

**ҚОРАҚАЛПОҒИСТОНДА
ФАН ВА ТАЪЛИМ**

**ҚАРАҚАЛПАҚСТАНДА
ИЛИМ ҲӘМ ТӘЛИМ**

**НАУКА И ОБРАЗОВАНИЕ
В КАРАКАЛПАКСТАНЕ**

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**THE IMPORTANCE OF INCORPORATING DIGITAL TECHNOLOGIES INTO
GEOGRAPHY EDUCATION**

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Summary: *The article discusses the peculiarities of the contemporary educational system, the value of incorporating digital technologies into geography lessons, and innovative ideas, techniques, and tools for teaching geography in the context of the contemporary educational system.*

Key words: *education, standard, textbook, card, information technology, communication, Tarsia Pazl program, interactive technology.*

One of the most critical concerns facing our nation now is raising the standard of education, and there are now enough options to do so. Students' education and upbringing according to international standards receive particular attention, and innovative teaching techniques are widely used. Special attention is paid to education and upbringing of students based on international standards, wide use of new methods of education. Decree No. PQ-6108 of the President of the Republic of Uzbekistan dated November 6, 2020 "On the development of world-class educational resources of Uzbekistan", May 11, 2022 "National education in 2022-2026 Decree No. PQ-1348 "on the introduction of educational resources in the program of the Ministry of Public Education of the Republic of Uzbekistan" on December 29, 2020 "Development of educational resources on" Decree No. PQ-1348, December 9, 2020 Decree No. PQ-1348 "On the Development of Educational Resources" of the Ministry of Public Education of the Republic of Uzbekistan, 2020 Published by the Ministry of Public Education of the Republic of Uzbekistan on December 9.

It has gained universal acceptance in recent years that textbooks are evolving into new forms in education. It is important to recognize that the textbooks we use for the National Curriculum now seem very different from what they did in the past. Color books have replaced black-and-white textbooks; illustrations, photo illustrations, different schematics, signs devoid of maps, and QR codes have substituted textbooks. Textbooks began including infographics at the same time. Naturally, these modifications improve the textbook's quality, reduce its page count, and above all capture students' attention. Furthermore, we are aware that students may become disinterested and demotivated in handwritten textbooks in the modern era due to the widespread use of computers, cellphones, and the Internet in our daily life. For this reason, instructional manuals that aim to include information technology into the teaching process are being displayed today. The rationale for this is that ICTs help to guarantee high-quality educational materials.

For instance, students are more engaged in their own learning when presentations are used less frequently nowadays. Since the benefit of computer presentations speeds up the instruction. In actuality, the software is replaced. The lesson's materials are conveniently blue-white in color, and the information is presented in an easy-to-understand manner by being right in front of the pupils. availability, while also consulting the data again if needed. The most accessible and easily understood knowledge is given to pupils through presentations. This guarantees that the instructor can impart knowledge and cultivate a captivating atmosphere [4].

The current excitement has led to the employment of information and communication technology in geography classes. The benefits of communication technologies include:

1. Making the most of the chance to employ information and communication technologies: interactive cards, maps, videos, and other data can be used fast.

2. class enrichment - Using information communication technology allows for the addition of a variety of resources to the class, such as bright photos, presentations, interactive exercises, websites, and monthly courses.

3. Creativity development: In addition to geographic knowledge, digital technologies and a variety of programs foster the development of technological proficiency.

4. The actuality of Modern Technology: Students' excitement for learning is heightened by the modern features that information and communication technologies bring to the classroom.

Thus, there are several benefits to using ICTs in geography classes, including developing students' information literacy. The development of technical and software tools, the production of electronic learning materials, the placement of online courses for students, knowledge assessment systems, Internet technologies, remote learning technologies, and the use of video are currently the information technologies employed in the education of students. conference, comprehensive knowledge is needed for online courses (Coursera, edX, Khan Academy, MIT Open Course Ware) [2].

The information gleaned from the flow is highly valued in the work of these platforms, and the flow is emerging in novel ways. For instance, the Learning Apps platform is one of these platforms where interactive, multimedia, electronic training exercises were developed to help students apply the knowledge they had learned. The platform's ability to teach any subject is one of its benefits. The ability to produce a wide variety of activities from all science courses is the reason.

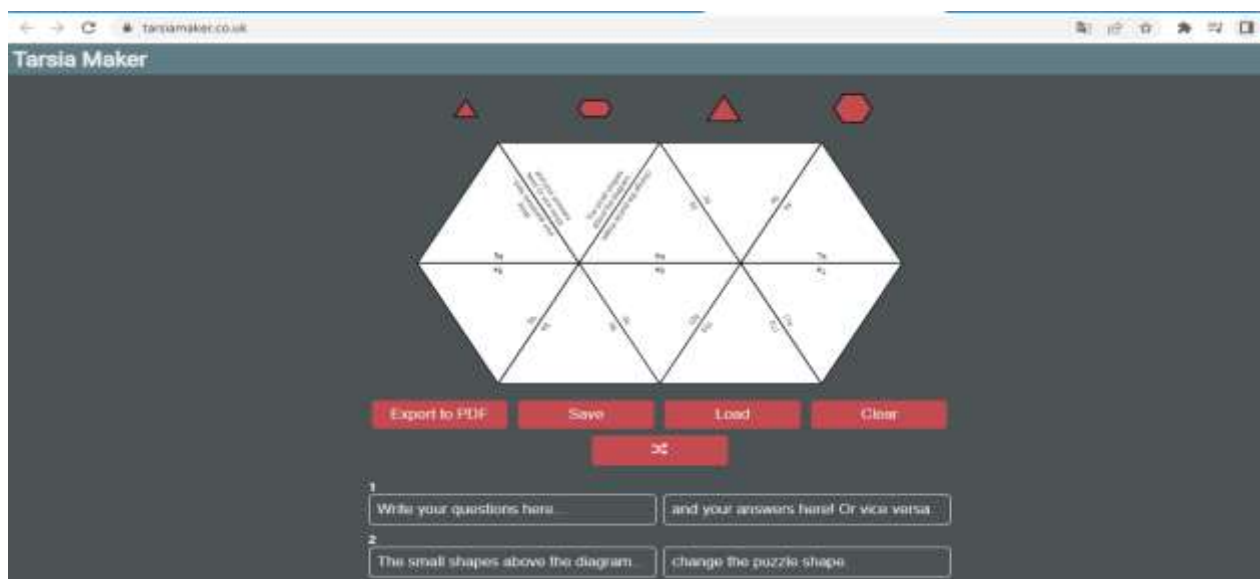
Simultaneously, educators developed their own training programs and streamlined the process by assigning homework to students simultaneously via Telegram groups or kundalik.com. It also shown how extensively our teachers employ it in their daily educational work, observe intriguing outcomes in their training, and raise students' engagement levels. Thus, students can teach geography lessons using the following opportunities made possible by the LearningApps.org platform: [2] platform: [2]

Systematizes the knowledge acquired during the lesson;

- Tries to make a decision quickly;
- Performs the task well under several conditions;
- General motivation appears;
 - Will be reconnected and self-evaluated;
- Will have independent knowledge;

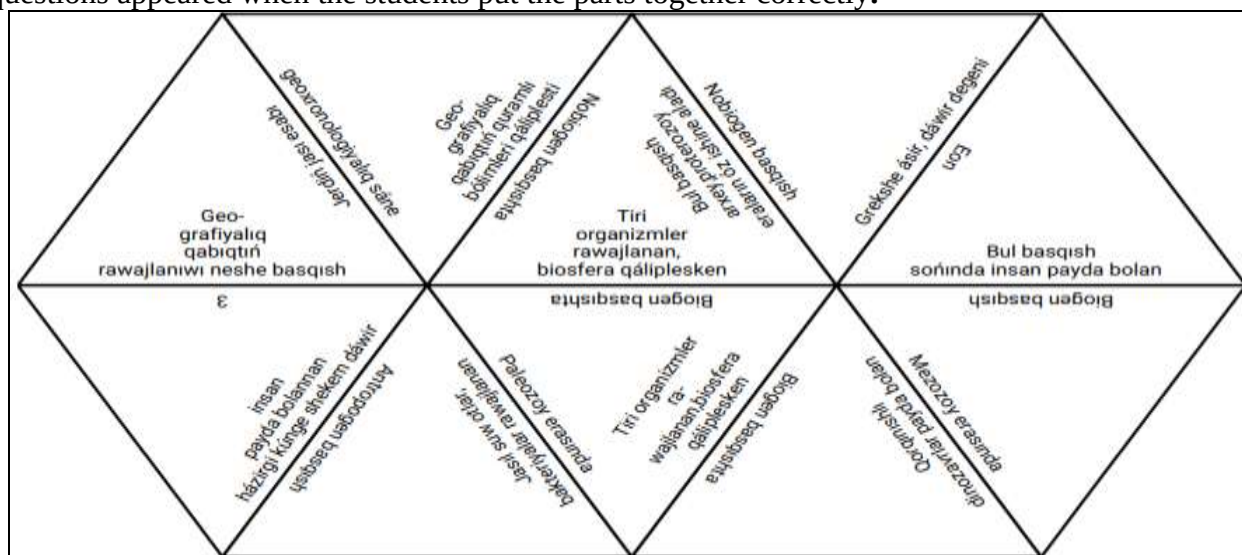
Uses mobile devices, tablets, and PCs to arrange independent work. strengthens the skills of educators who use interactive technology in the classroom successfully. The availability of information technologies will allow educators to plan didactic lectures. Improving Tarsia Pazl's ability to teach geography is one of these opportunities that is crucial. The development of teachers' skills is possible because of this conventional learning process. Some reports state that teachers' skills have improved as a result of these conventional training sessions.

Most British schools have implemented this application as a math teaching tool. However, it developed into a useful foundation for teaching other subjects over time. Based on the information provided, Tarsia Puzzle, also known as Tarsia Guide, is another domino game that students must solve. Using these programs, students can create tool resources that fully explain the lesson's content. Subjects that are read while under the influence of tarsia software can be utilized for accurate subject analysis, historical subject description, and accurate manual reference.



"Tarsia" view.

There are questions and answers in every part of Tarsia's presentation. The answers to the questions appeared when the students put the parts together correctly.



(appearance of Tarsia)

The program has a built-in editor for creating such formulas. This program also allows you to create complex drives with 24 segments and other drives with 6 segments. Simultaneously, a 2016 study on the program's effect on student learning by L.T. Cardazo discovered that: "Learning games awaken students' interest in the studied topics "shoots and encourages them to solve the problem, to learn as a team." For this reason, every teacher should set aside time to locate resources that make each lesson more engaging, making use of the opportunities that are available [3].

Additionally, we have the chance to increase the efficacy of the lessons by utilizing useful applications and resources (Google Earth Win, Banditsam, Ispring, Eclipses Crossword Crossword Toolbars), which are excellent teaching strategies for geography classes. However, further study on the part of the instructor is necessary in order to take use of these chances. Put succinctly, when instruction in geography is delivered through the use of ICTs, pupils will be :

- gaining knowledge by imparting knowledge in the form of animation, audio, or video;
- participating fully in the learning process rather than just receiving information;
- setting up chances for self-processing with provided data;

- having the chance to track and discuss the knowledge acquired during the learning process through skill assessments or educational assignments.

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Rezyume: Maqalada zamonaviy ta'lim tizimining o'ziga xos jihatlari, geografiya darslarini o'qitishda raqamli texnologiyalardan foydalanishning ahamiyati, zamonaviy ta'lim tizimidagi, shu jumladan, geografiya fanidagi yangicha ta'limiy yondoshuvlar, usullar va ta'lim texnologiyalari haqida so'z yuritiladi. Yana maqolada Tarsiya dasturi asosida o'qitish keng yoritilgan.

Резюме: В статье рассматриваются специфические аспекты современной системы образования, поддерживается значение и важность использования цифровых технологий при преподавании уроков географии, новые образовательные подходы, методы и образовательные технологии в современной системе образования, в том числе по географии. В статье широко освещено обучение на основе программы Tarsia.

Kalit so'zlar: ta'lim, standart, darslik, karta, axborot texnologiyasi, kommunikatsiya, Tarsiya Pazl dasturi, interaktiv texnologiya.

Ключевые слова: образование, стандарт, учебник, карта, информационная технология, коммуникация, программа Tarsiya Pazl, интерактивная технология.

EXPLORING THE DIVERSITY OF LONGHORNED BEETLES (COLEOPTERA, CERAMBYCIDAE) IN THE REPUBLIC OF KARAKALPAKSTAN

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Summary: *This study delves into the remarkable diversity of longhorned beetles (Coleoptera, Cerambycidae) in the Republic of Karakalpakstan, Uzbekistan. Through an exploration of various genera, including Cerambyx, Callidium, and Monochamus, it highlights their unique ecological adaptations and behavioral traits. The research underscores the significance of understanding these beetles' roles in ecosystem dynamics and the implications for conservation in the region.*

Key words: *Longhorned beetles, Coleoptera, Cerambycidae, Republic of Karakalpakstan, species diversity, genera diversity, ecological adaptations, behavioral characteristics, biodiversity, conservation implications, habitat preservation, ecosystem dynamics, endemic species, threats, forest management, invasive species, nutrient cycling, forest ecosystems, conservation strategies, monitoring programs*

Introduction:

Karakalpakstan, an autonomous republic in Uzbekistan, is blessed with a rich biodiversity owing to its diverse ecosystems ranging from deserts to wetlands. Among the fascinating fauna inhabiting this region are the longhorned beetles (Coleoptera, Cerambycidae). These beetles, characterized by their elongated antennae and often vibrant colors, play crucial roles in ecosystem dynamics. In this review, we delve into the species composition of longhorned beetles in Karakalpakstan, exploring their ecological significance and conservation implications.

Species Diversity:

The Republic of Karakalpakstan hosts a remarkable diversity of longhorned beetles, with numerous species belonging to various genera within the Cerambycidae family. Among the notable species found in the region are members of the Cerambyx, Callidium, and Monochamus genera, each exhibiting unique ecological adaptations and behavioral characteristics.

The Republic of Karakalpakstan boasts an extraordinary array of longhorned beetles, showcasing a rich diversity of species from different genera within the Cerambycidae family. Among the noteworthy species thriving in this region are representatives from the Cerambyx, Callidium, and Monochamus genera. Each of these genera presents distinct ecological adaptations and behavioral traits, contributing to the fascinating tapestry of biodiversity found in Karakalpakstan.

Cerambyx species, known for their elongated bodies and striking appearances, are often encountered in the diverse landscapes of Karakalpakstan. These beetles exhibit specialized adaptations suited to their respective habitats, showcasing a remarkable ability to thrive in various environmental conditions.

Similarly, Callidium beetles, with their unique colorations and feeding habits, contribute to the ecological mosaic of Karakalpakstan. Their interactions with specific plant species and their role in nutrient cycling underscore their importance in local ecosystems.

Monochamus beetles, commonly referred to as sawyer beetles, are prevalent inhabitants of Karakalpakstan's forests. With their characteristic long antennae and wood-boring larvae, Monochamus species play crucial roles in forest dynamics, including decomposition processes and nutrient cycling.

Each of these genera brings its own set of ecological contributions and adaptations to the ecosystems of Karakalpakstan. Understanding the dynamics of these longhorned beetles is essential for effective conservation strategies and the preservation of the region's unique biodiversity.

Cerambyx cerdo, commonly known as the Great Capricorn Beetle, is one of the largest longhorned beetles found in Karakalpakstan. Its larvae develop in decaying wood, contributing to nutrient recycling in forest ecosystems. Another prominent species is *Callidium violaceum*, recognized for its iridescent violet elytra and association with dead or dying trees, where its larvae feed on decaying wood.

Monochamus spp., commonly referred to as sawyer beetles, are prevalent in the region. These beetles are often vectors of pine wilt disease, posing significant threats to pine forests in Karakalpakstan. Understanding the distribution and behavior of *Monochamus* species is crucial for effective forest management and disease control strategies.

Indeed, *Cerambyx* beetles serve as vital components of Karakalpakstan's biodiversity, highlighting the intricate interconnections between species and their environments. These beetles play multifaceted roles within their ecosystems, influencing various ecological processes and contributing to overall ecosystem health and stability.

Firstly, *Cerambyx* beetles are integral to nutrient cycling through their participation in decomposition processes. As wood-borers, their larvae feed on decaying or dead wood, breaking it down into smaller organic components. This activity releases nutrients back into the soil, enriching it and supporting the growth of plants and other organisms. By facilitating nutrient recycling, *Cerambyx* beetles contribute to the maintenance of ecosystem productivity and resilience.

Moreover, *Cerambyx* beetles interact closely with vegetation, particularly trees, as their primary habitat and food source. Through their feeding and breeding behaviors, they can influence the distribution and abundance of plant species within their habitats. Additionally, as pollinators and prey for other organisms, *Cerambyx* beetles participate in complex food webs, further reinforcing the interconnectedness of species within ecosystems.

Furthermore, *Cerambyx* beetles can serve as indicators of ecosystem health and environmental quality. Their presence, abundance, and diversity can reflect the overall condition of habitats, including factors such as habitat integrity, resource availability, and disturbance levels. Monitoring *Cerambyx* populations can thus provide valuable insights into the state of Karakalpakstan's ecosystems and inform conservation and management efforts.

Overall, *Cerambyx* beetles exemplify the intricate web of relationships that characterize ecosystems, highlighting the importance of preserving biodiversity and maintaining ecological balance in Karakalpakstan and beyond. Recognizing their role as essential components of biodiversity underscores the need for concerted efforts to conserve their habitats and ensure their continued presence in the region's diverse landscapes.

Ecological Significance:

Longhorned beetles play vital roles in ecosystem functioning, particularly in nutrient cycling and decomposition. As primary decomposers of wood, their larvae facilitate the breakdown of dead trees, releasing nutrients back into the soil and promoting soil fertility. Additionally, adult beetles contribute to pollination and serve as prey for various predators, thereby sustaining food webs in their habitats.

Conservation Implications:

Despite their ecological importance, longhorned beetles face threats from habitat loss, climate change, and invasive species. Deforestation and urbanization pose significant challenges to beetle populations by reducing suitable habitats and fragmenting ecosystems. Furthermore, the introduction of invasive species, such as the Asian longhorned beetle (*Anoplophora glabripennis*), poses a serious threat to native beetle communities.

Conservation efforts in Karakalpakstan should focus on habitat preservation, restoration, and sustainable land management practices. Promoting awareness among local communities about the ecological value of longhorned beetles can foster support for conservation initiatives. Additionally, monitoring and research programs are essential for assessing population trends, identifying priority species, and implementing targeted conservation measures.

Conclusion:

The diverse assemblage of longhorned beetles in the Republic of Karakalpakstan underscores the region's ecological richness and importance for biodiversity conservation. By understanding the species composition, ecological roles, and conservation challenges facing these beetles, we can work towards safeguarding their habitats and ensuring their continued presence in the unique ecosystems of Karakalpakstan.

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Rezyume: *Ushbu tadqiqot O'zbekiston, Qoraqalpog'iston Respublikasida uzun shoxli qo'ng'izlarning (Coleoptera, Cerambycidae) hayratlanarli xilma-xilligiga qaratilgan. Cerambyx, Callidium va Monochamus kabi turli avlodlarni o'rganish orqali olimlar ularning o'ziga xos ekologik moslashuvi va xulq-atvor xususiyatlarini aniqladilar. Tadqiqot ushbu qo'ng'izlarning ekotizim dinamikasidagi rolini va mintaqadagi tabiatni muhofaza qilish oqibatlarini tushunish muhimligini ta'kidlaydi.*

Резюме: *Данное исследование посвящено удивительному разнообразию жуков-усачей (Coleoptera, Cerambycidae) в Республике Каракалпакстан, Узбекистан. Благодаря исследованию различных родов, включая Cerambyx, Callidium и Monochamus, ученые выявили их уникальные экологические адаптации и поведенческие особенности. Исследование подчеркивает важность понимания роли этих жуков в динамике экосистемы и последствий для сохранения природы в регионе.*

Kalit so'zlar: *Uzun shoxli qo'ng'izlar, Koleoptera, Cerambycidae, Qoraqalpog'iston Respublikasi, turlar xilma-xilligi, nasllarning xilma-xilligi, ekologik moslashuvi, xulq-atvor xususiyatlari, bioxilma-xilligi, ekologik oqibatlari, yashash muhitini saqlash, ekotizim dinamikasi, endemik turlar, tahdidlar, o'rmonlarni boshqarish, invaziv turlar, ozuqaviy moddalar velosiped moddalari. , o'rmon ekotizimlari, muhofaza qilish strategiyalari, monitoring dasturlari.*

Ключевые слова: *Жуки-усачи, жесткокрылые, Cerambycidae, Республика Каракалпакстан, видовое разнообразие, разнообразие родов, экологическая адаптация, поведенческие характеристики, биоразнообразие, природоохранные последствия, сохранение среды обитания, динамика экосистемы, эндемичные виды, угрозы, лесопользование, инвазивные виды, круговорот питательных веществ. , лесные экосистемы, стратегии сохранения, программы мониторинга.*

UDK 911.5+ 004. 9 (575. 171)

QUANTITATIVE ANALYSIS OF WATER USED IN AGRICULTURE IN THE AVIO 200 DEVICE

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Summary: Due to its wide application in agriculture and industry, it is vital for the survival of living beings. An analysis of the water sample of the Dustlik canal from the section flowing through the territory of the city of Gulistan was carried out. The main purpose of this study was to assess the quantitative quality of the water sample of the Dustlik Canal flowing through the territory of the city of Gulistan, based on the content of 27 selected basic elements. Quantitative analysis of the water in the channel was carried out using an inductively coupled Avio 200 plasma optical emission spectrometer (ICP-OES). The results showed that the highest concentrations in the sample were recorded by elements such as Ca, Na and S. The absence of CD, as, PB, HG and BI elements, which are considered dangerous elements for all industries, showed that the water of the Dustlik canal does not pose a danger to the health of water users in agriculture, industry, as well as in domestic spheres.

Keywords: Dustlik canal, trace elements (microelements), Avio 200, ICP-OES analysis, hazardous elements, calibration, irrigation.

INTRODUCTION

Water is a source of vitality, which nothing can replace in the benefits given to humanity by nature. The importance of water in nature is extremely high, and there are no substitutes. That's why we define water as "water is the source of life." There are no living organisms that could live without water. Long-term studies have shown that people's life expectancy correlates with their consumption of clean drinking water. According to the World Health Organization, many diseases are caused by the consumption of water that does not meet the requirements, and water is also the key to human health[1].

In our country, indicators affecting the chemical, bacteriological and organoleptic composition of drinking water and its properties are adopted on the basis of norms known as O'zDavSt 950/2000 "Drinking water" (Fresh water) and 28-74-82 "Sources of centralized household drinking water supply" [2,9].

Water occupies 2/3 of the Earth's surface, being considered one of the first substances necessary for the life of living organisms. It is widely used in agriculture (about 70%), marriage, industry and tourism and for these reasons plays an important role in the global economy[3]. In addition, industrial development, urbanization, agricultural development and population growth from year to year have a negative impact on the quality of drinking water. With regard to crop irrigation, polluted water can affect the quality of crops due to the elements it contains, causing serious concern about human health[4,5]. Water can be contaminated in different ways: it can be chemically, physically and microbiologically contaminated, and water pollutants can be of inorganic, organic or biological origin[4,6]. Water has a great impact on human health in different ways, and from the point of view of microbiological contamination, it can lead to serious human health problems[7].

A presidential decree was adopted "On the program for the integrated development and modernization of drinking water supply and sewerage systems for 2017-2021." This decision is aimed at improving the efficiency of drinking water supply and water supply in our country in 2017-2021, as well as ensuring consumer access to high-quality drinking water in all regions[9,10].

Today, water pollution in our country is mainly caused by the absence or malfunction of sewer networks, uncontrolled discharge of industrial wastewater and small enterprises without water treatment facilities. Under these conditions, the quality of water in rivers varies, and in some parts it does not meet the requirements for the use of fresh water due to its poor quality[8].

The experimental part

Dustlik Canal is a canal on the territory of Uzbekistan and Kazakhstan, located northeast of Mirzachul. It takes water from the discharge channel of the Farkhad hydroelectric power station in the Syr Darya. This is a canal flowing through the city of Gulistan, its length is 116 km, and the capacity is 230 cubic m/s. The canal consists of 6 dams, 45 drainage channels with a water flow rate from 0.2 to 50 cubic m/s and 3 spare discharges. The eastern discharge (40 cubic m /s), the northern discharge (18 m³/s) and the last discharge (17 cubic m/s) were built. The end of the canal ends with discharge into the Chardara reservoir [11].

ICP-OES analysis. The equipment used for analysis purposes was also thoroughly washed 2 times with purified (dittillacid BSB – 939 - IR) HNO₃ solution in a ratio of 1:1, and then with distilled water (BIOBASE). The sample (designated as F1) from the section of the Dustlik canal flowing through the city of Gulistan was taken in sterile containers with a volume of 1 liter. When the samples were stored for 2 days and then examined, it was found that there were deposits at the bottom of the container. For the purposes of analysis, water was heated in the entire volumetric container (tubular heater model 98 III-B).

Elemental analysis was performed on an Avio 200 device (ICP-OES Perkin Elmer, USA) for the purpose of analysis. The samples were analyzed using standards consisting of a mixture of high purity elements. For calibration purposes, standard solutions of 0.1 mg/l; 1 mg/l; 10 mg/l and 40 mg/l are prepared from a standard sample (CPA Chem ICP Multi-Element Standard-33 ISO 9001, ISO 17025, ISO 17034).

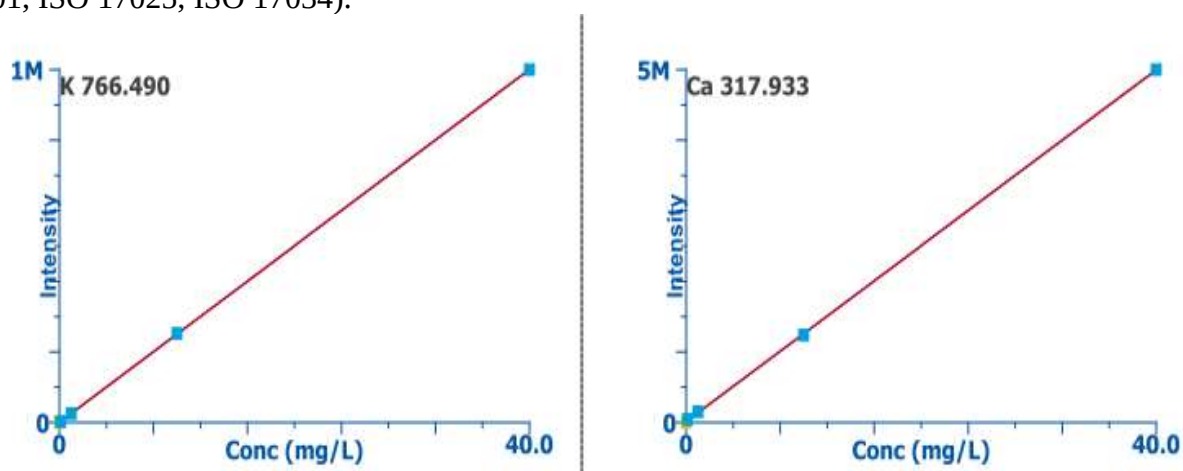


Figure 1. Calibration line drawn on the basis of standards (for K and Ca).

Avio 200 device has been launched and optimized (20 min.). When the device was in working condition, the corresponding parameters were entered for analysis (Table 1).

Table 1.

System operation parameters	
Power:	1,5 kVt
Plasma gas (argon) flow:	9,0 L/min
Auxiliary gas flow:	0,7 L / min
Lamp type:	Standard one-piece quartz burner with 1.4mm diameter injector tube
Type of nebulizer:	Glass concentric
Pressure of nebulizer:	160 kPa
Pump tube:	Grey-grey (input) Yellow (output)

Pump speed:	15 rpm
Sampling rate:	1,4 ml/min
Integration time:	3 sec
Automatic PMT voltage:	650 V

The results of the analysis

Table 2

	Al (mg/L)	Ba (mg/L)	Be (mg/L)	B (mg/L)	V (mg/L)	Bi (mg/L)	Fe (mg/L)	Cd (mg/L)	K (mg/L)	Ca (mg/L)
Canal ter	0	0,0286	0	0,0429	0	0	0	0	2,1023	63,84

Co (mg/L)	Si (mg/L)	Li (mg/L)	Mg (mg/L)	Mn (mg/L)	Cu (mg/L)	As (mg/L)	Na (mg/L)	Ni (mg/L)	Pb (mg/L)	Se (mg/L)
0	10,42	0,0256	16,283	0	0,0071	0	36,692	0	0	0,0567

Ag (mg/L)	Sr (mg/L)	Cr (mg/L)	Zn (mg/L)	P (mg/L)	S (mg/L)
0,0963	0,5095	0	0,0954	0,0613	36,701

THE RESULTS OBTAINED AND THEIR DISCUSSION

As a result of the multi-element analysis (27), among the studied elements, the highest concentration of elements in the sample was noted for Ca, Na and S (Table 2).

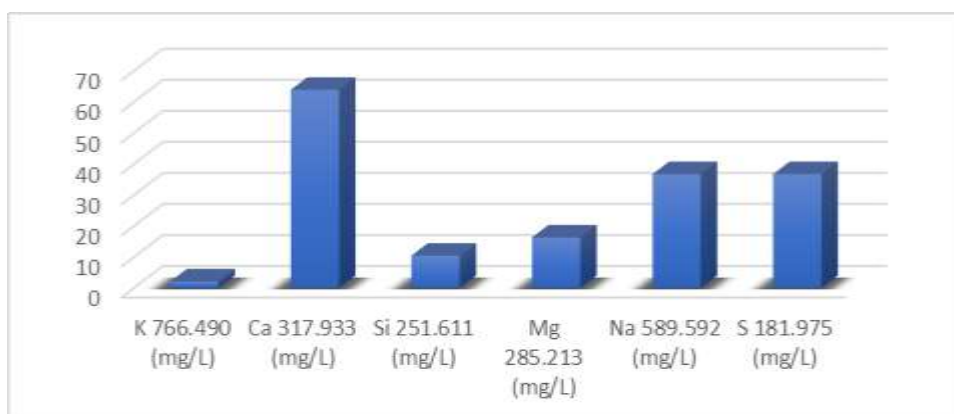
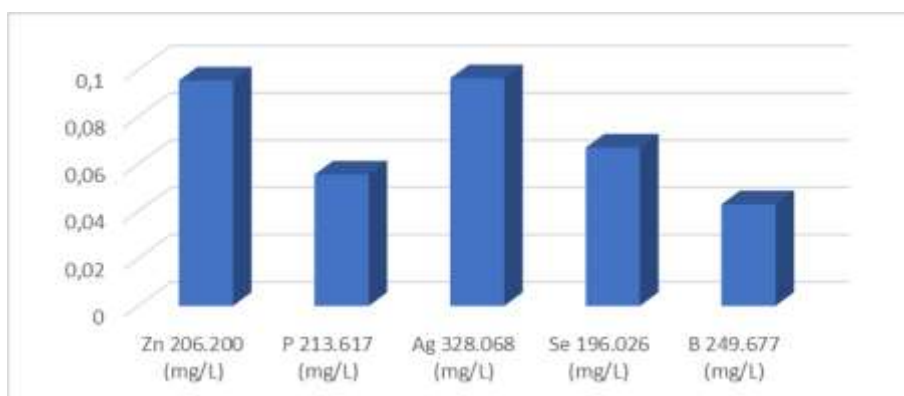


Figure 1.

The main macroelements in the water of Dustlik canal.



The fact that hazardous substances (Cd, as, Pb, Hg and Bi) that may be present in the water were not detected in the water of Dustlik Canal showed that this water is safe for use in agriculture.

Figure 2.

The content of microelements in the water of Dustlik canal.

A significant content of elements such as Ca, Na and S was found in a water sample taken from a section of Dustlik canal flowing through the territory of Gulistan. It was found that elements such as Cd, as, Pb, Hg and Bi, which are considered dangerous elements, are not found. As can be seen from this, it has been shown that it has an alternative consumer composition that is used for various purposes.

CONCLUSION

The main purpose of the research is to determine and analyze quantitative indicators of the water of Dustlik Canal based on ISO 17034 standards using the Avio 200 device (ICP-OES) of a sample taken from a section flowing through the territory of the city of Gulistan. During the analysis, the quantitative quality of the water of Dustlik Canal was assessed based on the content of 27 selected basic macro- and microelements. Of the analyzed elements, higher concentrations were noted for Ca, Na and S. It was emphasized that the absence of elements dangerous for use in many industries, including Cd, as, Pb, Hg and Bi, is safe for water consumers in agriculture and industry. Also, due to its use in many areas that may arise in any region of sewage, it imposes different requirements on water quality, which is why any water consumed must meet the relevant quality requirements.

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Rezyume: Qishloq xo'jaligi va sanoatda keng qo'llanilishi bilan tiriklikning omon qolishi uchun hayotiy ahamiyatga ega. Do'stlik kanali suvining Guliston shahri hududidan oqib o'tuvchi qismidan olingan namuna tahlili olib borildi. Ushbu tadqiqotning asosiy maqsadi 27 ta tanlangan asosiy elementlarning tarkibiga asoslanib, Do'stlik kanali suvining Guliston shahri hududidan oqib o'tuvchi suv namunasining miqdoriy sifatini baholash edi. Kanal suvining miqdoriy analizi Avio 200 (ICP-OES) induktiv bog'langan plazmali optik emissiya spektrometri yordamida amalga oshirildi.

Резюме: Широко используемый в сельском хозяйстве и промышленности, он жизненно важен для выживания жизни. Проведен анализ пробы, взятой из воды канала

Достлик, протекающего по территории города Гулистан. Основной целью данного исследования была оценка количественного качества пробы воды канала Достлик, протекающей по территории города Гулистан, на основе состава 27 выбранных основных элементов. Количественный анализ воды в канале проводился с использованием оптико-эмиссионного спектрометра с индуктивно связанной плазмой Avio 200 (ICP-OES).

Kalit so‘zlar: makro mikro element, miqdoriy analiz, argon, induksion bog‘lamli plazma, og‘ir metallar.

Ключевые слова: макромикроэлемент, количественный анализ, аргон, индукционно-связанная плазма, тяжелые металлы.

**ISSUES OF ASSESSMENT OF VEGETATION COVER DYNAMICS AND SOIL
MELIORATIVE STATUS IN OASIS LANDSCAPES OF KHORAZM REGION USING
GEOINFORMATION SYSTEMS**

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Summary: *This article presents a comprehensive analysis of soil and vegetation cover monitoring in Khorezm region. In the implementation of this process, the possibilities and advantages of satellite images, the methods of their effective use and the tasks performed during the process are shown in a clear sequence. The importance of monitoring some natural components based on the unique natural conditions of the region is explained in detail.*

Key words: *monitoring, GAT, Sentinel 2A, Landsat 8OLI, NDSI, NDVI, ArcGIS, soil-ameliorative conditions.*

Enter. Since the second half of the 20th century, as a result of the scientific and technical revolution, the influence of society on nature has increased. As a result, global, regional and local ecological problems began to emerge. This required the organization of a system of continuous monitoring of the environment.

In the countries of the world, great importance is attached to the introduction of digital technologies in the research of natural and anthropogenic landscapes, the monitoring of soil and plant cover, and the use of modern information systems and software products. Particular attention is being paid to issues related to remote sensing of agricultural lands, complex analysis of natural components based on geographic information systems (GIS) based on agroclimate, groundwater and surface water, and soil properties. [5, 6, 8, 9, 10, 11,12].

Relevance of the research topic. In this regard, a new concept of monitoring (Latin "monitor" - reminding, warning) appeared in science. The main purpose of monitoring is to observe changes in the natural environment under the influence of human activities, to evaluate based on the obtained data and to implement the appropriate management system. [3,1088]. On the basis of monitoring, pollution of atmospheric air, water bodies, groundwater, soil, plant cover with various wastes, toxic chemicals, and radioactive elements is observed. Monitoring works are focused on the violation of human existence in certain ecological conditions. The degree of environmental change is taken in relation to the state of natural conditions that have not yet been polluted [4, 5, 6, 7, 8, 9, 10, 11, 12].

Research object. Khorezm region is located in the western part of Uzbekistan, in particular, in the northwestern region of the country. It borders Turkmenistan in the southwest, south and southeast, Karakalpakstan in the northwest and north, and Bukhara region in the east. The region covers an area of approximately 6050 square kilometers. Geographically, Khorezm region is located on the left bank of the Amudarya, which one of the largest rivers in Central Asia [6, 7, 8, 10]. The river plays an important role in the irrigation systems of the region.

The goal and task of the research is to provide information about the process of monitoring natural oasis landscapes of Khorezm region based on the data of Sentinel-2A and Landsat 8OLI satellites. To achieve this goal, the following tasks have been defined: collecting information about the capabilities of both satellites, studying and implementing methods of landscape monitoring using space photographs, and preparing monitoring cards.

Research methods. When planting agricultural crops, it is recommended to take into account the level of salinity of the existing cultivated areas and the changes in the level of underground water.

Today, planting works begin everywhere in the regions, with a partial difference in time. Taking this into account, it is not possible to determine the salinity level of all cultivated areas at the same time in short periods [6, 7, 8, 11, 12], and this process creates certain difficulties. [2,352].

However, there are ways to solve this problem by effectively using the capabilities of modern satellites. In particular, we have the ability to determine NDSI (Normalized Differential Salinity Index) - soil salinity index and NDVI (Normalized Differential Vegetation Index) - vegetation index based on the data obtained from satellites that we know and use. [1].

If we determine soil salinity and vegetation cover based on the data of the Sentinel-2A satellite, which is widely used in scientific research at the international level, $NDSI = \frac{RED - NIR}{RED + NIR}$ and using the $NDVI = \frac{NIR - RED}{NIR + RED}$ index formulas, we can get the desired results. The red B4-band in the formulas (RED) indicates the wavelength of 650-680 nm, and the near-infrared B8-band (NIR) indicates the wavelength of 785-899 nm. The pixel resolution of the bands is 10m. That is, the size of each pixel is 10 m x 10 m.

Likewise, if we determine soil salinity based on Landsat 8OLI satellite data, the red B4 band in our formula (RED) has a wavelength of 636-673 nm, and the (NIR) near-infrared B5 band has a wavelength of 851-879 nm stands for wavelength. Based on this satellite data, we will be able to observe saline areas in the wavelength range from 0.075 nm to 0.060 nm.

Results and their discussion. In order to obtain the desired results during this research work, it is necessary to perform a number of sequential actions.

First of all, after registering on the website <http://earthexplorer.usgs.gov>, we will download space photos from both satellites, including the territory of the Khorezm region, and upload them to the ArcGIS program (Figure 1).

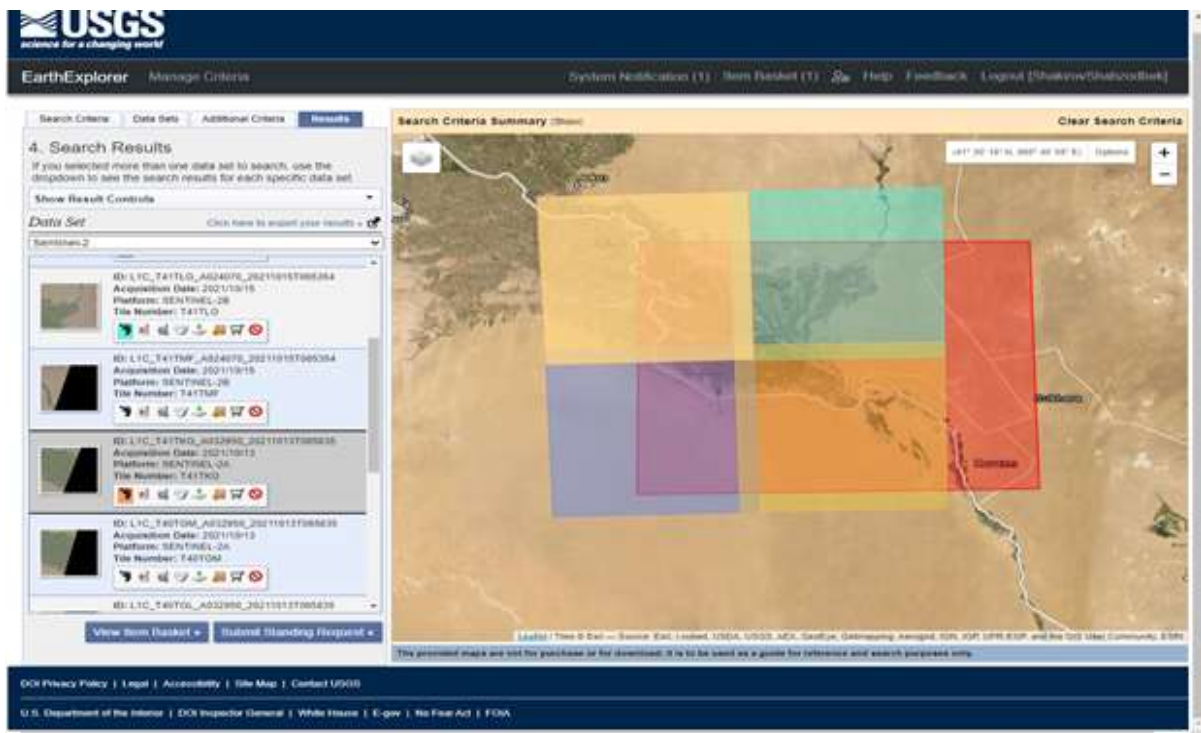


Figure 1. The process of uploading images to the territory of Khorezm region.

In the next steps, data from Sentinel-2A and Landsat 8OLI satellites will be downloaded at the same time interval; the next stage begins with working on raster data. We thought it would be appropriate to use images from May 2013 and 2023 to clearly show the difference between the years.

"Mosaic raster layer" operation is performed on the files using the ArcMap program, then the formula $\text{Float}(\text{RED} - \text{NIR}) / \text{Float}(\text{RED} + \text{NIR})$ is calculated using the "raster calculator" function. During this operation, it is advisable to use B4=RED, B8=NIR bands on the Sentinel-2A satellite,

and B4=RED, B5=NIR bands on the Landsat 8OLI satellite. In order to process the saved image, we select a color scale that changes from red to green by performing the action "double click→properties→symbology→color ramp". As a result, our saved image appears in the form of different color scales. This color scale reflects the degree of salinity of the soil cover, that is, as the colors change from green to dark red, it means that the salinity of the soil covers is increasing or vice versa. In order to extract the territory of Khorezm region from the resulting image, we download the "shp" file of the "polygon" type, which describes the territory of the region, using the "Add data" command, and then we perform the sequence of actions "arctoolbox→data management tools→raster→raster processing→clip" and in the corresponding window we save the region in a separate "shp" format. We delete the images outside the region from the list of layers and process the remaining layers (Figures 2, 3).

We perform all the above actions separately for the selected 2 years in the same sequence.

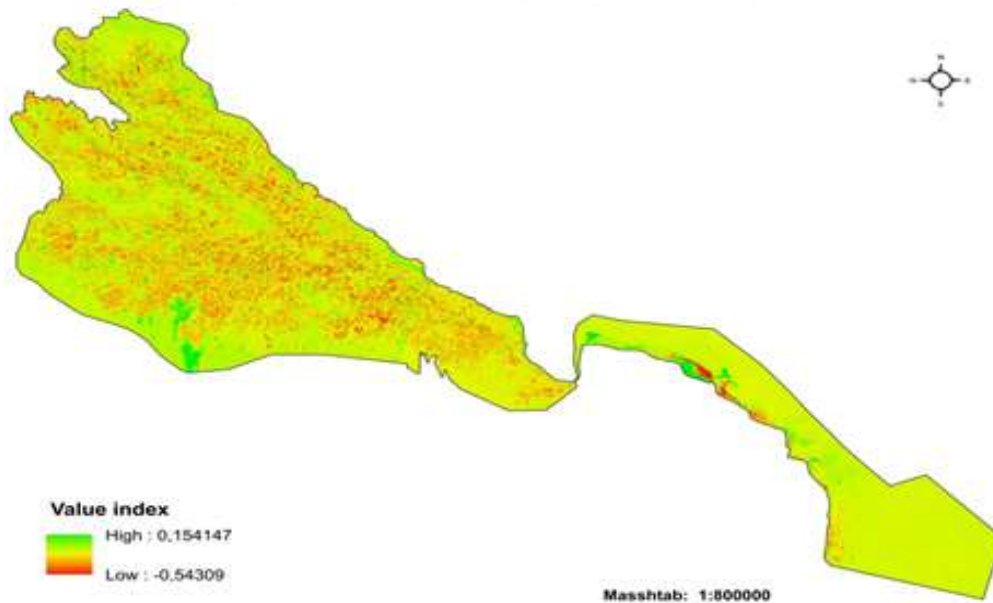


Figure 2. Indicators of NDSI analysis for the territory of the province for 2013.

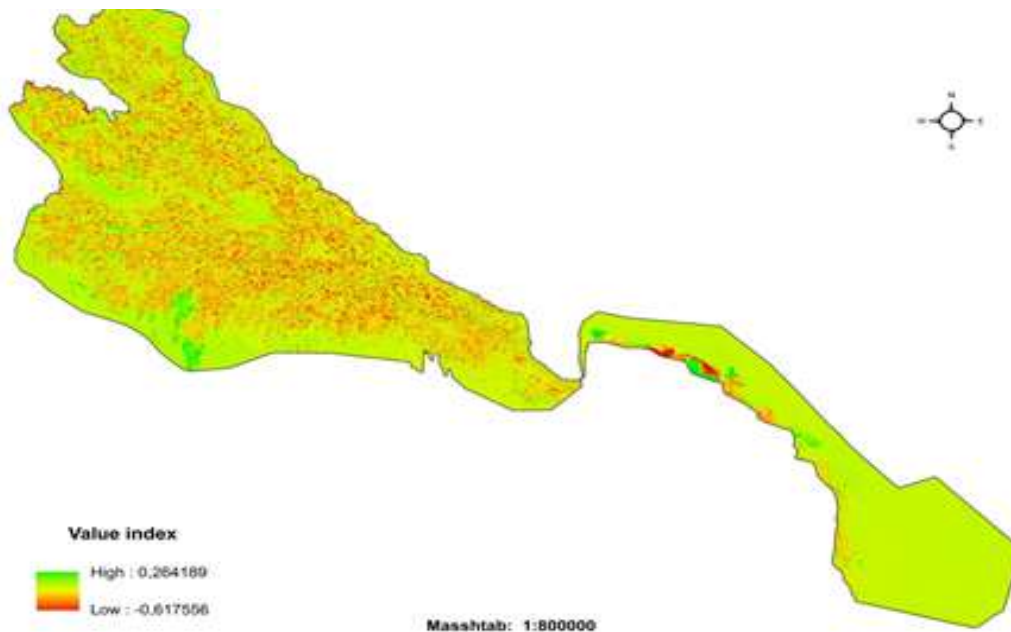


Figure 3. Indicators of NDSI analysis for the territory of the province for 2023.

If the soil salinity level is considered high in the areas depicted on the scale from dark red to yellow in the image, the soil-ameliorative conditions of the areas where the scale has changed from light green to dark can be positively assessed.

By repeating the same actions, their areas are determined by calculating NDVI. In this process, we use the formula $\text{Float}(\text{NIR}-\text{RED})/\text{Float}(\text{NIR}+\text{RED})$ (Figures 4,5).

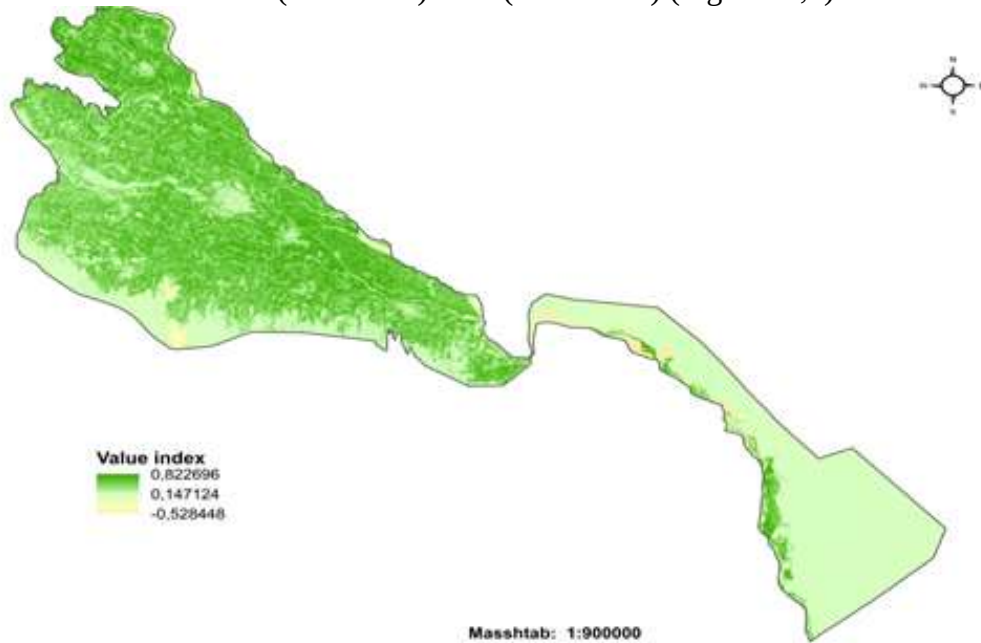


Figure 4. Indicators of NDVI analysis for the territory of the province in 2013.

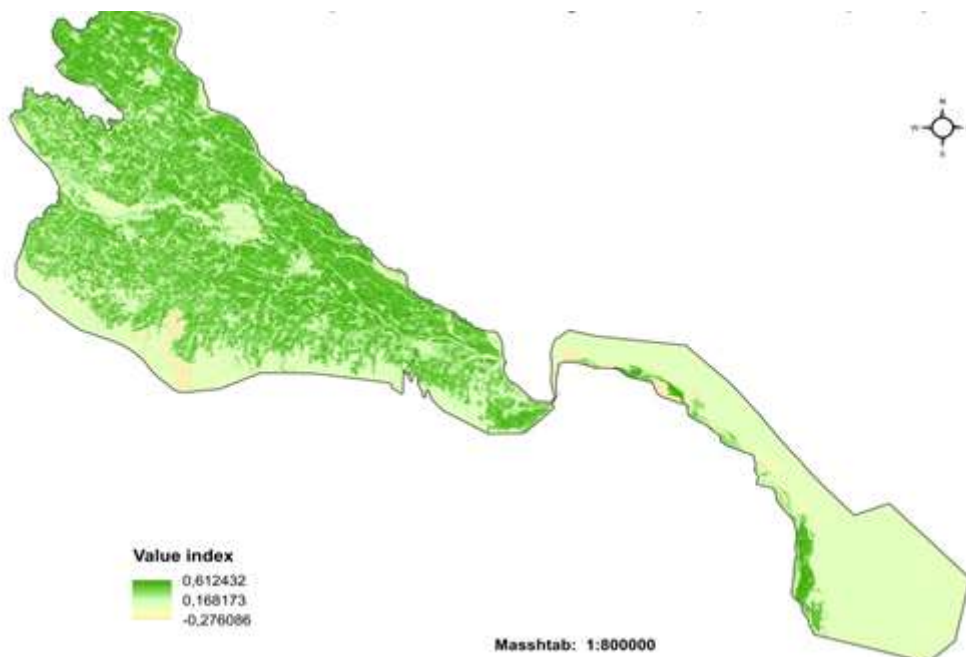


Figure 5. Indicators of NDVI analysis for the territory of the province in 2023.

The vegetation index is usually determined using the ArcToolbox plugin based on the above formula. For this, the eighth (near-infrared) and fourth (red) bands of the Sentinel-2A satellite will be included in the program. Using their general structure (properties), the image is transferred to the state of standard deviation. From the file menu space of the “ArcToolbox” dialog, the “Spatial Analyst tools” command line is launched and the raster calculator dialog is restored from it. In it, the vegetation index is determined using the above formula.

By comparing the 2013 and 2023 NDVI analysis maps for the region, it is known that during the past 10 years, we can observe that the area occupied by the settlements, that is, the landscape has increased significantly in the region.

Conclusions. In conclusion, it can be said that by using Sentinel-2A and Landsat 8OLI data today it is possible to regularly collect the latest data on land use, new forests and groves, logged, harvested and burned areas.

By monitoring natural landscapes using these satellite data, it is considered very convenient and effective to determine dynamic and structural changes in natural and anthropogenic landscapes in the area, as well as to develop and implement a set of optimal measures. becomes important against the background of environmental crises.

The monitoring of land reclamation condition of the regional territory serves to fully implement the measures for the sustainable development of the region and environmental protection and to achieve highly positive results.

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Rezyume: Ushbu maqolada Xorazm viloyatida tuproq va o'simlik qoplami monitoringining keng qamrovli tahlili keltirilgan. Bu jarayonni amalga oshirishda sun'iy yo'ldosh tasvirlari

imkoniyatlari, afzalliklari, ulardan unumli foydalanish usullari va jarayonni olib borishda bajariladigan vazifalar aniq ketma-ketlikda ko'rsatib o'tilgan. Viloyat hududining o'ziga xos tabiiy sharoitidan kelib chiqqan holda ayrim tabiat komponentlari monitoringini yuritishning ahamiyati batafsil yoritilgan.

Резюме: В данной статье представлен комплексный анализ мониторинга почвенного и растительного покрова Хорезмской области. При реализации этого процесса в четкой последовательности показаны возможности и преимущества спутниковых снимков, методы их эффективного использования и решаемые в ходе процесса задачи. Подробно объяснена важность мониторинга некоторых природных компонентов с учетом уникальных природных условий региона.

Kalit so'zlar: monitoring, GAT, Sentinel 2A, Landsat 8OLI, NDSI, NDVI, ArcGIS, tuproq-meliorativ sharoit.

Ключевые слова: мониторинг, GAT, Sentinel 2A, Landsat 8OLI, NDSI, NDVI, ArcGIS, почвенно-мелиоративные условия.

MAIN LIMNOLOGICAL CHARACTERISTICS OF WATER BODIES

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Summary: *The article presents the results of the analysis of the distribution of biogenic elements in the aquatic ecosystems of the Aral Sea region by the method of principal components. The analysis performed shows that, in general, the studied system of characteristics of the state and distribution of biogenic elements in the studied water body does not differ in the stability of correlations; in certain periods of observation, correlations between the studied indicators weaken or even are absent.*

Key words: *Aral Sea Area, monitoring, biogenous elements, water ecosystems, eutrophication.*

At the global level, great attention is being paid to solving the problem of progressive anthropogenic impact on water resources and preservation of biological diversity in aquatic ecosystems. Especially in connection with the sharp increase in anthropogenic pressure on water ecosystems, the quality of the water environment is becoming increasingly worse, and it is playing an important role in solving the issues of threats to the ecological, food and national security of our country. In this direction, the study of anthropogenic degradation of water bodies is becoming more relevant in the field of ecology, in addition to the creation of laws of rational use of natural water bodies and their protection.

Due to the extraordinary dynamics of the hydrological regime of the Amudarya basin, there is a strong need for up-to-date information in the development of prospective measures of water management, which also applies to information on the composition of biogenic elements. is the result of anthropogenic influence on water ecosystems of this region.

The flow of Amudarya is an important source of fresh water, and it is one of the main routes of migration of pollutant biogenic substances in the Amudarya basin. The average content of dissolved phosphorus in Amudarya water and drainage channels varied from 0.004 mg/l to 0.36 mg/l during the considered period. The average annual minimum content of phosphates in collector waste water (KS-1) near the bridge in the area of Shortanbay collective farm of Nukus district and in the area of Kokshiel collective farm of Bozatau district (0.19 mg/l), the maximum in the collector KS-4 of Takhtakopir district and at the "Asha" point (Akpetkey archipelago) (0.32 mg/l). The content of ammonium nitrogen in the Amudarya water near the Takhiatash bridge is around 0.01-0.20 mg/l, Porlytau pos., Muynaq district. Around 0.01-0.32 mg/l.

Lake Sudoche. Lake Sudoche, located in the north-western part of Karakalpakstan, consists of a system of several lakes (big and small Sudoche, karateren, Begdulla aydyn, Omar salym, Qarajar, Qarysjag'ys, Akushpa).

The lake borders the Urga hill (580 30' - 430 35') to the east (580 38' - 430 35') with the Ustyurt chinki, the eastern border of the Karajar system is from the eastern shore of Sudoche lake (to 580 38' - 430 22'), the western border is Akushpa. hill and passes along Ustyurt plateau (580 22' - 430 32') from Tayly to Urge hill. The total area is 50,000 ha.

The lake is a breeding ground for many hydrophilic species and a stopover for migratory birds on the west-Asian migration route, including rare and endangered birds.

Currently, Sudoche consists of a large number of small water bodies and four large water bodies (Aqushpa, Qarateren, Begdulla-Aydyn and Big Sudoche), as well as the areas adjacent to it. The maximum length of Akushpa is 20 km, width is 6.5 km, depth is not more than 1.5-1.7 m. The area of the lake is 11,600 ha.

The southern and western shores of the lake, adjacent to the Ustyurt Plateau, have low coastlines; the northern and eastern coasts are very high and marshy. Ash is surrounded on all sides by groves of reeds, their height and density decrease towards the southern edge. The shallowest

southern end of the lake is rich in open plains and large inlets. The clear surface of the lake is 60% of its total area, and the rest of the lake is covered with reed groves.

It should be noted that the water level in the lake has decreased by 50-55 cm compared to 2016. The bird fauna of this area includes 230 species of birds, 117 of which build nests. There are many rare species here, which is why in 2007 Sudoche was included in the list of the most important ornithological area of Uzbekistan (Uz 002) according to criteria A1, A3, A4, A4.

The different conditions of water supply and water exchange, as well as the chemistry of the feeding waters, create a polyhaline hydrochemical regime of different sections and lakes of the wetland. For example, this situation occurred in 2005-2010, 2015 and 2017, when the inflow through the collectors decreased or stopped. It was observed that the lakes dry up and become salty: water mineralization increases in all places, especially in non-flowing areas. Mineralization in the freshest water stream zones corresponds to the mineralization of the feeding stream - 3-4 g/l. 2014 and in 2018, this system was also very popular. The area of Tayly Lake was greatly reduced. Water flows into the KKS collector in small quantities, the flow of water here is very low. According to our data, its salinity is around 6 g/l, and its last section near West Karateren Lake is 14.01 g/l, with a smell of hydrogen sulphide.

Davutkol. The Davutkol lake system, located at the beginning of the "former" delta of the Amudarya, is the largest and oldest limnic ecosystem in the Amudarya basin. It is marked on the map as Dautkol reservoir. The study of this system is of great importance, because, on the one hand, it helps to establish relationships within the basins in lakes located in extreme arid conditions, secondly, it helps to observe the transformation of ecosystems exposed to anthropogenic influence, and thirdly, it is reasonable to distinguish freshwater limnic ecosystems from freshwater limnic ecosystems in the conditions of acute shortage of freshwater in the Amudarya basin. provides an opportunity to develop a strategy of use.

The Davutkol lake system is located on the banks of the river, 4 km north of the city of Nukus. formed. At that time, water fell into the lakes through the Davutkol system and fed the lakes located below it, namely up to the Kuskhanatau hill. The water level is variable and is characterized by significant fluctuations, often depending on the filling of the river with water. The boundaries of the system were constantly changing, its area varied from 1770 to 2250 ha. The greatest depth in the system was 5-7 meters in the Kuksu distribution, and unlike other distributions, its boundaries were well defined. In the lake, some moons are separated from each other by reeds 0.7-1.5 m high. Lakes are rich in aquatic plants.

According to experts, the main dominant of this ecosystem is reed (*Phragmites australis*), along the coast there are many examples of narrow-leaved sedge (*Typha angustifolia* L.) and sea pig grass (*Bolbochoenus maritimus*), in the muddy bottoms of shallow lagoons, underwater plant communities urut (*Myriophyllum verticillatum* L.), also forms dense thickets with rdest (*Potamogeton pectinatus* L.) and (*Potamogeton crispus* L.) species. Reeds (*Phragmites australis*) make up 85% of the ecosystem of the watershed and in some places are in clumps. The height of reeds in such bundles reaches 200-400 cm. Among the reeds, the growth of 90-100 cm tall narrow-leaved sedges (*Typha angustifolia* L.) and reeds (*Schoenoplectus litoralis* (Schrad.) Palla) was recorded. On the banks of the reservoir, specimens of hogweed (*Bolbochoenus maritimus*) are rare. Underwater macrophytes consist of rdest (*Potamogeton pectinatus* L.) and (*Potamogeton crispus* L.), urut (*Myriophyllum verticillatum* L.) and spiky urut (*Myriophyllum spicatum*). When the aquatic and coastal vegetation of the lake was studied, it was noted that it was covered with plants and had a high level of growth.

The lake is shallow and consists of numerous clumps of reeds (*Phragmites australis*). The bottom of the lake is muddy and sandy. Thick reed beds grow along the shore and form isolated clumps of dense reed beds in the lake's water area. The bottom is thickly covered with *myriophyllum spicatum* species. Above the bottom of the lake and on the surface of the water spiral spirogyra (*Sphaerocysti*) formed a light green layer. The vegetation cover of the coastal part of the lake was dominated by such plants as white-leaved (*Kareliniacaspica*) and yulgun (*Tamarix*

hispidula). The dominant of this ecosystem is reed (*Phragmites australis*). It formed dense thickets and isolated islands. Underwater plants are represented by spiky urut (*Myriophyllum spicatum*). The species composition of the ecosystem is represented by only 2 types of aquatic plants. It is covered with reeds and its growth is high, and the coastal zone is also thickly covered with urut. Dominants of the coastal area are halophytes - plants such as sedge and rush.



Geographical location of Davutkol (www.uzeconet)

A change in the hydrological situation in the region, a sharp decrease in the total water flow of the Amudarya in the delta, as a result of the transition to another source of water supply led to the transformation of the lake system into a basin formed in the deepest water areas with a single water surface. Irrigation is carried out by pumping water from the Erkindarya channel and tributaries of the Sapaqkol-Birkulok lake system. The water supply of the water basin is very irregular, as a result of which, even in a short period of time, there are sharp changes in the water level and significant changes in the area. vegetation was observed only in the open expanses of the plains.

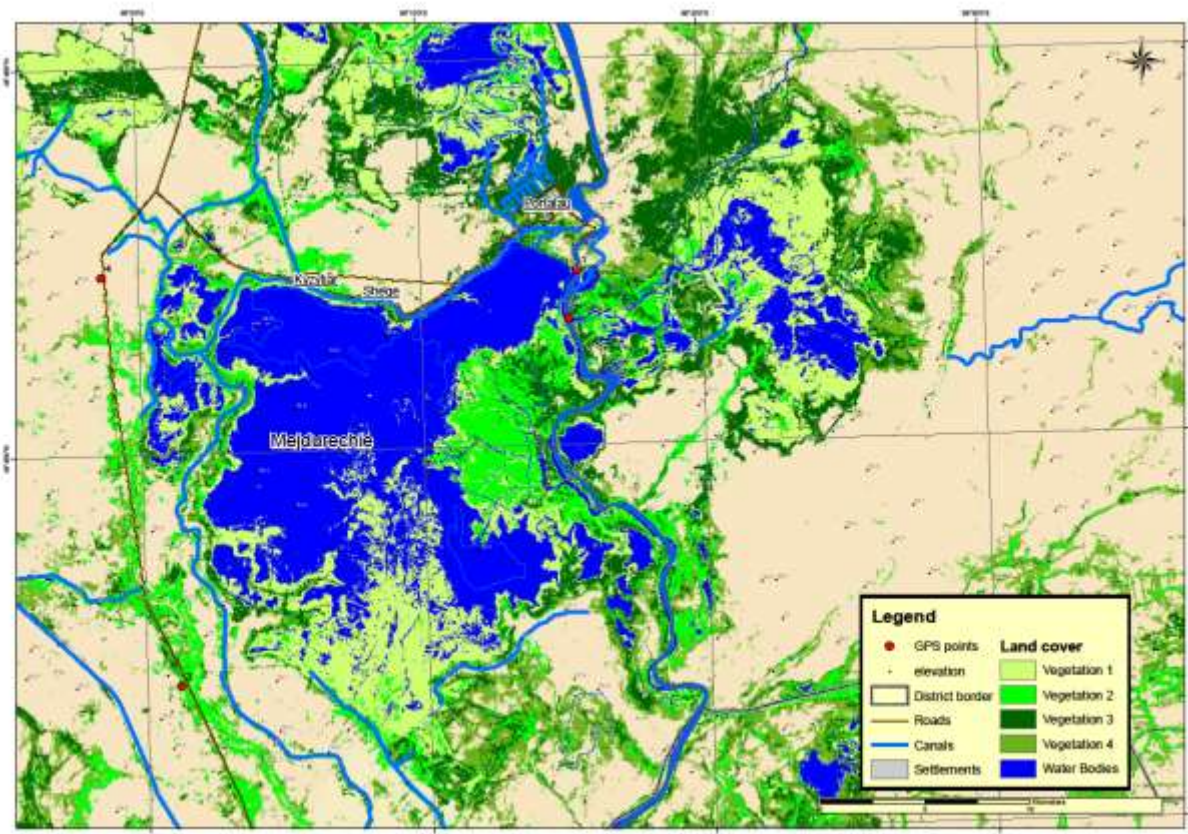
Not too high clarity is characteristic for Davutkol water. Sometimes it was 3-4 m or more, the clarity of the water decreased due to contamination with various debris on the shores of the lake and when approaching the dam, as well as a strong bloom of algae.

In the case of Dautkol (1995-2000 years) (Fig. 3.2), during the study of the seasonal dynamics of mixed substances, it was found that the content of seston in the spring water of the circular canal flowing into Dautkol was 0.662 mg/l. In Dautkol water, the content of seston in the upper layer of water is 0.634 mg/l, in the lower layer of water at the bottom of the water is 0.603 mg/l. In winter, the concentration of seston decreases significantly, which is probably caused by the process of destruction and sedimentation. Seston content in the upper layer of Dautkol water is 0.88-0.95 mg/l, in the lower layer it is 0.45-0.47 mg/l. The analysis of the amount of seston concentration shows that the concentration of mixed dissolved substances in the lake can vary significantly from year to year.

Lake Mejdureche. Mejdureche is located in the northwestern part of the reservoir, between Kipchakdarya and Okdarya. The water source is Amudarya. The total area of the water basin is 3000 ha, its length is 9-10 km, and its width is 2-3 km. The maximum depth is 3.5 m, the deepest

place is 1.3-1.8 m.

The waters of Amudarya flowing into the lake are characterized by high mineralization and general pollution, which increases along the entire river due to collector-drainage and industrial water discharge. The clarity of the water in Shegekol varies depending on the season and is 0.50-0.80 m. Water mineralization in Shegekol undergoes drastic changes, minimum as well as maximum indicators were recorded during all periods of observations in the warm time of the year. In summer it is 1274-2124 mg/l, and in autumn it is 1240-1270 mg/l.



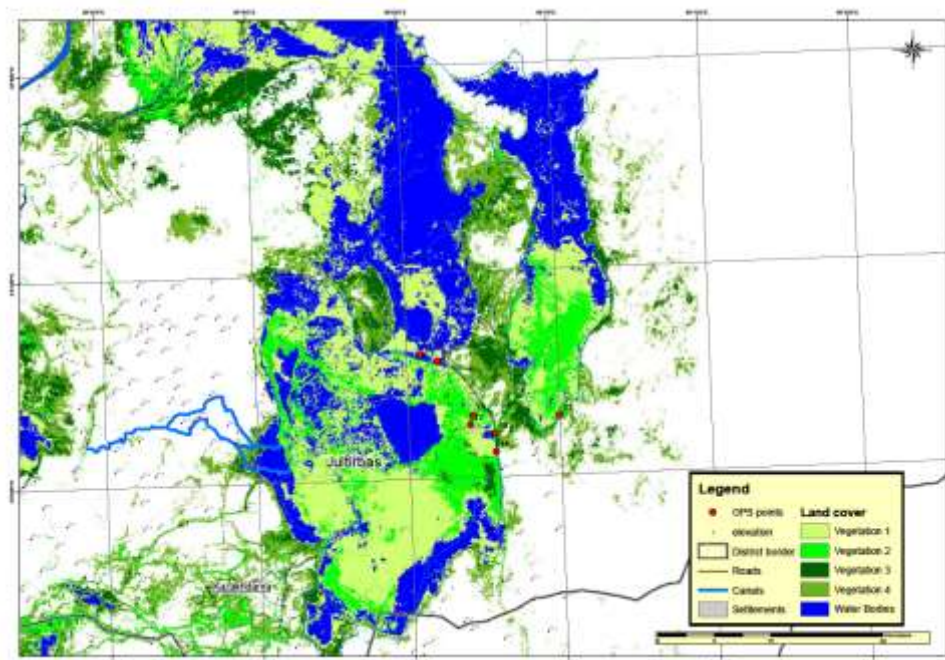
Geographical location of Lake Mejdureche

The concentration of dissolved substances in the water area of the lake is different and changes depending on the season. The content of dissolved substances in the summer season was 0.012-0.556 mg/l, in autumn - 0.310 mg/l (1998), in spring (1999) 0.104-0.671 mg/l, in summer from 0.0093 mg/l to 0.568 mg/l. It should be noted that the maximum amount of seston was recorded in the hypolimnion part of the water layer of the lake.

2013-2019 The analysis of the amount of seston concentration during the period shows that the distribution of dissolved mixed substances is not uniform and its variability probably depends on the internal regime of the water basin and the introduction of seston by the river flow.

Lake Jyltyrbas was formed in this bay of Orolbuyi, which is shallow and consists of numerous meadows and reed groves.

Lake Jyltyrbas is very important for most terrestrial animals. It is a large body of water. The area is 15,000 ha. KS water source - 1,2,3. The maximum depth is 4 meters, the minimum is 1m. Lake Jyltyrbas is located 50 km from the center of Chimboy district.



Geographical location of Lake Jyltyrbas

Water from the Kazakh Darya and several thermal artesian wells enters the lake. Thanks to the construction of the dam, the water level in it was stabilized several years ago, and this water body was the most important wetland and used land for fish in the background of the catastrophic drying of the Aral Bay lakes. But during the 2007-2009 water shortage, the lake's water level dropped sharply.

The State Forestry and Hunting Farm (DOOX) is located on the lake, and fishing and hunting are actively conducted. It is quite difficult to reach the lake, the nearest settlement Kazogdarya is 30 km away, but during the period of high water level, the detours are stretched to 80-90 km.

The lake is shallow and consists of numerous clumps of reeds (*Phragmites australis*). The bottom of the lake is muddy and sandy. Thick reed beds grow along the shore and form isolated clumps of dense reed beds in the lake's water area. The bottom is thickly covered with *myriophyllum spicatum* species. Above the bottom of the lake and on the surface of the water spiral *spirogyra* (*Sphaerocysti*) formed a light green layer. The vegetation cover in the coastal part of the lake was dominated by such plants as the white gorse (*Karelinia caspica*) and the heather (*Tamarix hispida*).

The dominant of this ecosystem is reed (*Phragmites australis*). It formed dense thickets and isolated islands. Underwater plants are represented by spiky urut (*Myriophyllum spicatum*). The species composition of the ecosystem is represented by only 2 types of aquatic plants. It is covered with reeds and its growth is high, and the coastal zone is also thickly covered with urut. The dominants of the coastal part are halophytes - plants such as sedge and sedge (Matjanova, Oryol, 2019).

General characteristics of the current state of the Arolboi lakes

	Names of lakes	Field, ga			Depth, m			Food source
		A lot of water	average	Low water	A lot of water	average	Low water	
	Mejdureche	49600	16000	110	2,10	1,80	0,5	River
	Jyltyrbas	28500	13500	4000	3,2	1,6	0,9	River
	Davutkol	17000	1380	920	7,0	6,8	-	A mix

In general, it can be noted that the hydrochemical and hydrobiological condition of water is deteriorating in Jyltyrbas and a number of small lakes fed by collector-drainage waters, their mineralization is increasing, and accordingly, these lakes are losing their importance for the national economy. Every year, the area of reed fields is expanding and they are turning into saline depressions. The future development of the ecological situation of the Aralboyi delta water basins depends on the amount of fresh water supply from Amudarya.

Depending on the volume of water supply, changes in the morphometric parameters of the studied lakes occur at one or another level. For example, from 2013 to 2019, when looking at the dynamics of the total area of the studied lakes, it is possible to observe the cyclic characteristics of the filling and silting of the lakes.

The water surface area of Sudoche Lake during the period under consideration is 2010 and 2018. got maximum performance. The polynomial trend of its dynamics is aimed at the stabilization of this characteristic of the morphometry of Lake Sudoche. As for Lake Jyltyrbas, here also in 2008. 2010 there is a period of abundant water, but in the following years the indicators are slightly decreasing.

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Rezyume: *Maqolada biogen elementlarining Orol dengizining suvi ekosistemalarida asosiy komponent metodi sifatida joylashgan analiz natijalari keltirilgan. Utkarilgan analiz natijasi kursatgichi buyicha umumiy urganilaetgan xarakteristik vaziyat sistemasi va biogen elementlarining joylashishi urganilaetgan suv ob'ekti korreliyatsion aloqalar barqarorligi bilan ajralmaydi, ayrim muddat kuzatuvlarida korreliyatsion aloqalar urganilaetgan kursatgichlar orasida kuchsizlanadi eki utuman yo 'q bo 'lib ketadi.*

Резюме: *В статье приведены результаты анализа распределения биогенных элементов в водных экосистемах Приаралья методом главных компонент. Проведенный анализ показывает, что в целом изучаемая система характеристик состояния и распределения биогенных элементов в исследуемом водном объекте не отличается стабильностью корреляционных связей, в отдельные сроки наблюдений корреляционные связи между изучаемыми показателями ослабевают или даже отсутствуют.*

Kalit so'zlar: *Orolbuyi, kuzatish, biogen elementlar, suv ekosistemi, evtrofikatsiya jaraeni.*

Ключевые слова: *Приаралье, мониторинг, биогенные элементы, водные экосистемы, эвтрофикация.*

AGROCHEMICAL PROPERTIES OF SOILS IN THE SOUTHERN AND NORTHERN REGIONS OF THE REPUBLIC OF KARAKALPAKISTAN

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Summary: *the article describes the materials collected as a result of agrochemical research conducted in Amudarya and Chimboy districts of the Republic of Karakalpakstan in 2023-2024.*

Key words: *Soil, fertility, humus, meadow-alluvial, salt, gypsum, carbonates, profile.*

In recent years, the sudden change in climatic conditions in the world has had a negative effect on soil fertility. In such conditions, it is very important to determine the soil fertility and increase it in obtaining high and quality crops from agricultural crops. For this purpose, scientific research studies were conducted on the study of soil fertility in the Southern and Northern regions of the Republic.

The land area of the Republic of Uzbekistan is 448,978 km², of which the land area of the Republic of Karakalpakstan is 166,600 km², which is 37% of the land area of Uzbekistan. However, it should be said that today the Republic of Karakalpakstan is the lowest region in the Republic of Uzbekistan in terms of soil fertility reduction due to the problem of the island and the lack of water.

The soils of the Orolboyi region are highly salinized and have attracted the attention of scientists, who have developed significant springs, and this is clearly reflected in their scientific work.

Amudarya district of the Republic of Karakalpakstan, where the study was conducted, is located in the southwestern part of the Republic of Karakalpakstan, the land area is 1.02 thousand km², of which irrigated land is 39.1 thousand, and crops are 36 thousand hectares. - it is bordered by Khorezim region from the east and south, the Republic of Turkmenistan from the west and south, and Nukus district from the north-east.

The obtained data show that the soils of the studied area are not very rich in humus. The distribution of humus in soil profiles is based on certain laws. In all soils, a large amount of humus is distributed in the upper horizons, and a very small amount of humus is observed in the lower layers.

In the medium salinity soils of the first experimental farm, the amount of humus in the arable layer was 1.08%-1.37%, and in the lower genetic layers, its amount decreased considerably.

In general form; N P K; The amounts of nutrients are as follows. It was found that the amount of nitrogen in the arable layer was 0.120, 0.218 and 2.21%, and in the lower horizons, the amount of nitrogen decreased to 0.096-0.021%, the amount of phosphorus decreased to 0.189-0.091%, and the amount of potassium decreased to 1.86-1.13%. During the growth of the root system of plants, phosphorus and potassium are required in the soil horizons, and if these elements are lacking, the exchange of substances in plants, the growth and development of plants, and the resistance to diseases and pests will decrease.

Table 1

Description of agrochemical properties of moderately saline meadow-alluvial soils of Amudarya district (2023)

Layer depth, cm	Humus, %	Common forms, %			Active, mg/kg		CO ₂ carbonates %	SO ₄ Plaster %	pH
		N	P	K	P ₂ O ₅	K ₂ O			
0-27	1,37	0,120	0,218	2,21	32,80	272	8,95	0,116	7,51

27-49	1,08	0,096	0,189	1,86	25,70	220	6,24	0,134	7,54
49-70	0,78	0,071	0,170	1,67	15,00	186	8,45	0,170	7,60
70-90	0,50	0,042	0,153	1,50	9,45	150	8,20	0,165	7,58
90-112	0,40	0,027	0,133	1,26	5,09	136	9,43	0,109	7,56
112-130	0,39	0,024	0,115	1,22	4,68	125	9,90	0,120	7,62
130-150	0,36	0,021	0,091	1,13	4,12	101	9,45	0,116	7,65

Nitrogen, phosphorus, and potassium elements in the soil, when they are transferred to the mobile form by the plant, have the character of plant absorption, for this purpose, it is necessary to study and describe P₂O₅ and K₂O in the mobile forms in the soil profile. It was observed that the upper layer of the studied farm soils is very poorly supplied with mobile phosphorus, and its amount decreases as it descends to the lower layers. It was found that the amount of mobile potassium is 272 mg/kg in the 0-27 cm layer, and its amount decreases to 220-101 mg/kg in the lower profiles. When determining the environment in the soil, it was observed that the pH value of the soil was alkaline in the upper and lower layers when it was characterized by genetic layers.

Chimboy district is located in the northern part of the Republic of Karakalpakstan. The district borders with Kongirot district from the north, Karauzak district from the east, Kegeili district from the southwest and northwest, and its land area is 3,000 km².

The amount of humus in the upper layers of newly irrigated moderately saline meadow-alluvial soils of Chimboy district, which is the northern district of our republic, was 0.59%, and it was 0.11% in the lowest layer of the profile.

2-Table

Description of agrochemical properties of moderately saline meadow-alluvial soils of Chimboy district (2023)

Layer depth, cm	Humus, %	Common forms, %			Active forms, mg/kg		CO ₂ Carnonates %	SO ₄ plaste %	pH
		N	P	K	P ₂ O ₅	K ₂ O			
0-29	0,59	0,054	0,122	1,19	13,00	94	8,20	0,397	7,57
29-48	0,48	0,037	0,091	1,11	10,00	71	8,70	0,269	7,51
48-66	0,42	0,033	0,069	1,11	8,00	61	9,26	0,253	7,53
66-95	0,29	0,021	0,051	1,10	3,4	46	9,50	0,170	7,64
95-110	0,27	0,017	0,041	0,91	2,7	41	9,50	0,206	7,61
110-140	0,11	0,012	0,023	0,51	3,00	-	9,90	0,187	7,67

Nitrogen, phosphorus and potassium elements in the 0-29 cm layer of the soil were 0.054, 0.122, 1.19 percent, and in the lower layer, their amounts were proportionally 0.037; 0.122; It was found to be 1.19 percent. It was observed that phosphorus and potassium in mobile form were 13.00-94 mg/kg in the uppermost layer, and their amounts decreased as the profile deepened.

When comparing moderately saline meadow-alluvial soils in the southern part of the republic with the soils of the northern region, it was observed that humus, total nitrogen, phosphorus and potassium, and the amount of mobile phosphorus and potassium were much lower

in the moderately saline soils of the northern zone. A lack of humus primarily leads to a lack of plant cover and a decrease in microorganisms in the soil. This indicates the severity of the land reclamation of highly saline soils.

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Rezyume: *Qoraqalpoqiston Respublikasining Janubiy va Shimoliy mintaqalaridagi tuproqlarning unumdorlik kórsatkichlari bir- biridan farq qilishi taqqoslangan va bu har bir zona uchun óziga xos agrotexnik tadbirlarni olib borishni talab qiladi.*

Резюме: *Сравнивается, что показатели плодородия почв в южных и восточных районах Республики Каракалпакстан отличаются друг от друга, что требует проведения специфических для каждой зоны агротехнических мероприятий.*

Kalit so'zlar: *Tuproq, unumdorlik, gumus, ótloqi-allyuvial, shór, gips, karbonatlar, profil.*

Ключевые слова: *Почва, плодородие, гумус, лугово-аллювиальный, соленый, гипс, карбонаты, профиль;*

**ANALYSIS OF THE CURRENT STATE OF PROBLEMS OF EUTROPHICATION OF
AQUATIC ECOSYSTEMS**

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Summary: *The article presents the results of the analysis of the distribution of biogenic elements in the aquatic ecosystems of the Aral Sea region by the method of principal components. The analysis performed shows that, in general, the studied system of characteristics of the state and distribution of biogenic elements in the studied water body does not differ in the stability of correlations; in certain periods of observation, correlations between the studied indicators weaken or even are absent.*

Key words: *Aral Sea Area, monitoring, biogenous elements, water ecosystems, eutrophication.*

In the world's leading scientific centers, large-scale research is being carried out on the development of methods for predicting changes in the state of water ecosystems under the influence of human economic activities, with the integrated use of water management and water management.

The problem of environmental protection has an increasingly significant impact on international life, and is becoming one of the main directions of international cooperation of various countries. Studying the changing processes in the biosphere, influencing environmental factors, studying the laws of development of natural systems is one of the important tasks of modern ecology. An ecologically unstable environment is characterized by anomalously rapid changes in natural systems and intersystem interactions.

Despite the fact that the term "degradation of water bodies" is very common in scientific publications, there is still no generally accepted definition of it. Usually, only the definition of "environmental degradation" is given in the vocabulary related to ecology, which means the joint deterioration of the natural and social environment of human life. But man does not live directly in the water environment. Therefore, the degradation of water bodies in the scientific literature refers to the loss of the most diverse properties of water bodies that are potentially used by humans, that is, water management, fisheries, recreational potentials, social and cultural-historical importance. In general, anthropogenic degradation of water bodies can be defined as a joint process with complex factors associated with various types of human activity, not only the ecological condition of water bodies and watercourses, but also changes in their resource-exploitation parameters. Methodologically, the process of degradation of environmental elements is related to the development of an emergency environmental situation or environmental disaster. Moreover, in most cases, degradation processes are seriously studied only when such situations arise.

An important and currently understudied aspect of the problem is to find interactions between the ecological situation in this emergency and the development of other types of emergency situations. In a comprehensive analysis of personal materials and literature materials, anthropogenic degradation of water bodies can cause environmental, biological and man-made emergency situations.

Ecologically unstable arid zones lead to the development and dynamics of a number of new laws of the natural environment, as a result of which not only their composition and structure change, but also the conditions and strategies of the organic world undergo changes. It is necessary to consider this in environmental forecasting. Taking into account the concept of partial load on the balance of various components of the natural environment, it is necessary to take into account new laws when developing a strategy for the use of natural resources and planning a rational use of nature.

According to the definition, eutrophication is an increase in the biological productivity of water bodies as a result of the accumulation of biogenic elements under the influence of anthropogenic or natural factors.

Eutrophication means the introduction of biogenic elements (nitrogen and phosphorus) into natural water bodies and the negative consequences of this process. Eutrophication disrupts the ecological balance of water bodies, harms fishing and has a negative impact on the use of water for drinking, domestic and recreational purposes.

Pollution of water bodies with excess biogenic elements increases the level of primary production: in eutrophic water bodies, there is a lot of development of microscopic water plants and water "blooming" is observed. An increase in the number of microscopic water droplets reduces the clarity of the water. A phenomenon characteristic of highly productive water bodies is the bloom of water with blue-green algae, most of which are poisonous.

Symptoms of eutrophication of water bodies include the covering of the water's edge by aquatic plants, as well as an increase in the number of epiphytes (plants that live on other plants) and "alien" microscopic aquatic organisms. The main source of biogenic elements entering water bodies is municipal and industrial wastewater, as well as agriculture. To improve the condition of water bodies, it is very important to reduce the load on biogenic substances, especially phosphorus, because in many cases the same phosphorus is the biogenic element that controls the productivity of phytoplankton in inland water bodies.

The source of anthropogenic deposition of biogenic elements can be residential areas, agricultural land, waste water of industrial enterprises. Eutrophication is often accompanied by "blooming" of water, strong development of higher water plants. Eutrophication leads to a decrease in the fishery and recreational potential of water bodies, and has a negative impact on systems that purify water from water bodies for drinking water supply.

The change of abiotic factors can be determined directly, that is, by conducting a physico-chemical analysis of water bodies, as well as indirectly, by changing the structure and parameters of the population characteristics of living organisms in water bodies. It is known that primary trophic level producers, including phytoplankton, are the first stage in the development of eutrophication processes. Therefore, the change in their condition serves as an indicator of the processes taking place in water bodies.

The identification and quantitative registration of the physico-chemical factors of the environment that cause the processes that worsen the ecological condition of biocenoses of natural ecosystems is the main fundamental issue of ecology.

The degree of influence of abiotic factors on water ecosystems against the background of geographical and climatic characteristics of the studied area can be determined using the method of ecological probability levels of environmental factors. 2) important physico-chemical calculation of the water environment; 3) makes it possible to classify important factors according to their danger to the ecosystem. The biotic concept of natural environment control is taken as the basis of this method.

It is necessary to take seasonal factors into account when developing the scientific basis for the regulation of anthropogenic pressure, predicting the consequences of anthropogenic pollution, and solving practical environmental problems related to the development of the regime of wastewater discharge into water bodies.

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Rezyume: Maqolada biogen elementlarining Orol dengizining suvi ekosistemalarida asosiy komponent metodi sifatida joylashgan analiz natijalari keltirilgan. Utkarilgan analiz natijasi kursatgichi buyicha umumiy urganilaetgan xarakteristik vaziyat sistemasi va biogen elementlarining joylashishi urganilaetgan suv ob'ekti korreliyatsion aloqalar barqarorligi bilan ajralmaydi, ayrim muddat kuzatuvlarida korreliyatsion aloqalar urganilaetgan kursatgichlar orasida kuchsizlanadi eki umuman yo 'q bo 'lib ketadi.

Резюме: В статье приведены результаты анализа распределения биогенных элементов в водных экосистемах Приаралья методом главных компонент. Проведенный анализ показывает, что в целом изучаемая система характеристик состояния и распределения биогенных элементов в исследуемом водном объекте не отличается стабильностью корреляционных связей, в отдельные сроки наблюдений корреляционные связи между изучаемыми показателями ослабевают или даже отсутствуют.

Kalit so'zlar: Orolbuyi, kuzatish, biogen elementlar, suv ekosistemasi, evtrofikatsiya jaraeni.

Ключевые слова: Приаралье, мониторинг, биогенные элементы, водные экосистемы, эвтрофикация.

APPLICATION OF BLOCKCHAIN TECHNOLOGY IN IMPROVING DIGITAL MEDICAL SERVICES AND INFORMATION SECURITY IN THE DIGITAL ECONOMY

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Summary: Nowadays, the issue of anonymity and confidentiality is very important in ensuring the security of the patient's electronic medical card data. Blockchain is a rapidly developing technology that is widely used in various fields as a solution to these issues. Within the framework of this research, the existing electronic medical data storage and processing systems of patients were analyzed and a web application was developed using blockchain technology.

Key words: blockchain technology, Medical information, digital medical services, Digital technologies, server, confidentiality, anonymity, digital economy

Introduction. Medical information is valuable to patients. However, in current medical systems, patient information can only be shared by one or more medical institutions, forcing the creation of new patient medical records when visiting different medical centers. In addition, paper storage, the most common storage method for patient medical information, is unreliable and easy to lose or lose. On the other hand, the use of traditional databases to share medical information often leads to misuse by some medical personnel, which leads to additional losses for patients. Therefore, in the field of medicine, there is a need to develop a secure system for the safe exchange and storage of medical information between patients and hospitals, and currently blockchain is very promising for the development of this system.

The purpose of this scientific research is to ensure the security of the patient's electronic medical card based on blockchain technology. The following tasks were set to achieve the purpose of the research:

- Analysis of available information on blockchain and distributed ledger technologies;
- Analysis of the application of cryptographic primitives and methods used in blockchain technology;
- Consider the advantages and disadvantages of using blockchain technology;
- Analysis of consensus algorithms used in blockchain technology;
- To study the experiences of using blockchain in medicine;
- Analysis of the network infrastructure formation process;
- Developing a database;
- Software development;

Currently, various solutions have been developed and are in progress to ensure the confidentiality of information, prevent immutability, and prevent rejection by the sender and many similar problems. There is another problem, which is to keep the data unchanged and safe, and if there is a change in it, it is easy to notice the change. As a solution to this problem, the use of a distributed database and various cryptographic algorithms and technologies have been created. One of them is blockchain technology, which is one of the technologies that is slowly becoming popular in the world today. Currently, computers and information technologies occupy an important place. Digital technologies are developing day by day and occupying a strong place in all spheres of our life. We can observe the development of these fields more clearly in areas such as medicine, economy, military-technological, and bio-technology. In order to meet the needs of the population and save their valuable time, various convenient technological tools are being provided in the economic direction. Nowadays, we live in such a digital world that even the most complex technologies work with algorithms and codes consisting of a few small words. The presence of the digital world in all areas, i.e., economy and business, is sometimes observed through various tricks, crypto-explosions, that is, people's property is taken by deception. The most widespread of this type

of fraud is happening under the name "blockchain". We usually see and hear the word blockchain in our daily life, seeing and hearing it side by side with bitcoin and similar electronic forms of money. But most people have very little understanding and skills about blockchain and distributed ledgers. Those who are a little aware of these consider blockchain and distributed ledger technology to be the same concept. In fact, how similar they are, we will find out below.

Often, when we read about economy and business technologies, concepts such as distributed ledger technologies (Distributed Ledger Technologies) or TRT (TRT) attract our attention. In fact, this technology is not difficult to understand. A distributed ledger is a data warehouse that exists among many people or in different places, for example, it is a somewhat complex but reliable and secure system compared to a centralized data warehouse. Nowadays, many companies usually use a centralized data warehouse, which means that all data is stored in only one place, and it is enough to focus on one point to threaten the security of this data. Figure 1 shows the hierarchical view of the centralized data warehouse.



Figure 1. Centralized data warehouse hierarchy

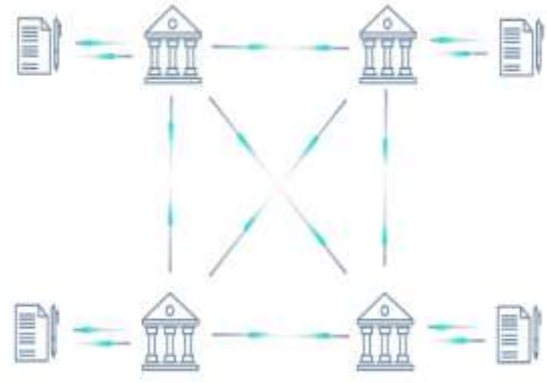


Figure 2. A distributed registry database hierarchy

Decentralized data storage is used in distributed registries, that is, when changing or storing data in the system, the centralized management does not check and confirm them. Information is stored only after companies or individuals have reached mutual agreement and expressed mutual trust. That is, the process of identification and authentication is carried out by users, not by the system. The following describes the system hierarchy of this distributed ledger technology. The technology of distributed registers is a system using special protocols and infrastructures that allow to edit, change and update data in a decentralized data warehouse at the same time from different places and different devices.

Literature Rewiev. Many scientific literature, articles and Internet data were analyzed in this scientific research work. An example of them is Satoshi Nakamoto's article on blockchain technology, the article "Algorithms and security concern in blockchain technology: A brief review" by Rejwan Bin Sulaiman, Amer Kareem, Muhammad Umer, students of the University of Bedfordshire. Also, for cryptographic primitives and methods used in blockchain technology, from the article "SoK of Used Cryptography in Blockchain" by Mayank Raikwar, Katina Kralevska, Danilo Gligoroksi and "A study on Blockchain and Cryptography" by Ritik Banger, Ronit Khawal, Risheek Mittal was used. Imran Bashir's book "Mastering Blockchain" was used as the main source in the analysis of information about distributed ledger technology, centralized and decentralized systems. In addition, many scientific articles, literature and Internet resources about the application of blockchain technology were used.

Methodology. In this research work, the theory of information protection systems, the theory of information security and the application of blockchain technologies were used in the organization.

Analysis and results. Naturally, after studying the possibilities of the blockchain, if there is such a safe algorithm, why is it not used in all systems at once? But I wouldn't recommend thinking like that, because this algorithm has its own requirements, like any other. As an emerging

technology, blockchain faces many challenges. Various blockchain solutions have been proposed and implemented to address these issues. The proliferation of cryptocurrencies in many payment systems creates many social, economic and technical risks. Blockchain faces many challenges due to its network architecture, pseudo-consensus protocol, and cryptographic primitives used. Some of these key issues are blockchain-related security and privacy, blockchain scalability, and resource consumption (computing power, memory, network bandwidth). An in-depth analysis of research prospects and challenges for Bitcoin and other cryptocurrencies has been provided in the past and provides good insight into the scalability, security, privacy and consensus of cryptocurrencies.

1. Requirements for systems based on blockchain technology

Privacy and security. The main evaluation parameter for any blockchain is how well the security and privacy conditions meet the requirements of the blockchain. Analyzing the security and privacy issues of blockchain is a broad area of research, and some studies have been conducted in this area. We will not go into these details here, but rather just define these terms. Security has three components: confidentiality, integrity, and availability. In a general context, (i) confidentiality is a set of rules that restrict access to data, (ii) integrity is a guarantee that data is reliable and correct, and (iii) availability is a guarantee of reliable access to data. information by authorized persons. However, in the case of blockchain, the term "Information" used in the above context can have multiple meanings, such as data in a database, smart contract data, or transactions. Privacy can be defined as data privacy and user privacy (anonymity).

A. The problem of expansion. The size of the blockchain is constantly growing, and due to this expansion, big problems are emerging in the blockchain domain. Synchronization of blockchain data with a scalable architecture requires enormous computing power, and yet the management of all nodes in the network is becoming slow. To scale the blockchain, the computing power and bandwidth capabilities must be high for each node in the blockchain, which is practically impossible. Most current blockchains are therefore designed with limited scalability. One proposal for how to solve the blockchain ledger's scaling problems is called "simplified payment verification." It verifies the authenticity of certain transactions, but without downloading the full accounting. This method is used by some wallets and lightweight bitcoin clients, and its security is the first to be analyzed later.

B. Scalability. Using other types of erasure codes, such as recovery codes for distributed storage, locally repairable codes, or a combination of both types of codes, can further reduce storage and communication costs. Another problem with scalability is the issue of interoperability.

C. Compatibility issue. That is, it is true that the number of different state registers is growing rapidly. While some rudimentary interoperability has been implemented across cryptocurrency exchange platforms, the risks and insecurities associated with these platforms are extensive and well-documented.

D. Forking. Blockchain fragmentation mainly occurs when two miners find a block almost simultaneously due to a software update or versioning. In a blockchain network, each device or computer is considered a "full node" that runs software to secure the blockchain by verifying the ledger. The program will be updated to adjust some parameters and install new features on the blockchain. This updated software may not be compatible with older software. Thus, old nodes that have not updated their software and new nodes that have implemented a software update can cause forks in the blockchain to create new blocks. There are two types of partitions: one that is not backward compatible, called hard partitions, and another that is backward compatible (backward compatible), called soft partitions. Hard partitions occur when there is a significant change in the software, such as a change in block parameters or a change in the consensus mechanism. In the case of Ethereum, hard divisions appear when moving from proof of work to proof of stake.

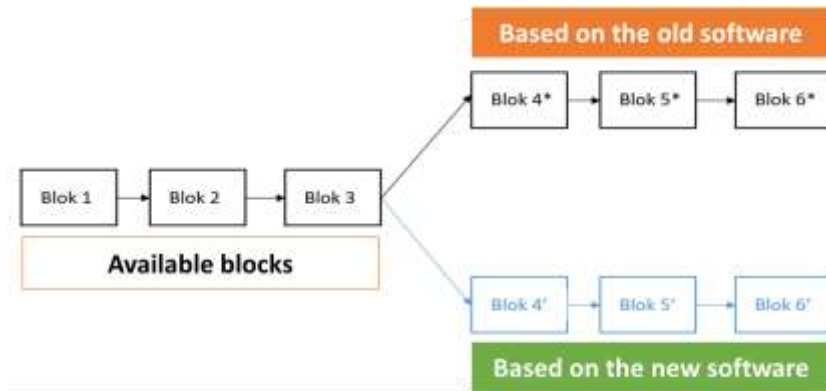


Figure 4. A view of the problem that may arise when dividing into parts

An example of a soft split is implemented in Bitcoin by changing the transaction format. Recently, beam privacy coin released its first hard split away from ASICS.

E. Power consumption. The process of mining a new block in the blockchain requires huge energy consumption. Also, in the process of solving the puzzle given in trust-based blockchains, a lot of power has to be wasted.

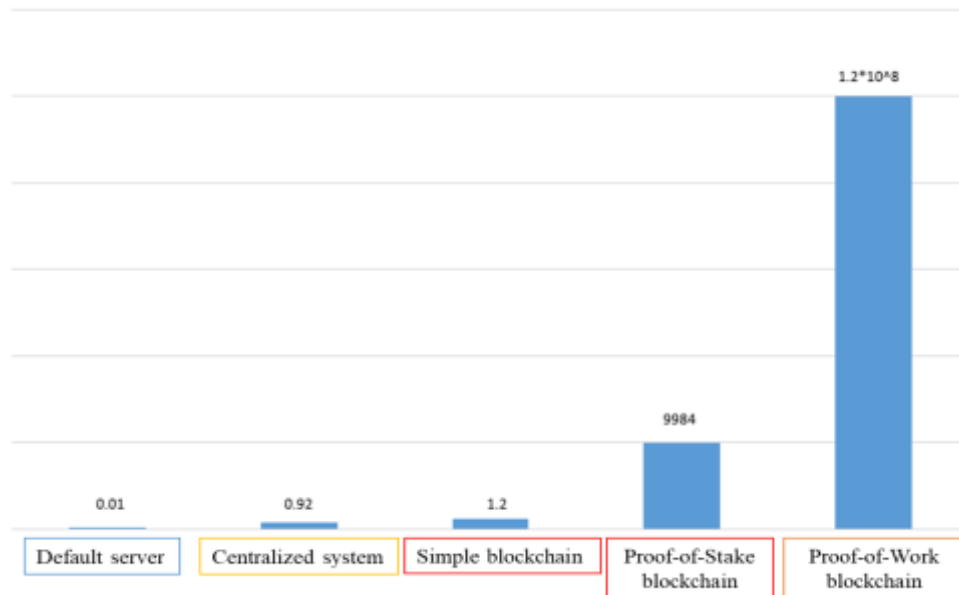


Figure 5. Amount of energy spent per transaction (J).

In order to reduce the amount of energy consumed in this process, even if it is imperceptible, Bitcoin has proposed and is currently using other types of puzzles instead of relying on trust. Energy is also consumed during network communication. Some cryptographic mechanisms also require huge energy consumption, so it is very important to choose the right cryptographic mechanism in the blockchain. can be a solution to distribution. But even with everything reduced to a minimum, as blocks increase in the blockchain, it takes a huge amount of energy to manage it on the network. From the graph shown in Figure 1.4, we can also see the difference between the amount of energy consumed by blockchain technology and the amount of energy consumed by a typical server. shows that it is being spent on the algorithm.

F. Dependence on infrastructure. Blockchain infrastructure is built with several elements of network protocols, cryptographic concepts and mining equipment. All these elements are somehow related to each other. If we look at the layered architecture of the blockchain in the - table, each layer depends on its upper and lower layers for a given input/output. Thus, blockchain has many infrastructure dependencies. For example, the data from the smart contract layer is the input to the transaction layer, which produces the actual transactions; information received from the consensus layer leads to access to the network layer through the communication protocol; and data

from the network layer is sent to the database through database storage management. These dependencies must be considered when creating a comprehensive blockchain framework for any use case; otherwise, some functions of the blockchain will not be performed. In terms of blockchain infrastructure, we have to mention here an emerging and enabling technology that will be very important in the next decade, which is 5G. 5G will connect hundreds of billions of infrastructure devices, but this massive number of devices can only be managed securely through the powerful decentralized mechanisms provided by blockchain technologies. The challenge is to create efficient, scalable, affordable and stable blockchain systems capable of managing the billions of infrastructure devices connected via 5G network infrastructure and their security.

2. Cryptographic mechanisms of blockchain technology and their principle of operation. From a cryptographic perspective, many cryptographic techniques have already been demonstrated and widely used in various blockchain platforms and blockchain use cases. Since the spectrum of cryptographic concepts is very wide, there is always an opportunity to mine some of the existing cryptographic schemes and use them in blockchain services. Below are some of the cryptographic concepts that have been well analyzed and implemented in blockchain.

A standard digital signature is a mathematical scheme based on public-key cryptography that aims to generate short codes called digital message signatures using a private key, and these signatures can be verified using the corresponding public key. In this context, digital signatures protect digital messages from tampering and forgery. A signature scheme is used to sign a transaction on the blockchain, thus ensuring the authentication of the intended sender and the integrity of the transaction, as well as non-repudiation of the sender. Many signature schemes are widely used to exploit integrity and anonymity in the blockchain. A digital signature is one of the most important cryptographic primitives, making the blockchain publicly verifiable and attainable by consensus. Signature schemes are used in almost every blockchain. Figure 5 shows a general example of how a blockchain user (signer) creates a digitally signed transaction or block using his private key. In addition, Figure 5 shows how other blockchain nodes (verifiers) verify the validity of the signature on a transaction or block, or whether they use the signer's public key. Blockchain uses various signature schemes to provide additional features such as privacy, anonymity, and non-attachment. A signature scheme can also be used to generate a fixed-size signature using signature stacking. Schnorr signatures are a form of signature collection that was used in Bitcoin instead of P2SH for scalability. Some of the signature schemes used in the blockchain (Figure 6 and Figure 7).

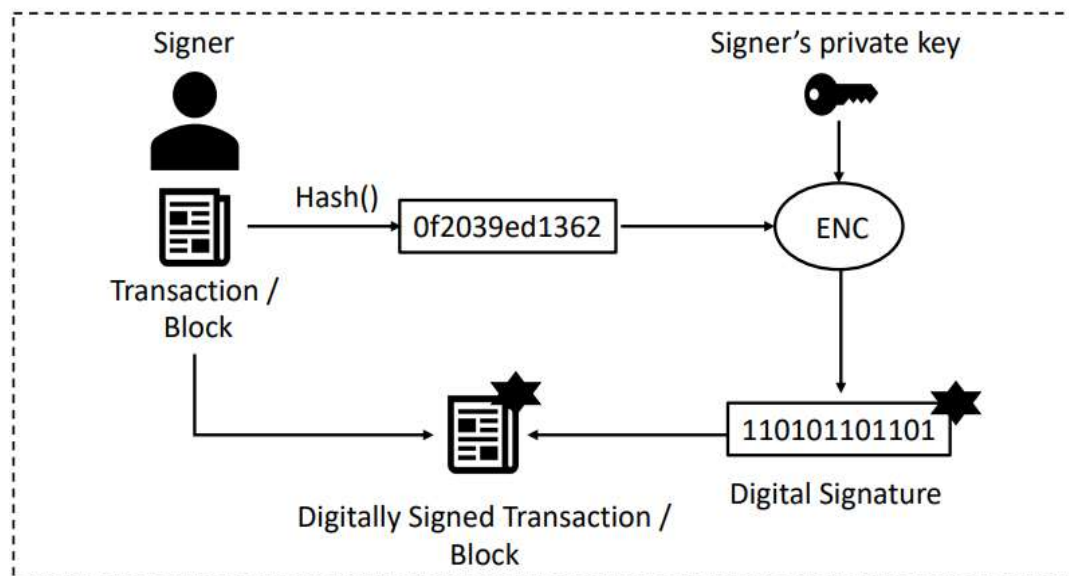


Figure 6. Electronic digital signature in blockchain transaction/block process

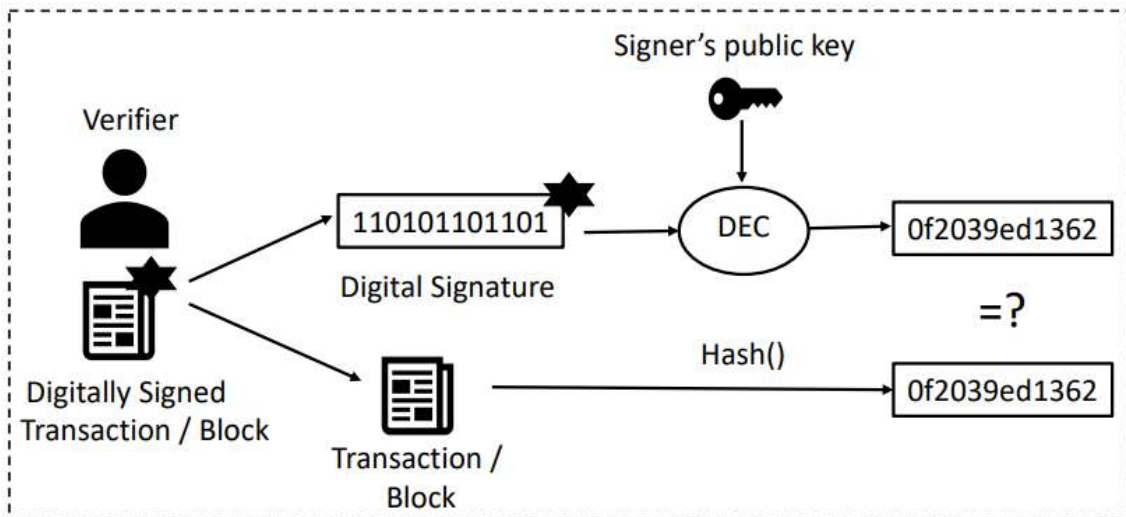


Figure 7. Signature verification process

1. **Multi-signature:** In a multi-signature scheme, a group of users sign a single message. In a blockchain network, when a transaction requires the signature of a group of participants, the use of a multi-signature scheme can be useful. Blockchain platforms such as Openchain and MultiChain support the M-of-N multi-signature scheme, which reduces the risk of data theft by tolerating M-1 cryptographic keys. Boneh et al have developed many compact multi-signature algorithms for smaller blockchains.

2. **Blind signature:** In this scheme, signatures are used in privacy protocols, where the signer and the authors of the message (transaction on the blockchain) are different parties. Blind signatures are used to ensure transaction integrity and anonymity. In blockchain implementations, blind signatures can be useful to ensure anonymity, and if the party making the transaction and the signing party are different. BlindCoin's distributed hashing network uses blind signatures to ensure transaction integrity. In Bitcoin, blind signatures are also tested to ensure anonymity for both on-chain and off-chain transactions.

3. **Rotary digital signature:** This scheme uses the following protocol, in which a signature is created on behalf of the group by any member of the group, preserving the identity of the person who signed the message. Rotating digital signatures are used to achieve anonymity of the signing party in the blockchain network. CryptoNote technology uses a rotating digital signature scheme to create untraceable payments in cryptocurrencies.

4. **Signature threshold:** This signature scheme is a (t, n) threshold signature, where n parties share a secret key to create a signature, and t of n parties create a signature over any message. Because the parties generate the signature directly from the shares, the key is never disclosed throughout the entire scheme. A boundary signature can be useful to ensure anonymity in a blockchain network. CoinParty uses a threshold signature scheme for multi-party mixing of Bitcoins. ShareLock, a recently published work on coin-mixer, uses ECDSA (Elliptic Curve Digital Signature Algorithm) thresholding to provide a privacy-enhancing solution for cryptocurrencies. However, ECDSA boundary signatures are complicated due to the subtlety of the signing algorithm. Other signature schemes such as EdDSA (Edwards Curved Digital Signature Algorithm) using the Edwards25519 curve are effective boundary signatures. The Libra blockchain uses this EdDSA to create new account addresses.

3. **Permissions Management on the blockchain.** It is the selective restriction of information or resource based on some policy or criteria. These mechanisms can be used to limit or restrict access to the blockchain. Access can be read/write or access to participate in the blockchain protocol. There are many different access control mechanisms that can be used in Blockchain, such as role-based, attribute-based, entity-based access control. Recent incidents have shown that security breaches and data theft from certain blockchain platforms can be addressed and prevented through access control. Data privacy can be ensured by access control in blockchains. Currently,

access control techniques are deeply used in blockchain-based medical applications or blockchains for the insurance industry, where data is sensitive information that should only be accessed by trusted and authorized parties. There are various types of access control mechanisms that can be used in blockchain applications; it is explained that some of these mechanisms are used in the blockchain.

- **Role-Based Access Control (RBAC):** RBAC is an approach to restrict system visibility to system users based on their roles in the system. Thus, it can be used in a blockchain system with access based on user roles. RBAC is used in a blockchain-based solution for Healthcare. A simple example illustrated in Figure 9 describes role-based access control in a private healthcare blockchain. Based on the role, each object in the blockchain system has its own access rights. A patient can request their personal medical information, but only the doctor associated with the patient can enter or change the patient's health information on the blockchain. On the other hand, a research company can request information about any disease from patients for research purposes (Figure 8).

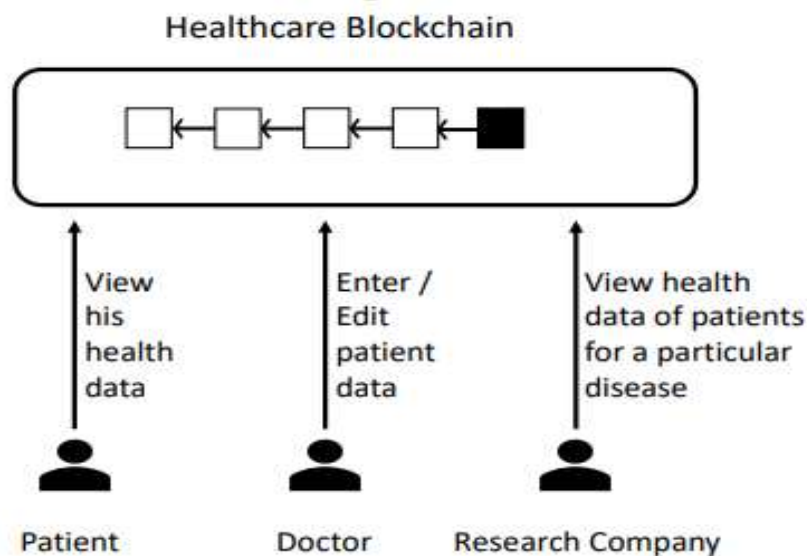


Figure 8. Role access management in healthcare

- **Attribute-Based Access Control (ABAC):** In ABAC, access control rules are based on the attribute structure. These attributes can be user-specific, environment-specific, or object-specific. For example, in a blockchain setup for the insurance industry, a "department" could be an attribute with limited access to blockchain data, meaning that a claims handling department has a different view of the blockchain than an audit. will be Department. ABAC can be used in a fair access blockchain model by storing attributes in a policy.

- **Organization-Based Access Control (OrBAC):** OrBAC is one of the richest access control models. OrBAC consists of three entities (subject, action, object) that specify whether some subject has permission to perform some action on some object. OrBAC is already used in blockchain fair access blockchain model and dynamic access control blockchain model for IoT.

Other access control mechanisms such as context-based access control and capability-based access control (proposed in blockchain solutions for autonomous vehicles, smart cities, IoT) may also be useful for various blockchain solutions.

Conclusion. In short, during the development of a web application that ensures the anonymity and confidentiality of the patient's electronic medical card data, the following activities were carried out:

- current systems for storing and processing patient electronic medical data were analyzed;
- the advantages and disadvantages of the use of blockchain and distributed registry technologies were analyzed;
- formation of network infrastructure in blockchain was studied;

it is ensured to keep the data safe and unchanged, if there is a change in it, to provide information about it;

the working mechanism of the SHA256 hashing algorithm used in blockchain technology was analyzed and used in the software;

a web application has been developed that provides the exchange of patient electronic medical card data.

Blockchain technology and distributed databases are now widely used because they prevent data from changing, ensure that it is kept safe, and that if there is a change in it, it can be easily detected. The purpose of this master's thesis is to apply the use of blockchain technology to the data of the patient's electronic medical card.

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Rezyume: Hozirgi vaqtda bemorning elektron tibbiy yozuvlari ma'lumotlarining xavfsizligini ta'minlashda anonimlik va maxfiylik masalasi juda muhimdir. Blokcheyn tez rivojlanayotgan texnologiya bo'lib, ushbu muammolarni hal qilish uchun turli sohalarda keng qo'llaniladi. Ushbu tadqiqot doirasida bemorlarning tibbiy ma'lumotlarini saqlash va qayta ishlash uchun mavjud elektron tizimlar tahlil qilindi va blokcheyn texnologiyasidan foydalangan holda veb-ilo va ishlab chiqildi.

Резюме: В настоящее время очень важен вопрос анонимности и конфиденциальности в обеспечении безопасности данных электронной медицинской карты пациента. Блокчейн — быстро развивающаяся технология, которая широко используется в различных сферах для решения этих проблем. В рамках данного исследования были проанализированы существующие электронные системы хранения и обработки медицинских данных пациентов и разработано веб-приложение с использованием технологии блокчейн.

Kalit so'zlar: blokcheyn texnologiyasi, Tibbiy ma'lumot, raqamli tibbiy xizmatlar, Raqamli texnologiyalar, server, maxfiylik, anonimlik, raqamli iqtisodiyot.

Ключевые слова: технология блокчейн, Медицинская информация, цифровые медицинские услуги, Цифровые технологии, сервер, конфиденциальность, анонимность, цифровая экономика.

UDC 564.48.01

PHOSPHOR CONTAINING IONIT FOR PEELINGS OF THE SEWAGE IS MINING INDUSTRY

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Summary: In article are considered some possibility of the chemical modification copolymers and ionits on their base, using for ioning changed peelings of the sewages is oil-referiner and chemical industry. They are shown concrete spheres of the using modified polymeric ionits.

Key words: ioning changed peelings, metal containing sewages, polymeric ionits, comonomer, copolymerization, filtrate, sorbet.

The ion exchange resins (ion exchangers) that we have developed based on quaternary phosphonium salts are typical solid hygroscopic gels, practically insoluble in water and common solvents. They belong to the class of high-molecular compounds obtained by polycondensation and polymerization of organic substances [1].

The increased sorption capacity of resins determines the ion exchange that occurs between the ion exchanger and the electrolyte solution in the event of their contact. Ion exchange is caused mainly by electrostatic forces, but the influence of the structure of the ion exchanger itself and the properties of the solvent cannot be excluded.

It has been established that each ion exchanger consists of a high-molecular spatial network of hydrocarbon chains - a "framework" (otherwise known as a "matrix"), "cross-linked" by transverse valence forces, or lattice forces, which prevents its separation. Thus, an ion exchanger grain is like one giant molecule. Divinylbenzene is most often used to form cross-links, and the degree of cross-linking of the ion exchanger is expressed as a percentage of divinylbenzene added during the polymerization of the ion exchange resin. Depending on the number of cross-links, the average pore size of the ion exchanger varies from several angstroms to values larger by two orders of magnitude (for the ion exchanger in the swollen state) [2].

In contrast to zeolites, the matrix of the synthetic ion exchange resins we synthesized does not have a regular periodic structure, but is a disordered three-dimensional system with unequal pore sizes. As a result, these ion exchangers belong to heterocapillary systems. Functional, chemically active (ionogenic) groups carrying electronegative or electropositive charges (fixed ions) are fixed in the matrix. They give the ion exchanger an acidic or alkaline character. The charge of the framework is compensated by countercharged ions (counterions), resulting in the solid remaining electrically neutral. Counterions are mobile inside the framework and are capable of exchanging with ions of the electrolyte solution [3]. According to their chemical nature, all ion exchange resins are divided into two types. Ion exchangers containing active acid groups and exchangeable cations are called cation exchangers according to generally accepted terminology, and ion exchangers containing basic active groups and mobile anions are called anion exchangers. In cation exchangers, the most common active groups are sulfonic acid, carboxyl, phosphoric acid and hydroxyl groups. Cation exchangers, all of whose mobile ions are hydrogen ions, are designated as H-cation exchangers (or H-form of cation exchanger). If hydrogen ions are replaced by other cations (Na⁺ or Ca²⁺), then the corresponding designations are used: Na- or Ca-cationite, Ca(Na)-form of the cationite, or the general term - salt form of the cationite. Anion exchangers with the same type of ionogenic groups contain aliphatic or aromatic primary and secondary (less often tertiary) amines, quaternary ammonium and sulfonium bases as active groups [4]. For anion exchangers, similarly to cation exchangers, the following symbols are introduced: OH-anion

exchanger or OH-form of anion exchanger, Cl-anion exchanger or Cl-form of anion exchanger, etc., as well as a generalized term - salt form of anion exchanger. Based on the degree of ionization, anion exchangers are divided into strongly and weakly basic. The first - with quaternary ammonium or sulfonium bases as ionogenic groups - enter into an exchange reaction in a neutral and slightly acidic environment. The latter (amino resins) participate in ion exchange only in acidic environments, and the completeness of the exchange increases with increasing acidity of the environment. The process of ion exchange consists of the diffusion of dissolved electrolyte ions to the surface of the sorbent grains, their diffusion into the sorbent, the displacement of mobile ions of the sorbent from the sphere of influence of the anionic (or cationic) complex and the diffusion of displaced mobile ions from the sorbent phase into the solution. It has been experimentally revealed that the process of ion exchange with the participation of ion exchangers developed by us has some similarities with adsorption. But, despite the significant differences, it is often difficult in practice to draw the line between these processes, since the exchange of counterions is almost always accompanied by adsorption, and most conventional adsorbents, for example aluminum oxide, activated carbon, can act as ion exchangers. The process under consideration can be carried out under static and dynamic conditions. In the first case, the test solution is brought into contact with the ion exchanger and thoroughly mixed. An ion exchange occurs, as a result of which the active group of the ion exchanger appears in a stable salt form that is not subject to hydrolysis during washing (the change in the volume of the ion exchanger is small). In production and analytical work, ion exchange under dynamic conditions is most often used. In this case, the exchange is carried out in columns filled with the required amount of prepared ion exchanger. The test solution is very slowly filtered through a layer of ion exchanger, while the ion exchanger is saturated with ions from the solution in exchange for counterions. The process is supported.

In this context, it was of interest to identify the mechanism and patterns of ion-exchange treatment of industrial wastewater from the oil refining industry using new ion exchangers developed on the basis of quaternary phosphonium salts (QPS) with divinylbenzene (DVB) and methyl methacrylate (MMA).

For a comparative analysis, various foreign-made industrial anion exchangers were used, the characteristics of which are given in Table 1. A decrease in the acid number of wastewater during treatment with an ion exchanger can occur as a result of the following reaction:



where: ktOH⁻ - hydroxyl form of anion exchanger (activated ion exchanger - in working position); H⁺An - acid in oil; kt An and H₂O - ion exchange products.

We have developed a technology for activating the ion exchanger, i.e. converting it from the salt form to the hydroxyl form. The activation method is as follows. The ion exchanger swells in distilled water for 1 hour, which is then sucked out of the column using a vacuum pump. The swollen ion exchanger is converted into the active form by treating it with a 5% NaOH solution. Then it is washed with distilled water until the wash water is neutral and the wash water is sucked off until the ion exchange resin is air-dry.

It has been experimentally established that freshly prepared ion exchanger should be used to purify oil refinery wastewater, since even slight contact with air reduces its ion-exchange capacity. It was also determined that an increase in NaOH consumption practically does not change the exchange capacity of the ion exchanger. To activate 100 g of ion exchanger, 0.5-1.0 l of 5% NaOH solution is sufficient.

The optimal temperature (30°C) for the process of ion exchange wastewater treatment with the developed ion exchangers was experimentally found. At a temperature of 30°C, a relatively high efficiency of using the ion exchanger is achieved. The optimal duration of contact of wastewater containing petroleum products with the WA-17 ion exchanger (ion exchanger consumption 10%, oil temperature 40°C) is visible from the following data (Table 2) [5]:

Table 1.

Main indicators of anion exchange resins

Indicators	WA-17	WA-18	IRM-1	IRM-2
Bulk density of commercial product, g/m ³ , not less	0,068	0,74	0,6	0,55
Exchange capacity, mEq/g, not less than: Static dynamic	7	8	9	9
	150-190	400-600	480	440
Grain size, mm	0,3-2,0	0,35-1,2	0,4-1,7	0,3-1,6
Humidity of product ion exchanger, %, no more	60	30-50	15	25
Appearance	Light brown grains	Yellow spherical grains	Brown grains	Transparent grains

(WA- water analysis, IRM-indicators risk management)

Table 2

Values of the optimal duration of contact of the ion exchanger AV-17 and waste вод

Duration of contact min.	Acid number, waste water, mg/KOH/g	Duration of contact min.	Acid number, waste water, mg/KOH/g
0	0,17	30	0,030
5	0,095	45	0,030
15	0,057	60	0,030
20	0,030	75	0,030

We have also developed a method for regenerating spent ion exchanger. It was first washed with gasoline until the filtrate was colorless, and then dried in air for 24 hours. The air-dry waste resin was transferred from the salt form to the hydroxyl (active) form, treated with a 5% NaOH solution according to the accepted technology. The effectiveness of reducing the acid number of wastewater containing petroleum products decreases with repeated regenerations of the ion exchanger. For example, a fresh AW-17 ion exchanger reduces the acid number of wastewater from 0.11 to 0.015 mg KOH/g (at a flow rate of 10%), and a regenerated ion exchanger reduces it to 0.018 after the first regeneration and to 0.023 mg KOH/g after the second.

Analysis of experimental data shows that the ion exchangers used for treating wastewater containing petroleum products can be ranked in the following row according to their neutralizing ability: IRM-2, IRM-1, WA-17, WA-18. The most effective are ion exchangers IRM-1 and IRM-2; at any temperature conditions, their consumption to obtain the acid number of treated wastewater 0.05-0.02 mg KOH/g is 3-5 wt. % of the volume of purified water. With increasing contact temperature, the degree of reduction in acid number increases slightly [6, 144].

Based on the experimental studies carried out, it can be concluded that the developed ion exchangers based on monomeric quaternary phosphonium salts with divinylbenzene and methyl methacrylate can be used not only as ion exchangers that make it possible to neutralize acidic products in the composition of industrial wastewater from oil refineries, they can successfully replace expensive and hard-to-find ion exchangers, adsorbents imported from abroad and widely used for wastewater treatment in industry. It should also be noted that when industrial wastewater from oil refineries is treated with developed ion exchange resins, the efficiency of extracting metal ions is significantly increased.

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Rezyume: Maqolada neftni qayta ishlash va kimyo sanoati oqava suvlarni tozalashda qo'llaniladigan sopolimer va ionitlarni kimyoviy modifikatsiya qilish imkoniyatlari o'rganilgan. Modifikatsiya qilingan ionitlarni qo'llashning aniq soxalari aniqlangan.

Резюме: В статье рассмотрены некоторые возможности химической модификации сополимеров и ионитов на их основе, применяющихся для ионообменной очистки сточных вод нефтеперерабатывающей и химической промышленности. Показаны конкретные сферы применения модифицированных полимерных ионитов.

Kalit so'zlar: ionalmashib tozalash, metall ushlagan okava suv, polimer ionitlari, somonomer, sopolimerizatsiya, filtrat, sorbat.

Ключевые слова: ионообменная очистка, металлсодержащих сточные воды, полимерные иониты, сомономер, сополимеризация, фильтрат, сорбат.

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TECHNOLOGIES FOR CREATION OF ELECTRONIC EDUCATIONAL RESOURCES

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National Center of the Republic of Karakalpakstan for training pedagogues in new methodologies

Summary: In the article, the technologies of creating electronic educational resources, the role of information and communication and innovative technologies in increasing the effectiveness of teaching, the role of electronic educational resources in the educational system, and the introduction of electronic educational resources to education and information on increasing the effectiveness of the teaching process is given.

Key words: electronic educational resources, information and communication technologies, innovative technologies, education, software.

The rapid application of information and communication and innovative technologies to the educational system is making huge changes in the form and content of the organization of improving the quality of the educational system. Today, along with traditional printed textbooks, in order to increase the effectiveness of teaching, modern electronic educational literature of the new generation: multimedia (multi-information) electronic textbooks, study guides, lecture texts, electronic programs, digest, data bank, etc. occupy a particularly important place. The introduction of electronic educational resources into the educational process in the continuing education system is being implemented at a rapid pace.

Nowadays, it is impossible to find a subject in the educational system that does not use electronic publications or resources in one way or another. At the same time, the introduction of information and telecommunication technologies in the teaching of many subjects causes a set of problems related to the development of appropriate software and content of electronic resources used in the field of education. Research conducted over the past few years has provided the basis for the theory of the development and application of such educational tools. Practice shows that a modern teacher actively uses information and telecommunication technologies in his professional activities.

The role of electronic educational resources in the educational system, the need to transition to the information society, the formation and priority of a new technological order in the world economy, the transition of information resources to real resources of socio-economic development, meeting the society's demand for information products and services, in the system of social development, the importance of information and communication infrastructure will increase, the improvement of educational, scientific-technical and cultural fields based on international information exchanges, and the use of "global information benefits" on the basis of equal rights.

In recent years, the advantages of electronic education compared to traditional education have been identified more and more. Recently, learners and teachers have come to the conclusion that online education has more advantages than some types of traditional education. The reason is that digital learning platforms aimed at improving the quality of education are increasing in the educational system, where the best aspects of traditional and online education are combined to form a mixed education system. The reason for this alternative is the low cost, flexibility, freeness of mixed education, as well as the advantage of using complex technologies in the educational process. Interest in this trend affects students in the educational process and increases the quality of education. Many studies have shown that online education leads to the development of creative thinking in students, that is, it forms the basis for students' independent learning and the ability to adapt to the educational process, taking into account their individual needs.

We can see the development of electronic education in the ability of students to behave freely in the digital world, that is, to download and analyze the necessary information, to freely use

online content. As time goes by, we can introduce the desired type, method, teaching method of traditional education based on the use of technologies into this trend.

Currently, information and communication technologies are rapidly entering the educational process, and it remains one of the most favorable factors in increasing the effectiveness of education. That is why the research aimed at effective use of computer equipment and modern information and communication technologies in the educational system of advanced countries is ongoing. In general, the transition of the society from the standard industrialized economy to the new economy is being observed. The new economy is the economy of customers - users, therefore, the main factor in the development of the world information and telecommunications industry is the provision of new generation services on a large scale.

Development of basic mechanisms of integration of science and production in education, its implementation, individualization of learning, independent distance education system, development and mastering of technology, electronic education based on new pedagogical and information technologies Acceleration of student learning using limited resources is one of such urgent tasks. It will be necessary to make certain changes to the principles of organizing the educational process on the basis of electronic educational resources, including improving the presentation of educational materials. In this case, the introduction of modern information technologies into the educational process and their use is the most effective way to achieve the goal.

The main tasks in the implementation of electronic information and educational technologies in the educational system, critical evaluation and improvement of the material technical base of educational institutions are as follows.

- creation of the necessary material and technical base for the implementation of electronic educational resources in the educational process;
- creation and application of educational technologies designed to create electronic educational resources for the educational process;
- formation of students' knowledge and skills in the field of modern electronic educational resources;
- increasing the efficiency of the educational and training process by introducing electronic educational resources.

Electronic educational resources consist of a set of methods and tools for collecting, storing, transmitting, and processing educational information, and it depends on internal and external factors that determine the creation of various educational information:

- internal factors - the creation of information, its types, properties, performing various actions with information, their collection, transmission, storage and so on
- external factors - this means the implementation of various tasks with information through the technical equipment of electronic educational resources.

The use of e-learning resources depends on the skills and abilities of those who interact with them. Therefore, it is important to first learn what modern telecommunication means are. Modern telecommunications means a very wide system with possibilities, including a number of new concepts, in addition to such concepts as a modern computer, multimedia tools, computer networks, and the Internet. These can be examples of information systems, information system management, information transmission systems, data warehouse, data warehouse management system, knowledge warehouse, etc.

The stages of organizing electronic educational resources in an educational institution begin with the creation of a psychological information environment. The need to use modern tools and methods is formed on the basis of technological and scientific results, created software products. In this regard, it is necessary to organize a system of independent and computer education of pedagogues based on individual and advisory training in each educational institution.

In our country, special attention is paid to the organization of information resources in the field of education and their use in education. The introduction of electronic educational resources into the educational system depends, first of all, on the intellectual potential of the society,

including the informatization of the educational sector, the development of information educational resources. Development of basic mechanisms of integration of education with science and production, its implementation, individualization of study, independent learning, development and mastering of distance education system technology and tools, electronic based on new pedagogical and information technologies Accelerating student learning using educational resources is one such important task.

It is necessary to make certain changes to the principles of organizing the educational process on the basis of electronic educational resources, including improving the presentation of educational materials. The use of electronic educational resources in the educational process is mainly carried out in two ways. The first condition is that it is equipped with technical equipment, and the second condition is that it is provided with special software.

So, provision of technical equipment: computers, network devices, high-speed internet networks, video conferencing equipment and so on.

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Rezyume: *Maqolada electron ta'lim resurslarini yaratish texnologiyalari, o'qitish samaradorligini oshirishda axborot-kommunikatsiya hamda innovatsion texnologiyalarning o'rni va electron ta'lim resurslarini ta'lim tizimidagi roli va electron ta'lim resurslarini joriy etish orqali ta'lim tarbiya va o'qitish jarayonining samaradorligini oshirish haqida ma'lumotlar keltirilgan.*

Резюме: *В статье рассматриваются технологии создания электронных образовательных ресурсов, роль информационно-коммуникационных и инновационных технологий в повышении эффективности обучения, роль электронных образовательных ресурсов в системе образования, внедрение электронных образовательных ресурсов в образование. и дана информация по повышению эффективности учебного процесса.*

Kalit so'zlar: *electron ta'lim resurslari, axborot-kommunikatsiya texnologiyalari, innovatsion texnologiyalar, ta'lim, dasturiy ta'minotlar.*

Ключевые слова: *электронные образовательные ресурсы, информационно-коммуникационные технологии, инновационные технологии, образование, программное обеспечение.*

**AGE-RELATED AND ADAPTIVE CHANGES OF RESPIRATORY SYSTEM
INDICATORS IN CHILDREN IN THE CONDITIONS OF THE REPUBLIC OF
KARAKALPAKSTAN**

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Summary: *This article discusses the issues of researching age-related and adaptive changes in respiratory system indicators in children in the conditions of the Republic of Karakalpakstan. It has been established that the physiological reserves of the body manifest themselves only in extreme conditions, such as intense physical exertion. In the process of improving a certain sports activity, a specific functional system is formed and improved, aimed at achieving the final result of the activity.*

Key words: *adaptive parameters, respiratory system, children population, Karakalpakstan, age dynamics.*

Currently, the main criterion for the health status of the younger generation is physical development, which is a continuous process. At each age stage, this process is characterized by a specific complex of interconnected morpho-functional properties of the organism and reserves of physical capabilities determined by these properties and the external environment.

As is known, during the period of biological maturation of the child's body, there is continuous development of the respiratory system, its morphological structures, and functional processes, which leads to the formation of not only quantitative but also qualitative indicators. The functional plasticity of the respiratory system allows its indicators to be used as criteria for adaptation to physical and educational loads.

Studying the condition of the respiratory system, adaptive and compensatory capabilities taking into account environmental factors allows to identify age, gender, and individual features of respiratory function development in children and outline the possibility of correcting existing deviations. Growth processes accelerate at the age of six, leading to changes in body proportions. During this period, differences in the development of children of different sexes emerge: girls grow faster than boys. In other words, the growth and development of the organism are determined by the dynamic interaction of internal and external factors.

The environment acts not only as a condition but also as a source of development for the human body, promoting the improvement of its hereditary properties or hindering and even correcting undesirable manifestations [15]. One of the indicators frequently used to characterize the functional state of the body is the vital capacity of the lungs (VC). Sometimes added to this are breathing rate and volume, chest excursion, and breath-holding time [5, 7]. At the same time, based on years of comprehensive research, it has been shown that the respiratory system is one of the leading factors largely determining both the mental and physical performance of a person, and the volumetric-temporal characteristics of breathing serve as criteria for the functional (both age-related and adaptive) development of the respiratory system and the entire body of children [10, 11].

The general patterns of development of external respiratory functions, its reserve and adaptive capabilities in the ontogenesis of the child's body have been very well studied by scientists and specialists [1, 2, 6, 8]. It has been established that continuous maturation of the morphological structures of the lungs occurs at the age of 8-12 years. However, between 8-9 years of age, elongation of the bronchial tree predominates over its widening [2]. The greatest growth and development of the respiratory system occurs during the period of sexual maturation [6].

Functional indicators of the respiratory system were studied in examined children who were born and living in the Republic of Karakalpakstan. To determine age and sex-specific characteristics, all examined children were divided into the following groups: children aged 8 years

(18 girls and 11 boys), 9 years (12 girls and 10 boys), 10 years (14 girls and 11 boys). The examined children did not have acute or chronic respiratory diseases and were classified as belonging to health groups I and II.

Most indicators of lung function change with the age of children. It has been proven that the higher their correlation with indicators of physical development, the more significant they are as criteria for biological age (bronchial resistance, volumetric breathing rates, lung and chest wall stretchability and elasticity, static lung volumes) [2, 6, 8].

According to specialists, by the beginning of puberty, the total lung volume increases by 10 times. The cartilage of the bronchi in children is soft, flexible, and easily springy. Elastic fibers are relatively weakly developed. The mucous membrane of the bronchi is rich in blood vessels but relatively dry. According to N.A. Skoblina (2008), the final branching of the bronchial tree (segmental, subsegmental, and terminal bronchi, bronchioles, alveolar ducts) is completed by the age of 7 [13].

Physiological reserves of the body are manifested only in extreme conditions, such as intense physical exertion. In the process of improving a specific sports activity, a specialized functional system is formed and perfected, aimed at achieving the final result of the activity [17].

All systems are interconnected in such a way that one system plays the main role, while others complement its primary function. Therefore, when physical loads affect one system, changes in that system lead to changes in other systems.

With coordinated work of individual systems that include their reserves, we can talk about a system of reserves of functioning systems, the level of which is subject to certain regularities of adaptive processes [18]. The results obtained indicate that during the development of children, lung capacity indicators (FVC) tend to increase. (tab.1)

Table 1

Age dynamics of respiratory function indicators in children living in the South Aral region ($M \pm m$) (n=125)

age	sex	FVC	PEF	FEF-75	FEF-25
8	b (n= 11)	1,94±0,08	3,77±0,1	3,33±0,1	1,26±0,07
	g (n=18)	1,72±0,08	4,06±0,2	3,53±0,2	1,36±0,1
9	b (n= 10)	2,18±0,08	4,49±0,2	3,78±0,2	1,33±0,07
	g (n=12)	1,85±0,06	4,24±0,1	3,86±0,1	1,42±0,1
10	b (n= 11)	2,34±0,07	4,91±0,2	4,23±0,1	1,54±0,1
	g (n=14)	2,07±0,07	5,17±0,1	4,31±0,2	1,76±0,01

Note: g - girls, b - boys, FVC – forced vital capacity (liters); FEF-75 – forced expiratory flow at 75% of FVC (liters/second); FEF-25 – forced expiratory flow at 25% of FVC (liters/second), PEF - peak expiratory flow (liters/second)

During the conducted research, it was found that in boys aged 6 and 7 years, the FVC values were 1.90±0.07 L and 1.93±0.02 L respectively. The greatest increase in FVC was observed in children aged 9 and 10 years, with boys showing FVC values of 2.18±0.08 L and 2.34±0.07 L ($p < 0.001$) respectively.

Analysis of the data revealed that in girls aged 6 and 7 years, the FVC values were 1.60±0.04 L and 1.62±0.08 L respectively. The highest increase in FVC was observed in girls aged 9 and 10 years, with absolute FVC values of 1.85±0.06 L and 2.07±0.07 L ($p < 0.001$) respectively. In girls aged 10 years, the FVC was significantly higher at 2.07±0.07 L ($p < 0.001$) compared to girls aged 6 years and not significantly different from girls aged 8 years ($p > 0.05$).

Examination of the patency of various parts of the tracheobronchial tree showed that in boys, there is a tendency towards increased bronchial patency with age. In boys aged 9 and 10 years, the patency of large bronchi (FEF-75) was 3.78±0.2 L/s and 4.23±0.1 L/s respectively compared to 3.33±0.1 L/s for boys aged 7 and 8 years (respectively) ($p < 0.001$). In girls aged 9 and 10 years, the absolute values of FEF-75 were significantly increased to 4.31±0.2 L/s compared to values of 3.48±0.2 L/s and 3.53±0.2 L/s in girls aged 7 and 8 years ($p < 0.001$).

It should be noted that the absolute values of small airway flow rates (FEF-25) in boys aged 9 and 10 years were significantly higher at 1.33 ± 0.07 and 1.54 ± 0.1 L/s, respectively, compared to boys aged 6-8 years ($p < 0.05$). As for girls, in the 9-10 age group, small airway flow rates (FEF-25) were significantly increased to 1.42 ± 0.1 and 1.76 ± 0.01 L/s ($p < 0.001$) compared to girls aged 7-8 years, and significantly higher than the 1.23 ± 0.1 L/s in girls aged 6 years ($p < 0.001$).

It is known that the movement of airflow during breathing is associated with a considerable expenditure of energy by the respiratory muscles. During inhalation, the elastic resistance of the lungs and chest tissues, the elastic resistance of the organs in the chest and abdominal cavities moving during breathing, as well as the resistance of the tracheobronchial tree have to be overcome [7,11]. Since muscular activity is the most powerful natural stimulus for breathing, we attached great importance to the dynamics of ventilation parameters after light physical exertion on the subjects [6, 7, 10]. Impulses from the sensorimotor cortex to the working muscles simultaneously have a direct influence on the respiratory center through corticobulbar pathways. In addition, breathing is stimulated by afferent impulses coming from the proprioceptors of the working muscles [10, 11]. As soon as muscular load is initiated, breathing becomes faster and deeper. At the same time, the variability of ventilation parameters increases, which is apparently related to the different individual sensitivity of chemoreceptors and the respiratory center to humoral factors regulating breathing, as well as to the different intensity of metabolic processes in children of the same chronological age [6, 12, 15].

The analysis showed that the absolute values of peak expiratory flow (PEF) in boys increased with age. The greatest increase in PEF was observed in boys aged 9 and 10 years, reaching 4.49 ± 0.2 and 4.91 ± 0.2 L/s respectively, compared to 3.25 ± 0.1 and 3.77 ± 0.1 L/s in boys aged 7 and 8 years respectively. According to the principles of adaptation theory and functional systems, different levels of organism functioning correspond to different gradations of severity of conditions. Different degrees of tension in compensatory mechanisms are also observed [6, 7, 11, 12].

All examined children showed relatively favorable dynamics of maximal lung ventilation (MLV) after the performed load: at 8 years old 98.8%, at 9 years old 106.8%, and at 10 years old 102.4% of the resting level. If testing MLV in the first 60 seconds of the recovery period reveals that its value has not changed or has decreased but has not reached zero, then the performed load is considered relatively adequate. Similar changes in the respiratory system were observed in the examined 8-9-year-old children. In the examined 10-year-old children, the response to this load was favorable, adaptation occurred without additional strain on the external respiratory system, and without signs of respiratory muscle fatigue.

It is well known that static and dynamic lung volumes increase with age in children. This increase is facilitated by the greater elasticity of the lungs with increasing age and the ability of muscles to produce maximum changes in chest volume. Periods of maximum growth in these indicators are noted between 5 and 7 years old, i.e. at the age of 6 years, due to the predominance of the airway expansion process over their elongation, bronchial resistance decreases intensively, breathing rates increase, and accordingly, dynamic lung volumes increase. In conditions of rest and breathing atmospheric air, the functional indicators of the examined children correspond to age norms.

However, the respiratory reserve after performing the MLV test in these children falls into the high values range. This fact, when examining the external respiratory system, is not considered a sign of any respiratory function-related disease manifestation but is an individual reaction of the child to the load presented to them, thus processes of load adaptation occur in them [15]. In this case, the activity of vegetative systems, including the respiratory system, changes in such a way as to create the best conditions for supplying energy to working muscles and minimize negative shifts in the internal environment of the body that may arise due to metabolic processes in the muscles.

The identified relationships in the levels of development of lung ventilation function and physical development are consistent and determined by the heterochrony and unevenness of

maturation of each of the studied systems. Ventilation in 8-9-year-old children during exercise is provided solely by an increase in breathing rate, while in 10-year-old children, in addition to this, a slight increase in tidal volume is also involved.

Thus, taking into account the high pollution of the lower atmospheric layer in the Southern Aral Sea region, the identified increase in bronchial patency in children was considered by us as an undesirable reaction and one of the factors contributing to the development of bronchopulmonary pathology. An increase in bronchial patency in conditions of dustiness of the lower atmospheric layer is physiologically irrational.

When assessing the levels of development of lung ventilation function and physical development, it is important to consider the influence of environmental factors and heredity, especially in children who fall outside the average level of physical development. The use of developed assessment tables can help identify the nature and degree of deviations in the functional development of the respiratory system and physical development, determine ways and methods for their correction.

The reaction to physical exertion in children during early childhood is favorable. The duration of the respiratory cycle in children of this age is characterized by pronounced instability, but the ratio of inhalation to exhalation becomes more stable, which is associated with different individual sensitivities of regulatory mechanisms to humoral factors regulating respiration within one age group. Maintaining this reaction in the future may lead to various pathological changes in the bronchopulmonary system, partially explaining the increase in bronchopulmonary pathology among children in the Southern Aral Sea region.

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Rezyume: Maqolada Qoraqalpog‘iston Respublikasi sharoitida bolalarning nafas olish tizimi ko‘rsatkichlarining yoshga bog‘liq va adaptiv o‘zgarishlarini o‘rganish masalalari ko‘rib chiqilmoqa. Organizmning fiziologik zaxiralari faqat kuchli jismoniy faoliyatni o‘z ichiga olgan ekstremal sharoitlarda namoyon bo‘lishi aniqlandi. Muayyan sport faoliyatini takomillashtirish jarayonida faoliyatning yakuniy natijasiga erishishga qaratilgan o‘ziga xos funksional tizim shakllanadi va takomillashtiriladi.

Резюме: В статье рассматриваются вопросы изучения возрастных и адаптивные изменения показателей системы дыхания у детей в условиях Республики Каракалпакстан. Установлено, физиологические резервы организма проявляются лишь в экстремальных условиях, к которым относятся напряженные физические нагрузки. В процессе совершенствования определенной спортивной деятельности формируется и совершенствуется специфическая функциональная система, направленная на достижение конечного результата деятельности

Kalit so‘zlar: adaptiv parametrlar, nafas olish tizimi, bolalar aholisi, Qoraqalpog‘iston, yosh dinamikasi.

Ключевые слова: адаптивные параметры, система дыхания, детское население, Каракалпакстан, возрастная динамика.

**ECOLOGICAL BALANCE OF WATER BODIES OF THE SOUTHERN ARCHIPELAGO
VIOLATION**

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Summary: *The article presents the results of the analysis of the distribution of biogenic elements in the aquatic ecosystems of the Aral Sea region by the method of principal components. The analysis performed shows that, in general, the studied system of characteristics of the state and distribution of biogenic elements in the studied water body does not differ in the stability of correlations; in certain periods of observation, correlations between the studied indicators weaken or even are absent.*

Key words: *Aral Sea Area, monitoring, biogenous elements, water ecosystems, eutrophication.*

In the world's leading scientific centers, large-scale research is being carried out on the development of methods for predicting changes in the state of water ecosystems under the influence of human economic activities, with the integrated use of water management and water management.

Degradation processes in the hydrosphere lead to a decrease in the recreational potential of water resources and water bodies. Solving priority tasks in the field of protection of water resources and their rational use is gaining urgent importance. In this regard, conducting research on the development of new innovative methods of monitoring and bioindication of water ecosystems is becoming an important priority.

The water ecosystem is considered as a system consisting of two independent, but actively interacting components: the abiotic part of the ecosystem, i.e. water, with dissolved (including gases) and mixed substances in it, the edges and bottom soil of water bodies, and the biotic part of the ecosystem, i.e. all Hydrobionts and their complexes are biocenoses. Among the characteristics of the abiotic part of aquatic ecosystems, which are most important for the development of the aquatic ecosystem, the following can be included: temperature, mineralization (salinity), light, gas regime, the composition of chemical substances, including biogenic, organic and pollutant); oxygen and carbon dioxide concentration; flow rate; the intensity of water exchange between different parts of the water body; water level, glacial events, soil character, etc.

Central Asia is considered the ancient seat of civilization and has been under anthropogenic influence for a long time, which has become increasingly stronger in the conditions of scientific and technical progress. As a result, the process of changing the status of water bodies has been accelerated by the active participation of people in the territory of water catchment areas. The intensively increasing use of water resources for economic needs leads to significant changes in the water regime, including river flows, basins and catchment areas. This effect is especially large in arid zones where there are almost no rivers that are not used for agriculture.

The lake is a natural coastal water body with a slow water exchange. Typically, lakes have a wind-induced riparian zone profile. Lakes have no direct connection with the ocean. Two invariable conditions are necessary for the formation of a lake: the presence of a natural depth, that is, the lowness of the earth's surface, and the presence of a certain volume of water located in this depth.

Lakes are very sensitive to external influences, including natural climate changes. According to the nature of water exchange, lakes are divided into two large groups: flowing and non-flowing. Lakes that receive water from the outside and do not give anything to the natural or artificial water flow, but only use it for evaporation, infiltration or artificial water intake, are considered non-flowing. In other words, there is no water flow over the surface of such a water body. In all lakes, the main morphological elements are distinguished with greater or lesser accuracy: a depression, that is, a natural depression of the earth's surface of various origins, on the border of which the lake is located; an arm of a lake occupied by water.

An important element of a lake's depth is its shoreface, which, depending on the receding character of the shore, includes the shoreface, lakeshore ridges, and lakeshore shallows. The last two elements of the lake depth are often called the littoral, its characteristic features include the shallowness of the water and the influence of waves. Beyond the littoral boundaries, there is an underwater basin (i.e., sublittoral). The shallow part of the lake is pelagic; the bottom of the lake is called profundal.

Lakes fill depressions of various genesis. Since the processes of formation of these depressions are biased by local conditions in most cases, lakes are concentrated in certain areas.

Depending on the origin, lake depths can be tectonic, volcanic, meteoric, glacial, thermokarst, suffazion, fluvial, marine, organogenic. Lakes located in these depths are given the same names.

The oldest and deepest of the existing lakes were formed by tectonic activity, but most lakes were formed by glacial processes.

Not long ago, the lower Amudarya was called the "Great Lakes". Amudarya used to form numerous and calm water bodies. Reed fields 0.7 mln. occupied an area of about.

Water mineralization ranged from 400 to 1400 mg/l in most lakes and was determined by the Amudarya hydregime: in spring and summer, during floods, lake water salinity is minimum, and maximum in autumn and winter. The chemical composition of water is hydrocarbonate in summer, chloride-sulfate in winter and autumn.

An important aspect of the water balance of lakes is the rate of water exchange. This characteristic is determined by the time (in years) of complete exchange of water in the lake, which is expressed as the ratio of the volume of the lake to the flow of water flowing out of it, or by the inverse value known as the coefficient of water exchange of the water body. Water bodies with a shorter cycle of complete water exchange are cleaned of pollutants faster and generally have a lower concentration of them.

Water is a good solvent, and therefore lake waters contain a lot of dissolved substances. Most of the mass of these substances is represented by a limited number of compounds in most lakes, notably calcium, magnesium, sodium and potassium cations and anions consisting of bicarbonate, sulfate and chloride. Other substances, such as plant nutrients (nitrogen and phosphorus) and metals (iron and manganese) are involved in almost small amounts. Lakes are called chloride, sulfate, or carbonate, depending on which anions have accumulated in them in the greatest amount due to evaporation or atmospheric precipitation.

According to experts, a group of water bodies appeared spontaneously when the surplus of collector-drainage waters began to fill various geomorphic depressions (Togyz-Tore Lake, Saykol). The second group of water bodies includes the depths of the former lakes (Karateren lake, Dautkol, Saryqamys lake) where the collector-drainage water was transferred. The third group of lakes has a freshwater stream, but in recent years they have been heavily polluted (Khojakol, Maqpalkol, Shegekol). Current limnological characteristics of some water bodies of the Amudarya delta are presented in table 1.1.

As a result of draining of collector-drainage waters, new types of water bodies appeared in the Aqchadarya and Amudarya delta plains, for example: irrigation-waste (Ayazkala, Aqchakol, Karateren, sudoche lake system).

According to experts, these irrigation-waste lakes act as an accumulator of water-soluble salts, poisons and agrochemicals. On the one hand, the water exchange and total area of the watersheds in question have experienced significant and strong fluctuations due to the strong development of irrigated agriculture in the region and the soil and waste water.

Table 1.1.

Dynamics of expansion and area changes of island water basins

Water bodies	Barkhanskova et al., 1963		Abdirov et al., 1970		Sagidullaev, 1986		Atanazarov, 2017	
	General area, ga	Covering with Usimli., %	Total area, ha	Vegetation, %	Total area, ha	Vegetation, %	Total area, ha	Vegetation, %
Dawitkol	600	80	1170	90	650	20	3500	30
Qarateren	640	15	650	12	-	-	2700*	-
Shegeköl	180	65	180	60	150	25	230	10

Note: — no information, * - O. Information from Nuritdinov

According to experts, 1964-1965. Intensive growth of wetland vegetation (up to 90% of the area) was observed in the system of Davutkol lakes, a large mass of plant debris was accumulated, which caused the local death of fish.

In the 1980s, after the main lines of drainage systems and irrigation canals were cleaned and expanded, the vegetation area of the reservoirs was significantly reduced, and the total area of the lake has increased significantly in recent times. In Shegeköl, the anthropogenic impact was expressed in the increase of mineralization due to the deterioration of Amudarya water, in which the share of collector-drainage waste increased sharply.

According to scientific literature, 1959. in most cases, the water in the lake was poorly mineralized and saturated with oxygen up to 127%, the reaction of the environment was neutral and low-alkaline, pH 7.8 was not orthotic. According to the data of 1963, the pH of water in the lakes was 7.4-8.4, the oxygen saturation of the water mass was 64-204%, the chlorine salinity was 86-259 mg/l, that is, the reaction of the environment during the 5-year period was from neutral to low alkalinity. has changed. 1964-1968 in freshwater ponds, oxygen content was 22-160%, oxygen saturation was 42-153%, salinity was 3.9-9.9 g/l. Currently, the active reaction of the environment and the general mineralization of water have increased, while the content of oxygen, on the contrary, has decreased. During the considered period, the Aralboyi water basins have undergone great changes.

At the beginning of the 20th century, many researchers began to observe specific and rapid changes in the appearance of lakes, which were called anthropogenic eutrophication. The main reason for this process is the introduction of excess nutrients into the lake system.

The problem of eutrophication of water bodies has recently become one of the most important regional environmental problems. The quality of accumulated water collected in limnic ecosystems is one of the most important indicators that determine the possibilities of efficient and effective use of water and biological resources of aquatic ecosystems. First of all, this water is considered for economic-drinking and cultural-domestic use.

Plants performing photosynthesis significantly affect the chemical composition of lake water. Most nutrients are present in freshwater bodies in excess of their requirements, but two of them, nitrogen and phosphorus, are relatively scarce. These elements, individually or together, limit the process of photosynthesis or primary production. In addition, some blue-green algae can convert atmospheric nitrogen into ammonium and use it in the process of photosynthesis to evaporate it, while phosphorus does not have such a source, so the latter is the most important limiting element. As a result, many important characteristics of lakes, such as the total growth of primary crops or the abundance of algae, are directly related to the phosphorus content of the lakes. That is why lakes are classified according to this indicator. Lakes are classified as oligotrophic (poor in nutrients), mesotrophic (moderate in nutrients) and eutrophic (high in nutrients).

Biogenic substances in lake water are necessary for the life of aquatic organisms, but their excess leads to deterioration of water quality in lakes.

The slowing down of water exchange in lakes leads to thermal stratification, the separation of lake waters into layers of different temperatures. In some lakes, the temperature changes depending on the season, while in others it remains constant throughout the year.

It is desirable to distinguish the external and internal factors of water body pollution and self-cleaning. External factors, first of all, there is a need to study the situation of high concentration of waste water in water bodies and the high concentration of pollutants in its content compared to the water environment. In this series, it is possible to include cases of water pollution through the atmosphere and through evaporation from the surface of water bodies, which leads to an increase in the concentration of one or another limiting substance in their water.

The external factors of self-purification are the influx of less polluted water into a river or lake compared to the water of the same object, or perfectly clean water of a tributary and atmospheric precipitation. When taking into account the water body's internal factors of water self-cleaning and pollution, it is necessary to take into account the hydrological regime of water bodies, which determine the transfer and diffusion of pollutants, sedimentation and subsequent mixing of heavy substances, and the hydrological characteristics of the streams formed in them. Biological processes of pollution, such as eutrophication of water bodies, can play an important role. Also, it is necessary to take into account the chemical processes in the dissolution of substances, their distribution, state of synthesis.

The spread of polluted water in water bodies, the self-cleaning process, and the multiplicity of pollutant dissolution are considered the reason why the problem of water quality formation in rivers and water bodies exposed to anthropogenic influence has not been sufficiently solved until now. When looking at the dynamics of pollution and self-cleaning in rivers, lakes and reservoirs, attention is firstly drawn to the dilution process as the most significant factor in reducing the concentration of pollutants in the aquatic environment. The final effect of dilution on a river flow can generally be determined based on a mass balance equation constructed for the flow.

In the process of reducing the concentration of pollutants in rivers, lakes and reservoirs, not only dilution, but also biochemical and physicochemical processes play the most important role. Among the latter, the most significant are oxidation-reduction reactions of organic and inorganic compounds, sorption and desorption, difficult-to-solve and complex compounds, polymerization and condensation reactions. The role of some factors in the self-cleaning of water bodies is related to the specific conditions of this or that polluted water body: it is necessary to take into account the chemical nature of the substances thrown into it, biomass, microorganisms, oxygen regime, turbulence level, temperature regime, hydrochemical background and some others.

The process of eutrophication did not spare Amudarya water bodies either. Amudarya lakes under anthropogenic influence are undergoing significant transformation. This, in turn, leads to significant changes in the water regime in limnic ecosystems, especially affecting the biological mechanisms of self-cleaning processes of water bodies. In recent years, due to a sharp increase in the discharge of nitrogen and phosphorus into water bodies and water streams, as well as as a result of the regulation of the flow of most lowland rivers, a specific disturbance of the hydrochemical and hydrobiological regime of water bodies has occurred. For example, during the intensive development of phytoplankton, the formation of organic matter increased and the trophicity of water bodies increased. The main crop of the Amudarya region is rice. It is grown using new technologies, which include the introduction of high doses of fertilizers (potassium chloride, phosphorus, ammonium sulfate). Experts estimate that a third and even a half of the fertilizers fall into water bodies. The main reason for the rapid deterioration of the appearance of lakes is the increasing load of biogens, primarily nitrogen and phosphorus.

Collector-drainage waters play a major role in the formation of current limnic ecosystems of the Amudarya River. According to experts' estimates, the volume of collector-drainage water has recently exceeded 1 km². They are often the only source of nutrients for most water bodies in the

Delta. Collector-drainage waters are extremely rich in biogenic elements: there are large amounts of ammonia nitrogen, its nitrate forms, as well as phosphorus compounds. Accumulation of biogenic substances at the bottom of water bodies and deposition from bottom sediments to the water mass can be one of the main factors affecting the productivity of aquatic ecosystems and water quality. In water bodies that have been under a significant load of biogenic substances (primarily phosphorus) for a long time, after the load decreases, bottom sediments become the main source of these substances entering the water.

It is known that the formation of highly productive limnic ecosystems in the Amudarya basin has been carried out for thousands of years mainly due to the flow of fresh water of the Amudarya. Intensive activity in the Aral Sea basin led to a significant reconstruction of the entire hydrological network in the Amudarya delta. The processes of aridization and desertification accelerated the processes of transformation of water ecosystems of the region and led to the reconstruction of all limnic systems and, ultimately, a specific disturbance of the bio- and hydrochemical regime of water bodies. For example, during the intensive development of phytoplankton, the formation of organic matter increased and, thus, the trophicity of water bodies increased. The nutritional character of the lakes has also changed, instead of the fresh (0.6-1.2 g/l) water of the Amudarya, mineralized (1.8-8.0 g/l) waters enriched with biogens and pesticide residues began to flow.

Eutrophication and pollution of water bodies caused changes in the composition of biocenoses, their structure and service. In recent times, eutrophic lakes containing abundant biogenic substances, usually not deep, whose silt deposits are rich in organic matter and bottom fauna should be included.

So, as a result of the influence of the anthropogenic factor, radical changes occurred that led to the emergence of new water ecosystems characterized by other parameters and internal processes of the water basin compared to the previous one.

The processes of aridization and the lack of fresh water led to the degradation of the natural ecosystems of the region, which was manifested in the development of processes of desertification. The vegetation of the natural vegetation of the island has deteriorated, the area of the multi-layered productive plant community is decreasing, sparse low-value crops are developing, as a result, the natural potential of pastures is decreasing, in which 5.5 million tons of valuable nutrients have been lost. The main destruction of the natural environment in Southern Orolbuyi is related to the extensive development of economic activity and productive forces. Of all anthropogenic factors affecting deserts and river valley ecosystems, the most profound and significant change in landscapes is irrigation and land development. Irrigation strongly affects all components of the soil. With the development of irrigation, about 4.5 million natural ecosystems have been lost in the last 30-40 years.

Thanks to centuries-old cultivation for agriculture, an anthropogenic landscape was formed here, and artificial ecosystems (agrocenoses) whose activities were determined and controlled by humans were established. Natural complexes were completely destroyed, successional processes and ecological relations with the natural surroundings were broken. The processes of desertification in the delta are happening rapidly, and their consequences are becoming more noticeable every year. Currently, the Amudarya delta no longer functions as a normal delta ecosystem.

1950-1960 There were 490 lakes with a total area of 840 km² in the Amudarya delta in 1980. 30 lakes with an area of 76.3 km² remained. Currently, there are 9 large lakes left, their depth is 2-5 m, the total area is 26500.

According to the data of hydroproject institutions of the Republic of Karakalpakstan, in 1992-1993. The total area of the wetted area of the Amudarya delta is approximately 1250-1300 thousand. established to It is known that irrigation strongly affects all components of the soil. Most of the irrigation canals were and are being constructed without protective covering of their bottoms and sides, and they lose 40-50% of water to filtration. The stoppage of the Amudarya and Syrdarya flows into the Aral Sea and the annual decrease of the water level in it leads to a decrease in the

water level and an increase in mineralization of the soil of the Aral Sea.

According to the reclamation cadastre, almost 96% of the land of Karakalpakstan is saline. According to experts' calculations, 78,000 hectares (15%) are highly saline, 201,100 hectares (41%) are moderately saline, and 194,700 hectares (40%) are low saline. It was also found that the mineralization of atmospheric precipitation has increased 6-7 times in recent decades.

Experts' studies show that the analysis and assessment of anthropogenic impact on forest vegetation leads to strong and irreversible changes of natural complexes in large areas.

In the early 30s of the 20th century, the total area of wood groves was more than 300,000 ha. Currently, it has decreased by almost 90% and is 30,000 ha. The most intensive reduction of the forest area began in the mid-1950s. The area of the large forest massif: Nazarkhan, Shortanbay, Samanbay, Shabbas, Nurumtubek, Erkin has been greatly reduced. Large forest massifs such as Kuyanchik, Aqqamish, Kulatau, Jumalaq, Qatep disappeared.

According to experts' estimates, vast reed groves occupied an area of more than 600,000 ha in the Amudarya delta. By the mid-1980s, their area was reduced 6 times, the area of meadows and pastures was also significantly reduced, and their productivity decreased. For example, from 420,000 hectares of grassland in the 1960s, only 70,000-75,000 hectares were preserved by the end of the 1980s. The conducted studies show that the dynamic changes in the Amudarya basin and delta are determined by the regional change in the hydrological regime of the area, which leads to successive stages of desertification.

As a result of increased water withdrawals for irrigation and a sharp reduction in the river's flow, the Amudarya's ability to self-purify has greatly decreased. In addition, 3 billion m³ from the territory of Uzbekistan and Turkmenistan. More than m³ of collector-drainage and untreated industrial-domestic waters saturated with toxic chemicals are discharged into Amudarya, they saturate drinking water with residual amounts of pesticides and heavy metals, making it unfit for use.

Various toxic chemicals used in agriculture enter Amudarya with collector-drainage waters. The increase in the regulation of the content of pollutants was 4 times for phenols, copper, chromium, 5 times for petroleum products, and 10 times for pesticides (hexachloran, lindane). The results of inspection of 40 lakes and reservoirs in the Amudarya delta also testify to high mineralization, high content of phenols (10-15 REM), oil products (3-5 REM), pesticides (up to 3 REM), copper, chromium (up to 6 REM). Bacterial contamination of river waters is 10 times higher than sanitary requirements. In 1994, the share of samples that did not meet sanitary requirements according to chemical indicators was 68.9%, and according to bacteriological indicators, it was 13.4%.

In the process of agricultural industry, it is necessary to consider the research of anthropogenic impact on the natural environment not only from the point of view of economy, but also taking into account the possible ecological consequences, and it is necessary to develop measures aimed at optimizing the use of nature, first of all, at the careful use of water resources.

Thus, the progressive deterioration of natural conditions along the archipelago can lead to unpredictable ecological consequences. Degradation of the natural environment is a negative experience of anthropogenic intervention in the activity of the biosphere: it is the destruction of centuries-old stable ecosystems, the loss of unique natural complexes with high productivity, the invaluable wealth of living nature, the gene pool of endemic flora and fauna, is lost without a trace. Prevention of negative hydroecological problems is primarily related to effective and cultural water use and water use.

Accumulation can be seen as a part of the stream system and as a key feature of lakes as landscape elements. Under the desired conditions of the geographical environment, lakes are a collecting system. As a consequence of the slowing down of water exchange, the phenomenon of accumulation in lakes has a number of phenomena and processes specific to lakes that are closely related to each other.

Theoretical justification of the view of accumulation in lakes as the main characteristic of lakes reveals their essence as a natural resource. This is confirmed in the forms of economic use of water bodies directly related to accumulation in lakes, that is, economically useful products collected by lakes (various salts of salt lakes, many types of lake bottom sediments, sapropels, diatomites, lake ore, tibial muds).

Thus, the restoration of natural objects is one of the priorities of ecology and environmental protection, but it should be recognized that the concept and methodology of restoration of lake ecosystems is still developing. Restoration issues have been considered mainly in the CIS countries and foreign countries, there are few such studies in the South Aral Bay region, only partial studies. Therefore, the development of theoretical foundations for the restoration of ecosystems, including inland lakes, is undoubtedly one of the urgent tasks of ecology, and the determination of the characteristics and laws of the restoration of small lakes will help the formation of a new direction in ecology and the development of the theory of ecosystems.

The concept of systemic ecology, seeing the water reservoir as a whole, as an organized system in which all elements are closely related to each other, made it possible to take an important step in the development of the typological direction and improvement of the biological classification of lakes.

It is necessary to take seasonal factors into account when developing the scientific basis for the regulation of anthropogenic pressure, predicting the consequences of anthropogenic pollution, and solving practical environmental problems related to the development of the regime of wastewater discharge into water bodies.

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Rezyume: Maqolada biogen elementlarining Orol dengizining suvi ekosistemalarida asosiy komponent metodi sifatida joylashgan analiz natijalari keltirilgan. Utkarilgan analiz natijasi kursatgichi buyicha umumiy urganilaetgan xarakteristik vaziyat sistemasi va biogen elementlarining joylashishi urganilaetgan suv ob'ekti korrelyatsion aloqalar barqarorligi bilan ajralmaydi, ayrim muddat kuzatuvlarida korrelyatsion aloqalar urganilaetgan kursatgichlar orasida kuchsizlanadi eki umuman yo'q bo'lib ketadi.

Резюме: В статье приведены результаты анализа распределения биогенных элементов в водных экосистемах Приаралья методом главных компонент. Проведенный анализ показывает, что в целом изучаемая система характеристик состояния и распределения биогенных элементов в исследуемом водном объекте не отличается стабильностью корреляционных связей, в отдельные сроки наблюдений корреляционные связи между изучаемыми показателями ослабевают или даже отсутствуют.

Kalit so'zlar: Orolbuyi, kuzatish, biogen elementlar, suv ekosistemasi, evtrofikatsiya jaraeni.

Ключевые слова: Приаралье, мониторинг, биогенные элементы, водные экосистемы, эвтрофикация.

UDC 549.01.48

**SOME WAY OF THE DECISION OF THE PROBLEM HARD INDUSTRIAL
DEPARTURE**

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Summary: *The Explored possibilities of the syntheses and practical application new stabilizer bore solution on base departure chemical enterprise of our republic. They are shown concrete areas of the practical application designed new stabilizer.*

Key words: *departure, conversion, salvaging, ecology, toxicity, viscosity, density, dispersing, boring, collector, bore hole.*

To ensure its existence, humanity must have food, water, shelter, clothing, etc. All this inevitably involves the formation of various types of waste that enter the environment. To avoid unnecessary and sometimes irreparable damage to the natural environment, such environmental impacts must be carefully planned. At the same time, it is necessary to combine the satisfaction of human needs at the expense of nature with the active protection of the natural environment from the consequences of human activity. As a rule, these goals are not mutually exclusive, although in some cases trade-off decisions must be made. Every day, 80% of the amount of water per inhabitant (0.6 tons) enters the city sewerage system; 150 tons of soot, fly ash and other air pollutants and 2000 tons of solid waste are generated. Theoretically, in urban conditions it is possible to avoid environmental pollution: obtain clean water from wastewater, and grow agricultural products on the sludge of wastewater. Even CO₂ and H₂O released during respiration could be converted into carbohydrates and oxygen with the help of plants and algae. However, according to the laws of thermodynamics, such an isolated existence of substances cannot continue indefinitely.

Any human activity has an impact on the total resources of the Earth. It would seem that as a result of such activities, the Earth's resources should dry up. However, we should not forget that the Earth constantly receives an influx of new energy, the source of which is the Sun [1].

Thus, human activities cause damage to the environment, regardless of their good intentions, and the task is to make the consequences of these activities the least harmful.

The main types of lithosphere pollution are solid household and industrial waste. On average, each city resident produces approximately 1 ton of solid waste per year, and this figure increases annually.

In cities, large areas are allocated for storing household waste. Waste should be removed promptly to prevent the proliferation of insects and rodents and to prevent air pollution. Many cities have factories for processing household waste, and complete recycling of waste allows a city with a population of 1 million people to receive up to 1,500 tons of metal and almost 45 thousand tons of compost per year, a mixture used as fertilizer. As a result of waste disposal, the city becomes cleaner; in addition, due to the freed up areas occupied by landfills, the city receives additional territories. A properly organized technological landfill is a storage of solid household waste that provides for constant, albeit very long-term, waste processing with the participation of atmospheric oxygen and microorganisms. At household waste incineration plants, along with neutralization, a maximum reduction in their volume occurs (up to 90% of the original). However, it is necessary to take into account that waste incineration plants themselves can pollute the environment, therefore, when designing them, it is necessary to provide for the treatment of emissions into the environment.

In Japan, a country of high everyday culture, polyethylene waste is collected in special containers, which are then pressed and used to create islands in the Pacific Ocean for the disposal of currently non-recyclable waste (for example, nuclear waste).

In many European countries, containers for cans and bottles of different colors are installed near large stores. Experts have calculated that a glass factory in a city with a population of 0.5–1.0 million people can operate a glass factory using raw materials collected in this way for a year [2].

As a result of human industrial activity, soil pollution occurs, which leads to the destruction of land suitable for agriculture. The main types of industrial waste are slag from thermal power plants and metallurgical plants, rock dumps from mining enterprises and mining and processing plants, construction waste, etc. A special group includes soil pollution with petroleum products and other chemicals (in aviation and other technologies, these are solid sediments from galvanization and metal etching products), which have a detrimental effect on soil microorganisms and the root system of plants.

Iron-containing slurries from the iron and steel industry, for example, contain more iron than the mined ore. At the same time, the building materials and construction industry produces and consumes 3.5 billion tons of non-metallic raw materials annually, most of which can be replaced by waste. The economy of our republic also suffers huge losses associated with waste storage. As a result, huge amounts of money are spent just on transporting 1 ton of waste and maintaining dumps. The construction of combined production facilities and separate technological installations for waste processing is especially advisable in industrial areas with a great need for building materials, products, and structures. For example, by the method of catalyzed glass crystallization.

Table 1

Chemical composition of Navbakhor clay containing phosphogypsum

Substance	Na ₂ O	MgO	Al ₂ O ₃	SiO ₂	K ₂ O	CaO	TiO ₂	MnO	Fe ₃ O ₃	CuO
Sod., % mass.	0,72	98	16,43	63,90	2,90	1,29	1,33	0,47	0,24	0,74

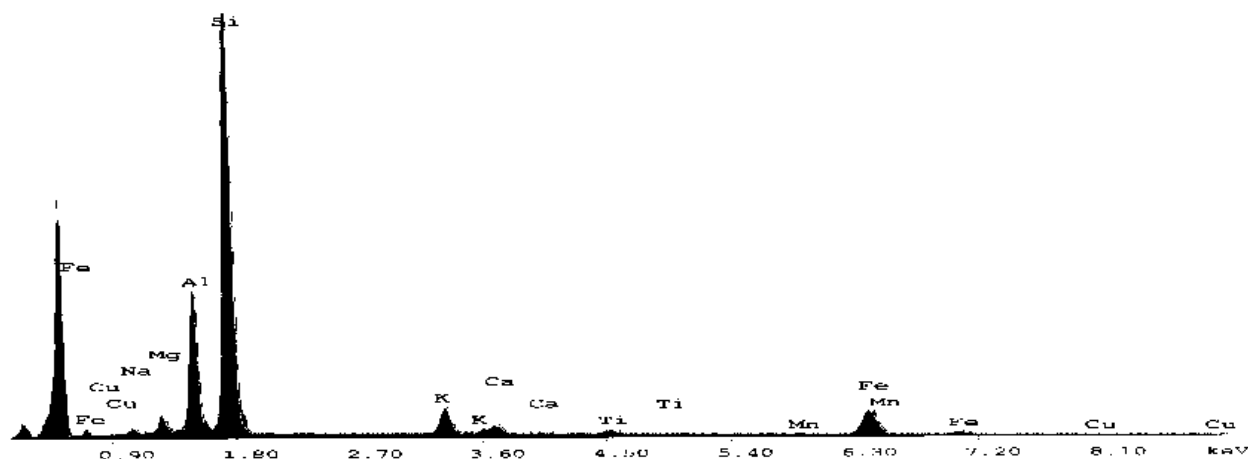


Fig. 1. Chemical composition of Navbakhor clay containing phosphogypsum

We used microwave-modified Navbakhor clay as a filler, containing phosphogypsum - a waste product of Maham-Ammophos OJSC. The resulting stabilizer is a fine powder with a number of valuable properties that determine its scope of application: high degree of dispersion; high chemical resistance in different environments; well-developed active specific surface area; environmental friendliness and safety of use.

The physicochemical properties of the original clay (IGC) and the resulting stabilizer-reagent are given in Table. 2.

Table 2

Physico-chemical properties of clay

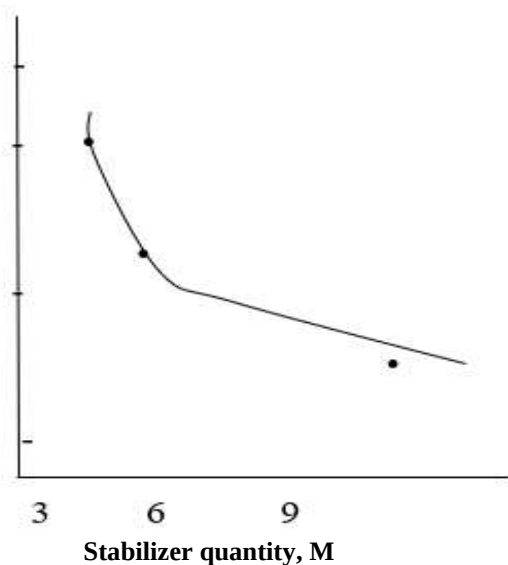
Product	Color	pH	Density, kg/m³	Bulk volume, m³/kg	Size particles, mm	Specific surface, m²/g
IPG	sandy	5,65	1420	816	0,1-0,315	196,98- 53,96
SBN- processed	brick	4,83	1289	731	0,05-0,1	211,2-67,06

We have conducted experimental studies on the use of microwave-modified clays containing phosphogypsum and lime waste as a stabilizer for drilling fluids. Laboratory studies of the properties of modified clay during drilling processes have shown that microwave treatment of natural clay increases its specific surface area, while the sorption area decreases. In accordance with the size of the sorption area, we can conclude that as a result of the sorption of the active components of the drilling fluid on the surface of clay sorbents, a monolayer is formed consisting of adsorbed molecules, the number is very small and is caused only by the dissociation (at certain pH values of the environment) of functional groups - SiOH–AlOH and SiOH–ROH formed on the crystal faces. A large negative charge is concentrated mainly on the basal surface of elementary packets and is neutralized by exchangeable cations of alkali and alkaline earth metals, located mainly in the interpacket spaces and in the form of aqua complexes that communicate between the packets. Clay minerals are highly dispersed, have a developed surface and are good stabilizers of drilling fluids.

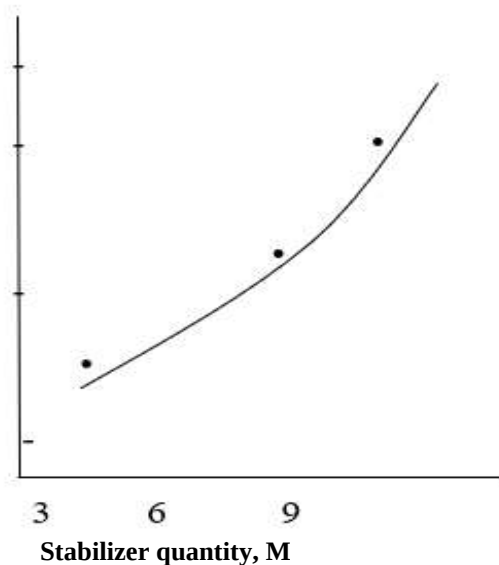
It has been experimentally revealed that drilling fluid containing a new stabilizer has high lubricity. By lubricating the surface of pipes, bit supports, and hydraulic equipment, the solution helps reduce energy costs for drilling and reduce accidents with drill strings, which is especially important in rotary drilling.

With an increase in the amount of stabilizers we have developed introduced into the composition of drilling fluids, the liquid base of drilling fluids becomes low-viscosity (Fig. 2) and has a low surface tension at the boundary with rocks, the concentration of clay particles in the solid phase of the solution is reduced to a minimum, and the volume-weighted average density value solid phase increases (Fig.2), in addition, drilling fluids are non-dispersing under the influence of changing thermodynamic conditions in wells and have stable indicators, and the aggressiveness and corrosiveness of drilling fluids is reduced, i.e. they become chemically neutral in relation to the drilled rocks and do not cause swelling and corrosion of metal parts of drilling rigs and bits. The performance of these functions depends on the interaction of the solution with the passable rocks. The nature and intensity of this interaction are determined by the nature and composition of the dispersion medium.

As can be seen from Fig. 3. with an increase in the amount of stabilizer introduced into the composition of drilling fluids, the density of the drilling fluid increases, which, together with other technological factors and techniques, provides sufficient back pressure on the passable formations, but at the same time it does not worsen the operating conditions of the bit and the operational characteristics of productive horizons and does not lead to complications. Density is also one of the main factors ensuring the stability of the well walls. With its increase, the intensity of slides and shaft collapses, as a rule, decreases, while another type of danger of complications - absorption of drilling fluid - also decreases. Therefore, the introduction of new stabilizers increases the stability of the well walls, the filtration rate, and the salinity of the drilling fluid. And a decrease in the viscosity of drilling fluids (Fig. 2) leads to an increase in the penetration of the drilling fluid filtrate into the pores of the rock due to filtration, osmosis, etc.



The influence of the amount of added stabilizer on the viscosity of the drilling fluid.



The influence of the amount of added stabilizer on the density of the drilling fluid.

An important technological quality of drilling fluid is keeping the particles in it in suspension, especially during circulation breaks. As the rheological characteristics of the drilling fluid increase, its holding capacity increases. However, this increases energy costs and time spent on circulation, and significant pressure fluctuations in the well occur during tripping operations, which can cause other complications.

The results obtained can be used in the production of stabilizing reagents, which can be used as components for quickly dispersing drilling fluid concentrates in water, as well as for other compositions with other end uses. The development involves the production of stable aqueous suspensions characterized by optimal rheological properties and making it possible to obtain such drilling fluid concentrates that quickly disperse in water. This results in a number of practical advantages, including the ability to produce and store a dry product, a powdered drilling fluid concentrate, which can later be easily redispersed during the production of drilling fluids. Dry powdered redispersible drilling fluid concentrates reduce the cost of transported materials.

Thus, we have developed new highly effective and affordable drilling fluid stabilizers based on waste from chemical enterprises of our republic and secondary local resources.

The main applied, physicochemical and rheological properties of drilling fluids have been identified. The practical application of the development can solve many economic and technological problems of the industry.

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учреждение образования «Университет гражданской защиты Министерства по чрезвычайным ситуациям Республики Беларусь», 2020. – С. 188.

Резюме: Respublikamizning kimyo korxonalari chiqindilari asosida burg'ulash suyuqliklari uchun yangi stabilizatorlarni sintez qilish va amaliyotda qo'llash imkoniyatlari o'rganildi. Ishlab chiqilgan yangi stabilizatorlarni amaliy qo'llashning o'ziga xos yo'nalishlari ko'rsatilgan.

Резюме: Исследованы возможности синтеза и практического применения новых стабилизаторов буровых растворов на основе отходов химических предприятий нашей республики. Показаны конкретные области практического применения разработанных новых стабилизаторов.

Kalit so'zlar: chiqindilar, qayta ishlash, utilizatsiya qilish, ekologiya, zaharlilik, yopishqoqlik, zichlik, disperslik, burg'ulash, rezervuar, quduq.

Ключевые слова: отход, переработка, утилизация, экология, токсичность, вязкость, плотность, дисперсность, бурение, коллектор, скважина.

MUNG BEAN GROWING TECHNOLOGY

Kosbergenova B.

Karakalpak State University named after Berdakh

Summary: *The formation of the Republic of Uzbekistan as an independent state has led to a comprehensive transformation and development for the Uzbek people. The conditions of market relations require the development of the economy in a completely new direction, in a new system. Economic independence also led to fundamental changes in the agricultural system in the agro-industrial complex, which is considered the most important branch of the national economy.*

Key words: *After independence, the production system in agriculture changed, ending cotton soloism.*

The foundations for achieving grain independence were laid. Uzbekistan is one of the most favorable regions for agriculture in the globe due to its natural climate and soil conditions. The basis of agricultural crops planted in the irrigated areas of our republic are acorns and autumn Acorns-grain crops. In more than one million hectares of irrigated areas of our republic, autumn Bush-grain crops are grown every year. So, after the autumn harvest of wheat, the cultivation of repeated crops in such a large amount of area appears. In view of this, the main focus on the fields vacated by autumn wheat is the cultivation of legumes-cereals, cereals and vegetable crops, which satisfy the daily food requirements of the population, as a recurring crop, which in the future will create the basis for further strengthening food security in the Republic, to fully satisfy the population's need for agricultural products, our, there are options for bringing the grain crop grown for one season to 85-95 ts/ha. This was observed on the example of many scientific experiments and advanced farms. From this point of view, at the expense of expanding the areas of legumes-cereals in the areas vacated by autumn wheat, it allows, first of all, to provide the population with nutritious and high-quality products, and livestock-with servitamin, mineral-rich feed. Among such legumes, such as soybeans, beans, peas, mosh has its place, according to the Food and Agriculture Organization of the nations and the World Health Organization, currently more than 840 million people in the world, that is, almost one in eight people, are malnourished, more than 30% of the population of the planet are experiencing the problem of incomplete nutrition, the Since Mosh is a type of beans, its sistema-stem is considered based on beans. There are more than 200 species of Phaseolus, of which about 20 species are cultivated, used as crops, the rest are wild species. By Origin, species are divided into two geographical groups: American and Asian. The American group includes the following common species:

- the stem of ordinary beans (*Phaseolus vulgaris* L) is tufted or rotten. 3-5 seed pods in dukkakgi. 1000 seeds 200-400 g. Seed varies, from white to Orange;
- multi-flowered (*Phaseolus multiflorus*) has a rotting stem, white and red flowers, large seeds. 1000 seeds 700-1200 g;
- the sharp-leaved (*Phaseolus lunatus* L) is hairy in shape, wide, short, flat, has 2-3 seeds in the pods, cracks quickly. The pods of Asian species are cylindrical in shape, without a beak, with a large number of seeds, the weight of 1000 seeds is 30-60 g. According to researchers [81], mosh is much more resistant to salt than it has the property of extracting excess salts accumulated in it outwards. Depending on the length and length of the growing season, the cultural Moss is divided into five: very early morning (60-75 days), early evening (75-90 days), mid-day (85-105 days), evening (100-115 days) and early evening (more than 115 days).

The mosh varieties grown in our republic, on the other hand, belong mainly to the middlepishar, latepishar and very latepishar, and their growing period goes 85-120 days.

Mosh seeds (grain) are used for food. The grain contains a large amount of easily digestible protein (24-28%), nitrogen-free extracts, fats (1-2%), starch (4-6%), sugar, oil (2-4%), starch (46-50%), ascorbic acid, thiamine, provitamins A, E and K, group B vitamins, nicotinic and pantothenic

acids, sitosterols, stipmasterin, flavonoids, leucoanthocyanins, vitexin, isovitexin, organic acids (apple, lemon and malon), lysine, contains macro-microelements and phosphorus salts such as arginine, Mg, Ca, S, Na, Fe, Ma, Cu, B, Co, Ni, I

Burning requirements for mash seeds

Class	Seed Content %	The fat contained in seeds is 1 kg of plant seeds with a cup		Sleeplessness at least %	Moisture content %
		everything	Foreign ut seed		
I	99.0	10	5	95	14,0
II	98.0	50	15	92	14,0
III	96.0	100	50	90	90

Viability, that is, the ability to live, is the ability to overcome some difficult conditions. The power of growth is rapid and horizontal germination of seeds, rapid growth and long-term storage of plants in field conditions. Germination energy is the ability of seeds to germinate quickly and horizontally. Seed germination - ensuring the normal development of seed growths. Seed moisture is the retention of hygroscopic water in the seed. A temperature of 20-250 is used to determine the fertility of the seed. At the same time, in our Republic, the lands with low and average nitrogen supply have increased by 18%, and the highly supplied areas have decreased by 8-10%. Areas with low and medium supply of phosphorus increased by 19%, and areas with high supply decreased by 14%. Irrigated lands with very low supply of exchangeable potassium increased by 10%, and medium and high supplied areas decreased by 20-25%.

Method of fertilization Nitrogen in mixed fertilizers has a good effect on the growth and development of plants. Especially phosphorus fertilizers should be given before planting, because phosphorus in the soil needs some time to affect the plant.

Before plowing the field in the fall for the main (spring season) mosh planting, phosphorus and 20-40 kg of potassium fertilizers are applied at the rate of 40-60 kg of pure substance per hectare. Nitrogen fertilizers can be applied before planting and during the growth period, the norm is 20-30 kg. 20-30 kg of phosphorus and 10-20 kg of potassium are added during the tillering period.

When the land is plowed repeatedly (in the summer season), 40-60 kg of phosphorus, 20-40 kg of potassium and 20-30 kg of nitrogen fertilizers are applied per hectare. 20-30 kg of nitrogen, 20-30 kg of phosphorus and 10-20 kg of potassium are added during the period of flowering and flowering.

Before planting mash in the summer season without plowing the land, the above-mentioned amount of fertilizer is applied to the ground.

If the rate of nitrogen fertilizer is exceeded, biological nitrogen will not be assimilated.

Foliar feeding with mineral fertilizers is beneficial. it is resistant and does not require much water. However, it is advisable to always keep the soil moisture in a moderate level. It is watered 2-3 times during the growing season. Moss seeds must be watered for germination and before flowering. The water requirement of the plant is 1500 m³ in the spring period, and 2000 m³ in the summer period. After the pods appear, it is not recommended to water the plants so that they are full.

Mosh planting terms and schemes by regions of the republic. Name of the regions.

The period of sowing of buckwheat

Varietal groups	North	central	South
Early ripening varieties	April 25	April 10-20	April 10

Early varieties	April 25	April 10-20	April 10

Summer(repeat) planting period

Early ripening varieties	June 15-25	June 15-30	June 20-30
Early varieties	June 15-25	June 15-30	June 20-30

Planting scheme (60-70 cm, one row):

Early ripening varieties	60-70x15	60-70x15	60-70x15
Early varieties	60-70x20	60-70x20	60-70x20

Herbicides used for leguminous crops can be used for weeding in the field planted with mash. Fuzilad super 12.5% em.k. 0.4-0.6 liters of herbicide can be applied per hectare.

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Rezyume: O'zbekiston Respublikasining mustaqil davlat sifatida shakllanishi o'zbek xalqining har tomonlama o'zgarishi va rivojlanishiga olib keldi. Bozor munosabatlari sharoiti iqtisodiyotni mutlaqo yangi yo'nalishda, yangi tizimda rivojlantirishni taqozo etmoqda. Iqtisodiy mustaqillik xalq xo'jaligining eng muhim tarmog'i hisoblangan agrosanoat majmuasining agrar tizimida ham tub o'zgarishlarga olib keldi.

Резюме: Образование Республики Узбекистан как независимого государства привело к всестороннему преобразованию и развитию узбекского народа. Условия рыночных отношений требуют развития экономики в совершенно новом направлении, в новой системе. Экономическая независимость также привела к коренным изменениям в аграрной системе АПК, считающейся важнейшей отраслью народного хозяйства.

Kalit so'zlar: Mustaqillikdan keyin qishloq xo'jaligi ishlab chiqarish tizimi o'zgarib, paxta yakka-xonligiga barham berildi.

Ключевые слова: После обретения независимости производственная система в сельском хозяйстве изменилась, положив конец хлопковому солоизму.

STUDYING THE PROLIFERATION ACTIVITY OF THE PLANT CAPER (CAPPARIS SPINOSA L.) IN A MUSE CELL CULTURE LINE

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Summary: The article presents information on the methods and results of studying the effect of extracts prepared from various organs of the plant Caper (*Capparis spinosa* L.), growing in the Samarkand region, on the activity of monocyte macrophages in RAW 264.7 mice.

Key words: *Capparis spinosa* L., RAW 264.7, macrophage, monocyte, extraction, PBS, adhesion,

Caper (*Capparis spinosa* L.) is a herbaceous, low-lying woody plant with a stem length of 200-300 sm, growing in the conditions of Uzbekistan. Caper (*Capparis spinosa* L.) seeds are kidney-shaped. The average weight of 1000 seeds is 755-760 mg. Caper bushes with such a morphological structure are observed in the Urgut district of the Samarkand region. Since the Urgut region is a mountainous region, when studying the morphological characteristics of fruits in this area, one bush can have up to 500 fruits, its height is 5.5 cm, and its weight is up to 30 grams.[1,6]

Most often they eat fragrant flower buds, which are dried and salted in the sun before flowering. Caper are classified by size: pea-sized flower buds, smaller than olives, are tastier and more valuable. In addition to their valuable nutritional properties, capers do not contain many calories: 100 g of caper contain only 23 kkal.[2,8].

This plant is widely studied in the field of medicine and pharmaceuticals due to its medicinal properties, and the polyphenols it contains are found in various organs of flowers, fruits, roots, leaves and stems. It is known that polyphenols are of great importance for human health. It has powerful potential in the prevention of diseases of modern civilization, cardiovascular diseases, diabetes, anti-obesity, anti-inflammatory, antibacterial and antitumor diseases, as well as the fight against hepatotoxicity. According to phytochemical studies of caper, the biologically active substances of the plant are physiologically active and are widely used in the food industry to protect human health. [2,5]

Caper (*Capparis spinosa* L.) grows especially in the wild, arid regions of Asia, Africa, Saudi Arabia and Europe, in the Mediterranean basin.[8].

Cornflower flowers and fruits are consumable materials in the pharmaceutical and food industries. At the same time, its flowers are used in medicine in Asian countries.[6]

The average annual world production of caper is estimated at 10,000 tons, and Spain is one of the main producers in Europe with a planted area of about 2,600 hectares and an annual production of 500–1,000 tons.[9]

In recent years, plantations of the Caper plant in Uzbekistan have been planted by ZominSakhavat LLC in the Zomin district of the Jizzakh region with a volume of 300 tons, and Caper (*Capparis spinosa* L) on 3000 hectares by Baraka Meva Industrial Service LLC in the Chust district of the Namangan region. started exporting. [10]

Currently, various scientific teams in our republic are conducting research on the phytochemical composition of Caper and the effect of bioactive substances on the human body. It has been established that Caper berries contain many biologically active compounds, such as alkaloids, flavonoids, steroids, terpenoids and tocopherols.[9,11]

However, there is not enough information about the effect of bioactive substances on the body of various organs of the Caper plant.[6,7,9]

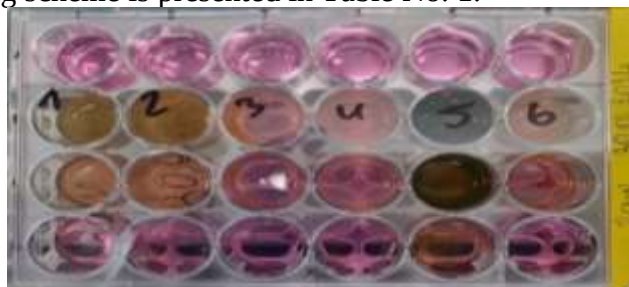
Based on the above analysis, the purpose of this research work is to study the immunomodulatory properties of the Caper plant. The immunomodulatory properties of the RAW264.7 line can be conveniently studied in laboratory mice of the macrophage-monocyte line.

Material and methodological part. Samples taken from various organs of the study object *Caper (Capparis spinosa L.)* were dried at room temperature. The dried samples were passed through a laboratory mill and turned into powder.

15 g of dried samples were weighed on an electronic balance and extracted with 200 ml of 96% alcohol. The extraction was prepared with constant stirring in an orbital shaker-incubator model ER-20/60 from Biosan at a temperature of 60°C for 24 hours. The remaining 8 ml of prepared samples were removed; after readiness, the samples were cooled and passed through filter paper, and then centrifuged in a centrifuge at 3000 rpm for 10 min. Monocyte-macrophage lines cultured from RAW 264.7 macrophage lines of laboratory mice were chosen as the object of study. RAW 264.7 macrophage-monocyte lineage cells were seeded in special plates (6x4=24 wells) the day before exposure to plant extracts. In this case, RAW 264.7 cell cultures were isolated from platelets. Then it was washed 2 times with PBS phosphate buffers. To move the cells into the adhesion state, 2 ml of trypsin was added and lightly shaken, then kept in a CO_2 incubator at a temperature of 36.6 °C and a humidity of 41% for 5 minutes. Cell cultures adhering to the bottom of the incubated plates were scraped off using a special tool—a cell scraper. The attached cell cultures were collected and placed in a 5 ml tube. Before transferring cell cultures to new dishes, 1 drop of cell cultures was dropped into a Thoma chamber (Tiefe Depth Profounder) and counted under a microscope. The counting results are calculated using the following formula.

$$\frac{N}{4} = \frac{N^-}{4} \cdot 10^6$$

5 ml RAW 264.7 cell lines were mixed with 50 ml DMEM using a pipette and 0.5 ml RAW 264.7 cells were seeded into 2 plates with a total of 48 wells. These cells were stored in a CO_2 incubator at a temperature of 36.5°C and a humidity of 41% for 1 day. Then, in two different treatments, they were given a control: 25, 5, 1 µl per first tablet and 1, 1, 0.5, 2 µl per second tablet with different concentrations of flowers, fruits, seeds, roots, leaves, stem extracts and inflammation *Caper*. To provide a therapeutic effect, bacteria were exposed to lipopolysaccharide-LPS in an amount of 0.5 µl. The planting scheme is presented in Table No. 1.



Analysis of the results obtained. It is known that articles on the medicinal properties of *Caper (Capparis spinosa L.)* have been and are being studied by many authors. The results of studies of the medicinal properties of the stem, leaf, flower, fruit, seeds and roots of various organs of *Caper*. by many authors differ from each other, and the main research consists in determining the chemical composition of various organs of *Caper (Capparis spinosa L.)* and is devoted to determining the medicinal properties.

The medicinal properties of the *Caper (Capparis spinosa L.)* plant, chemical composition and trace elements, agrotechnical properties of this plant are covered by a number of authors in Uzbekistan.

The medicinal properties of *Caper (Capparis spinosa L.)* extract are predominantly regenerative, immunomodulatory medicinal properties have been identified in the treatment of hemorrhoids. Among the chemical substances in its composition, mainly capparin A, B, C, flazin, guanosine, 1-H-indole-3-carboxaldehyde, apigenin, kaempferol, tevetiaflavone, rutin, quercetin, glucocapparin, stachidine and other spectrophotometric and chromatographic methods were identified and determined.

Based on these data, the influence of the immunomodulatory properties of the plant Caper (*Capparis spinosa L.*) on mouse macrophage cells RAW 264.7 was studied in morphological tests.

In the studies, 5 ml of RAW 264.7 cell line was mixed with 50 ml of DMEM using a pipette and 0.5 ml of RAW 264.7 cells were seeded into 2 plates with a total of 48 wells. These cells were stored in a CO_2 incubator at a temperature of 36.5°C and a humidity of 41% for 1 day. Then, in different treatments, they were given a control: 25, 5, 1 µl per tables with different concentrations of flowers, fruits, seeds, roots, leaves, stem extracts and inflammation Caper. To provide a therapeutic effect, bacteria were exposed to lipopolysaccharide-LPS in an amount of 0.5 µl. The study design is shown in Tables 1.

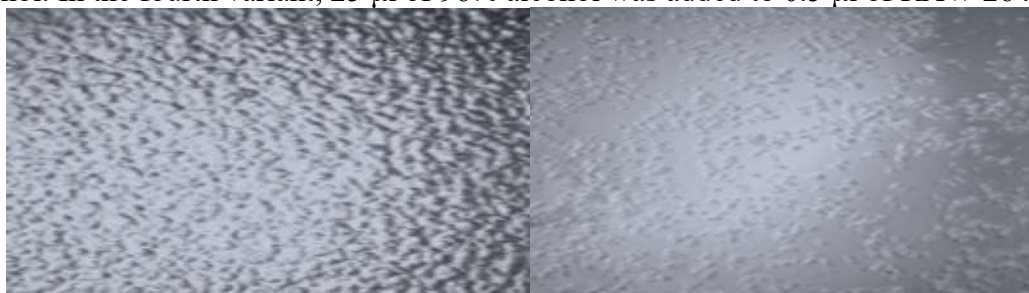
Table 1

Application of Caper (*Capparis spinosa L.*) in different concentrations.

Example	Quantity	RAW 264.7 0.5 µl	LPS 0.5 µl
Flower extract	control	-	-
	25µl	-	-
	5µl	-	-
	1µl	+	-
Fruit extract	Control	-	-
	25µl	-	-
	5µl	-	-
	1µl	+	-
Seed extract	96% alcohol 1 µl control	-	-
	25µl	-	-
	5µl	-	-
	1µl	+++	-
Root extract	96% alcohol 1 µl control	-	-
	25µl	-	-
	5µl	-	-
	1µl	+	-
Leaf extract	25µl	-	-
	5µl	--	-

Note: --no proliferation, +- not high proliferation, +-moderate proliferation, +++- high proliferation.

According to the study, a control variant was added to the variants available for the study. 0.5 µl of RAW 264.7 cells were exposed to 0.5 µl of LPS. In the second control, 0.5 µl of RAW 264.7 cells was used as a control. The third option was to expose 0.5 µL of RAW 264.7 to 1 µL of 96% alcohol. In the fourth variant, 25 µl of 96% alcohol was added to 0.5 µl of RAW 264.7 cells.



A)

B)

Figure 1. Control variant - RAW 264.7 cells stimulated with 0.5 µl LPS.

In the control treatment, when RAW 264.7 cells were exposed to 0.5 µl of LPS, macrophage cells had high proliferative activity (Fig. 1).

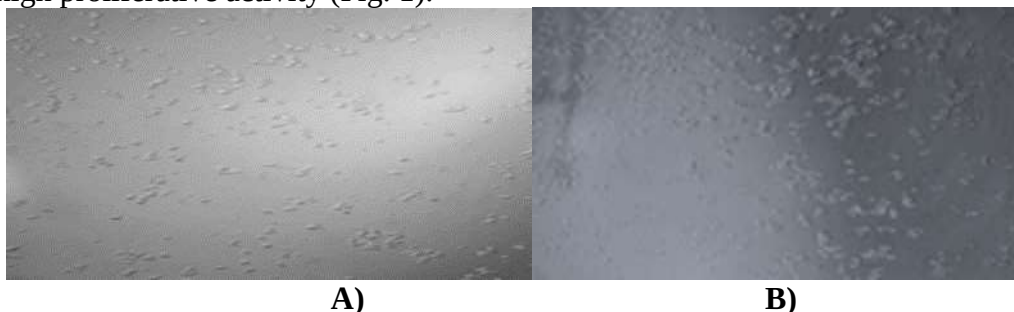


Figure 2. a) 0.5 µl of RAW 264.7 macrophages were treated with 1 µl of a 96% alcohol solution without LPS, b) 0.5 µl of RAW-264.7 macrophages were exposed to 25 µl of 96% alcohol

In variant III of the control variant, 1 µl of a 96% alcohol solution was added to 0.5 µl of RAW 264.7 macrophages; LPS was not added. According to the results, the cells died when examined under a microscope.

In the control treatment, when 0.5 µl of RAW-264.7 macrophages was exposed to 25 µl of 96% alcohol, the macrophages died.

Based on the results obtained, the first tablet was treated with 25 µl, 5 µl and 1 µl of Caper (*Capparis spinosa* L.) flower extract per 0.5 µl RAW 264.7, 0.5 µl LPS according to the information given in table No. 1, variants were created. Based on research results on Caper. When the proliferation of RAW 264.7 macrophage cells was examined under the microscope field under the influence of L 25 µl of flower extract, it was found that all cells died.



Figure 3. Morphological appearance of monocytes and macrophages under the influence of 1 µl of *C. spinosa* L. flower extract.

0.5 µl of RAW-264.7 was exposed to 0.5 µL of LPS, 25 µl of flower extract was exposed and incubated in a CO_2 incubator for 1 day. After 16 hours of incubation, the results of incubation were studied morphologically under a microscope. RAW 264.7 cells were killed in 25 µl of 0.5 µl flower extract.

Similarly, when 0.5 µL of RAW-264.7 was exposed to 0.5 µl of LPS followed by 1 µl of flower extract and incubated for 1 day in a CO_2 incubator, the incubation results were morphologically examined under a microscope. macrophage cells did not have high proliferative activity, the cells did not die (Fig. 3).

Similar samples were prepared from fruit extracts. According to the data presented in Table No. 1, after stimulation with RAW 264.7, 0.5 µl, 0.5 µl LPS, 25 µl, 5 µl and 1 µl of Caper fruit extract were obtained. According to the results of the study, under the influence of Caper 25 fruit extract, 5 µl, no proliferation of RAW 264.7 macrophage cells was observed in the field of view of the microscope, and the cells died (Fig. 4a).

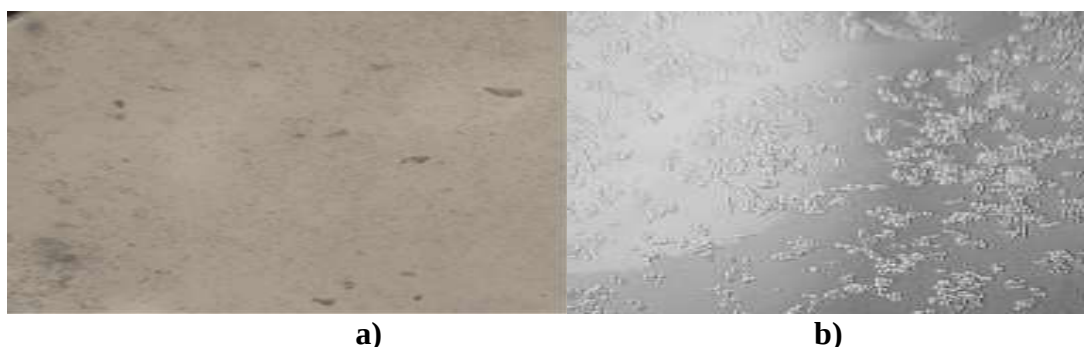


Figure 4. Morphological appearance of cells under a light microscope in (a) 25 µl and (b) 1 µl of *C. spinosa* L. fruit extract.

After stimulation with exposure to 0.5 µl of RAW-264.7 with 0.5 µl of LPS, after incubation with exposure to 1 µl of fruit extract, during a morphological study of the results of incubation under a microscope, RAW 264.7 macrophages in 1 µl of fruit extract. Low proliferative activity was observed in the cells (Fig. 4b).

Similar samples were prepared from seed extracts. According to the information presented in Table No. 1, 25 µl, 5 µl and 1 µl of Caper (*Capparis spinosa* L.) seed extract. According to the results of the study, under the influence of Caper (*Capparis spinosa* L.) seed extract 25.5 µl, no proliferation of RAW macrophage cells was observed in the field of view of the microscope 264.7, and the cells died.

0.5 µl of RAW-264.7 was exposed to 0.5 µl of LPS followed by 1 µL of seed extract and stored for incubation in a Caper (*Capparis spinosa* L.) incubator for 1 day. After 16 hours of incubation, the results of incubation were studied morphologically under a microscope. The highest proliferation activity was observed in RAW 264.7 macrophage cells in 1 µl of seed extract (Fig. 5).



Fig. 5. Morphological appearance of mouse monocytes and macrophages in 1 µl of *Capparis spinosa* L. seed extract.

Similar samples were prepared from root extracts. According to the information presented in Table No. 1, 25 µl, 5 µl and 1 µl of Caper (*Capparis spinosa* L.) root extract were obtained. According to the results of the study, under the influence of Caper (*Capparis spinosa* L.) root extract 25.5 µl, no cell proliferation was observed in the field of view of the microscope - macrophages RAW 264.7, and the cells died.



Figure 6. Morphological appearance of cells in 1 µl of root extract.

0.5 µl of RAW-264.7 was exposed to 0.5 µl of LPS followed by 1 µl of root extract (Fig. 6) and stored for incubation in a CO_2 incubator for 1 day. After 16 hours of incubation, the results of

incubation were studied morphologically under a microscope. In 1 µl of root extract, low proliferation activity was observed in RAW 264.7 macrophage cells.

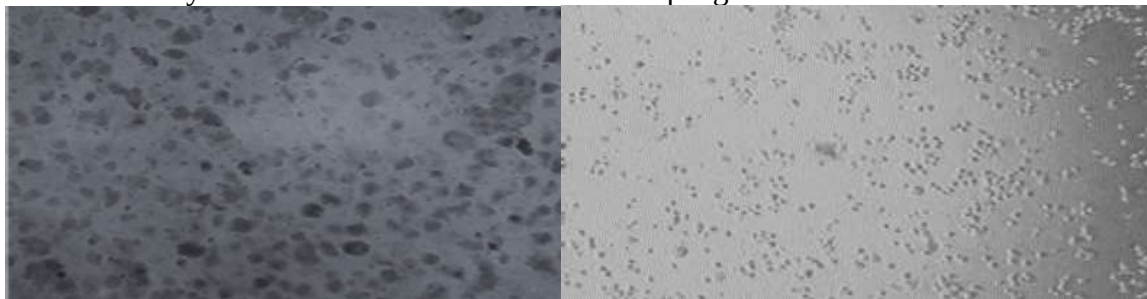


Figure 7. Cells died in 25.5 and 1 µl of leaf extract.

Similar samples were prepared from leaf extracts. According to the information presented in Table No. 1, 25 µl, 5 µl and 1 µl of Caper (*Capparis spinosa* L.) leaf extract were obtained. According to the results of the study, under the influence of Caper (*Capparis spinosa* L.) leaf extract 25, 5, 1 µl, no increase in the proliferation of RAW macrophage cells was observed 264.7 in the field of view of the microscope, the cells died (Figure 7).

Similar samples were prepared from stem extracts. According to the information presented in Table No. 1, RAW 264.7 was treated with 0.5 µl, 0.5 µl LPS and 25 µl, 5 and 1 µl Caper (*Capparis spinosa* L.) According to the results of the study, under the influence of Caper (*Capparis spinosa* L.) 25 stem extract, 5 µl, in the field from the microscope, no proliferation of RAW 264.7 macrophage cells was observed, and the cells died.



Figure 8. Cell proliferation was not observed in 1 µl of stem extract.

0.5 µl of RAW-264.7 was exposed to 0.5 µl of LPS followed by 1 µl of stem extract and stored for incubation in a CO_2 incubator for 1 day. After 16 hours of incubation, the results of incubation were studied morphologically under a microscope. In 1 µl of stem extract, RAW 264.7 macrophages had low proliferative activity (Fig. 8).

Summary. Alcoholic extracts were prepared from different parts of Caper (*Capparis spinosa* L.) and the Raw 264.7 macrophage-monocytic cells of mice were stimulated by exposure to LPS 0.5 µl, then the extracts prepared from different parts of the plant were treated with 25 µl, 5 µl and 1 µl was tested. Cells were killed by exposure to different extracts at 25 µl and 5 µl. 1 µl of Caper (*Capparis spinosa* L.) plant flower, fruit and root extract showed a low proliferation rate, and a high proliferation rate was observed under the influence of seed extract. Cells were killed by exposure to 25 µl, 5 µl and 1 µl of leaf extract.

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10. Xalq so'zi gazetasi 22-iyun, 2018-yil

Rezyume: Ushbu maqolada Samarqand viloyatida o'suvchi *Capparis spinosa* L. o'simligining turli organlaridan tayyorlangan ekstraktlarning sichqonlar RAW 264.7 liniya makrofag- monotsitar hujayralar faolligiga ta'sirini o'rganish usullari va natijalari haqida ma'lumotlar keltirilgan.

Резюме: В статье представлены сведения о методах и результатах изучения влияния экстрактов, приготовленных из различных органов растения каперс (*Capparis spinosa* L.), произрастающего в Самаркандской области, на активность моноцитарных макрофагов у мышей RAW 264.7.

Kalit so'zlar: *Capparis spinosa* L, RAW 264.7, makrofag, monosit, ekstraktsiya, PBS, adgeziya.

Ключевые слова: *Capparis spinosa* L., RAW 264.7, макрофаг, моноцит, экстракция, PBS, адгезия,

UNDERSTANDING THE DYNAMICS OF RENAL PHYSIOLOGY: A COMPREHENSIVE REVIEW

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Summary: *Renal physiology encompasses a myriad of intricate mechanisms that govern kidney function, ensuring the maintenance of internal equilibrium and systemic homeostasis. From the precise regulation of glomerular filtration to the fine-tuning of tubular reabsorption, secretion, and the integration of hormonal signaling pathways, the kidneys play a central role in sustaining life.*

Key words: *Renal physiology, glomerular filtration, tubular reabsorption, tubular secretion, renal blood flow regulation, nephron, transport mechanisms, acid-base balance, hormonal regulation.*

Renal physiology encompasses the intricate mechanisms underlying kidney function, crucial for maintaining homeostasis within the body. This review aims to provide a comprehensive overview of renal physiology, focusing on its fundamental processes including glomerular filtration, tubular reabsorption, secretion, and renal blood flow regulation. The intricate interplay of various factors such as filtration pressure, hormonal regulation, and tubular transport mechanisms orchestrates the kidney's remarkable ability to regulate fluid and electrolyte balance, acid-base equilibrium, and blood pressure. Understanding renal physiology is essential for unraveling the pathophysiology of renal diseases and developing targeted therapeutic interventions.

The kidneys, two bean-shaped organs nestled within the retroperitoneal space, are indispensable for sustaining life by orchestrating a multitude of physiological processes crucial for internal equilibrium. Their role extends beyond mere waste excretion; they serve as intricate regulators of fluid balance, electrolyte concentrations, acid-base homeostasis, and blood pressure. Renal physiology, the study of kidney function, delves into the intricacies of these processes, unveiling a complex network of molecular and cellular mechanisms operating within the nephron, the functional unit of the kidney.

At the heart of renal physiology lies the nephron, comprising the renal corpuscle (consisting of the glomerulus and Bowman's capsule) and the renal tubule (comprising the proximal convoluted tubule, loop of Henle, distal convoluted tubule, and collecting duct). The nephron is responsible for executing the vital functions of filtration, reabsorption, and secretion that culminate in the formation of urine.

Glomerular Filtration: Glomerular filtration represents the initial step in urine formation, where plasma is filtered across the glomerular membrane into the Bowman's capsule. This process is governed by the balance of hydrostatic and oncotic pressures across the glomerular capillaries, ensuring the selective passage of substances based on size and charge. The glomerular filtration rate (GFR), a measure of renal function, is meticulously regulated to maintain systemic homeostasis, with autoregulatory mechanisms and hormonal influences fine-tuning filtration dynamics.

Tubular Reabsorption: Following filtration, the renal tubules engage in reabsorption, the retrieval of essential substances from the filtrate back into the bloodstream. The proximal tubule, a site of vigorous reabsorption, reclaims the majority of filtered water, electrolytes, and solutes, setting the stage for the fine-tuning of urine composition in subsequent tubular segments. Specialized transport mechanisms orchestrate the reabsorption of glucose, amino acids, bicarbonate, and other solutes, ensuring their retention in the body.

Tubular Secretion: Tubular secretion complements reabsorption by facilitating the elimination of waste products and maintaining physiological balance. Active transport mechanisms in the renal tubules mediate the secretion of hydrogen ions, potassium ions, organic ions, and certain drugs into the tubular lumen, shaping the final composition of urine. This process

contributes significantly to acid-base regulation, electrolyte balance, and the excretion of metabolic byproducts.

Regulation of Renal Blood Flow: Renal blood flow, vital for ensuring adequate perfusion of the kidneys, is intricately regulated to maintain systemic blood pressure and renal function. Autoregulatory mechanisms, including the myogenic response and tubuloglomerular feedback, enable the kidneys to adjust vascular resistance and maintain a constant blood flow despite fluctuations in systemic pressure. Hormonal factors such as angiotensin II, aldosterone, and atrial natriuretic peptide exert profound effects on renal blood flow and glomerular filtration, contributing to blood pressure regulation and volume homeostasis.

In essence, renal physiology embodies a symphony of molecular and physiological processes meticulously orchestrated to maintain internal equilibrium. Understanding the intricate mechanisms governing renal function is essential for unraveling the pathophysiology of renal diseases and devising targeted therapeutic strategies aimed at preserving kidney health and overall well-being. This article aims to delve into the nuances of renal physiology, shedding light on the remarkable intricacies of kidney function and its pivotal role in sustaining life.

Certainly, let's delve deeper into the fascinating world of renal physiology.

Transport Mechanisms in Renal Tubules:

The reabsorption and secretion processes in renal tubules rely on a myriad of transport mechanisms orchestrated by specialized proteins embedded within the luminal and basolateral membranes of tubular epithelial cells. These transporters facilitate the movement of ions, solutes, and water across the tubular epithelium, contributing to the precise regulation of fluid and electrolyte balance. [1.117]

In the proximal tubule, sodium reabsorption serves as the driving force for the reabsorption of water and various solutes. Sodium transporters, such as the sodium-glucose cotransporters (SGLTs) and sodium-hydrogen exchangers (NHEs), actively transport sodium ions from the tubular lumen into the epithelial cells, creating an osmotic gradient that promotes the passive reabsorption of water and other solutes. Additionally, sodium reabsorption in the proximal tubule creates a negative luminal potential, facilitating the secretion of anions such as chloride and bicarbonate.

In the loop of Henle, sodium chloride reabsorption in the thick ascending limb is crucial for establishing the corticomedullary osmotic gradient, essential for water reabsorption in the distal nephron. Specialized transporters, including the Na-K-2Cl cotransporter (NKCC2), actively transport sodium and chloride ions from the tubular lumen into the epithelial cells, contributing to the generation of a hypertonic medullary interstitium.

In the distal tubule and collecting duct, fine-tuning of electrolyte balance occurs through the actions of aldosterone, antidiuretic hormone (ADH), and various ion channels and transporters. Aldosterone promotes sodium reabsorption and potassium secretion in the principal cells of the distal nephron, thereby regulating blood pressure and electrolyte balance. ADH, also known as vasopressin, increases water reabsorption in the collecting ducts by stimulating the insertion of aquaporin water channels into the luminal membrane, thereby concentrating urine and conserving water. [2.99]

Renal Regulation of Acid-Base Balance:

The kidneys play a pivotal role in maintaining acid-base homeostasis by regulating the excretion and reabsorption of hydrogen ions (H^+) and bicarbonate ions (HCO_3^-). Acid-base balance is tightly regulated through the coordinated actions of renal tubular cells and interstitial buffers, ensuring the maintenance of physiological pH levels. [3.65]

In the proximal tubule, bicarbonate reabsorption occurs through a series of enzymatic reactions involving carbonic anhydrase and bicarbonate transporters. Carbonic anhydrase catalyzes the conversion of carbon dioxide (CO_2) and water (H_2O) into carbonic acid (H_2CO_3), which then dissociates into bicarbonate ions and hydrogen ions. Bicarbonate ions are subsequently reabsorbed into the bloodstream, while hydrogen ions are secreted into the tubular lumen.

In the distal tubule and collecting duct, hydrogen ion secretion and bicarbonate reabsorption are regulated by the actions of intercalated cells. Type A intercalated cells secrete hydrogen ions into the tubular lumen via the activity of H⁺-ATPase pumps, contributing to urinary acidification. Conversely, type B intercalated cells reabsorb bicarbonate ions and secrete hydrogen ions into the bloodstream, thereby promoting systemic alkalinity.

Integration of Hormonal Regulation:

The regulation of renal function is intricately linked to hormonal signaling pathways that modulate renal blood flow, glomerular filtration, and tubular transport processes. Hormones such as angiotensin II, aldosterone, atrial natriuretic peptide (ANP), and parathyroid hormone (PTH) exert profound effects on renal physiology, orchestrating adaptive responses to maintain homeostasis in the face of physiological challenges. [4.82]

Angiotensin II, a potent vasoconstrictor, regulates renal blood flow and glomerular filtration by constricting the efferent arterioles, thereby increasing glomerular capillary pressure and promoting sodium reabsorption in the proximal tubule. Aldosterone, produced in response to angiotensin II and elevated plasma potassium levels, promotes sodium reabsorption and potassium secretion in the distal nephron, contributing to blood pressure regulation and electrolyte balance. ANP, released from cardiac atria in response to atrial stretch, counteracts the actions of angiotensin II by promoting vasodilation and inhibiting sodium reabsorption, thereby promoting natriuresis and diuresis.

In summary, renal physiology encompasses a myriad of intricate mechanisms that govern kidney function, ensuring the maintenance of internal equilibrium and systemic homeostasis. From the precise regulation of glomerular filtration to the fine-tuning of tubular reabsorption, secretion, and the integration of hormonal signaling pathways, the kidneys play a central role in sustaining life. A comprehensive understanding of renal physiology is essential for elucidating the pathophysiology of renal diseases and developing targeted therapeutic interventions aimed at preserving kidney function and improving patient outcomes.

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Rezyume: Maqolada buyrak fiziologiyasi tanadagi gomeostazni saqlash uchun muhim bo'lgan buyrak funktsiyasining asosiy mexanizmlarini o'z ichiga oladi. Ushbu sharh buyrak fiziologiyasini keng qamrovli ko'rib chiqishga qaratilgan bo'lib, uning asosiy jarayonlari, shu jumladan glomerulyar filtratsiya, quvurli reabsorbtsiya, sekretiya va buyrak qon oqimini tartibga solishga qaratilgan. Filtrlash bosimi, gormonal tartibga solish va quvurli transport mexanizmlari kabi turli omillarning murakkab o'zaro ta'siri buyrakning suyuqlik va elektrolitlar muvozanatini, kislota-ishqor muvozanatini va qon bosimini tartibga solishning ajoyib qobiliyatini tartibga soladi. Buyrak fiziologiyasini tushunish buyrak kasalliklarining patofiziologiyasini ochish va maqsadli terapevtik tadbirlarni ishlab chiqish uchun zarurdir.

Резюме: В статье Физиология почек включает основные механизмы функционирования почек, важные для поддержания гомеостаза в организме. Этот обзор посвящен всестороннему обзору физиологии почек с акцентом на ее основные процессы, включая клубочковую фильтрацию, канальцевую реабсорбцию, секрецию и регуляцию почечного кровотока. Сложное взаимодействие таких факторов, как давление фильтрации, гормональная регуляция и механизмы канальцевого транспорта, регулирует замечательную способность почек регулировать баланс жидкости и электролитов, кислотно-щелочной баланс и кровяное давление. Понимание физиологии почек необходимо для понимания патофизиологии заболеваний почек и разработки целевых терапевтических мер..

Kalit soʻzlar: Buyrak fiziologiyasi, glomerulyar filtratsiya, naysimon reabsorbtsiya, quvurli sekretsia, buyrak qon oqimini tartibga solish, nefron, tashish mexanizmlari, kislota-ishqor muvozanati, gormonal tartibga solish.

Ключевые слова: Физиология почек, клубочковая фильтрация, канальцевая реабсорбция, канальцевая секреция, регуляция почечного кровотока, нефрон, транспортные механизмы, кислотно-щелочной баланс, гормональная регуляция.

A CASE STUDY OF THE TAKHYATOSH THERMAL POWER STATION STRATEGIC APPROACH

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Summary: *The article discusses the progressive initiatives undertaken by the Takhyatash Combined Heat and Power Plant in Uzbekistan, aligning with the national Energy Strategy until 2035. The focus is on enhancing capacity and efficiency in the electric power industry post-2025. The importance of computer modeling for assessing steady-state conditions and supporting innovative circuit solutions is emphasized. Additionally, the article introduces the development of an intelligent software complex for managing technical objects at the plant, employing an iterative process for accurate modeling. Overall, the initiatives represent a proactive approach to address challenges in power generation, contributing to the broader discourse on optimizing efficiency and sustainability in the evolving energy landscape.*

Key words: *Energy Strategy, Electric power industry, Capacity enhancement, Computer modeling, Steady-state conditions, Circuit solutions, Intelligent software complex, Technical object management, Efficiency, Reliability, Sustainability, Power supply systems, Innovative development.*

As part of the implementation of the Energy Strategy of the Republic of Uzbekistan until 2035, the Takhyatash Combined Heat and Power Plant (CHPP) aims to develop its innovative potential, particularly focusing on the electric power industry. Post-2025, key measures to enhance capacity include extending the life of thermal power plants for optimal generating capacity and updating requirements for electrical equipment reliability, facility protection, and power supply backup. Emphasis is placed on integrating new technologies and circuit-technical solutions [1,2,3].

The operational efficiency of Takhyatash CHPP's power units is significantly influenced by the reliability of the power supply systems for their own needs (SN) in both long-term operational and emergency modes. Traditional SN power supply systems involve voltage regulation during stable operating conditions and backup power supplies to prevent interruptions. However, the introduction of backup supplies raises concerns about potential failures or erroneous actions leading to emergency shutdowns [4].

A crucial research task in designing and controlling electric power systems is the calculation of steady-state conditions. The adequacy of models depends on well-founded assumptions that simplify general equations, with a trend toward developing more accurate mathematical models. This applies to transformers at Takhyatash CHPP, which vary in functionality, connection diagrams, and design. Computer modeling becomes essential to comprehensively study operating properties, especially when introducing new circuit solutions [5,6].

Existing software systems for computer modeling, such as the interactive automated complex for analysis of steady-state conditions (DAKAR) [10], are primarily focused on traditional equivalent circuits. However, adapting these systems to support new circuit and technical solutions proposed in [11] is necessary to expand their capabilities for generating and solving equations of state.

The analysis underscores the justification for using computer modeling for steady-state modes of power plant units, particularly those with an additional working transformer for internal needs. This modeling approach provides an opportunity to identify operational features, especially in the presence of additional transformers. The article also introduces the development of a model for an intelligent software complex to coordinate the management of technical objects, exemplified by the Takhyatash CHPP.

In the process of developing the model, a method for working with requirements for computing systems is proposed, involving the identification of technical objects, development of use scenarios, establishment of functional and non-functional requirements, and recording these requirements in the specification. This iterative process ensures accurate and tailored modeling for the management of technical facilities at the Takhyatash CHPP.

In conclusion, the forward-looking approach adopted by the Takhyatash Combined Heat and Power Plant (CHPP) in Uzbekistan, as outlined in the article, reflects a commitment to advancing the electric power industry. The initiatives align with the overarching Energy Strategy of Uzbekistan until 2035 and emphasize the importance of innovative development, particularly in the context of power supply systems.

The article underscores the critical role of computer modeling in assessing steady-state conditions and justifying the feasibility of introducing new circuit solutions, such as an additional working transformer for the CHPP's own needs. Through a meticulous analysis of existing power supply systems and the application of adapted software systems, the article highlights the potential for enhancing operational efficiency while minimizing risks associated with interruptions and emergency shutdowns.

The need for continuous improvement is emphasized, with an iterative process involving real-time monitoring, documentation, training, and refinement of mathematical models. The example presented illustrates a practical implementation pathway, showcasing the integration of advanced technologies and methodologies to achieve a robust and reliable power supply system.

As the electric power industry continues to evolve, the experiences and lessons learned from the Takhyatash CHPP's endeavors serve as a valuable contribution to the broader discourse on optimizing power generation and distribution. The article encourages a holistic approach, combining technological innovation, mathematical modeling, and adaptive software solutions to address the challenges inherent in complex power systems.

In essence, the Takhyatash CHPP's initiatives exemplify a proactive stance toward the future, where the pursuit of efficiency, reliability, and sustainability remains at the forefront of endeavors to meet the growing energy demands of the Republic of Uzbekistan.

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Rezyume: *Maqolada Taxyatosh issiqlik elektr stansiyasi tomonidan 2035 yilgacha milliy energetika strategiyasiga muvofiq amalga oshirilayotgan ilg'or tashabbuslar muhokama qilinadi. Asosiy e'tibor 2025 yildan keyin elektr energetikasi quvvati va samaradorligini oshirishga qaratilgan. Stabil holat sharoitlarini baholash va innovatsion sxema echimlarini qo'llab-quvvatlash uchun kompyuter modellashtirishning ahamiyati ta'kidlangan. Bundan tashqari, maqola aniq modellashtirish uchun iterativ jarayonni qo'llagan holda zavoddagi texnik ob'ektlarni boshqarish uchun intellektual dasturiy kompleksni ishlab chiqish bilan tanishtiradi. Umuman olganda, tashabbuslar energiya ishlab chiqarishdagi muammolarni hal qilish uchun faol yondashuvni*

ifodalaydi va rivojlanayotgan energiya landshaftida samaradorlik va barqarorlikni optimallashtirish bo'yicha kengroq munozaraga hissa qo'shadi.

Резюме: В статье рассматриваются прогрессивные инициативы, предпринятые Тахьяташской ТЭЦ в Узбекистане в соответствии с Национальной энергетической стратегией до 2035 года. Основное внимание уделяется повышению мощности и эффективности электроэнергетики после 2025 года. Подчеркивается важность компьютерного моделирования для оценки установившихся режимов и поддержки инновационных схемотехнических решений. Кроме того, в статье представлена разработка интеллектуального программного комплекса управления техническими объектами предприятия, использующего итерационный процесс для точного моделирования. В целом, эти инициативы представляют собой активный подход к решению проблем в области производства электроэнергии, способствуя более широкому обсуждению вопросов оптимизации эффективности и устойчивости в меняющейся энергетической среде.

Kalit so'zlar: Energiya strategiyasi, Elektr energetikasi sanoati, Imkoniyatlarni oshirish, Kompyuter modellashtirish, Barqaror holat sharoitlari, Sxema yechimlari, Intellectual dasturiy kompleks, Texnik obyektlarni boshqarish, Samaradorlik, Ishonchlilik, Barqarorlik, Elektr ta'minoti tizimlari, Innovatsion rivojlanish.

Ключевые слова: Энергетическая стратегия, Электроэнергетика, Повышение мощности, Компьютерное моделирование, Стационарные условия, Схемотехнические решения, Интеллектуальный программный комплекс, Управление техническими объектами, Эффективность, Надежность, Устойчивость, Системы электроснабжения, Инновационное развитие.

ANALYSIS OF GROUND WATER SOURCES IN THE REPUBLIC OF UZBEKISTAN

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Summary: *Currently, there are significant changes in the climate of our planet and, as a result of this, changes in the water balances of various regions. In some places there are severe floods, while in others there is a lack of water resources. As a result of a decrease in the overall water inflow in the main rivers of Central Asia - the Amudarya and Syr Darya, in rural areas there is a large-scale transition to the use of groundwater both for irrigation and for domestic drinking purposes. In the practice of underground water use, in most regions of the Republic of Uzbekistan, less deeply buried groundwater (up to 10 m) often has low bacterial contamination and significant seasonal changes in quality. Poor quality drinking water can become a source of various infectious diseases.*

Key words: *water supply, ground sources, water resources, water quality, quality improvement.*

Introduction. According to hydrological experts from Central Asia, the following main types of surface water bodies are distinguished in the Republic of Uzbekistan: rivers receiving their water from glaciers, rivers fed by snow, streams supplied by groundwater, artificial irrigation canals, as well as run-of-river and bulk reservoirs. The composition of surface water depends on climatic and geomorphological factors (including topography and size of the basin), soil-geological conditions (the nature of soils and rocks), as well as agrotechnical and hydraulic interventions, agricultural and industrial development.

It should be noted that the hydrological features of the main rivers of Uzbekistan, associated with uneven water flows and a reduction in flow in recent years, high water consumption for irrigation of agricultural land, have led to a situation where the resources of most of the rivers flowing in the country have been almost completely used up. This, first of all, had an impact on the lower reaches, including even such large rivers as the Amu Darya and Syr Darya. As a result of this, the processes of drying up the Aral Sea and the spread of desert in the Aral region received new development.

Most surface water bodies exhibit high levels of suspended particles, organic compounds, and intense bacterial contamination. In recent years, especially in the lower sections of rivers and in areas of agricultural use downstream of large industrial cities, phenols, petroleum products, as well as increased levels of mineralization and water hardness are often found in the waters of surface reservoirs. In rural areas, surface water quality is deteriorating due to pesticides and mineral fertilizers used in agricultural production. Thus, the use of surface water as drinking water for the population is possible only after undergoing a complex and costly system of purification and disinfection at specialized water treatment facilities [5; 7].

There is a discrepancy between the quality of water in water supplies and established standards, which necessitates the need to improve this quality. To achieve a more acceptable state of natural water in the context of domestic, drinking and technical needs, a variety of special treatment methods are used. In order to improve the quality of drinking water and its purification in water supply systems, special complexes of treatment facilities are being implemented, combined into water treatment plants. These water treatment systems are designed to effectively remove a variety of contaminants from natural water sources before distributing them to the public and industries. High efficiency of operation of these treatment facilities is achieved through the use of modern and economically sound technological solutions. The basis for these solutions was the experience of existing systems and the introduction of modern and effective technical approaches, ensured by professional and qualified design.

In addition to surface water, groundwater can be sources of natural water. Groundwater includes perched water, groundwater, interstratal water, artesian water, fissure and karst water. The composition of groundwater depends on the factors influencing its formation.

It is known that according to most Uzbek [1; 2; 7] hygienists, deep pressure underground waters have significantly better organoleptic, chemical and sanitary-bacteriological characteristics compared to surface waters. However, less deeply buried groundwater, and especially groundwater that interacts with surface contaminants, is often characterized by increased mineralization and bacterial contamination, which necessitates the use of deep disinfection treatment.

As is widely known, water provided for public consumption must have a high degree of microbiological purity and be free from pathogenic microorganisms. In this regard, any water purification system used in water supply networks includes a disinfection stage in the last stage of the technological process. The selected method must be sufficiently effective to guarantee the achievement of quality standards for initial water contaminated with various types of microorganisms, in accordance with the requirements of sanitary norms, regulations and hygienic standards established in SanPiN of the Republic of Uzbekistan [3; 10].

It is important to consider that the effectiveness of the water disinfection process can be significantly influenced by parameters such as turbidity (transparency), color, the presence of organic compounds, the nature of microorganism contamination and its degree, as well as various sanitary and technological aspects. Consequently, in each specific case, the question of the correct choice of drinking water disinfection method is acute.

In the conditions of Uzbekistan, quality The abundance of groundwater varies significantly in different regions and depends on the hydrogeological conditions that influence the formation of specific underground aquifers [2]. Waters of shallower underground horizons (depth less than 100 m), the most frequently used and poorly isolated from surface runoff, with good physical characteristics, are characterized by relatively low bacteriological contamination and significant seasonal changes in quality. These features are especially pronounced in the case of groundwater. Spring waters, which are widely used by the rural population when available, usually have high organoleptic, chemical and bacteriological quality characteristics [3].

The ambiguous understanding of the provisions on groundwater in the republic emphasizes that many artesian wells are exposed to external pollution and, therefore, require sanitary disinfection. At the same time, the choice of disinfection method is determined by many variables and circumstances: the level of microbial contamination, the presence of impurities, the volume of water consumption, and so on. All these factors strongly call for a more in-depth analysis of methods and approaches to groundwater disinfection, taking into account their pros and cons, as well as the potential for providing drinking water supplies.

With information provided by the Uzsuvtaminot Joint Stock Company, at the moment about 69.7% of the population of the Republic of Uzbekistan have access to centralized sources of drinking water, while the remaining 30.3% are forced to turn to alternative sources. It is noted that the lowest rates of availability of centralized drinking water were recorded in several regions of the country, such as Kashkadarya region - 43.3%, Surkhandarya region - 58.6% and Jizzakh region - 58.7%.

People living in remote rural areas are forced to rely on alternative sources of water supply. However, the quality of water provided by these sources is often not guaranteed, unless drinking water is supplied by specialized transport. Poor quality drinking water can cause the spread of various diseases such as hepatitis, diarrhea and dysentery. In addition, the use of such water for domestic purposes can cause diseases of the mucous membranes and respiratory tract in humans. When designing a drinking water supply system for a rural population, using groundwater is often a more promising choice. However, due to the varied hydrogeological conditions in different regions of the republic, significant differences in the quality of groundwater are observed.

In light of the above, the problem of correct and efficient use of groundwater, as well as ensuring its epidemiological safety for the population and agricultural consumers, is currently becoming increasingly urgent.

Currently, 97 groundwater deposits have been identified in the Republic of Uzbekistan, the total productivity of which is 63.9 million cubic meters per day (which is 25% of the total water resources). Within this total volume, waters with mineralization not exceeding 1 g/l amount to 25.8 million cubic meters per day (corresponding to 40%) (Figure 1 and 2).

The distribution of underground fresh water reserves in the republic is uneven and is characterized as follows: 28% is in the Tashkent region, 14% in the Samarkand region, 13% in the Surkhandarya and Namangan regions, 12% in the Andijan region and 8% in the Fergana region. These groundwater reserves account for 67% of the total drinking water supply of the republic. In particular, the share of groundwater in the overall structure of water resource consumption is -29.1% in the Fergana region, -13.2% in the Namangan region, -10.8% in the Kashkadarya region, -11.5% in the Samarkand region and - 10.3% in the Tashkent region.

Groundwater is widely used in the agricultural and industrial sectors, the daily consumption of which is 18.6 million cubic meters (Figure 3).

According to environmental pollution monitoring data, the main sources of groundwater pollution are industry, the agricultural sector and utilities. The insufficient condition of surface water supply and drainage systems in a number of areas in our republic has led to an active rise in the level of groundwater.

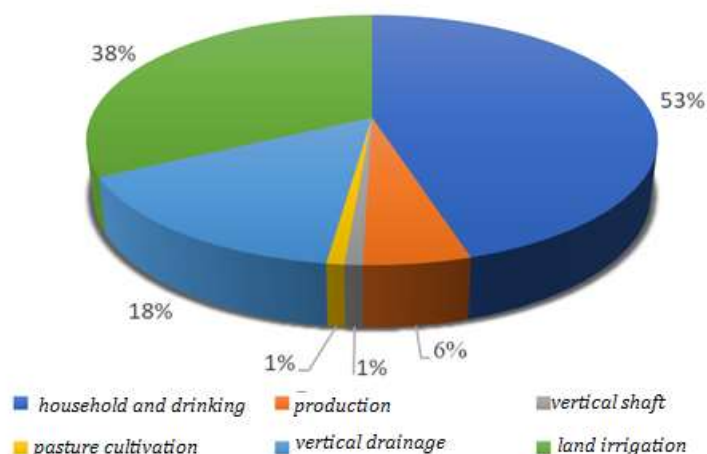


Figure 1. Distribution of water resources by consumer categories

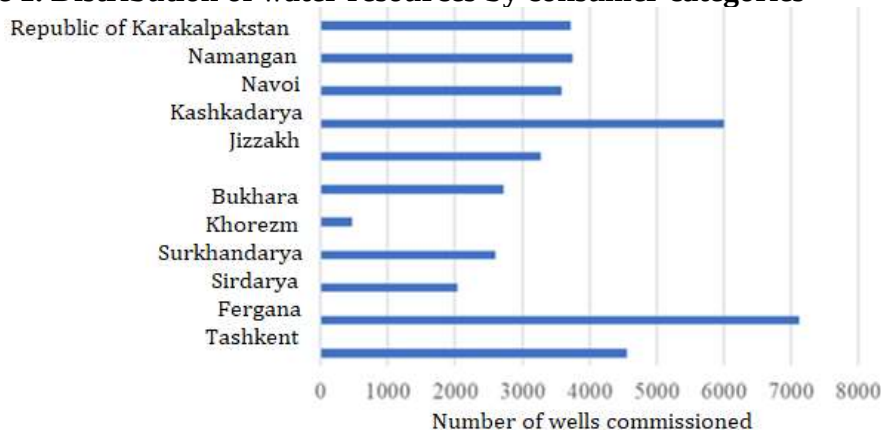


Figure 2. Distribution of commissioned water wells (50,839 pcs.) by region of the republic

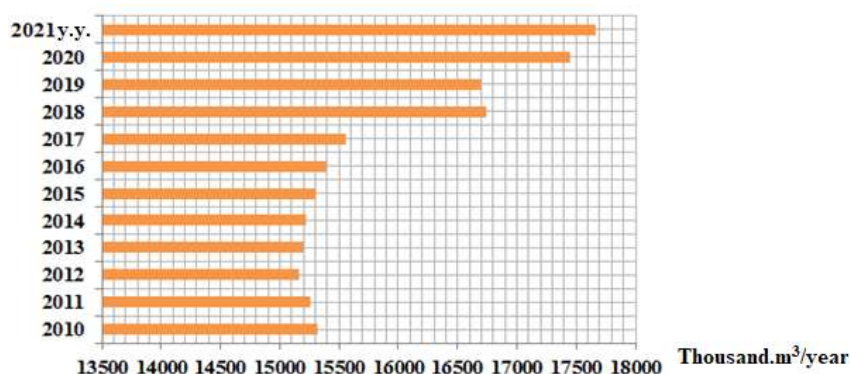


Figure 3. Dynamics of groundwater consumption in the period 2010-2022.

Together with the State Committee of the Republic of Uzbekistan for Geology and Mineral Resources, practical measures are being taken to strengthen control over the depletion and prevention of groundwater pollution, as well as monitoring environmental parameters in the area. An analysis of 3,886 underground wells used by enterprises revealed the following:

- 2472 wells (Republic of Karakalpakstan -11, Bukhara -1226, Jizzakh -237, Kashkadarya -44, Navoi -310, Namangan -3, Surkhandarya -438, Syrdarya -97, Fergana -16, Tashkent region -90) are operated without proper documentation ;

- 760 wells were drilled without preliminary geological exploration;

- 801 wells did not receive permission to drill;

- 2237 wells do not have technical passports;

- 1578 wells did not receive permission for water use;

- 112 cases: 63 in Jizzakh, 22 in Navoi, 27 in Syrdarya regions, drilling was carried out in violation of the law.

Despite the identified violations in terms of sanitary and hygienic standards, underground water sources still remain promising for organizing decentralized water supply to the rural population, when simpler methods of supplying and treating water for small groups of the population or objects are used.

Modern strategies to improve the quality of drinking water provided to the population include active measures to protect water sources from pollution and select the most reliable methods for treating and disinfecting drinking water, in accordance with sanitary legislation.

Depending on the quality characteristics of the source water and the required degree of its purification, underground water sources are classified into 3 classes (0)

Table 1.

Criteria for assessing the quality of underground water sources intended to provide water supply in accordance with classification

Indicator name	Water quality indicators		
	A	B	V
Permanganate oxidation, mg/l, no more	2,0	5	11
Koli-index, no more	3	100	1000
Fluorur, mg/l, no more	0,7	0,7	5
Ferrum, mg/l, no more	0,3	5	11
Color intensity, degrees, no more	20	20	30
Dihydrosulfide, mg/l, no more	absent	absent	3
Manganum, mg/l, no more	0,1	1	2
Acidity (pH)	6-9	6-9	6-9
Number of suspended particles (transparency), mg/l, no more	1,5	1,5	11

It has been established that it has been revealed that for each water source an individual optimized strategy for the water treatment process is applied, including the selection of the necessary chemical reagents. This choice is justified by a thorough analysis of previous technological research conducted in this area, or by analyzing the accumulated experience in operating similar engineering structures operating in similar climatic and geological conditions. This approach ensures the most effective removal of contaminants and sorption of harmful substances from water, optimizing the purification process taking into account the specific parameters of a particular water source. In particular, for Class I groundwater sources whose quality meets the standards established for drinking water, no additional treatment is required.

For groundwater water sources of the second class, where the water quality deviates according to certain indicators, the use of treatment methods such as aeration, filtration and disinfection is recommended. For groundwater water sources of the third class, whose quality requires bringing it to the level required for drinking water, along with the above methods, additional filtration with pre-sedimentation, the use of specific reagents or other more effective disinfection methods should also be applied.

If significant discrepancies are detected between the initial characteristics of water and the requirements for it within the above-mentioned quality classes, the provision of the opportunity to use this water is justified only if it has received prior approval from the competent authorities responsible for the field of sanitary and epidemiological control and supervision. This process implies the presence of reliable results, supported by specialized research, carried out in the field of technological efficiency, sanitary safety and hygienic suitability of the methods used to treat said water. From an epidemiological point of view, the safety of drinking water with regard to bacterial intestinal infections depends on indicators such as the total number of microorganisms per 1 ml of water (TMC) and the coli-bacteria index (coli-index). The TMC level in 1 ml of water should not exceed 100, and the coli bacteria index should remain below 3 (the number of *E. coli* in 1 liter of water) [3; 10].

Taking into account the urgent need to prevent water-borne diseases and ensure the preservation of public health, the drinking water treatment process undergoes a complex technological sequence, which includes several stages [6; eleven]:

1. Measures to improve the organoleptic characteristics of water;
2. Measures to ensure epidemiological safety;
3. Measures to regulate the ionic composition of water using specialized methods.

The classification of the main methods for improving the quality of drinking water is presented in the diagram shown in Figure 4.

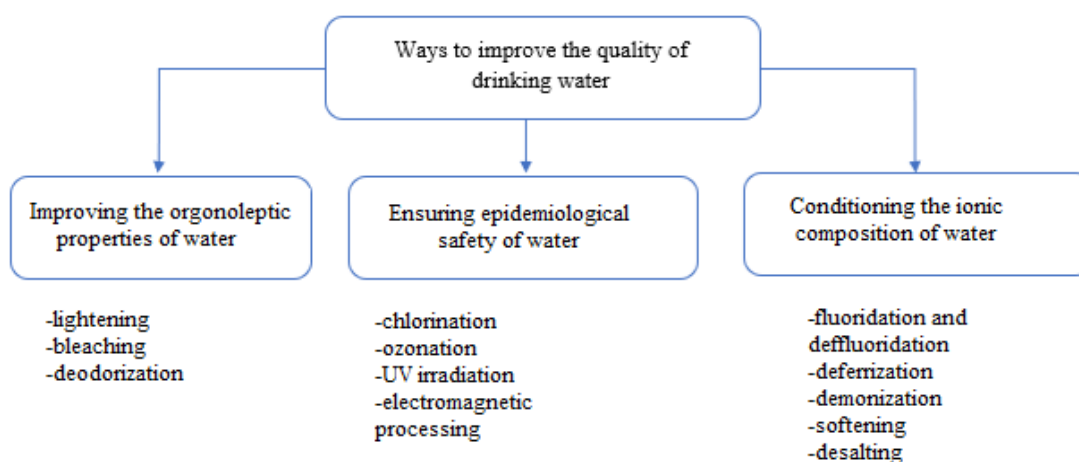


Figure 4. Classification of the main ways to improve the quality of drinking water

Determining the composition of the main structures of water treatment plants for the processes of clarification, disinfection and decolorization depends on the initial quality of water,

the volume of production of the station and local conditions [4; 10]. Combining all of the above methods of water treatment, when used for mass water consumption, as a rule, ensures an improvement in the organoleptic properties of water and its epidemiological safety. However, this does not always lead to the complete removal of specific chemical contaminants from drinking water. In this regard, many specialists [1; 2; 5; 7] focus on the “barrier” function of water treatment facilities.

All of the above confirms the possibility of a significant variety of technological schemes for processing groundwater, which can vary even within one region or region.

Conclusions

The most common methods and technologies of water treatment are considered - chlorination and ozonation. Their main advantages and disadvantages are noted: reliability and efficiency, large capital investments at the construction and commissioning stage; formation of harmful carcinogenic compounds in water, conflicting recommendations for specific doses of reagents, etc.

For these technologies to be profitable, a centralized water supply to the population is necessary, which is not feasible for remote agricultural areas or areas with dispersed populations.

The population of such regions is mainly provided with drinking water from ground sources. Their low pathogenic threat and acceptable organoleptic and physical properties predispose to the use of UV water treatment methods. It is worth noting that most of the wells were drilled and operated in violation of the law and without proper control from the country's responsible government bodies. Taking into account the trend of rising groundwater levels, the requirements for necessary disinfection are only becoming more stringent.

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Rezyume: Hozirgi vaqtda sayyoramiz iqlimida sezilarli o'zgarishlar ro'y bermoqda va buning natijasida turli mintaqalarning suv balansida o'zgarishlar ro'y bermoqda. Ba'zi joylarda kuchli suv toshqinlari sodir bo'lsa, boshqa joylarda suv resurslari etishmaydi. O'rta Osiyoning asosiy daryolari – Amudaryo va Sirdaryoda umumiy suv oqimining kamayishi natijasida qishloq joylarda yer osti suvlaridan ham sug'orish, ham maishiy ichimlik maqsadlarida foydalanishga keng ko'lamli o'tilmoqda. Er osti suvlaridan foydalanish amaliyotida O'zbekiston Respublikasining aksariyat hududlarida chuqurroq ko'milgan (10 m gacha) er osti suvlari ko'pincha bakterial ifloslanish darajasi past bo'lib, sifati sezilarli darajada mavsumiy o'zgarishlarga uchraydi. Sifatsiz ichimlik suvi turli yuqumli kasalliklar manbaiga aylanishi mumkin.

Резюме: Настоящее время наблюдается существенных изменения в климатах нашей планеты и как результат этого изменения водного балансов различных регионах. В одних местах отмечаются сильнейшие наводнения, а других недостаток водных ресурсов. Вследствие снижения общего притока воды в базовых реках Средней Азии - Амударья и Сырдарья, в сельской местности наблюдается масштабный переход к использованию подземных вод как для орошения, так и для хозяйственно питьевых целей. В практике подземного водоиспользования, в большинство областей республики Узбекистан, менее глубоко залегающие подземные воды (до 10 м) часто невысокой бактериальной заражённостью и значительными сезонными изменениями качества. Низкое качества питьевой воды может стать источником различных инфекционных заболеваний.

Kalit so'zlar: suv ta'minoti, yer osti manbalari, suv resurslari, suv sifati, sifatni yaxshilash.

Ключевые слова: водоснабжения, грунтовые источники, водные ресурсы, качество воды, улучшения качество.

METHOD AND ALGORITHM FOR ASSESSING THE EFFECTIVENESS OF ENERGY CONSUMPTION MANAGEMENT BASED ON ENVIRONMENTAL INDICATORS

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Summary: The article discusses the development of a method and algorithm for assessing the effectiveness of energy consumption management based on environmental indicators. It is known that environmental indicators are among the primary metrics for assessing the effectiveness of energy management by industrial enterprises. The environmental efficiency of energy consumers is primarily determined by evaluating CO₂ emissions into the atmosphere. A methodology is proposed for determining the total CO₂ value based on the summation of CO₂ emissions for each type of energy consumed during the processing or production of a product.

Keywords: emissions, energy efficiency, energy consumption management, production, technological process, quality of raw materials and resources, total volume of emissions, conversion factor.

Environmental indicators are among the primary metrics for assessing the effectiveness of energy consumption management by industrial enterprises. The environmental efficiency of energy consumers is mainly determined by evaluating CO₂ emissions into the atmosphere [1, 2]. The standard proportion of CO₂ in the air is 0.04%; at low levels, the necessary process of photosynthesis for plant development does not occur, while at high levels, excessive atmospheric warming occurs due to the “greenhouse effect” [3, 4]. Continuous monitoring of this indicator and the implementation of measures to reduce it are among the most important tasks in combating the threat of global climate warming.

In determining the volume of CO₂ emissions (M_{CO2i}), the emissions volume corresponding to the production of a unit of product (m_{0i}) is multiplied by the volume of gross product (M_i):

$$M_{CO2i} = m_{0i} \cdot M_i \quad (1)$$

The value of m_{0i} is calculated individually for each enterprise based on the technological process and considering the availability of fuel and energy resources. Initially, the energy resources expended per unit of product produced by the plant or processed raw material are studied. It is known that CO₂ emissions into the atmosphere occur only when coal or hydrocarbons are burned. Therefore, the value of m_{0i} is calculated and summed based on the amount of CO₂ emissions for each type of energy consumed in processing or manufacturing the product [5,6].

The largest volume of CO₂ emissions into the atmosphere is attributed to thermal power plants (TPPs) that burn coal, natural gas, and fuel oil, and these power plants produce a significant portion of the energy currently consumed by industrial enterprises. In this context, determining the indirect contribution of industrial enterprises to the greenhouse effect due to their consumption of electrical and thermal energy is an important task in the aspect of the project conducted by the author's team [7].

The volume of CO₂ emissions by thermal power stations can be determined as follows.

The share of produced electrical energy (k_{EE}), thermal energy (k_{IE}), and steam (k_S) relative to the total produced energy is:

$$k_{EE} = \frac{\frac{EE \cdot k_1}{\eta_{EE}}}{\frac{EE \cdot k_1}{\eta_{EE}} + \frac{HE \cdot k_2}{\eta_{HE}} + \frac{S \cdot k_3}{\eta_S}} \quad (1) \quad k_{HE} = \frac{\frac{HE \cdot k_2}{\eta_{HE}}}{\frac{EE \cdot k_1}{\eta_{EE}} + \frac{HE \cdot k_2}{\eta_{HE}} + \frac{S \cdot k_3}{\eta_S}} \quad (2)$$

$$k_{CS} = \frac{\frac{S \cdot k_3}{\eta_S}}{\frac{EE \cdot k_1}{\eta_{EE}} + \frac{HE \cdot k_2}{\eta_{HE}} + \frac{S \cdot k_3}{\eta_S}} \quad (3)$$

where EE represents electrical energy (kWh), IE represents thermal energy (kCal), and SB represents steam (tonnes). The conversion factors are k_1 for electrical energy from kWh to toe (tonne of oil equivalent), k_2 for thermal energy from kCal to toe, and k_3 for steam from tonnes to toe.

Knowing the CO_2 emissions for each resource consumed at the thermal power plant, the total volume of CO_2 emissions (m) can be calculated as follows:

$$m = G \cdot k_G^{CO_2} + C \cdot k_C^{CO_2} + M \cdot k_M^{CO_2} \quad (4)$$

The amount of CO_2 emitted into the atmosphere from the production of one unit of electrical energy (m_1), thermal energy (m_2), and steam (m_3) at a thermal power station (TPS) is determined as follows:

$$m_1 = \frac{m \cdot k_{EE}}{EE} \quad (2.22) \quad m_2 = \frac{m \cdot k_{HE}}{HE} \quad (2.23) \quad m_3 = \frac{m \cdot k_S}{S} \quad (5)$$

The specific amount of CO_2 corresponding to the production of the finished product is determined as follows:

$$m_0 = \frac{\sum m_i \cdot V_i}{M} \quad (6)$$

Here, V_i represents the volume of energy resources consumed; M refers to the volume of processed copper-molybdenum concentrate, in tons.

The total volume of CO_2 emissions is calculated based on the algorithm presented in Figure 1.

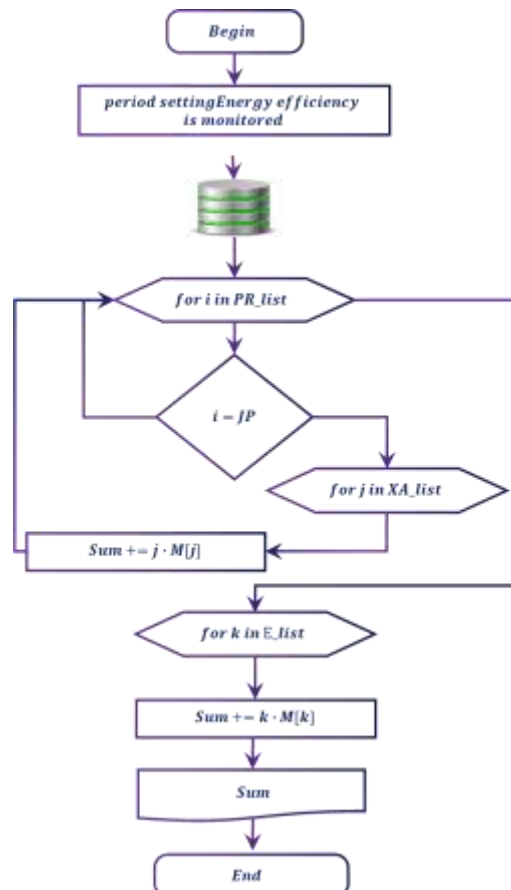


Figure 1. Algorithm for assessing the effectiveness of energy consumption management based on environmental indicators

The variability in the quality of raw materials and resources over different periods significantly complicates the task of calculating the amount of CO_2 emitted each month. Alongside well-organized energy conservation activities, it is advisable to establish a system at the enterprise to incentivize the reduction of CO_2 emissions into the atmosphere. To this end, it is necessary to

develop emission limits taking into account the regulatory value of CO₂ emissions. Based on this, emission limits for CO₂ were calculated in this study, demonstrating the feasibility of their practical application.

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Rezyume: Maqolada, ekologik ko'rsatkichlar bo'yicha energiya iste'molini boshqarish samaradorligini baholash metodi va algoritmini ishlab chiqish masalalari ko'rib chiqilgan. Ma'lumki, ishlab chiqarish korxonalarining energiya iste'molini boshqarish samaradorligini baholashda ekologik ko'rsatkichlar eng asosiy omillarda hisoblanadi. Elektr energiya iste'molchilarning ekologik samaradorligi asosan atmosferaga chiquvchi CO₂ chiqindi gazlarini baholash orqali aniqlanadi. Har bir energiya turi uchun, mahsulotni ishlab chiqarish yoki qayta ishlashda umumiy CO₂ qiymatini aniqlash usuli taklif etildi.

Резюме: В статье рассматриваются вопросы разработки метода и алгоритма оценки эффективности управления энергопотреблением по экологическим показателям. Известно, что экологические показатели являются одними из основных при оценке эффективности управления энергопотреблением промышленными предприятиями. Экологическая эффективность потребителей энергии в основном определяется путем оценки выбросов CO₂ в атмосферу. Предлагается методика определения общего значения CO₂ на основе суммирование по количеству выбросов CO₂ для каждого вида энергии, потребляемой при переработке или производстве продукта.

Kalit so'zlar: chiqindi gazlar, energiya samaradorligi, energiya iste'molini boshqarish, maxsulot, texnologik jarayon, xom ashyo va resurslar sifati, chiqindi gazlarning umumiy hajmi, o'tkazish koeffitsienti.

Ключевые слова: выбросы, энергоэффективность, управление энергопотреблением, продукция, технологический процесс, качества сырья и ресурсов, общий объем выбросов, переводный коэффициент.

**METHOD OF PHYSICAL MODELING OF THE WORKING PROCESS OF
AUTOMOBILE ROAD MACHINES FOR SOIL COMPACTION**

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Summary: *This article presents the basics of the mutual adaptation and modeling of the technological processes in the compaction of road surface soil with the working bodies of the roller in the natural object and the physical model. Probabilistic modeling, adaptation criteria, general stages of their determination, as well as their interrelationship through the calculation scheme and system of equations are also justified.*

Key words: *compaction machines, working body, interaction, modeling, adjustment criteria.*

In the development of the economy of Uzbekistan, along with all other sectors, the road network is of great importance. Because connecting sectors of the economic network directly with each other and establishing mutual cooperation, in turn, is closely related to the quality indicators of roads under construction, including such indicators as cross-country ability, stability, sustainability, load capacity and service resources.

Rapid reforms in the field of highways and the tasks to be implemented in this direction are also reflected in the development strategy of the new Uzbekistan for 2022-2026 [1.137]. The construction of nodes and elements of transport communications facilities requires a large amount of work. raw materials, building materials, machinery. - mechanisms, as well as devices and equipment are used. In particular, earth-moving, excavation and road-building machines are widely used at all stages of construction. [2.34-134]. Transport vehicles of this type differ from other machines and mechanisms in a number of technological and design features. The choice of machines according to the type of work, working conditions and productivity, their effective use leads to an improvement in the technical and economic indicators of the construction of transport communications facilities.

When interacting with the external environment, it is mainly the working parts of machines that work intensively. In this regard, components of work equipment must meet requirements such as reliability, durability, energy efficiency, resistance to wear and corrosion. In turn, this requires researchers to conduct theoretical and practical scientific research in this regard. In many cases, theoretical studies on the design of earth-moving and road-building machines, calculations of parts, assemblies and assemblies are carried out mainly on computers equipped with programming tools [3.76].

Carrying out this work on machines of large volume and size creates some difficulties: firstly, it takes a lot of time, secondly, it complicates experimental testing work, and thirdly, the volume of material costs increases.

The use of physical modeling methods in solving the mentioned problems, in studying the working processes of working parts of machines, as well as in conducting experimental tests leads to largely positive results. Research work in this direction is being carried out by the world's leading scientists [4.87,5.905,6.170, 7.77].

Earth-moving and road-building machines are used in different areas according to the type of work they perform, and compaction machines stand out among them by the technological processes they carry out in the soil layers of the road structure [8.205]. The main working part of machines of this type are rollers, which can be metal or pneumatic [9.46].

Road rollers are primarily machines designed to compact soils of highway road structures (soil, stone, gravel, crushed stone, asphalt concrete mixture) and provide compaction coefficient values for road building materials in each layer (base, road base, road surface). base and covering), as specified in the regulations, is required [10.131]. Because these values are directly related to permissible humidity values.

The values of these indicators make it possible to directly determine the parameters that ensure the strength, stability and load-bearing capacity of the soil of a road structure (Table 1).

Table 1: Soil compaction coefficients of road structures

Elements of the road surface	Layer depth from the coating surface, m	Lowest soil compaction coefficient by type of road surface					
		perfect			Lightened and transient		
		road-climate regions					
		I	II, IV	III	I	II, IV	III
Working level	up to	0,95-	1,00-1,02	0,98-	0,95-	0,98-	0,96-0,98 0,96
	H _{ит} +0,4	0,96		1,00	0,96	1,00	
	H _{ит} +0,4 – 1,5	0,95-0,96		0,96-0,98	0,95-0,98	0,96-0,98	
The waterproof part of the riser	1,5 - 6	0,95	0,96	0,94	0,95	0,94	0,94
The part of the riser that floods	1,5 - 6	0,95	0,98-1,00	0,97	0,95	0,98	0,98
The working layer below the seasonal freezing level of the carving	up to 1,2	-	0,95	0,95	-	0,95	0,95

The use of physical modeling methods in the study of working processes of compaction machines (gravity calculation, labor productivity, work cycle and operational indicators) and analysis of compaction criteria increases the efficiency of research in this direction. The classification of models used by purpose, description and nature is presented in Figure 1.

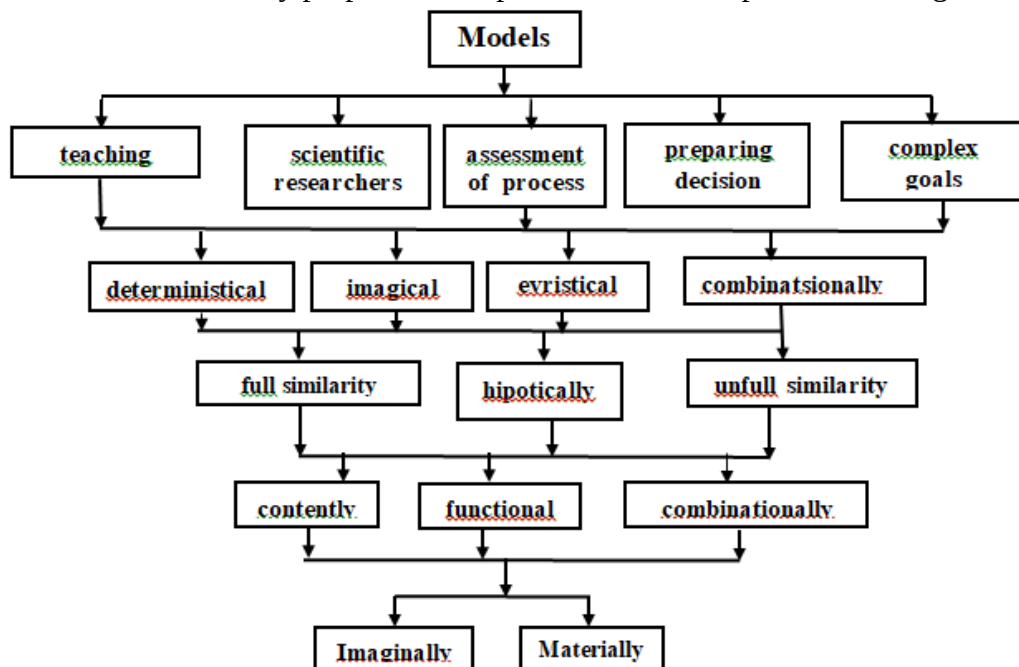


Figure 1. Classification of models according to their function, method of description, degree of similarity and nature

These modeling processes are carried out in the following sequence:

- application of an approximate probabilistic model when modeling processes;

- creation of a calculation diagram reflecting the process of interaction of the working parts of the machine (tooth, wheel, roller, cutter and hook) with the soil;
- bringing equations and formulas reflecting the technological process;
- similarity criteria are found using an integral analogue or other replacement methods;
- scaling equations are created;
- model parameters are determined.

The most common are three ways of forming similarity criteria.

- 1) method of equation analysis (integral-analog method of describing the process);
- 2) Method of analyzing the magnitude of quantities describing the process;
- 3) Method of analyzing the laws of technical mechanics (for technical systems).

In our task we use the second method.

When deriving the physical modeling equations, we use the coil circuit and traction force equations. The forces acting on the compaction machine in the general case are presented in Figure 2.

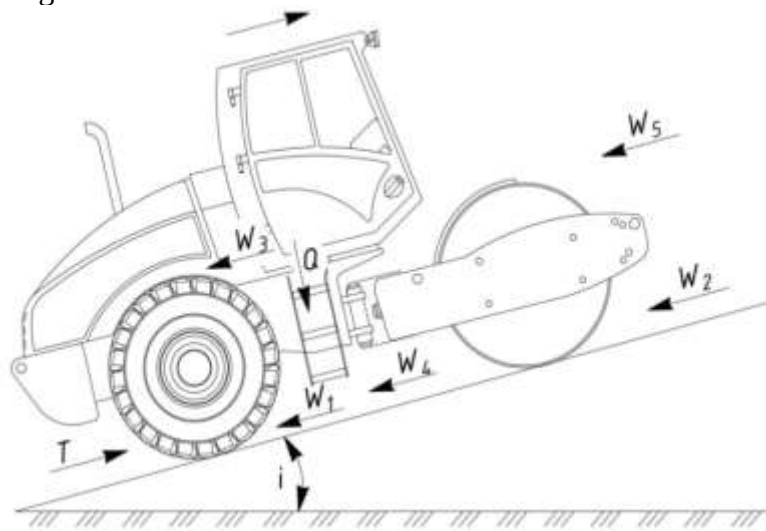


Figure 2. Scheme for compiling the gravitational balance equation

Let's get acquainted with the method of determining optimal parameters using the method of similar substitutions.

When determining the modeling equations and similarity criteria, we will use the expression for the traction force of the coil. In this case, we form a connection that defines the relationship between the main parameters of homogeneous technical objects.

$$T \geq W_1 + W_2 + W_3 + W_4 + W_5 \quad (1)$$

In turn, the force of attraction:

$$T = Q_{il} \cdot \varphi_{il} \quad (2)$$

where, Q_{il} - is the weight in which the reel is attached to the leading jacks, N;

φ_{il} -is coefficient factor of coated drive rollers.

W_1 -is represents the resistance of a coil moving along the road and is defined as follows:

$$W_1 = Q \cdot f \quad (3)$$

where, Q - is roller weight; f -is motion resistance coefficient, which significantly depends on the type of material being compacted and its condition, as well as other factors.

W_2 -is represents the value of increasing resistance and is determined by this formula:

$$W_2 = Q \cdot i \quad (4)$$

where, i -is road slope.

W_3 -is represents the resistance to overcoming the force of inertia during movement and is determined by the following expression:

$$W_3 = W_3' + W_3'' \quad (5)$$

where, W_3' -is resistance created by overcoming the inertia force when the coil mass moves;

W_3'' -is resistance created by overcoming the inertia force from rotation of the coil mass.

Take turns,

$$W_3'' = \frac{Q}{g} \cdot \frac{\nu}{t_t}, \quad (6)$$

where, $\frac{Q}{g}$ -is weight of roller, (kN·s²)/m;

$\frac{\nu}{t_t}$ -is roller acceleration, m/s²; ν -is working speed of the roller, m/s;

t_t -is travel time, s; t_t -is 2,0-2,5 s.

Since the speed of the engine roller is low, the amount of resistance arising from overcoming the inertia force from the rotation of the roller mass is not very large, therefore

$$W_3' = W_3'' \quad (7)$$

W_4 - is and resistance when processing old coating, and it is determined as follows:

$$W_4 = n \cdot F \cdot k \quad (8)$$

where, n -is number of operations;

F -is workable surface in the state loaded on the road surface, sm²;

k -is specific resistance in processing $k = 1,7-2,5$ kg/sm²;

W_5 -is the difficult position created by the rotation of the guide valets, the resistance to the rotation of the roller:

$$W_5 = k_1 \cdot Q_1 \quad (9)$$

k_1 -is experience coefficient, in softened crushed stone $k_1 = 0,3$;

when compacted crushed stone moves through rock $k_1 = 0,2$;

Q_1 -is corresponding to the guide shafts, the weight of the roller.

If we put all the given expressions of resistance into expression (1), then the following formula is formed.

$$T \geq Q \cdot f + Q \cdot i + \frac{Q}{g} \cdot \frac{\nu}{t_t} + n \cdot F \cdot k + k_1 \cdot Q_1 \quad (10)$$

Let us determine the number of similarity criteria using the following expression:

$$n_{cr} = n - n_{bum} \quad (11)$$

where, n -is number of common parameters defining the process;

n_{bum} - is number of basic units of measurement.

Units of measurement in the system (N, kN·s²)/m, m/s², m/s, s, sm², kg/sm²), $n_{bum} = 7$;

General parameters ($Q, f, T, i, \nu, g, t_t, n, F, k, k_1, Q_1$), $n = 12$.

So, for the situation under consideration, there should be five similarity criteria.

We divide the parameters in the expression (10) by one of them to form dimensionless complexes-similarity criteria.

$$T \sim Q \cdot f \sim Q \cdot i \sim \frac{Q}{g} \cdot \frac{v}{t_t} \sim n \cdot F \cdot k \sim k_1 \cdot Q_1 \quad (12)$$

$$\Pi_1 = \frac{Q \cdot f}{T}; \Pi_2 = \frac{Q \cdot i}{T}; \Pi_3 = \frac{Q \cdot v}{g \cdot t_t \cdot T}; \Pi_4 = \frac{n \cdot F \cdot k}{T}; \Pi_5 = \frac{k_1 \cdot Q_1}{T}. \quad (13)$$

Criterion indicators are created from the equality of the criterion of machine similarity - the connection of scales of values.

The standard criteria in similar machines are equal to one unit.

$$\frac{K_Q \cdot K_f}{K_T} = 1; \frac{K_Q \cdot K_i}{K_T} = 1; \frac{K_Q \cdot K_v}{K_g \cdot K_{t_p} \cdot K_T} = 1; \frac{K_n \cdot K_F \cdot K_k}{K_T} = 1; \frac{K_{k_1} \cdot K_{Q_1}}{K_T} = 1. \quad (14)$$

The machines in question operate under the same conditions and at the same speed f, i, v, g, t_t

n, k, k_1 the magnitude scale is equal to one unit $K_f = 1, K_i = 1, K_v = 1, K_g = 1, K_{t_p} = 1, K_n = 1, K_k = 1, K_{k_1} = 1$

Similarity scores reduced:

$$\frac{K_Q}{K_T} = 1, \frac{K_Q \cdot K_i}{K_T} = 1, \frac{K_Q}{K_{t_p} \cdot K_T} = 1, \frac{K_F}{K_T} = 1, \frac{K_{Q_1}}{K_T} = 1 \quad (15)$$

Now we connect the similarity criteria with the main technical parameters of the coils. To do this, we will compile a table of parameters related to compaction machines (Table 2).

Table 2. Main technical parameters of compaction machines

Calculated parameter	Defined parameter				
	P	D	L	n	v
Contact pressure	-	$k_1 \cdot D$	$k_2 \cdot L$	$k_3 \cdot n$	$k_4 \cdot v$
Diameter	$k_5 \cdot P$	-	$k_6 \cdot L$	$k_7 \cdot n$	$k_8 \cdot v$
Width	$k_9 \cdot P$	$k_{10} \cdot D$	-	$k_{11} \cdot n$	$k_{12} \cdot v$
Number of transitions	$k_{13} \cdot P$	$k_{14} \cdot D$	$k_{15} \cdot L$	-	$k_{16} \cdot v$
Frequency	$k_{17} \cdot P$	$k_{18} \cdot D$	$k_{19} \cdot L$	$k_{20} \cdot n$	-
Working speed	$v = \text{const}$				

This method is one of the simplest forms of physical modeling. The simple equations given above make it possible to determine the mathematical relationship between the parameters of homogeneous technical objects.

To determine the correlation between the main technical parameters (P, D, L, n, v) of compaction machines, it is necessary to refer to statistical data. Having determined the coefficients from the table (Table 2), you can find indicators of other technical quantities (power of individual units, mass of working units, overall dimensions of the coil and operating efficiency). This requires more research.

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Rezyume: *Maqolada avtomobil yo'l poyi gruntlarini katok ishchi organlari bilan zichlashtirishdagi texnologik jarayonlarni naturali obe'kt va fizik modeldagi o'zaro moslashtirish turlari va modellashtirishning asoslari keltirilgan. Shuningdek ehtimoliy modellashtirish moslashtirish mezonlari, ularni aniqlashning umumiy bosqichlari Shuningdek ehtimoliy modellashtirish, moslashtirish mezonlari, ularni aniqlashning umumiy bosqichlari, hisob sxema va tenglamalar orqali o'zaro bog'liqligi asoslab berilgan.*

Резюме: *В статье представлены виды взаимной подобии и основы моделирования, технологических процессов уплотнения грунтов земляного полотна рабочими органами катка в натурном объекте и физической модели. Также обосновано вероятностное моделирование, критерии подобии, общие этапы их определения, а также их взаимосвязь через схему расчета и систему.*

Kalit so'zlar: *зичлаштириш машиналари, ишчи орган, ўзаро таъсир, модллаштириш, мослаштириш мезонлари.*

Ключевые слова: *уплотняющие машины, рабочий орган, взаимодействие, моделирование, критерии подобия.*

**KEY MEASURES TO REDUCE ENERGY CONSUMPTION WITHOUT
COMPROMISING PRODUCTIVITY**

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Summary: This article addresses the main initiatives for reducing energy consumption without compromising productivity. It suggests dividing energy-saving measures at industrial enterprises into five principal groups. The calculated magnitude of electricity savings (plant-wide) that should be considered in the cost calculations of factory production should include reductions in electrical energy losses in transformers, converters, and within shop and factory networks up to the point of division with the power system networks. Since the costs of electricity, fuel, and raw materials are included in the costing at the prices at which they are released to the enterprise, it is natural that the effect of implementing measures, which reflects on the cost of production, can only be assessed based on tariffs.

Key words: productivity, electricity savings, energy efficiency, power factor, energy loss, specific energy consumption, cost of production.

Most measures to save electricity are inherently linked to the rationalization of existing technology and the introduction of new technologies, improving the organization of production, increasing the volume of products manufactured, and enhancing the quality indicators of their production. Clearly, in developing and implementing each measure for electricity conservation, the assessment and justification of their economic feasibility and efficiency should be performed only in conjunction with the entire complex of technological, energy, and organizational-technical factors. An incorrect assessment of the reduction in electrical energy costs as a result of implementing any given measure can lead to a distortion of the total cost magnitude and, consequently, to erroneous results [1].

For determining the feasibility of electricity saving measures, increasing the power utilization factor, and reducing electricity losses, outdated methods are often used. It is apparent that an assessment of measures based solely on the amount of electricity saved, without considering important factors such as changes in operating conditions and the capital expenses associated with the implementation of the measure, is flawed. Moreover, the absolute value of electricity savings cannot be a complete indicator of the effectiveness of the measure if it is considered in isolation from the operating mode of the equipment on which the measure is implemented, whether it is at maximum load or forced reduction due to restrictions from the power supply organization.

All electricity saving measures at industrial enterprises can be divided into the following groups [2, 3, 4]:

1. Measures to reduce consumed power.
2. Measures to reduce consumed energy without reducing productivity.
3. Measures to increase electricity (power) consumption and productivity.
4. Measures to increase productivity and consumed energy.
5. Measures to identify productivity without changing consumed power and energy.

These measures can be divided into two groups:

- a) measures not related to the volume of products manufactured;
- b) measures related to the volume of products manufactured.

In calculations related to increasing the power factor and reducing active losses in electrical machines and devices, the goal is to achieve a minimum of referred losses, i.e., a minimum of total active power losses in the electrical installations themselves and losses of active power in the power system networks caused by the reactive load of these machines and devices [5].

Referred losses cannot serve as a basis for assessing measures in conditions of a self-accounting enterprise, since it is known that only the energy directly consumed in the enterprise's energy management can be reflected in the technical-economic indicators of the enterprise.

Electricity savings in an industrial enterprise are achieved by reducing electricity losses in networks, devices, machines, and also by reducing the specific energy consumption per unit of product.

The annual electricity savings for a given technological unit, process, device, etc., can be determined from the expression:

$$W_{es} = (P_a - P_c) \cdot \tau = \Delta P_{es} \cdot \tau, \text{ kWh/year} \quad (1.1)$$

or

$$W_{\text{ЭК}} = (d_b - d_a) \cdot \Pi, \text{ kWh/year} \quad (1.2)$$

where, P_a , P_c – the average and consumed power, respectively, before and after the implementation of the measure;

d_b , d_a – specific electricity consumption per unit of product, respectively, before and after the implementation of the measure;

Π – productivity of units, machines, processes, etc., one year after the implementation of the measure;

τ – the number of operating hours per year.

The calculated amount of electricity savings (plant-wide) that should be considered in the cost calculations of factory production should include the reduction of electrical energy losses in transformers, converters, in shop and factory networks up to the point of division with the power system networks. The magnitude of this savings is:

$$W_{\text{ЭЭК}} = W_{\text{ЭК}} \frac{1}{\eta_3}, \Delta P_{\text{ЭЭК}} = \Delta P_{\text{ЭК}} \frac{1}{\eta_3}, \quad (1.3)$$

where, η_3 – the resulting efficiency of electricity transmission and conversion in the factory network from the point of energy reception to the point of division of the factory network with the power system network. Since the costs of electricity, fuel, and raw materials are included in the costing at the prices at which they are released to the enterprise, naturally, the effect of implementing measures, which reflects on the cost of production, cannot be assessed otherwise than by tariff.

The organization of energy conservation and enhancement of energy efficiency in industry is not only a relevant but also an extremely complex task. This complexity is due to the great diversity of enterprises in terms of both the nomenclature and volumes of products produced, as well as the specifics of each technological unit and process [7]. To this, one must also add the differences in the operating regime of each enterprise – around-the-clock continuous operation, operation with technological breaks, single-shift, and two-shift work modes. This explains the necessity to solve a number of tasks aimed at reducing energy consumption, which include a large complex of measures taking into account the characteristics of each electricity-consuming entity.

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Rezyume: Maqolada ish unumdorligiga ta'sir qilmasdan iste'mol qilinuvchi elektr energiyani kamaytirish bo'yicha asosiy chora-tadbirlar masalalari ko'rib chiqilgan. Ishlab chiqarish korxonalariga elektr energiyani tejash chora-tadbirlarini beshta asosiy guruhga taqsimlash taklif etiladi. Ishlab chiqarish mahsulotlarining tannarxini hisoblashda xisobga olinishi kerak bo'lgan elektr energiyani tejashning hisobiy qiymati (umumiy zavod uchun), transformatorlarda, o'zgartkichlarda, sex va zavod tarmoqlarining energotizim bilan taqsimlanish nuqtasigacha elektr energiya isroflarini kamayishini o'z ichiga olishi kerak. Chunki elektr energiya, yoqilg'i, xom ashyoga sarf harajatlar ishlab chiqarish korxonasi tomonidan belgilangan narxlarni hisoblashda hisobga olinadi. Mahsulotlar tannarxida aks ettirilgan chora-tadbirlarini amalga oshirilish samaradorligi tarifdan boshqacha tarzda baxolanishi mumkin emas.

Резюме: Вопросы основных мероприятий предлагается разделить мероприятия по которым они отпускаются предприятием которые отражаются на себестоимости продукции. Предлагается разделить мероприятий по экономии электроэнергии на промышленных предприятиях на пять основных групп. Расчетная величина экономии электроэнергии (общезаводская), которую следует учитывать при расчетах себестоимости заводской продукции, должна включать снижение потерь электрической энергии в трансформаторах, преобразователях, в цеховых и заводских сетях до точки раздела сетей с энергосистемой. Так как затраты на электроэнергию, топливо, сырье включаются в калькуляцию по ценам, по которым они отпускаются предприятию, естественно, что эффект от внедрения мероприятий, который отражается на себестоимости продукции, иначе, чем по тарифу, оцениваться не может.

Kalit so'zlar: unumdorlik, energiyani iqtisod qilish, energiya samaradorligi, quvvat koeffitsienti, energiya yo'qotishlari, energiyaning nisbiy sarfi, maxsulot tannarxi.

Ключевые слова: производительность, экономия электроэнергии, энергоэффективность, коэффициент мощности, потерь энергии, удельный расход энергии, себестоимость продукции.

ASSESSMENT OF THE STATE OF EARTH DAMS UNDER THE IMPACT OFFLOOD FLOWS

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Summary: *This article discusses the issue of water overflow through the crest of an operated earth dam. A risk reduction scenario has been developed on the example of the Langar reservoir.*

Key words: *Earth dam, safety, hydraulic structures, reservoir, category, flood.*

The possibility of possible accident and damage can be reduced or eliminated by regular monitoring of the technical condition of structures, implementation of measures to increase the safety of hydroelectric complex use, organization of reliable protection of the object, timely notification of residents and enterprises in the zone of impact of the rupture wave.

Due to the lack of safety category evaluation norms of hydraulic structures used in the development of safety declarations, the methods proposed in the 72nd Bulletin of the ICOLD Congress are being used for all hydraulic structures, including reservoirs, river hydroelectric complex, canals [1].

The analysis of the results of the research shows that the standards for evaluating the safety categories of the hydraulic structures in use require the development of standards for each hydraulic structures, i.e. reservoirs, river hydroelectric complex, canals and other structures based on their structural, design and operational characteristics.

Based on this, D.T.Paluanov [2] and F.A.Gapparov [3,4] used to assess the level of danger of hydraulic structures, based on the data of emergency situations observed in the climate change conditions and natural observations made in reservoir structures. taking into account risks and problems arising in the process of operation, the 72nd Bulletin of the ICOLD Congress made recommendations for making changes to the method of safety assessment of hydraulic structures.

The complexity of the assessment of the risk of accidents in earthen dams as a result of floods, as well as the degree of damage to them, depends on many factors, based on the characteristics that affect them. For example, the availability and completeness of primary data, soil properties, climate zone where structures are located, structural scheme and function of the object are characterized by the operation mode of the structure.

In practice, when assessing the safety level of earthen dams in use, scenarios are developed that can lead to catastrophic events [5,6].

Possible scenarios of possible emergency situations in the Langar reservoir are defined as follows: ensuring the safety of the hydroelectric system in compliance with the rules of use, earthquakes of great strength, leakage of filtration water on the ground due to damage to reverse filters or chemical suffusion, failure of the grout dam when water overflows through the top of the dam.

The calculated possible accidents will cause great damage to the residents and farms of Qamashi district. When the Langar reservoir earth dam breaks, 1,870 hectares of land will be flooded, and five settlements will remain in the flood zone. 5.4 km of highways, four road and one railway bridge, communication and electricity networks, irrigation and drainage networks will be destroyed.

Downstream of the operational water release and destructive water discharge facilities, the riverbed process, represented by the general subsidence of the bottom and the destruction (collapse) of the slopes, occurs in the Langar river bed. The river bed process really affects the stability of the structures above. The existing bed of the Langar river cannot exceed the estimated catastrophic discharge of 206 m³/s. Even when a flow rate of about 100 m³/s is transferred along the river, it floods the coastal lands and damages the structures.

Figure 1 below shows the scenario of possible catastrophic events in case of overtopping of the earthen dam of Langar reservoir under flood conditions.

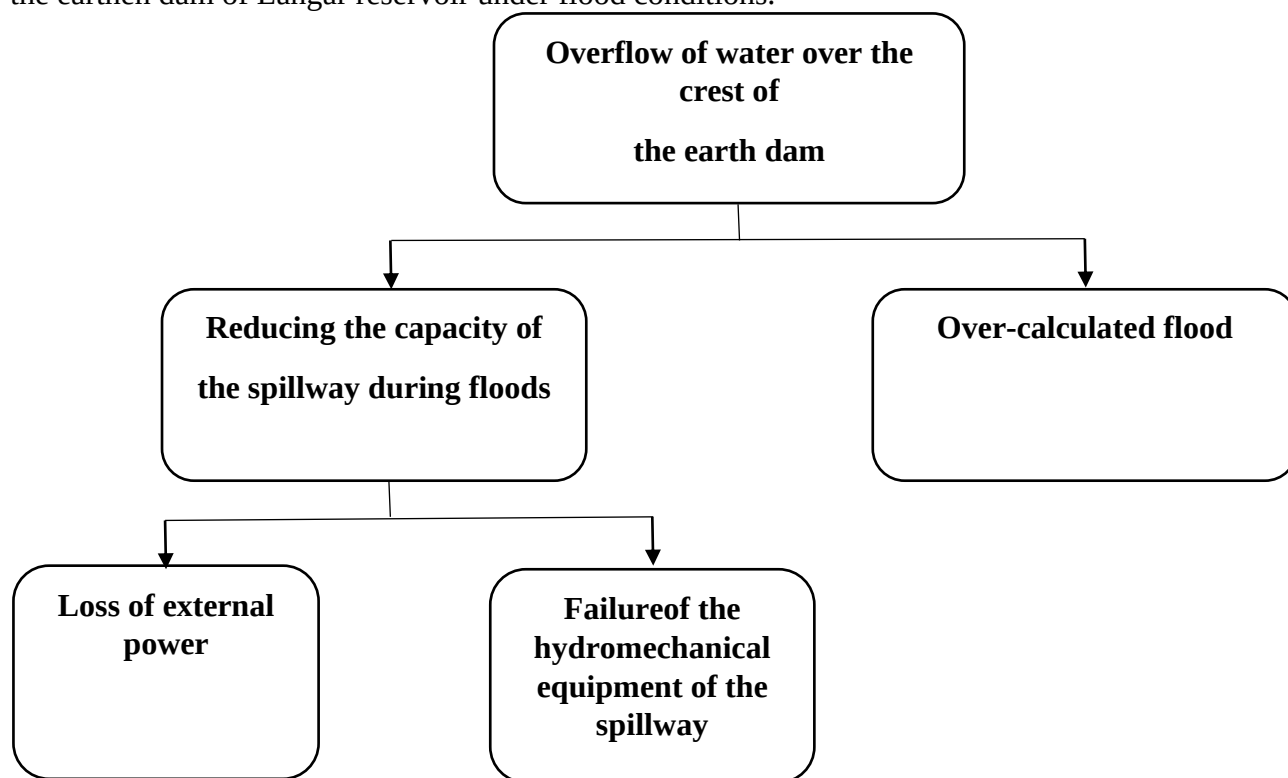


Figure 1. The scenario of occurrence of catastrophic events

In this scenario of overtopping of the Langar reservoir earthen dam, two catastrophic events are mainly considered in flood conditions, i.e., insufficient spillway capacity and excess of design capacity. In practice, during floods, a reduction in the capacity of the spillway and a relatively high flood occur at the same time and cause the water to overflow through the top of the earthen dam. This scenario does not take into account the situation of water overflow due to excessive subsidence of the earthen dam top, the reason for this is to ensure safety in the vertical subsidence of the earthen dam top according to the results of the calculations.

Interruption of the external power supply leads to the failure of the hydromechanical equipment in the water discharge facility, that is, failure to open and close the gates in time.

Thus, judging from the above, the following signs serve as diagnostic indicators of accidents as a result of water overflowing through the top of an earthen dam:

- water levels in reservoirs;
- subsidence of an earthen dam;
- condition of water disposal structures and their equipment.

Therefore, the construction of the scenario of possible occurrence of catastrophic events for hydraulic structures is an integral part of the stages of accident risk analysis and its assessment.

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Rezyume: Maqolada hozirgi kunda ekspluatatsiya qilinayotgan suv omborlari gidrotexnika inshootlarining texnik holatini tadqiq qilish natijalari masalalari ko'rib chiqilgan. Gidrotexnika inshootlarini ishlatish jarayonida ko'p yillik ekspluatatsiya davridagi turli ta'sirlar, loyiha, qurilish va ekspluatatsiya qilishdagi kamchiliklar natijasida suv omborlari va ularning gidrotexnika inshootlari ishonchliligiga ta'sir etuvchi omillar paydo bo'ladi. Suv omborlarini ishonchli ekspluatatsiya qilishga imkoniyat yaratuvchi asosiy mezonlar keltirilgan.

Резюме: В статье рассматриваются результаты исследования технического состояния эксплуатируемых гидротехнических сооружений водохранилищ. В процессе эксплуатации гидротехнических сооружений проявляются различные воздействия многолетней эксплуатации, недостатки в проектировании, строительстве и эксплуатации водохранилища и факторы, влияющие на надежность их гидротехнических сооружений. Приведены основные критерии, создающие надежной эксплуатации водохранилищ.

Kalit so'zlar: suv ombori, gidrotexnika inshootlari, ekspluatatsiya, tўg'on, filtratsiya, nasos stantsiya, nosozliklar.

Ключевые слова: водохранилище, гидротехнические сооружения, эксплуатация, плотина, фильтрация, насосная станция, неисправности.

**ENHANCING ELECTRICAL POWER EFFICIENCY THROUGH TECHNOLOGICAL
PROCESS MANAGEMENT AT INDUSTRIAL ENTERPRISES**

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Summary: *The article addresses issues of enhancing electrical energy efficiency through the management of technological processes at industrial enterprises, as well as the optimization of electrical load modes for energy-intensive units operating in various modes. Organizational measures to reduce energy expenditures are proposed. Research conducted using a systems approach allows the development of methods for optimizing electrical loads by establishing clear relationships between the operation of electric drives and their energy indicators.*

Key words: *technological process, operational mode, intermittent mode, continuous mode, mode optimization, electricity consumption, energy reduction, standardization, energy-intensive consumers*

Based on the results of conducted research and the analysis of operational materials for rational electricity consumption, the following tasks aimed at reducing energy costs can be formulated, covering virtually all industrial sectors [1,2]:

1. Rationalization of electricity consumption regimes with the following subtasks:
 - a) Reduction of energy costs in electrical power continuous and cyclic production processes;
 - b) The same for direct and indirect action electrical units, high-temperature and low-temperature, as well as continuous and cyclic electrothermal processes;
 - c) Reduction of energy costs during unstable operating modes of units (startup and shutdown);
 - d) Reduction of the power consumption of a unit during alternating operations at full power with modes of reduced load and idle running;
 - e) Reduction of the power consumption of a unit depending on the type of unit and the nature of the load changes, both linear and nonlinear.
2. Regulation of electrical loads at all production levels to reduce the "peak" load of the power system [3,4]:
 - a) Reduction of the "peak" load without additional capital expenditures and without reducing productivity;
 - b) The same, but with additional capital investments and reduced productivity;
 - c) Formation of cyclicity of technological processes to discretely align pauses with times of maximum load in the power system;
 - d) Creating conditions for stable operation of the electrical load regulation system.
3. Estimation of the forecasted reduction of "peak" power and the timing of its anticipation using technical control means:
 - a) Estimation of the forecasted amount of power reduction (theoretical forecast);
 - b) Estimation of the time to anticipate a 30-minute exceedance of declared power during peak hours of the power system.
4. Reduction of energy costs through the implementation of technological measures:
 - a) Optimization of technological parameters in electrical power processes;
 - b) The same, but in electrothermal processes.
5. Reduction of electricity losses in the power supply system, in machines and devices:
 - a) Reduction of electricity losses in the power supply system;
 - b) The same in electrical machines and devices, electrothermal units;
 - c) Optimization of the operating mode of devices compensating for reactive power.

6. Modernization and updating of machinery and equipment park to reduce energy costs:

- a) Modernization of the existing machinery and equipment park;
- b) Replacement of machines, mechanisms, processes with less energy-intensive ones.

7. Implementation of organizational measures to reduce energy costs [5,6]:

- a) Implementation of an automated system for accounting, monitoring, and managing the consumption of electricity, compressed air, water, gas, steam, etc.;
- b) Organization of collection and storage of statistical information on the dynamics of energy indicators;
- c) Development of standardization methods and organization of compliance monitoring.

Thus, the entire complex of research and implementation of energy-saving measures is reduced to solving 8 tasks, which in turn consist of 21 sub-tasks.

Optimization of electrical load modes of energy-intensive units operating in various modes.

Ensuring the minimum level of power consumption is one of the most important tasks when developing ESC and PEE technologies at industrial sites. It should be noted that the nature of power consumption is strictly governed by the technological regulations of the unit operating under both constant and variable load conditions. The complexity of solving this task is also due to the fact that in operating conditions there is a significant deviation of electrical loads due to random factors.

The use of a set of "standard charts" of electrical loads and their probabilistic characteristics does not provide the desired accuracy of calculating electrical loads and their optimization under the conditions of operation of industrial energy equipment, as the difference between calculated and actual loads reaches 200%.

Research conducted using a systems approach allows the development of methods for optimizing electrical loads by identifying clear dependencies between the operation of the electric drive and its energy indicators.

Below is a consideration of the solution to the posed problem under the most typical conditions of unit operation.

Continuous operation mode of the unit

This mode can be of two types:

- a) Continuous operation mode with constant hourly productivity;
- b) Continuous operation mode with varying productivity.

When units operate in modes a and b, the power consumption can be expressed by the following formula:

$$P = P_i + P_a + P_u, \quad (1)$$

where P_i is the idle power,

P_a is the power of auxiliary mechanisms,

P_u is the useful power of the unit.

In cases where the value of P fluctuates due to random factors, the average value P_{avg} is taken as the calculated load; the powers P_i and P_a can be assumed as constant quantities. An exception can be made for units whose P_i may undergo certain changes during the calculation period. An example of this can be cement tube ball mills, whose grinding bodies lose weight over time, thereby significantly reducing the idle power consumption.

Continuous operation mode of the unit with constant hourly productivity

In this mode, the consumed power P is practically unchanged provided that: $P_i = const$; $P_a = const$; $P_u = const$; $A = const$.

Under the condition $P_i = var$, and $P_a = const$, the resultant power over the calculation period changes within certain limits.

Continuous operation mode of the unit with varying productivity

In operational conditions, various disruptions in the rhythm of product feed, subject to processing, may occur, causing changes in productivity and, accordingly, consumed power. In this case, the nature of the change in consumed power can be expressed by formula (1).

Operation of the unit in a variable mode

Units may operate in several modes:

- 1) Alternation of maximum load with the complete shutdown of the unit,
- 2) Alternation of maximum load with the unit in idle mode,
- 3) Alternation of maximum and reduced loads.

In all modes, the average power is considered, which depends on the average productivity

$$P_{avg} = f(A_{avg}).$$

A special consideration in the calculation of consumed power in the unit when operating in these modes is given to the startup costs of the units, which in some cases constitute a significant portion of the overall electricity consumption [7]. The magnitude of startup costs (startup and shutdown mode) has a significant impact on the energy indicators of the unit, each having its unique characteristics. The magnitude of these costs is mostly determined experimentally and should be accounted for in the process of optimizing electricity consumption modes.

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Rezyume: Maqolada sanoat korxonalarida texnologik jarayonlarni nazorat qilish, shuningdek, turli rejimlarda ishlaydigan energiya sig'imi katta elektr yuklama rejimlarini optimallashtirish orqali energiya iste'moli samaradorligini oshirish masalalari ko'rib chiqilgan. Energiya xarajatlarini kamaytirish bo'yicha tashkiliy chora-tadbirlar taklif etilgan. Tizimli yondashuv yordamida olib borilgan tadqiqotlar elektr yuritma ish rejimi va ularning energiya samaradorligi o'rtasidagi aniq bog'lanishlarni aniqlashda elektr yuklamalarni optimallashtirish usullarini ishlab chiqishga imkon beradi.

Резюме: В статье рассматриваются вопросы повышения эффективности электропотребления с помощью управления технологическими процессами на промышленных предприятиях, а также оптимизация режимов электрических нагрузок энергоёмких агрегатов, работающих в различных режимах. Предлагаются организационные мероприятия по снижению энергозатрат. Исследования, выполненные с использованием системного подхода, позволяют разработать методы оптимизации электрических нагрузок при определении чётких зависимостей между работой электропривода и их энергетическими показателями.

Kalit soʻzlar: *texnologik jarayon, ish rejimi, doimiy boʻlmagan rejim, uzliksiz rejim, rejimlarni optimallashtirish, elektr isteʼmoli, energiya xarajatlarini kamaytirish, meʼyorlash, energiya sigʻimdor isteʼmolchilar.*

Ключевые слова: *технологический процесс, режим работы, прерывный режим, непрерывный режим, оптимизация режимов, электропотребление, снижение энергозатрат, нормирование, энергоемкие потребители*

DEVELOPMENT OF BETA-CAROTENE OIL EXTRACT PROCESSING TECHNOLOGY

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Summary: *There are two main sources of beta-carotene in this article. One is derived from synthesis, of course. At present, natural carotene production sources mainly include saltwater algae extraction (microalgae culture), plant extraction method, microbial fermentation and other methods. The establishment of the peak absorption spectra using spectrophotometric analysis shows that these carotenoids are represented by the base β -carotene.*

This oil can be fed directly in food as a salad additive, as a fat base for mayonnaise, for the preparation of functional mixtures and as a preventive product.

Key words: *Vegetable oils, beta-carotene oil, sunflower oil, pumpkin puree, Extraction of fat from puree, carotenoids, Extracts.*

Vegetable oils are an important component of food, a source of energy and plastic material for the human body, a supplier of a number of substances necessary for it (unsaturated fatty acids, phospholipids, fat-soluble vitamins, sterols), that is, they are indispensable nutritional factors that determine its biological effectiveness. In this respect, carotenoids also play an important role. Are fat-soluble provitamines involved in biochemical processes related to cell membrane activity. They are necessary for the growth and development of a person, the functioning of the mucous membranes, they are involved in the process of photoreception - the perception of light. At the same time, in most vegetable oils of industrial production and widely consumed (in addition to oils of rare fatty plants such as sea buckthorn oil), carotenoids and the amount of vitamin A produced from them are very small (unlike tocopherols).

Beta-carotene oil, as an ingredient in plants, has been used for centuries to acquire a yellow to orange color for food and cosmetics. Beta-carotene is perhaps the most popular of the carotenoids, the largest family of pigments produced by nature.

There are two main sources of Beta-carotene. One is derived from chemical synthesis and the other from natural substances. Currently, natural carotene production sources mainly include saline algae extraction (microalgal culture method), plant extraction method, microbial fermentation and other methods.

As raw materials-by extracting with organic solvents (such as petroleum ether, chloroform, ether, acetone, ethanol, etc.) using natural plants rich in carotene or their residues-carotene can be obtained. The extraction efficiency of different solvents is different. It is obtained by this method-carotene has such advantages as fast speed, no pollution, simplicity of the process, pure color and taste of the extract. Currently, many plants can be used as raw materials to obtain beta-carotene, such as carrots, palms, sea buckthorn, potatoes, corn, etc. However, due to the low active ingredients in raw materials and the high cost of production, it is difficult to produce on a large scale.

So, for example, sunflower oil has a carotenoid content of $0.42 \div 0.47$ mg%, cotton - $0.26 \div 0.28$ mg%, flax - $2.7-4 \div 3.6$ mg%. Our research has shown that when zucchini is fried in vegetable oil at a temperature not higher than 120°C , the oil improves slightly due to the passage of flavorings, fat-soluble vitamins and pumpkin pigments into its composition.



Organic beta-carotene oil is a red-brown liquid produced with micronization technology. Micronized beta-carotene crystals spread evenly in sunflower oil. DI-alpha-tocopherol is added as an antioxidant. Beta-carotene Crystal Blakeslea is obtained through a fermentation process using a mixed culture of two sexual mating types (plus) and (-) of Natural strains of *Trispora* fungus. Crystallized products consist mainly of trans beta-carotene. It is used as a coloring agent or nutritional supplement for fat-based foods such as margarine and soft capsule preparation.

Chemical formula: $C_{40}H_{56}$ molecular weight: 536.85 g. Product specifications

Absorption of light(in cyclogexane	Red-brown liquid
Maximum suction	At 453-457nm
Absorption at 340 nm	Less than or equal to 0.080
Heavy metals	Less than or equal to 10 ppm
Hook	Less than or equal to 3 ppm
Arsenic	Less than or equal to 1ppm
Cadmium	Less than or equal to 0.1 ppm
Mercury	Less than or equal to 0.1 ppm
Analysis	Greater than or equal to 30.0 percent
Total number of aerobes	Less than or equal to 1000cfu/g
Yeast and mold	Less than or equal to 100cfu / g
E-Coli	Less than or equal to 30 MPN/100g
Salmonella	Negative
Staphylococcus aureus	Negative

The good effect of pumpkin on fat during passivation is due to the composition and properties of pumpkin, in particular, the low content of macromolecular compounds with a high content of mono - and disaccharides, the less acidic (neutral) reaction (pH) of cell juice. ($6.4 \div 6.2$) compared to other vegetables (e.g. for potatoes, $\text{pH} = 4.8 \div 4.6$), high content of fat-soluble vitamins and pigments, specifically β -carotene. Studies show that with one use of refined cottonseed oil for frying zucchini (oil to pumpkin ratio 1:1), the amount of carotenoids in cottonseed oil increased from 0.271 mg% to $1.75 \div 2.19$ mg%, depending on the varieties. used pumpkin. At the same time, there are very small changes in the acid number of the oil (from 0.31 to 0.33 mg KOH / g), smoke point (from 230°C to 226°C), the composition of polymer compounds (from 0% to 0.84%).) and complex polar compounds (6.8% to 7.5%). It should also be noted that passivated zucchini, in comparison with boiled or steamed zucchini, for example, has a more delicate taste, nutritional value and energy value. Passionate pumpkin puree can produce a puree that is equally different from other types of pumpkin puree, with a longer shelf life due to its low moisture content (10%) and fat content (42%).

Such porridge can be recommended both for direct consumption and in the production of a wide range of foods as a food additive, for example, for bread and flour confectionery. However, when mashed flour is used in the production of confectionery products, carotenoids (in particular, β -carotene) flour dies under the influence of the alkaline environment of semi-finished products, since baking soda or ammonium carbonate are mandatory for them. recipe component and baking powder. In this regard, we studied the possibility of pre-extracting (extracting) β -carotene along with the fat contained in pumpkin puree porridge.

The extraction of oil from the puree was carried out in accordance with the generally accepted laboratory technique in the Soxhlet device. Oil ether was used as an organic solvent. Distillation of the organic solvent was also carried out according to the generally accepted method. The composition of carotenoids in the resulting fat (fat) was determined. And the dry residue in the filter (in the filter paper cartridge) was a powder that, after a little drying, the flour could be successfully used as a food additive in confectionery. Carbohydrates and other dry substances contained in such a powder help to save flour and sugar in the production of flour confectionery products.

When choosing a method for determining carotene in fat, the stability of carotenoids in relation to alkalis was used, that is, when the oil is cooled, the amount of carotenoids should not change. Twice 16% alcohol alkali (KOH) was added to the oil sample (25), and the mixture was heated at 50°C for 15 minutes. After soaping, the contents of the tube were diluted with water (125-150 cm³), and then carotenoids were separated with oil ether. The solution was processed four times with an oil ether until it completely lost its color. The extracts were combined and distilled in a small volume (12-15 cm³) in a slightly heated water bath, transferred to a 25 cm³ measuring flask and filled with oil ether to the mark. The method for detecting carotenoids in the extract has been accepted by colorimetric as the simplest and most reliable.

Detection was carried out on the FEK photoelectrochlorimeter. An aqueous solution of potassium bicromate was used as the standard solution, with a concentration of 0.04%, which corresponds to 5.36 mg of carotene per 1 liter of petroleum ether.

Studies have found that the oil from the puree contains 28-35 mg% carotenoids, depending on the pumpkin variety used. Establishing the highest absorption spectra using spectrophotometric analysis shows that these carotenoids are mainly represented by Brown b-carotene.

This oil can be used directly as a salad spoon in food, as an oily base of mayonnaise, for the preparation of functional mixtures, and as a preventive product.

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Rezyume: *Tadqiqotlar natijasida pyuresi tarkibidan olingan yogda ishlatiladigan qovoq naviga qarab 28-35 mg% karotinoidlar borligi aniqlandi. Spektrofotometrik tahlil yordamida eng yuqori yutilish spektrlarini o'rnatish shuni ko'rsatadiki, bu karotinoidlar asosan qovoq b-karotin bilan ifodalanadi*

Резюме: *В результате исследований установлено, что масло, полученное из пюре, содержит 28-35 мг% каротиноидов в зависимости от сорта используемой тыквы. Аппроксимация пиковых спектров поглощения с помощью спектрофотометрического анализа показывает, что эти каротиноиды представлены в основном β-каротином тыквы.*

Kalit so'zlar: *Qovoq pyuresi tarkibidan olingan yogda ishlatiladigan qovoq naviga qarab 28-35 mg% karotinoidlar borligi aniqlash.*

Ключевые слова: *Определение наличия 28-35 мг% каротиноидов в масле, полученном из тыквенного пюре, в зависимости от сорта используемой тыквы.*

THE IMPORTANCE OF USING THE SOLAR COLLECTOR IN HEATING SYSTEMS OF BUILDINGS

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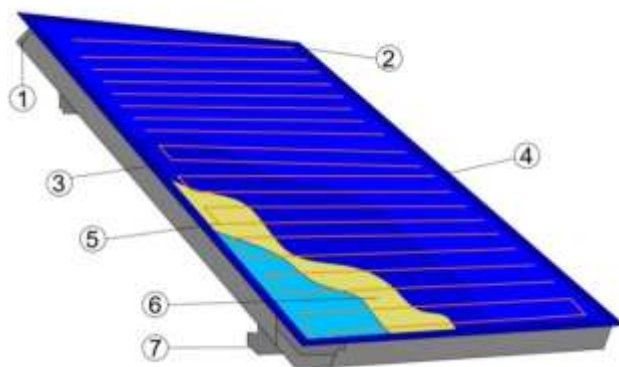
Summary. The article shows the possibilities of using a solar heat supply system in increasing the energy efficiency of heating systems of buildings, the importance of using solar heat supply systems, and the relevance of using renewable energy today.

Key words: energy saving, solar energy, solar collectors

INTRODUCTION. Currently, the most effective way to increase energy efficiency is to use solar collector systems integrated into this system, except for gas, coal and fire-powered boilers in the heating system. This, in turn, makes it possible to save up to 40-50% of organic natural gas, coal and other natural substances. As a result of increasing the share of renewable energy to 25% by 2026 in the New Development Strategy of Uzbekistan adopted at the initiative of the President, saving 3 billion cubic meters of natural gas per year, wide use of renewable energy sources in housing and communal economy, social network facilities and other areas and improvement of energy efficiency is envisaged [1].

In residential areas, 300-400 kWh of program energy is consumed per 1m² per year. By using a solar collector heating supply system, we can reduce it by two to three times. Another important aspect of this method is that the buildings do not have a continuous supply of fuel and energy. Its provision of solar collector heating systems creates a permanent operation mode. For example, solar devices work during the day, and automatically switch to the software system in cloudy and evening mode.

Flat collectors are the most preferred way for heating systems. Because they make it possible to heat the temperature of the heat carrier up to 60-80 degrees Celsius.



Picture 1. Structure of a flat solar collector

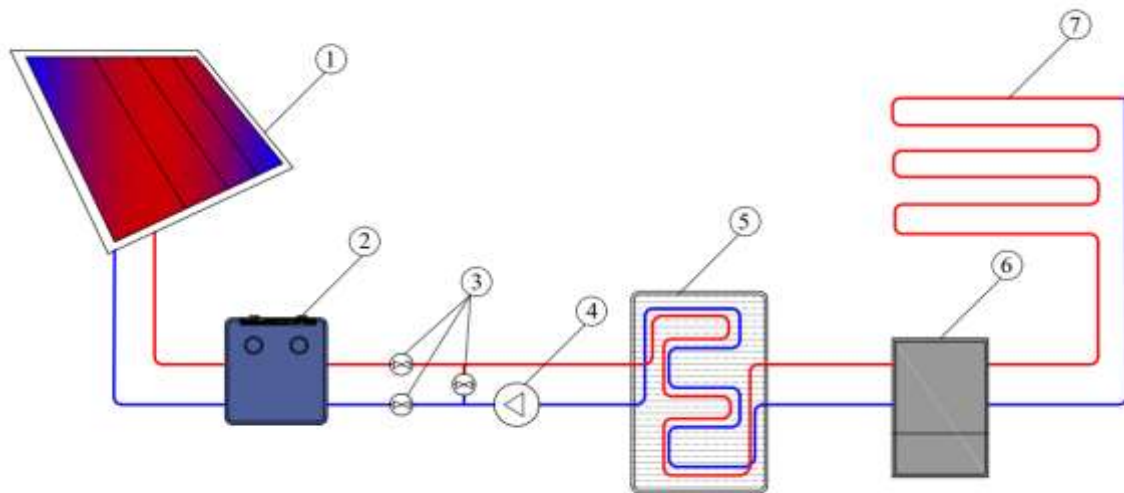
1-water inlet pipe;

2- window layer; 3-absorber; 4-aluminum frame; 5-copper pipe; 6-insulation layer; 7-water outlet pipe

In order to ensure the correct operation of the solar device, the specified conditions must be met. One of the most important ways for the system to be in working order is to periodically clean the panels that are exposed to the external environment. Before the start of the autumn-winter season, it is recommended to check and if necessary, replace the antifreeze in the initial circuit. When using small solar devices, (for example in private houses) the user should regularly perform technical inspections of the system.

In the winter mode, the solar collector and the electric boiler work together as part of the Solar Heating System (2-picture). The solar collector is the main source of heat energy for the heating system.

Solar heating system devices must be interconnected with an electric boiler with additional heat sources [6].



2-picture. Solar heating system of residential building

1-solar collector; 2-controller; 3-valve; 4-circulation pump; 5-tank accumulator;
6-heat generator; 7-“warm floor” heating system.

In heat mode, the heat generator (6) sends the heat carrier to the heating circuit. At the same time, the heat carrier from the solar collector (1) comes to the heat circuit and serves for its additional heating. The required temperature of the heat carrier in the heating system is brought to the norm in the heat generator. It should be noted that the main function of the system is performed by the heat generator, the solar collector performs an auxiliary function, the fuel consumed by the heat generator is saved with the help of the solar collector. The heated heat carrier is transferred to the heating system [7].

Solar radiation heats the non-freezing fluid circulating in the solar circuit. The power of liquid circulation in the system is provided by a 50W electric pump. The water circulation pump (4) works when the temperature in the accumulators (5) of water and heat exchange is below 80 degrees Celsius. In the system, the temperature heat carrier is controlled using a thermostabilizer (2) device in the confectioner, and when the temperature is below 40-45 degrees Celsius, it is turned off using the solar collector valve (3) and the heat generator performs the main function. Pipes made of copper are used in the system and in the solar collector, the liquid pressure in the circuit should be around 4-5 atmospheres. Heat from the solar collector is supplied to the heat exchange circuit of the tank and the heating system heats the water in the circuit.

Currently, there is no clear opinion about the use of solar collectors in heating systems. The main reason for this is that the temperature of the heat carrier in the heating systems of residential buildings should not be higher than 95 degrees Celcius, as indicated in paragraph 1 of Appendix 10 of the "Heating, ventilation and air conditioning" section of QMQ 2.04.05.97 and the temperature of the heat carrier in the return pipe is set to 70 degrees Celcius [7]. If the temperature of the heat carrier is lowered, the size of the heating devices will increase dramatically, as a result of which the costs will increase.

According to the above information, it seems that we cannot use a solar collector in the heating system of the building with radiators. Another main reason for this is that the water temperature is around 50 degrees Celsius as a result of the reduction in the efficiency of solar collectors in the winter season. This can only be used in the "warm floor" system. The temperature of the heat carrier in the "warm floor" system should not exceed 40-55 degrees Celsius. This, in turn, is sufficient to ensure that the temperature of the water in the "warm floor" heating system is at the required level of 35-45 degrees Celsius.

Calculation of the required power for heating is carried out using the following formula:

$$Q_{tn} = V \times T \times K, \text{ kcal/hour} \quad (1)$$

here:

V- the size of the heated rooms, m³

T- difference in temperature of the outside air and the air inside the heated room, °C

K-diffusion coefficient (depending on the type of structures and thermal insulation of the room).

The meaning of the coefficient K is chosen as follows:

-for a wall with a thickness of two bricks, K 1.0-1.9 when thermal insulation is average.

Preliminary data for determining the amount of heat capacity:

- heating area - 132 m², (3-picture);

- the height of the room is - 2,8 m;

- the number of floors is – 1;

- outside temperature in the winter season, -20 °C;

- the required temperature inside the room, +18 °C;

-the difference between external and internal temperatures in winter is T=38 °C.

If we put these data into the formula:

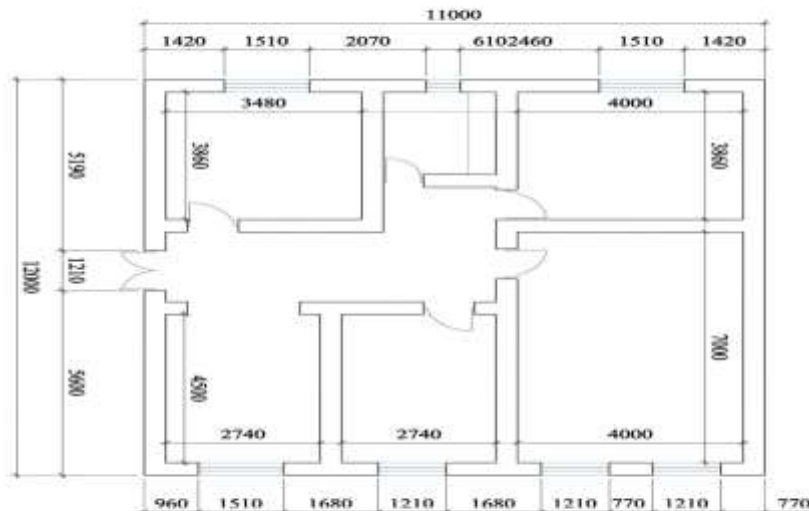
$$Q_{tn} = V \times T \times K = 132 \times 1 \times 2.8 \times 38 \times 1 = 14044,8 \text{ kcal/h}$$

If:

$$1 \text{ kvt} = 860 \text{ kcal/h}$$

Considering this, we determine the amount of the necessary heat capacity:

$$Q_{tn} = 14044,8 / 860 = 16,33 \text{ kW} \quad (1^*)$$



Picture 3. A one-story 5-room residential plan

Calculation of the required power of the solar collector to provide heating

As we know, it is possible to assume an average of 900 kW per square meter of solar collector area. The solar collector is surrounded by a special layer with an area of 2m² and a heat accepting coefficient of 0,95%. The back side of the collector is covered with wool 5 cm thick, the heat transfer coefficient of mineral wool is equal to 0,035 (W/m) Celsius. If the temperature difference between the surface side and the back side of the collector is equal to 50 degrees Celsius, the amount of energy lost per square meter is (0.035/0.05) × 50 = 35 W. Almost as much energy is

lost in the tubes and other sections on the sides of the collector. Taking this into account, we consider the heat loss in one collector as 100 W. Also, if we consider the heat loss on the surface of the collector as 100 W, we consider that 700 W/m² of heat is transferred from the surface of the collector. The heat capacity of water is equal to 4200 Dj/kg Celsius, the relationship between power units is 1 W×h = 3600 Joules, that is, 1,16 W of power is needed to heat 1 kg of water at a temperature of 1 degrees Celsius. Based on these indications, we calculate the conditional power value for a 2,42 m² solar collector:

$$Q_k = 2,42 \times 700 / 1,16 = 1206,9 \text{ W} \quad (2)$$

Based on the calculations, we choose the TPF 2510 solar collector (Table 1).

Technical characteristics of the TPF 2510 flat solar collector

TABLE 1

№	Terms	Indicator
1.	Gabarit size dimensions, mm	1988x104190
2	Collektor area, m ²	2,42
3	Absorber area, m ²	2,23
4	Heat carrier a scope, l	1,3
5	Weight, kg	44
6	Insulation	40 mm mineral cotton
7	Has a maximum working pressure, bar	10
8	Nominal permeability coeficienti, l/day	120

We calculate how many pieces of the collector, each with an area of 2,42 m², are needed to heat the building. We use the amount of power required for heating the building, which is calculated using (1*) -16.33 kW.

$$N_k = Q_{tn} / Q_c = 16,33 \text{ kW} \times 10^3 / 1206,9 = 12 \text{ pieces}$$

So, we need 12 TPF 2510 collector devices.

If the building is heated only with the help of solar collectors, the actual cost means the energy consumption of the electric pump (one 50 W) to ensure the forced circulation of the heat carrier with forced circulation in the system. If 12 TPF 2510 solar collectors (1.2 kWh each) are installed to heat the building, their electric pumps will receive 0.6 kWh of electricity per hour. We determine the amount of electricity consumed during the heating season (182 days) as follows:

$$Q_{col} = (24 \times 182) \times 0,6 = 2620,8 \text{ kW} \times \text{hour} \quad (3)$$

Electricity consumed during the heating season when the building is heated with an electric heater:

$$Q = Q_{tn} \times (24 \times 182) = 16,33 \times 24 \times 182 = 7132,9 \text{ kW} \times \text{hour} \quad (4)$$

Taking into account the consumption of 0,1-0,108 m³/h of gas for 1 kW×h of heat power, 671,33 m³ of gas is used for 7132,9 kW×h of heat power.

Electricity - requires 7132.9 kW×hour of power.

As a result of using the solar collector heat supply device, it builds 2620,8 kW×hours for one season of energy consumption (182 days). This requires the following amount of fuel consumption:

Gas – 208,51 m³;

Electricity – 2620,8 kW×h.

CONCLUSION. As can be seen from the calculations, the use of solar heating system in providing heat to our living space is 3 times more energy efficient than using only software heating system. Therefore, it is possible to save up to 69% of the amount of energy used in the heating system of our home during the heating season itself. The inclusion of a solar heating system in the heating system of residential buildings is sufficiently economical and reliable, and the investment costs for this purpose will be repaid within 3,5-4 years. In the heating system, it is advisable to use a thermal floor system in addition to the solar heating system. Also, the use of antifreeze as a heat carrier for the solar heating system is an effective method. Because antifreeze prevents the heating system from freezing during the cold days of the day.

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Rezyume: Maqolada isitish tizimlarini yanada rivojlantirish asosida quyosh energiyasidan foydalanish orqali energiyani tejash bóyicha ilmiy tadqiqotning maqsad va vazifalarini shakllantirish imkonini beradigan tadqiqot ishlarining bosqichi ko'rsatilgan. Bu bizga muhandislik tarmoqlarining yanada optimal tizimlarini yaratish imkoniyatini beradi.

Резюме: В статье представлен этап научно-исследовательской работы, который позволит сформировать цели и задачи научных исследований по энергосбережению за счет использования солнечной энергии на основе дальнейшего развития систем отопления. Это дает нам возможность создавать более оптимальные системы инженерных сетей.

Kalit so'zlar: energiya tejamkorlik, quyosh energiyasi, quyosh kollektorlari

Ключевые слова: энергетически эффективность, солнечная энергия, солнечный коллектор,

**METHODS OF AUTOMATIC VOLTAGE REGULATION IN THE NETWORK FOR
MANAGING INDUSTRIAL PROCESSES IN INDUSTRIAL ENTERPRISES**

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Summary: *The article discusses methods of automatic voltage control in the network for managing the technological process of industrial enterprises, particularly those with continuous production characteristics. Three main methods of voltage regulation are proposed: by changing the transformation ratio of transformers, using compensating devices, and altering network parameters. It is known that one effective means of voltage regulation is by adjusting the reactive power transmitted by the network. Reactive power is generated not only by power station generators but also by other sources: synchronous compensators (SC), synchronous motors (SM), capacitor banks (CB), static reactive power sources (SRPS), including STATCOM devices, thyristor compensating installations (TCI), and others.*

Keywords: *compensation, reactive power, voltage, regulation, transformer, capacitor banks, on-load tap changing, STATCOM, synchronous motors, autotransformer.*

The conducted research has revealed that due to the impact of external and internal factors during the setup of technological processes, there are technological pauses caused by the supply voltage not meeting the specifications required by the electric installation's documentation. Specifically, the variance in the supply voltage exceeds its permissible value ($\pm 5\%$ of the nominal voltage, U_n). To mitigate these interruptions and, consequently, prevent mass downtime affecting the productivity of the enterprise, electrical loads must be supplied from devices that provide voltage at the terminals within the allowable variation range [1,2]. This necessitates the use of centralized and local automatic voltage regulation devices in electrical networks. There are three primary methods of voltage regulation:

By changing the transformation ratio of transformers,

Using compensating devices,

By modifying network parameters.

Changing the transformation ratio is achieved by equipping transformers with additional (regulating) taps. Transformers with de-energized tap switching (DTS) do not allow for voltage regulation throughout the day, as this requires the transformer to be disconnected for each switch, which is operationally infeasible. Modern transformers with DTS allow for voltage adjustment within $\pm 5\%$ with steps of 2.5% from nominal. DTS devices are installed on transformers with capacities up to 630 kVA.

Transformers with on-load tap changers (OLTC) allow for voltage regulation without disconnecting from the network, thus avoiding interruption in power supply to consumers. OLTC devices are installed on powerful transformers with voltages above 20 kV. The voltage regulation range for OLTC transformers is from $\pm 10\%$ to $\pm 16\%$ with increments of 1.5 - 2.5% from nominal. However, transformers with OLTC have a more expensive and complex design [3,4].

Autotransformers regulate voltage either through taps on the high-voltage winding or by using a regulating winding at the line end of the medium voltage. Autotransformers are primarily produced with on-load tap changers (OLTC) on the medium voltage side. Such autotransformers are used for high power and high voltage applications. The regulation range on the medium voltage side is $\pm 12\%$ with 2% steps from nominal. When sufficient voltage regulation cannot be achieved using OLTC, linear regulators (LR) or series regulating transformers are used, which serve to regulate voltage and redistribute power flows in the lines. However, LRs are significantly more expensive

than OLTC devices, thus their use is limited. Voltage regulation can maintain it at the required level at the consumer busbars [5,6].

One effective means of voltage regulation is the adjustment of reactive power transmitted by the network. Reactive power is not only generated by power station generators but also by other sources: synchronous compensators (SC), synchronous motors (SM), capacitor banks (CB), and static reactive power sources (STATCOM, TCI, etc.). A synchronous compensator is a synchronous motor operating without load on the shaft. Unlike a generator, it does not have a primary engine. SCs cannot generate active power and consume energy from the network to cover their mechanical and electrical losses. When overexcited, SCs generate reactive power to the network, and when underexcited, they become consumers of reactive power. Voltage regulation using SCs is smooth [7]. Synchronous compensators are usually installed at powerful step-down substations and are connected to 6-10 kV buses or connected to the low-voltage winding of an autotransformer or the compensating winding of a transformer with OLTC.

Synchronous motors are widely used as electric drives for working mechanisms. While consuming active power, they can also generate reactive power (when overexcited) or consume it (when underexcited). SMs enable smooth, automatic voltage regulation in local networks. The cost of SMs is high, but lower than that of an asynchronous motor of the same capacity together with a compensating device that provides an equivalent voltage regulation effect.

Capacitor banks are used in cases where reactive power consumption is not required. Managed capacitor banks (MCBs) consist of a group of capacitors connected in series and parallel to achieve the required power and to connect at the specified voltage. MCBs are more economical than SCs. They are designed for large capacities (up to 100 MVar or more). Capacitor banks are installed at major substations and connected to both 6-35 kV buses and high voltage 110 kV buses [8]. The presence of a switching device in the capacitor banks allows for stepped voltage regulation at the consumer busbars, as it enables part of the parallel connected capacitors or the entire bank to be disconnected during reduced load and fully reconnected at maximum load.

Static sources of reactive power (STATCOM, SCU, TCI, etc.) have been increasingly used due to qualities such as the absence of rotating parts, high responsiveness, smoothness in voltage regulation, and generated reactive power, with minimal impact on fault currents, etc. However, schemes for regulating with capacitor banks are complex and thus the cost of the whole device is still significantly higher than that of other compensating devices of the same capacity.

It is known that voltage can be regulated within minor limits by changing the active and reactive resistances of the supply network. With several lines operating in parallel or during hours of minimum load when voltage losses decrease, one of the lines or transformers can be disconnected, leading to increased voltage losses in the supply network and, consequently, to a reduction in voltage at the consumer [9]. Despite its stepwise nature, this type of regulation increases the economic efficiency of transmission but can only be used if it does not reduce the reliability of the power supply.

Longitudinal capacitive compensation of the inductive resistance of transmission is possible by connecting a capacitive impedance in series with the line. With constant voltage at the supply end of the line, the voltage at the consumer will be higher with longitudinal capacitive compensation than without it, as this reduces the voltage losses on the reactive resistance of the line. Compensation is implemented by shunting the capacitor bank with a switching device. The degree of compensation on domestic power lines does not exceed 50%. Disadvantages of this method of voltage regulation include increased fault currents in the network, the possibility of overvoltages on capacitor banks, and the appearance of subharmonic oscillations up to subharmonic resonance under load impulses.

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Rezyume: Maqolada ishlab chiqarish korxonasining, ayniqsa uzluksiz ishlab chiqarish xarakteriga ega texnologik jarayonini boshqarishda, tarmoqdagi kuchlanishni avtomatik rostlash usullari kurib chiqilgan. Kuchlanishni rostlashning, jumladan, transformatorning transformatsiya koeffitsientini uzgartirish, kompensatsiyalovchi qurilmalar yordamida va tarmoq parametrlarini o'zgartirish orqali uchta asosiy usullari taklif etilgan. Ma'lumki, kuchlanishni rostlashning eng samarador usullaridan biri tarmoqdan berilayotgan reaktiv quvvatni uzgartirish hisoblanadi. Reaktiv quvvat nafaqat elektr stantsiya generatorlari tomonidan, balki sinxron kompensatorlar (SK), sinxron motorlar (SM), kondensator batareyalari (KB), statik reaktiv quvvat manbalari (SRQM), shu jumladan STATKOM qurilmalari va tiristorli kompensatsiyalovchi qurilmalari (TKQ) va boshqalarda ishlab chiqariladi.

Резюме: В статье рассматриваются способы автоматического регулирования напряжения в сети для управления технологическим процессом промышленных предприятий, в частности для предприятий с непрерывным характером производства. Предложено три основных способа регулирования напряжения: изменением коэффициента трансформации трансформаторов, с помощью компенсирующих устройств, изменением параметров сети. Известно, что одним из эффективных средств регулирования напряжения является изменение реактивной мощности, передаваемой сетью. Реактивная мощность вырабатывается не только генераторами электростанций, но и другими источниками: синхронными компенсаторами (СК), синхронными двигателями (СД), батареями конденсаторов (БК), статическими источниками реактивной мощности (ИРМ), к которым относятся и устройства СТАТКОМ, тиристорными компенсирующими установками (ТКУ) и др.

Kalit so'zlar: kompensatsiya, reaktiv quvvat, kuchlanish, rostlash, transformator, kondensator batareyalari, yuklama ostida rostlash, STATKOM, sinxron motor, avtotransformator.

Ключевые слова: компенсация, реактивная мощность, напряжение, регулирование, трансформатор, конденсаторные батареи, регулирование под нагрузкой, СТАТКОМ, синхронные двигатели, автотрансформатор.

BASALT DEPOSITS OF UZBEKISTAN AND THEIR TYPES

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Abstract: *The analysis of the current state of using local mineral resources in the industry of Uzbekistan shows that their utilization in the national economy is still not at the appropriate level. Their utilization mainly remains within the scope of construction materials. Despite the vast reserves of minerals such as basalt, kaolin, diabase, chamotte, and others, local producers limit themselves to the acquisition of imported industrial products. Therefore, significant importance is placed on the development of technology for obtaining industrial products of various purposes with high thermal and physico-mechanical properties based on local mineral raw materials. This article presents the results of scientific research on the study of local basalt minerals and the development of production technology based on them. In this regard, the conditions for the use of modern innovative technologies, theoretical justification for the selection of local raw materials, study of their inherent and mineralogical properties are presented. The technological processes and modes of material processing are analyzed, and the most important environmental and social issues related to the development of such valuable natural resources are discussed.*

Key words: *mineral extraction, basalts, melting, local raw materials, furnace, filter, microstructure, basalt wool, thermal insulation materials.*

Introduction: The comprehensive development of natural mineral resources, the development of rational technology for producing competitive industrial products, remains one of the pressing tasks of the global mining and metallurgical industry. Over the past 50 years, the world consumption of metal substitutes and paper substitutes obtained from natural mineral resources has increased 2-3 times, and refractory, composite, and acid-resistant materials have increased 2.5-3.8 times. Currently, in developed countries, the main directions of modern ore mining science include studying efficient ways of developing mineral resources, their processing, and implementing advanced technology in practice. Special attention is paid to the processing of natural mineral resources by the metallurgical industry. In recent years, Uzbekistan's demand for new, cheap, competitive products from local raw materials has grown, which is directly related to the expansion and development of mining and metallurgical and processing industries, mainly relying on widespread implementation of ore processing and beneficiation in practice. Basalt rocks are recommended for the production of new, alternative, environmentally friendly, and high-quality products. The growing demand for basalt products contributes to the improvement of comprehensive basalt processing and the production of various products based on specified parameters of the rock's chemical and physico-mechanical properties. In such conditions, solving the aforementioned problems becomes a highly relevant issue, requiring comprehensive studies of the properties and composition of basalts, aimed at further increasing the efficiency of using local basaltic raw materials, their enrichment, and the organization of production of new, high-quality, and environmentally friendly products. Special attention should be paid to the comprehensive study of the chemical and physico-mechanical properties and composition of rocks, the development of technology for cleaning basalt rock from sludges, hydroxides, salts (hereinafter referred to as sludges), typification and enrichment of basalts, as well as the development of modern production technologies for high-quality products. The purification, typification, and enrichment of basalts are highly demanded and allow the creation of new production technologies, such as electrical insulators of various potentials; tiles used in acidic environments; basalt filters for dewatering pulp for reuse of wastewater in water supply and filters for gas cleaning from dust in the mining and metallurgical industry. This contributes to increasing the production capacity of the enterprise, creating new technologies in the industry for the production of environmentally friendly products of various purposes, and additional jobs. In early literary sources, there is little information, in

particular, about basalt deposits in Uzbekistan. The only scientific source can be considered the work of Professor P.N. Venyukov of St. Petersburg University (Russia), which was published in 1885 under the title "On Some Basalts of North Asia" (modern Central Asia). Basalts are a set of formed silicate compounds: olivine, pyroxene, and plagioclase. The share of olivine in basalts varies within $11\div 21\%$, pyroxene - $19\div 29\%$, plagioclase - $31\div 61\%$, and sometimes their sum reaches $90\div 95\%$. These three components determine the structure, composition, physical, and other properties of basalt rock [1].

Olivine – $(\text{Mg,Fe})_2\text{SiO}_4$ mainly consists of MgO, FeO, Na_2O , and CaO, with a melting temperature reaching 1250°C ; pyroxene – $\text{R}_2[\text{Si}_2\text{O}_6]$, mainly consists of R – Mg, Fe, Ca, Al, and Na, with a melting temperature reaching 1450°C ; plagioclases – $\text{Na}[\text{AlSi}_3\text{O}_8]$, mainly consist of SiO_2 , Al_2O_3 , CaO, Na_2O , and impurities of K and F, occurring in two forms: albite – $\text{Na}[\text{AlSi}_3\text{O}_8]$ - with a melting temperature of 1250°C , and anorthite – $\text{Ca}[\text{Al}_2\text{Si}_2\text{O}_8]$, whose melting temperature can occasionally reach 1550°C [2].

Basalts in Uzbekistan are found on the earth's surface, at shallow depths, in the form of individual pieces, with an average diameter mostly ranging from $250\div 300$ mm. The volume of raw basalt reserves has not been fully explored. Basalts are mainly mined at the "Gavasay," "Aydarkul," and "Asmansay" deposits. The volume of basalt extraction and processing is approximately $25\div 30$ tons per day, which does not meet the requirements of the domestic market. The main products are heat insulation and insulation materials and Portland cement. Studies show that basalts often cause corrosion of pipelines when used as thermal insulation materials. In practice, after crushing, the rock is sent to the smelting furnace without removing impurities, which are thrown into the furnace along with the basalts. This results in the production of low-quality and highly hygroscopic thermal insulation material. Manufacturers do not consider factors such as: the grain or fraction composition of the rock; the content of dusty and clayey particles on the basalt, as well as weak rocks; the shape of basalt grains and the content of harmful impurities; the salinity of the soil at the location of the basalt deposit. Thus, it becomes evident that the quality of the rock, its composition, and properties are not the main criteria for product quality in organizing the production of various products. The analysis of the state of basalt processing enterprises is still insufficiently studied, and therefore, there are no development plans for production. Therefore, the development of an efficient and rational technology for the enrichment and processing of basalts is of scientific and practical interest, the fundamental factors of which are the specified parameters of the chemical-mineralogical composition, chemical and physico-mechanical properties of the rock, as well as the state of the enterprise [3].

To solve the set tasks, it is necessary to:

- study the current state of basalt mining, enrichment, and processing;
- conduct comprehensive studies of the chemical and physico-mechanical properties, as well as determine the chemical-mineralogical composition of basalts;
- study the process of cleaning basalt rock from sludges;
- establish criteria for typification of basalt rock from different deposits;
- select optimal technological parameters for the enrichment and sorting of basalts (crushing, screening, washing, grinding, roasting, and magnetic separation);
- study the reasons for the low productivity of equipment, melting processes, fluidity of molten basalts, and develop an optimal technology for obtaining products;
- study the physico-chemical and dielectric properties of basalts and develop a technology for producing electrical insulators of different potentials and acid-resistant tiles;
- study the processes of filtration through basalt filters of pulp and gases for phase separation in reaction environments for the mining and metallurgical industry and develop recommendations for their use.

The regularities of changes in the physico-chemical properties of basalts depending on the chemical and mineralogical composition were studied using samples from the "Aydarkul,"

"Gavasay," and "Asmansay" deposits. The technological characteristics of basalts were obtained through gamma spectrometric, microscopic, and chemical analyzes.

Gamma spectrometric analysis allowed determining the activity of rock samples per unit mass. The analysis showed that the specific effective activity of natural radioactive elements in basalt is (Bk/kg): "Aydarkul" deposit – 251, "Asmansay" – 312, and "Gavasay" – 202, which corresponds to the sanitary norms of 370 Bk/kg according to SanPiN-0193-06.

The chemical composition of basalt rock from all three considered deposits has been investigated. Chemical analysis of basalt rock samples, taking into account moisture and weight loss upon ignition, allowed determining the content of oxides: silicon, aluminum, titanium, calcium, iron, magnesium, potassium, sodium, total sulfur, and sulfate sulfur. The results of the study showed that the silicon dioxide content in basalt samples from the "Aydarkul" deposit reached 50÷60%, compared to 47.0÷53% in other basalt deposits worldwide; magnesium oxides - up to 5%, compared to 10%; calcium – 15%, compared to 3%; sodium oxides - 3.6%, compared to 3% and iron - 7.37%, compared to 9%, etc.

In the composition of basalt rock from the "Aydarkul" and "Asmansay" deposits, significantly high contents of such chemical components as SiO₂, CaO, Al₂O₃ were identified. However, in the basalt from the "Aydarkul" deposit, components such as MnO₂, FeO, Fe₂O₃ are found in a lower percentage compared to "Asmansay". Noticeably high contents of chemical components such as SiO₂, CaO, Al₂O₃ were identified in the basalt rock composition of both deposits.

It is noted that calcium oxides, magnesium, and iron oxides contribute to reducing viscosity and improving the crystallization ability of melts. In case of reduced silica content (less than 42%), the melt has reduced viscosity, and upon cooling, it solidifies rapidly with the formation of a glassy microstructure and the appearance of cracks [4].

The dissertation provides comparative indicators of the chemical composition of Uzbekistan's rock samples with other basalts. The melting temperature of basalt from the "Aydarkul", "Gavasay", and "Asmansay" deposits, which differ by 200 to 250°C, has been determined. It was established that the higher the content of SiO₂, TiO₂, and MgO in basalt, the higher the melting temperature.

Overall, it has been revealed that the percentage ratio of oxides in basalt composition can affect its physico-chemical and mechanical properties, namely: electrical conductivity, resistance to corrosion and chemical reactions, refractoriness, and melting temperature, which are significant factors in production.

In all examined samples of basalt rock from the "Aydarkul" deposit, using the semi-quantitative spectral analysis method, no elevated content of elements such as Zn, Cd, Ag, Bi, Ge, Sb, W, Sn, In, As, and P was detected, while in the basalt from the "Asmansay" deposit, elevated or near-clark content of the above-mentioned elements was observed. It was also noted that in basalt rocks, particularly prominent are the bonds between Al, Fe, Mg, K, N, Ti, and Si with oxygen. The oxygen bonds with metal chemical elements form oxides, which, in general, constitute the basis of the silicate compound of basalt. As the main part of basalt consists of SiO₂, a significant portion of silicon-oxygen bonds is allocated in such a cohesive structure. Figures 1 and 2 depict the microstructure of basalt from the "Aydarkul" and "Asmansay" deposits. Basalts from the "Aydarkul" deposit manifest as rare and fine-porphyrific rock with an aphyric, allotriomorphic granular structure. Basalts consist of approximately equal amounts of perfectly irregular plagioclase and pyroxene grains, optically close to diopside-augite C:Ng = 36÷430. The grain sizes of plagioclase, in the main mass, do not exceed 0.01 mm, and in very rare porphyritic areas - 0.5÷0.7 mm. Augite crystals are more isometric compared to elongated plagioclase grains. They form small tabular crystals, the sizes of most of which in the main mass of the rock do not exceed 0.01 mm. Individual areas in the rock are occupied by larger augite crystals, forming small porphyritic segregations, the sizes of which reach up to 0.5÷0.7 mm.



Fig. 1. Microstructure of basalt from the "Aydarkul" deposit: a) fine-porphyritic, b) aphyric, c) twisted structure (crossed nicols, magnification 150x).



Fig. 2. Microstructure of basalt from the "Asmansay" deposit: left polarized, right transmitted light (magnification 150x).

The conclusions drawn from the study of the chemical composition and mineralogical composition of the basalt deposits from "Aydarkul" and "Asman-Sai" allow for several significant statements.

1. Chemical Composition and Its Influence:

- The high content of calcium oxides, magnesium, and iron oxide contributes to reducing viscosity and improving the crystallization ability of basalt melts.
- The silica oxide plays a key role in determining the melting temperature of basalt. Higher silica, titanium dioxide, and magnesium oxide content results in a higher melting temperature.

2. Mineralogical Composition:

- The presence of olivine, pyroxene, and plagioclase minerals in varying proportions affects the physical and chemical properties of basalt.
- Basalt from "Aydarkul" and "Asmanyay" deposits show differences in their mineralogical composition, with varying proportions of olivine, pyroxene, and plagioclase minerals.

3. Implications for Processing:

- Understanding the chemical composition is crucial for determining the processing regime of basalt.
- Basalts with lower Al_2O_3 , Fe_2O_3 , and TiO_2 content and higher MnO_2 content exhibit better insulating properties. Therefore, selecting basalts with specific chemical compositions is recommended for the production of electrical insulation materials.

In summary, the chemical and mineralogical composition of basalt significantly influences its properties, including its melting temperature, viscosity, and insulating properties. This knowledge is essential for selecting suitable basalt for various industrial applications.

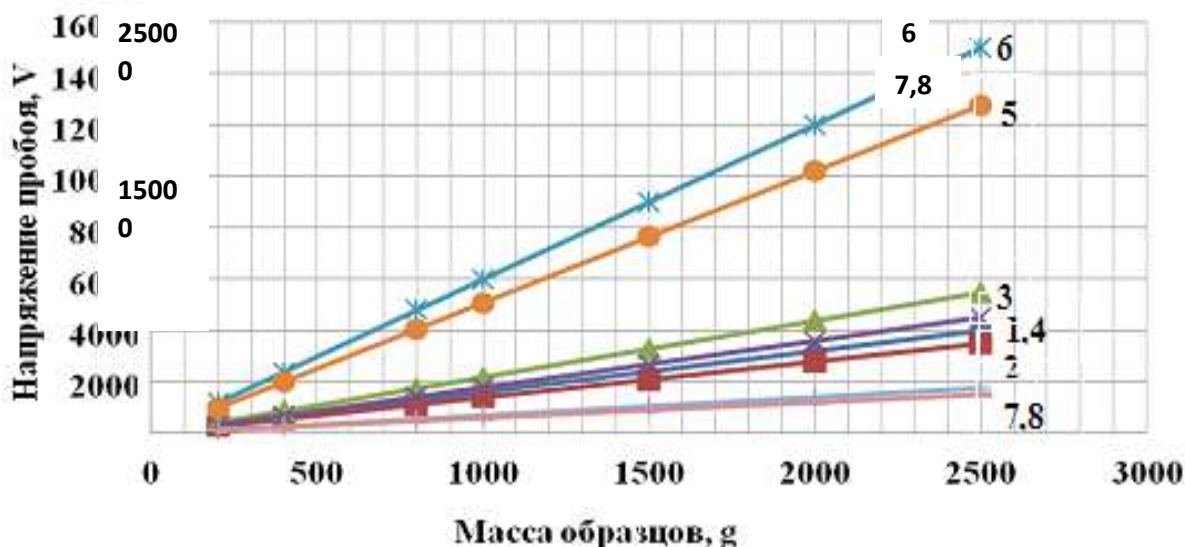


Fig. 3. Graphs depicting the insulation capabilities of basalt and existing insulators: 1- dry basalt rock; 2- wet basalt rock; 3- dry basalt wool; 4- wet basalt wool; 5- dry, cast basalt; 6- wet, cast basalt; 7- dry porcelain insulator; 8- wet porcelain insulator.

It has been observed that as the hardness of basalt increases, so do its insulation properties. The low electrical conductivity of basalt and the heat resistance of cast basalt up to 800°C allow them to be used in the production of electrical insulators. For the production of insulators with different potentials, the maximum permissible content of SiO₂ in basalt has been determined to be 43.7% to 49.3%. In such cases, cast basalt, obtained from the deposits of "Aidarkul" and "Gavasay", is particularly suitable. Basalt insulators can operate at temperatures ranging from -260°C to 800°C. In practice, it has been proven that melts with the following chemical composition (%): SiO₂ - 43.5% to 49.0%; Al₂O₃ - 11.0% to 20.0%; CaO - 9.0% to 16.0%; MgO - 5.0% to 11.0%; FeO - 2.0% to 7.0%; (Na₂O+K₂O) - 1.2% to 5.5%, exhibit the best casting properties.

Conclusions

Thus, basalt from all three examined deposits can be successfully used for the production of fibrous thermal insulation materials. It has been found that for the production of thermal insulation materials, basalt rocks with the following composition (%): SiO₂ - 43% to 47%; MgO up to 7%; Al₂O₃ up to 20%; CaO up to 10%; and (K₂O + Na₂O) no more than 3.5% are required. The content of (FeO+Fe₂O₃) and TiO₂ in basalt does not affect the thermal conductivity of the rock. It has been established that in the basalt from the "Aydarkul" deposit, the SiO₂ content reaches 60%, TiO₂ up to 3%, and Al₂O₃ - 9.2% to 10.2%, leading to an increase in the melting temperature. Such basalt is more suitable for the production of products through crushing, screening, washing, grinding, drying, and firing systems, which do not require the melting of the rock and allow the production of tiles resistant to acidic and alkaline environments.

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Rezyume: O'zbekiston sanoatida mahalliy mineral-xom ashyo resurslaridan foydalanishning hozirgi holati tahlili shuni ko'rsatadiki, ulardan xalq xo'jaligida foydalanish hali ham kerakli darajada emas. Ulardan foydalanish asosan qurilish materiallari sohasida qolmoqda. Bazalt, kaolin, diabaz, shamot va boshqalar kabi foydali qazilmalarning katta zahiralari qaramay, mahalliy ishlab chiqaruvchilar faqat import qilinadigan sanoat mahsulotlarini xarid qilish bilan cheklanadi. Shu bois mahalliy mineral xomashyo asosida yuqori issiqlik va fizik-mexanik xususiyatlarga ega bo'lgan turli maqsadlardagi sanoat mahsulotlari ishlab chiqarish texnologiyasini rivojlantirishga katta ahamiyat berilmoqda. Ushbu maqolada mahalliy bazalt minerallarini o'rganish va ular asosida ishlab chiqarish texnologiyasini ishlab chiqish bo'yicha olib borilgan ilmiy tadqiqotlar natijalari keltirilgan. Shu munosabat bilan zamonaviy innovatsion texnologiyalardan foydalanish shartlari, mahalliy xomashyo tanlashning nazariy asoslari, ularning tabiiy va mineralogik xossalarini o'rganish ko'rsatilgan. Materiallarni qayta ishlashning texnologik jarayonlari va usullari tahlil qilinadi, bunday qimmatli tabiiy resurslarni o'zlashtirish bilan bog'liq eng muhim ekologik va ijtimoiy muammolar muhokama qilinadi.

Резюме: Анализ современного состояния использования местных минеральных ресурсов в промышленности Узбекистана показывает, что их использование в народном хозяйстве все еще находится не на должном уровне. Их использование в основном остается в сфере строительных материалов. Несмотря на огромные запасы полезных ископаемых, таких как базальт, каолин, диабаз, шамот и др., местные производители ограничиваются приобретением импортной промышленной продукции. Поэтому значительное значение придается разработке технологии получения промышленной продукции различного назначения с высокими тепловыми и физико-механическими свойствами на основе местного минерального сырья. В данной статье представлены результаты научных исследований по изучению местных базальтовых минералов и разработке технологии производства на их основе. В связи с этим представлены условия использования современных инновационных технологий, теоретическое обоснование выбора местного сырья, изучение его природных и минералогических свойств. Анализируются технологические процессы и режимы переработки материалов, обсуждаются важнейшие экологические и социальные проблемы, связанные с освоением столь ценных природных ресурсов.

Kalit so'zlar: tog'-kon, bazalt, eritish, mahalliy xomashyo, o'choq, filtr, mikrostruktura, bazalt yünü, issiqlik izolyatsiya materiallari.

Ключевые слова: добыча полезных ископаемых, базальты, плавка, местное сырье, печь, фильтр, микроструктура, базальтовая вата, теплоизоляционные материалы.

METROLOGICAL SUPPORT OF THE REPAIR AND TESTING OF THE NOSE OF THE AIRCRAFT PARAMETERS OF AN AIRCRAFT

Dzhumamuratov B.A.

Tashkent State Technical University named after Islam Karimov

Summary: *This article delves into the application of simulation techniques for refining the navigation parameters of aircraft, aiming to enhance their operational efficiency and safety. By employing advanced simulation models, researchers and engineers can mimic real-world flight scenarios, allowing for thorough testing and optimization of various navigation parameters such as route planning, autopilot algorithms, and flight control systems. Through a systematic approach, simulations enable the exploration of diverse scenarios under varying conditions, including weather disturbances and airspace congestion, providing valuable insights into the performance of navigation systems. The article discusses how simulation optimization techniques, including genetic algorithms and machine learning algorithms, are utilized to fine-tune navigation parameters, ultimately leading to improved flight trajectories, fuel efficiency, and overall flight safety. Moreover, it highlights the significance of collaborative efforts between aerospace engineers, software developers, and aviation authorities in leveraging simulation technologies to continuously refine and optimize aircraft navigation systems, thereby ensuring the reliability and effectiveness of air transportation in increasingly complex airspace environments.*

Key words: *stimulation, aircraft navigation, optimization, parameters, flight performance, avionics, computer modeling, fuel efficiency, flight dynamics*

Introduction In the ever-evolving world of aviation, the quest for optimal performance and safety is paramount. One crucial aspect of aircraft operation is navigation, which encompasses a wide array of parameters ranging from flight path planning to autopilot systems. The use of simulation technology has emerged as a powerful tool in the optimization of these navigation parameters. Simulation allows for the creation of virtual environments that closely mimic real-world scenarios, providing a safe and cost-effective platform for testing and refining navigation strategies. By utilizing advanced algorithms and realistic flight models, simulators can accurately replicate the behavior of different aircraft types in varying environmental conditions.

In this page, we explore the role of simulation in optimizing navigation parameters for aircraft. We delve into the various components of navigation, including route planning, autopilot systems, and collision avoidance algorithms, and examine how simulation can be leveraged to fine-tune these elements. Furthermore, we discuss the benefits of simulation-based optimization, such as reduced operational costs, increased efficiency, and enhanced safety. By iteratively testing and refining navigation parameters in a simulated environment, airlines and aircraft manufacturers can minimize the risks associated with real-world testing while maximizing the performance of their aircraft. Ultimately, this paper aims to highlight the importance of simulation in the optimization of navigation parameters and underscore its potential to revolutionize the way aircraft navigate the skies. Through a combination of advanced technology, rigorous testing, and innovative strategies, simulation offers a pathway towards safer, more efficient air travel for passengers and crew alike.

Basic principles of modeling.

Basic principles of modeling in the context of optimizing navigation parameters for an aircraft using simulation involve the following key concepts:

1. **Accurate Representation:** The model must accurately represent the physical characteristics, dynamics, and behavior of the aircraft and its environment. This includes factors such as aerodynamics, propulsion, weight and balance, weather conditions, and navigation systems.
2. **Simulation Fidelity:** The level of detail and fidelity of the simulation should be appropriate for the specific objectives of the optimization process. This may range from simplified,

high-level models for initial exploration to complex, high-fidelity simulations for detailed analysis and validation.

3. Parameterization: The navigation parameters to be optimized should be carefully selected and parameterized within the model. These may include variables such as heading, altitude, airspeed, fuel consumption, flight path, and route planning.

4. Objective Function: A clear objective function should be defined to quantify the performance or effectiveness of the navigation parameters being optimized. This could be based on criteria such as fuel efficiency, flight time, safety margins, or mission objectives.

5. Constraints: Any constraints or limitations on the optimization process should be explicitly defined within the model. These may include regulatory requirements, operational limitations, physical constraints, and performance limitations of the aircraft.

6. Validation and Verification: The model should be thoroughly validated and verified to ensure its accuracy and reliability. This may involve comparison with real-world data, empirical testing, sensitivity analysis, and peer review.

7. Iterative Optimization: The optimization process is typically iterative, involving multiple simulations and adjustments to the navigation parameters based on the results obtained. This may include techniques such as gradient-based optimization, genetic algorithms, or simulation-based optimization.

8. Trade-off Analysis: It's important to consider trade-offs between conflicting objectives or constraints when optimizing navigation parameters. This may involve exploring the Pareto frontier to identify optimal solutions that balance competing criteria.

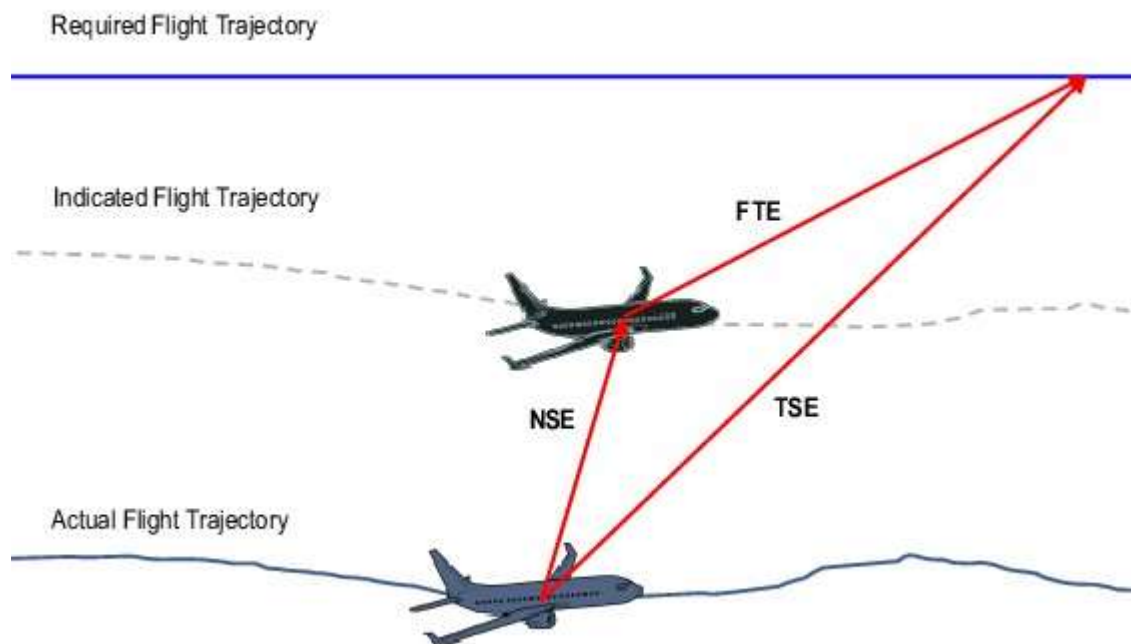


Fig. 1. Navigation accuracy in aviation applications

Navigation accuracy is crucial in aviation applications to ensure the safe and efficient operation of aircraft. It refers to the precision with which an aircraft can determine its position, track its intended course, and navigate through airspace. High levels of navigation accuracy are essential for various aspects of flight, including takeoff, en-route navigation, approach, and landing.

Predictive Analysis – The Challenge of Small Numbers

One possible solution to the problems described above is based on predictive analysis. Predictive analysis refers to making a quantitative statement about a future state or condition based on previous experience or knowledge. Predictive analysis focuses on quantifying the probabilities of serious incidents for an individual airline, which are small, yet not equal to zero. Before incident probabilities can be quantified, incident metrics must be developed. Incident metrics are used to describe the closeness of a single flight to ending in a specific incident. Put another way, the incident metric describes a safety margin of a particular flight with respect to a particular incident.

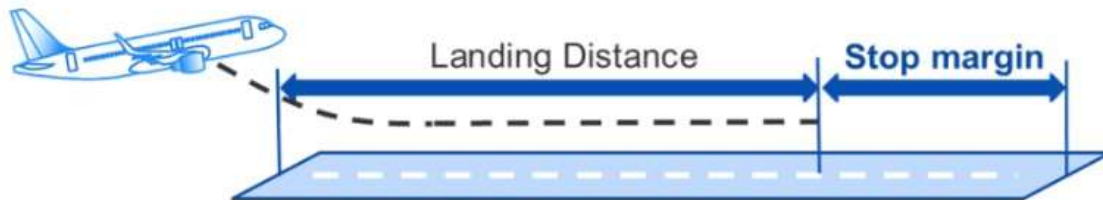


Fig. 2. Flight way to stop

Incident metrics have two main characteristics: Firstly, incident metrics can be compared to a limit in order to exactly determine whether an incident has occurred. Secondly, the closer the calculated incident metric is to the limit, the more critical the flight regarding that particular incident. These kinds of incident metrics can be calculated after each flight based on its flight operational data. An example of such an incident metric is the stop margin, with respect to a runway overrun, or the tail clearance, with respect to a tailstrike.

Parameter Identification

System Identification is a method for modeling physical system dynamics. The approach is based on measured input- and output data of the real system. Flight vehicle system identification focuses on the aircraft dynamics and on modeling the forces and moments that act on it. The result is a validated model with known uncertainty bounds that is reliable in a known region of the flight envelope. System identification techniques allow to compare and combine dynamic models from very different sources, e.g. from flight test data, wind-tunnel tests or computational fluid dynamics (CFD), leading to very accurate results. As it is very laborious to achieve similar results purely from traditional modeling techniques, flight vehicle system identification is an integral part of common flight test programs / aircraft development programs. **Examples of the use of modeling.**

1. **Flight Simulator Training:** Flight simulators are widely used for training pilots to handle various scenarios and to become familiar with the navigation parameters of different aircraft. Pilots can practice navigation techniques, including using autopilot systems, adjusting flight paths, and managing different weather conditions, all within a controlled and safe environment.

2. **Aircraft Design and Testing:** Engineers use computer simulations to model the flight characteristics of new aircraft designs and to optimize navigation parameters such as control surface configurations, engine placement, and overall aerodynamics. These simulations help identify potential issues and refine the design before physical prototypes are built and tested.

3. **Route Planning and Optimization:** Airlines use simulation tools to optimize flight routes, taking into account factors such as fuel efficiency, weather conditions, air traffic congestion, and airspace restrictions. By modeling different route options and adjusting navigation parameters, airlines can minimize costs, reduce flight times, and improve overall operational efficiency.

4. **Air Traffic Control Simulation:** Air traffic control (ATC) simulations are used to train controllers and test new procedures for managing air traffic. These simulations model various scenarios, including different levels of traffic congestion, emergency situations, and changes in weather conditions, allowing controllers to practice making decisions and coordinating aircraft movements in a safe and realistic environment.

5. **Emergency Response Planning:** Simulation tools are used to model emergency scenarios such as engine failures, loss of communication, or in-flight disturbances. By simulating these situations, airlines can train pilots and flight crews to respond effectively, follow emergency procedures, and safely navigate the aircraft to a suitable landing site.

6. **Research and Development:** Researchers use computer simulations to study the behavior of aircraft navigation systems under different conditions and to develop new algorithms and technologies for improving navigation accuracy, reliability, and safety. These simulations help advance the state-of-the-art in aviation technology and contribute to the development of next-generation navigation systems.

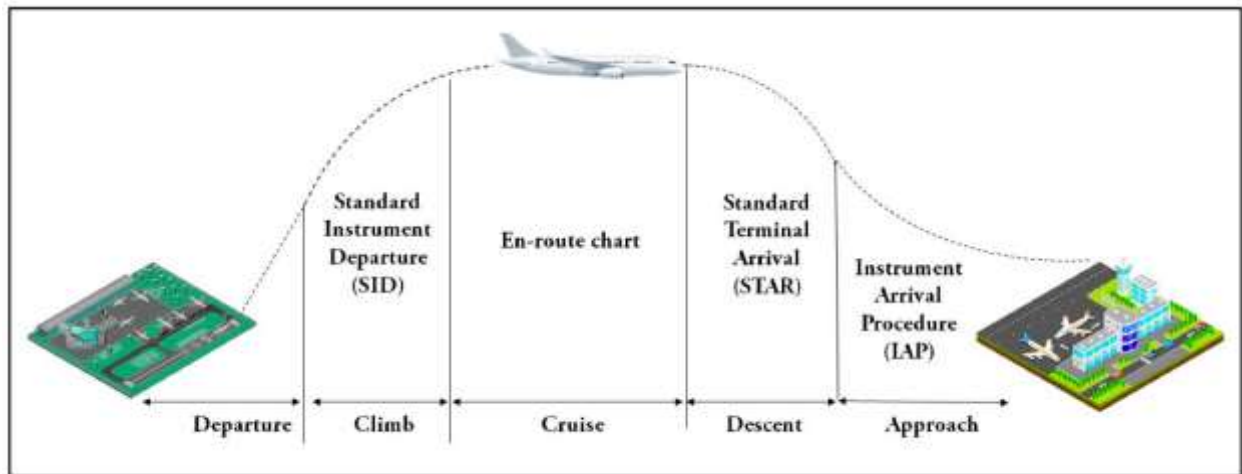


Fig. 3. Flight path analysis using fast-time stimulation

Algorithms of the model of the automatic air traffic control system.

Fast-time simulation is a technique used in aviation to simulate the behavior of aircraft over a period of time much shorter than real-time. This allows for the analysis of flight paths, route optimization, and other navigation parameters in a more efficient manner. Here are some algorithms commonly used in fast-time simulation for flight path analysis:

1. **Flight Dynamics Model:** A mathematical model that simulates the behavior of the aircraft in response to various inputs such as control surface deflections, engine thrust, and environmental conditions (e.g., wind, air density). This model is based on principles of aerodynamics, propulsion, and aircraft performance.

2. **Route Planning Algorithm:** An algorithm that generates and evaluates different flight routes based on criteria such as fuel consumption, flight time, weather conditions, and airspace restrictions. This algorithm may use techniques such as Dijkstra's algorithm, A* search, or genetic algorithms to find optimal or near-optimal routes.

3. **Weather Forecasting Model:** A model that predicts weather conditions along the flight route, including factors such as wind speed and direction, temperature, humidity, and turbulence. This model may incorporate data from weather satellites, ground-based sensors, and atmospheric models to provide accurate forecasts for the simulation.

4. **Air Traffic Control Model:** A model that simulates the behavior of air traffic control systems and other aircraft operating in the same airspace. This model may include algorithms for managing air traffic flow, resolving conflicts between aircraft, and coordinating communication between pilots and controllers.

5. **Performance Optimization Algorithms:** Algorithms that optimize various aspects of flight performance, such as fuel efficiency, speed, altitude, and routing. These algorithms may use techniques such as gradient descent, simulated annealing, or particle swarm optimization to iteratively improve the flight path based on defined objectives and constraints.

6. Sensitivity Analysis: Techniques for assessing the sensitivity of the flight path to changes in input parameters such as aircraft performance, weather conditions, and route constraints. This analysis helps identify critical factors affecting the optimal flight path and provides insights for decision-making.

These algorithms are typically implemented in software tools or simulation platforms used by aviation professionals, including airline dispatchers, flight planners, and air traffic controllers, to analyze and optimize flight paths for various purposes, such as fuel savings, route efficiency, and airspace management.

Aircraft Parameters

Aircraft Model	Airbus A320
Wingspan, S_a	34.1 m
Mass, M_a	64 000 Kg
True Airspeed (TAS) in cruise, V_a	236.8 m s ⁻¹
Fuel flow, m_F	0.17 kg s ⁻¹
Soot number per fuel mass, EI_{soot}	2.8 10 ¹⁴ kg ⁻¹
Emission Index for water, $EI_{\text{H}_2\text{O}}$	1.23
Fuel combustion heat, Q_{fuel}	43.2 MJ kg ⁻¹

Fig. 4. Aircraft Parameters

Aircraft parameters refer to the various settings and configurations that dictate the behavior and performance of an aircraft during flight. These parameters include factors such as airspeed, altitude, heading, pitch, roll, and engine power settings, among others. Optimizing these parameters is crucial for achieving efficient and safe navigation of an aircraft.

Simulation plays a key role in optimizing these parameters by allowing engineers and pilots to conduct virtual tests and experiments in a controlled environment. By using advanced flight simulation software, they can simulate various flight conditions and scenarios to assess the impact of different parameter settings on the aircraft's performance. For example, engineers can use simulation to determine the most fuel-efficient cruising altitude and airspeed for a given flight route, taking into account factors such as wind conditions and air traffic. Similarly, pilots can use simulation to practice and refine their navigation skills, experimenting with different parameter settings to achieve optimal performance during takeoff, landing, and in-flight maneuvers.

Overall, the use of simulation to optimize aircraft navigation parameters helps improve fuel efficiency, reduce operating costs, enhance safety, and optimize the overall performance of the aircraft. By conducting virtual tests and experiments before actual flight, engineers and pilots can make more informed decisions and ensure that the aircraft operates at its peak efficiency and safety levels.

Conclusion. The use of fast-time simulation for flight path analysis offers significant advantages in terms of efficiency, accuracy, and flexibility. By employing sophisticated algorithms and mathematical models, aviation professionals can generate and evaluate multiple flight routes, optimize navigation parameters, and assess the impact of various factors such as weather conditions, air traffic, and aircraft performance. This allows for more informed decision-making in route planning, fuel management, and airspace management, ultimately leading to improved operational efficiency, safety, and cost savings for airlines and other stakeholders in the aviation industry. As technology continues to advance, fast-time simulation techniques will play an increasingly

important role in enhancing the capabilities of flight planning and navigation systems, contributing to the continued evolution and optimization of air transportation systems worldwide.

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Rezyume: Ushbu maqolada samolyotlarning ekspluatatsiya samaradorligi va xavfsizligini oshirish uchun navigatsiya parametrlarini yaxshilash uchun modellashtirish usullaridan foydalanish muhokama qilinadi. Ilg'or simulyatsiya modellaridan foydalangan holda tadqiqotchilar va muhandislar real hayotdagi parvoz stsenariylarini simulyatsiya qilishlari mumkin, bu esa marshrutni rejalashtirish, avtopilot algoritmlari va parvozlarni boshqarish tizimlari kabi turli navigatsiya parametrlarini qat'iy sinovdan o'tkazish va optimallashtirish imkonini beradi. Tizimli yondashuvdan foydalangan holda, simulyatsiyalar navigatsiya tizimlarining ishlashi haqida qimmatli ma'lumotlarni taqdim etadigan ob-havoning buzilishi va havo bo'shlig'idagi tirbandliklarni o'z ichiga olgan turli sharoitlarda turli stsenariylarni o'rganishi mumkin. Maqolada simulyatsiyani optimallashtirish usullari, jumladan genetik algoritmlar va mashinani o'rganish algoritmlari navigatsiya parametrlarini nozik sozlash uchun qanday qo'llanilishi, natijada parvoz yo'llarining yaxshilanishi, yoqilg'i samaradorligi va umumiy parvoz xavfsizligiga olib kelishi muhokama qilinadi. Bundan tashqari, u aviatsiya muhandislari, dasturiy ta'minot ishlab chiquvchilari va aviatsiya ma'murlari o'rtasida samolyot navigatsiya tizimlarini doimiy ravishda takomillashtirish va optimallashtirish uchun simulyatsiya texnologiyalaridan foydalanish bo'yicha hamkorlikdagi sa'y-harakatlarning muhimligini ta'kidlaydi, shu tariqa tobora murakkablashgan havo bo'shlig'ida ishonchli va samarali havo qatnovini ta'minlaydi.

Резюме: В данной статье рассматривается применение методов моделирования для уточнения навигационных параметров летательных аппаратов с целью повышения их эксплуатационной эффективности и безопасности. Используя передовые имитационные модели, исследователи и инженеры могут имитировать реальные сценарии полета, что позволяет тщательно тестировать и оптимизировать различные параметры навигации, такие как планирование маршрута, алгоритмы автопилота и системы управления полетом. Благодаря систематическому подходу моделирование позволяет исследовать различные сценарии в различных условиях, включая погодные возмущения и перегруженность воздушного пространства, предоставляя ценную информацию о работе навигационных систем. В статье обсуждается, как методы оптимизации моделирования, включая генетические алгоритмы и алгоритмы машинного обучения, используются для точной настройки параметров навигации, что в конечном итоге приводит к улучшению траекторий полета, топливной эффективности и общей безопасности полета. Более того, он подчеркивает важность совместных усилий аэрокосмических инженеров, разработчиков программного обеспечения и авиационных властей по использованию технологий моделирования для постоянного совершенствования и оптимизации авиационных навигационных систем, тем самым обеспечивая надежность и эффективность воздушных перевозок во все более сложных условиях воздушного пространства.

Kalit so'zlar: rag'batlantirish, samolyot navigatsiyasi, optimallashtirish, parametrlar, parvoz samaradorligi, avionika, kompyuter modellashtirish, yoqilg'i samaradorligi, parvoz dinamikasi.

Ключевые слова: стимуляция, навигация самолета, оптимизация, параметры, летно-технические характеристики, авионика, компьютерное моделирование, топливная эффективность, динамика полета.

SIMULATION OF A DYNAMIC CONFLICT SITUATION IN REAL TIME FLIGHT OF A RESTORED AIRCRAFT VESSEL

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Summary: *An aircraft (AC) is one of the most complex and dynamic objects; during operation, they are under the influence of forces (various loads), vibration, dust, various gases, high temperatures and atmospheric conditions. All these factors cause natural wear of parts and assemblies, which consists of a gradual change in their size, shape, surface quality and strength properties. These changes lead to a decrease in reliability and, ultimately, to failure of parts and assemblies of aircraft and aircraft engines. One example of an integrated approach to aircraft design is the use of composite materials. Composite materials make it possible to reduce the weight of aircraft, which leads to increased efficiency. At the same time, they also provide the necessary strength and safety of the aircraft.*

In this article we will consider the main aspects of modeling dynamic conflict situations in real time of the flight of an aircraft with a restored fairing.

Key words: *aircraft, fairing, conflict situation, algorithms, modeling, radome test, models.*

1. Introduction

In the airspace there are many different objects such as airplanes, helicopters, drones and other aircraft that move through the air at high speed and can collide with each other at any given time. To ensure air traffic safety, various systems are used, such as radio navigation systems, flight control systems, etc. However, despite this, conflict situations still arise that can lead to accidents and major disasters. One of the ways to prevent conflict situations is to simulate dynamic conflict situations in airspace in real time. This allows you to predict possible conflicts and take measures to prevent them.

2. Basic principles of modeling.

Numerous methods have been developed for calculating the motion parameters of aircraft, including maneuvering ones. Usually, for this purpose, a system of differential equations is compiled that describes the control and disturbing forces acting on the aircraft, and the initial data for modeling are the characteristics of the aircraft and the purpose of its movement [1,2].

Modeling of dynamic conflict situations in airspace [3,4,7,8] in real time is based on the following principles:

1. Modeling the movement of aircraft. To simulate dynamic conflict situations, it is necessary to have an accurate model of the movement of aircraft. This model must take into account all factors that can affect the movement of the aircraft, such as weather conditions, technical condition of the aircraft, navigation data, etc.

2. Simulation of conflict situations. To simulate conflict situations, it is necessary to have an accurate model of all objects that may collide with each other in the airspace. This model must take into account all parameters of objects, such as speed, direction of movement, height, etc.

3. Modeling reactions to conflict situations. To model the response to conflict situations, it is necessary to have an accurate model of the behavior of aircraft when a conflict occurs. This model must take into account all possible behavior of the aircraft under various conditions.

4. Modeling of the control system. To model dynamic conflict situations, it is necessary to have an accurate model of the control system that will make decisions about conflict prevention. This model must take into account all the parameters of the aircraft and determine the optimal path and time to prevent a conflict.

A possible example of modeling dynamic conflict situations in airspace in real time could be the automatic air traffic control (ATC) system in Fig. 1, used at airports and on airlines. [9,10,11,12,13,14].

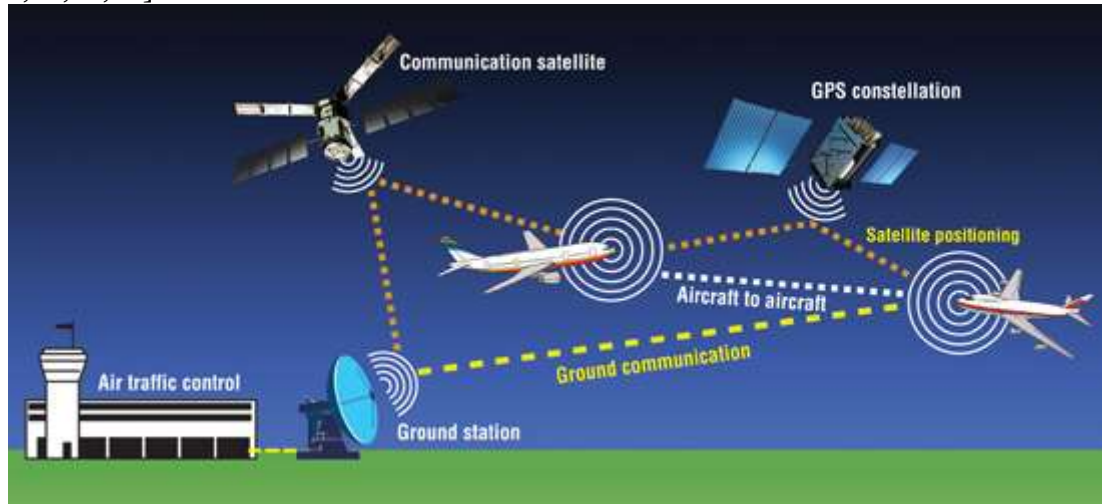


Figure.1. Automatic Air Traffic Control (ATC) system.

The system uses data about the position and speed of aircraft, as well as weather conditions and other factors, to identify potentially dangerous situations and prevent collisions between aircraft. The ATC model may include various algorithms and rules that determine what actions must be taken to prevent conflicts. For example, the system can automatically change flight routes or aircraft speeds to avoid collisions. Such a model can be used to train and train air traffic controllers, as well as to test new algorithms and airspace management strategies.

3. Examples of using modeling.

Real-time simulation of dynamic airspace conflict situations can be used for various purposes, for example:

1. Prevention of accidents. Modeling can help prevent accidents and major disasters by predicting possible conflicts and taking measures to prevent them.
2. Optimization of the control system. Simulation can help optimize an air traffic control system by determining the optimal path and timing for each aircraft.
3. Pilot Training Simulation can be used to train pilots and other aviation professionals by creating different scenarios and practicing how to react to them.

The absorber was measured by using a HP 5610B network analyzer that covers the range of 9–12 GHz, and two broadband horn antennas in a microwave anechoic chamber, as shown in Figure 3. As shown in Figure 3(b), the peak reflection is obtained, and then the maximum peak is remained by using bandpass time gating in vector network analyzer. The wire grid mesh ground plane can act as the metal plane at the microwaves. The fabricated structure shows absorption greater than 88% is in the frequency range of 6.4-12.1GHz and the bandwidth is 61.8% of center frequency. Figure 3 shows the measured absorptions for different polarizations of the incident wave. The optical transmittance of total structure is more than 62.4% as shown in Figure 3(b) [26,27].

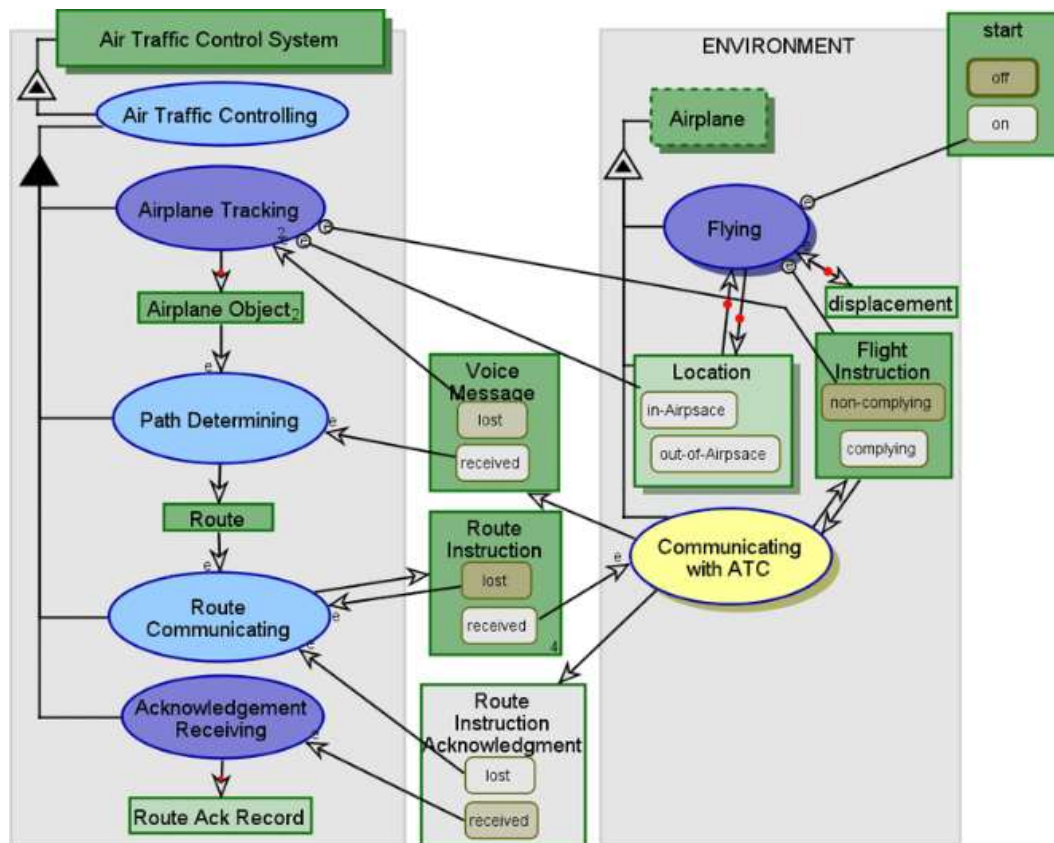


Figure. 2. Fault-tolerant model of air traffic control system .

4. Algorithms for the automatic air traffic control system model.

1. Hazard Identification Algorithm: This algorithm uses aircraft position and speed data, as well as weather conditions and other factors, to determine when a collision between aircraft is likely.

It involves obtaining data on the position and speed of aircraft, determining the distance between them, calculating the time to collision and checking that time against a threshold. If the time to collision is less than a threshold, the program displays a message about a potentially dangerous situation. This algorithm can be used in automatic air traffic control systems to prevent emergency situations and ensure flight safety [17-19].

An algorithm for identifying potentially dangerous situations involving a collision between aircraft may consist of the following steps:

- Step 1. Obtaining data on the position and speed of aircraft;
- Step 2. Determining the distance between them;
- Step 3. Calculation of time to collision using the formula: $\text{time} = \text{distance} / \text{speed}$;
- Step 4. Checking the time to collision against a threshold value;
- Step 5. If the time to collision is less than the threshold value, a message about a potentially dangerous situation is displayed;
- Step 6. The program repeats steps 1-5 for all pairs of aircraft in the observation area;
- Step 7. The algorithm can be integrated into automatic air traffic control systems to prevent emergency situations and ensure flight safety.

2. Conflict Prevention Algorithm: This algorithm determines what actions should be taken to prevent conflicts. For example, the system can automatically change flight routes or aircraft speeds to avoid collisions. The algorithm may consist of the following steps:

- Step 1. Obtaining data on the position and speed of aircraft from a radar surveillance system;
- Step 2. Determining the distance between all pairs of aircraft;
- Step 3. Calculation of time to collision using the formula: $\text{time} = \text{distance} / \text{speed}$;

Step 4. Setting a threshold value of time before a collision at which it is considered that an emergency situation is possible;

Step 5. Checking the time to collision for each pair of aircraft against a threshold value;

Step 6. If the time to collision is less than a threshold value, a message about a potentially dangerous situation is displayed and automatic notification of aircraft crews and regulatory authorities occurs;

Step 7. The program repeats steps 1-6 at specified intervals to ensure continuous monitoring of the airspace;

Step 8. The algorithm can be integrated into automatic air traffic control systems to prevent emergency situations and ensure flight safety.

3. Aircraft Flow Control Algorithm: This algorithm determines which aircraft should be allowed to take off and land, and what route they should take. It can also take into account airspace restrictions such as restricted areas or low visibility areas. Algorithm steps:

Step 1. Determination of aircraft flight routes based on planned flights and current airspace load;

Step 2. Distribution of aircraft along routes taking into account their speed and flight priority;

Step 3. Monitoring the position and speed of aircraft on routes;

Step 4. Analysis of the current airspace load and adjustment of aircraft routes if necessary;

Step 5. Determination of optimal time intervals between departures and arrivals of aircraft at airports;

Step 6. Monitoring the implementation of flight schedules and timely departure and arrival of aircraft;

Step 7. Regulating the flow of aircraft by delaying or accelerating aircraft departures and arrivals;

Step 8. Ensuring flight safety by preventing aircraft from crossing routes and preventing collisions;

Step 9. Integration of an algorithm for controlling the flow of aircraft into automatic air traffic control systems to optimize the work of regulatory authorities and ensure flight safety.

4. Delay Allocation Algorithms: These algorithms are used to distribute landing and takeoff delays among different aircraft. They can take into account airline priorities and requirements, as well as airspace restrictions. Algorithm steps:

Step 1. Determination of the current load of airspace and the predicted load in the near future;

Step 2. Determining the priority of aircraft flights based on their type, flight direction and the presence of passengers who must transfer to another flight;

Step 3. Calculation of the optimal delay time for each aircraft, taking into account its speed and flight priority;

Step 4. Determination of a new departure time for each delayed aircraft;

Step 5. Notifying pilots and airlines about new departure and arrival times;

Step 6. Monitoring the implementation of delays and adjusting the schedule if necessary;

Step 7. Ensuring flight safety by preventing aircraft from crossing routes and preventing collisions;

Step 8. Integration of an algorithm for controlling the flow of aircraft into automatic air traffic control systems to optimize the work of regulatory authorities and ensure flight safety.

5. Emergency Handling Algorithms: These algorithms are used to handle emergency situations such as engine failure or other technical problems. These may include evacuation procedures and other safety measures. Algorithm steps:

Step 1. Detection of an emergency situation in the airspace or on board an aircraft;

Step 2. Collection and analysis of data on the condition of the aircraft, its location, weather conditions and other factors that may affect further actions.

Step. 3. Identification of possible solutions to resolve the emergency and their assessment, taking into account flight safety and available resources.

Step. 4. Decide on the best course of action and implement it, including communication with pilots, airlines and other regulatory authorities.

Step. 5. Monitoring the implementation of the decision and adjustments if necessary.

Step. 6. Notifying the relevant services about the emergency situation that has occurred and the measures taken to eliminate it.

Step. 7. Analysis of the emergency situation and its consequences to determine possible improvements in the air traffic control system and prevent similar situations in the future.

Step. 8. Ensuring timely information to passengers and airlines about the emergency that has occurred and its consequences.

6. Algorithms for handling changes in weather conditions : These algorithms are used to handle changes in weather conditions such as thunderstorms or strong winds. These may include changing flight routes or aircraft speeds to avoid hazardous conditions. Algorithm steps:

Step. 1. Collection of information about current weather conditions in the flight area and at destination and departure airfields.

Step. 2. Analyze the data obtained and determine possible weather changes that could affect the flight.

Step. 3. Risk assessment and decision-making on the need to change the route, departure time or other actions to ensure flight safety.

Step. 4. Communication with pilots, airlines and other regulatory authorities to discuss measures taken and coordinate actions.

Step. 5. Monitoring weather changes and adjusting decisions if necessary.

Step. 6. Update flight plans and prepare for changes in real time.

Step. 7. Notifying passengers and airlines about possible delays or schedule changes.

Step. 8. Analysis of weather changes that have occurred and measures taken to determine possible improvements in the air traffic control system and prevent similar situations in the future.

7. Emergency Handling Algorithms : These algorithms are used to handle emergency situations such as terrorist attacks or other security threats. These may include evacuation procedures and other safety measures. Algorithm steps:

Step. 1. Detection of an abnormal situation in the flow of aircraft, for example, an engine failure on board an aircraft or a violation of the safe distance between aircraft.

Step. 2. Collection of information about the situation, including data on the position and speed of aircraft, weather conditions and other factors that may affect the further development of the situation.

Step. 3. Analysis of the data obtained and determination of possible consequences for the safety of the flight and the lives of people on board.

Step. 4. Deciding on measures to eliminate an emergency situation, for example, changing the flight route, changing the flight altitude or evacuating passengers.

Step. 5. Communication with pilots, airlines and other regulatory authorities to discuss measures taken and coordinate actions.

Step. 6. Monitoring changes in the situation and adjusting decisions if necessary.

Step. 7. Notifying passengers and airlines about changes and possible delays.

Step. 8. Analysis of changes that have occurred and measures taken to determine possible improvements in the air traffic control system and prevent similar situations in the future.

Program written in Python uses data about the position and speed of two aircraft to determine the distance between them and the time before collision. If the time to collision is less than 10 seconds, the program displays a message about a potentially dangerous situation.

5 . Radome Test Range Design

The radome test range design is shown in Figure 1. The size of the test room was determined by considering the range length as well as providing adequate room for the positioner and radome

handling space. The example shown below will test radome up to and including the Boeing 667 radome. The room dimensions are nominally 4.4 M height x 4.5 M width x 12.5M Length (14' H x 14'W x 38' L). The range antenna and the system antenna are precisely and permanently aligned with each other and do not move during the measurements.

The range antenna is transmitting and all testing is performed at the single frequency of operation of the weather radar which is typically within 9 to 9.8 GHz. A narrow band filter is used on the input of the measurement device to filter out any out of band signals.

Because the two directive antennas stay precisely aligned to each other throughout the test and because the filtering rejects any out of band signals, the measurement is largely impervious to off axis or out of band stray signals. As a result of this, the requirements for the test room are significantly reduced. Provided that there is not a significant source of in band stray radiation near by, a full fledged shielded anechoic chamber is not required. Eight (2) inch absorber is only needed on the end walls to knock down potential mutual coupling[24,27].

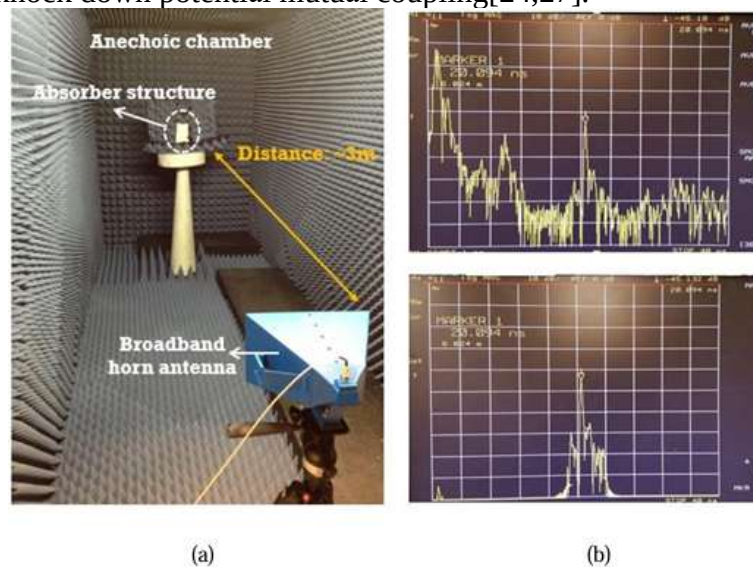


Figure 3. (a) Measurement set-up (b) Time gating in vector network analyzer.

6 .Conclusion.

Real-time simulation of dynamic airspace conflict situations is a very important tool for ensuring air traffic safety. It allows you to predict possible conflicts and take measures to prevent them. In addition, simulation can be used to optimize control systems and pilot training.

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Rezyume: *Samolyot eng murakkab va dinamik ob'ektlardan biridir; Ish paytida ular kuchlar (turli yuklar), tebranish, chang, turli gazlar, yuqori harorat va atmosfera sharoitlariga ta'sir qiladi. Bu omillarning barchasi qismlar va agregatlarning tabiiy aşınmasına olib keladi, bu ularning hajmi, shakli, sirt sifati va mustahkamlik xususiyatlarining bosqichma-bosqich o'zgarishidan iborat. Ushbu o'zgarishlar ishonchlilikning pasayishiga va pirovardida samolyotlar va samolyot dvigatellarining qismlari va agregatlarining ishdan chiqishiga olib keladi. Samolyot dizayniga kompleks yondashuvga misollardan biri kompozit materiallardan foydalanishdir. Kompozit materiallar samolyotning og'irligini kamaytirishi mumkin, bu esa samaradorlikni oshirishga olib keladi. Shu bilan birga, ular samolyotning zarur quvvati va xavfsizligini ham ta'minlaydi.*

Ushbu maqolada biz tiklangan parda bilan samolyot parvozida real vaqt rejimida dinamik ziddiyatli vaziyatlarni modellash tirishning asosiy jihatlarini ko'rib chiqamiz.

Резюме: *Воздушное судно (ВС) является одним из наиболее сложных и динамичных объектов; в процессе эксплуатации они находятся под воздействием сил (различных нагрузок), вибрации, пыли, различных газов, высоких температур и атмосферных условий. Все эти факторы вызывают естественный износ деталей и узлов, заключающийся в постепенном изменении их размеров, формы, качества поверхности и прочностных свойств. Эти изменения приводят к снижению надежности и, в конечном итоге, к выходу из строя деталей и агрегатов самолетов и авиационных двигателей. Одним из примеров комплексного подхода к проектированию самолетов является использование композиционных материалов. Композиционные материалы позволяют снизить массу самолетов, что приводит к повышению эффективности. В то же время они также обеспечивают необходимую прочность и безопасность самолета.*

В данной статье мы рассмотрим основные аспекты моделирования динамических конфликтных ситуаций в реальном времени полета самолета с восстановленным обтекателем.

Kalit so'zlar: *samolyot, yarmarka, konfliktli vaziyat, algoritmlar, modellash tirish, yarmarka sinovi, modellar.*

Ключевые слова: *самолет, обтекатель, конфликтная ситуация, алгоритмы, моделирование, испытание обтекателя, модели.*

ANALYSIS OF CCTV FOOTAGE AND METHODS OF INITIAL IMAGE PROCESSING

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Summary: Surveillance systems, CCTV devices, and the development of software for them are providing solutions to many practical problems. One of the critical aspects of solving a practical problem using images obtained from CCTV devices is the reprocessing of these images. The image processing procedure can vary according to the problem posed. Today, in education, healthcare, industry, manufacturing, and generally in all fields, there is a process related to image reprocessing, and improving the results obtained through images by developing the right model according to the problem is possible. The accuracy of the processes carried out on images for classification, segmentation, and object recognition is very important, and a higher level of accuracy increases the possibility of developing a practical solution suitable for the posed problem [1]. The quality of the training dataset and its compliance with specified requirements also form the basis for increasing the accuracy of the model and its proper functioning. The article reviews the most important and necessary stages of reprocessing CCTV images and the results obtained.

Key words: Image Preprocessing, CCTV, Computer Vision, OpenCV, Image Segmentation, Image Filtering, Greyscale, Background Subtraction.

There are several methods and stages for processing CCTV images, one of the most fundamental stages being background subtraction. Background subtraction is a primary algorithm in video surveillance systems for detecting moving objects. It segments moving objects by utilizing the differences between the background and incoming images. Image processing involves converting images into digital format and performing processing operations on them [2]. Digital image processing has many advantages over analog image processing. It allows for the application of a broader range of algorithms to the input data and prevents issues such as noise and distortions during the processing phase. Since images are defined in two dimensions, digital image processing can be modeled in a multi-dimensional format [3].

Initially, filters are applied to images to reduce noise. There are several filters available for noise reduction in images, including the Gaussian filter, the Median filter, and the Bilateral filter. The Gaussian filter, being a linear low-pass filter, attenuates the high frequencies present in the signal. It modifies the incoming values in a convolution state by applying the Gaussian function to the image [4].

$$G(x) = ae^{-\frac{(x-\mu)^2}{2\sigma^2}} \quad (1)$$

The Gaussian function, $G(x)$, is defined in the range between 0 and 1.



Figure 1. A simple image and the image after applying a Gaussian filter.

After reducing noise in the image with a Gaussian filter, the parameters are significantly reduced, which speeds up the processing of the image in the next stage. Following the Gaussian filter, another crucial step of image processing can be performed.

Background subtraction is a method used to simplify the processing of video sequences by removing the background image from the actual image. It is also known as foreground extraction and is used to detect moving objects, objects in specified areas, and others [5]. Generally, pre-processing images is the initial and primary stage of preparing the video for the next phase. Pre-processing removes image errors and noise that arise during scanning and reading, improving image quality. The stages of pre-processing include color normalization, statistical methods, and convolution methods. As a result of pre-processing, the images are ready for the subsequent stages of processing tasks.

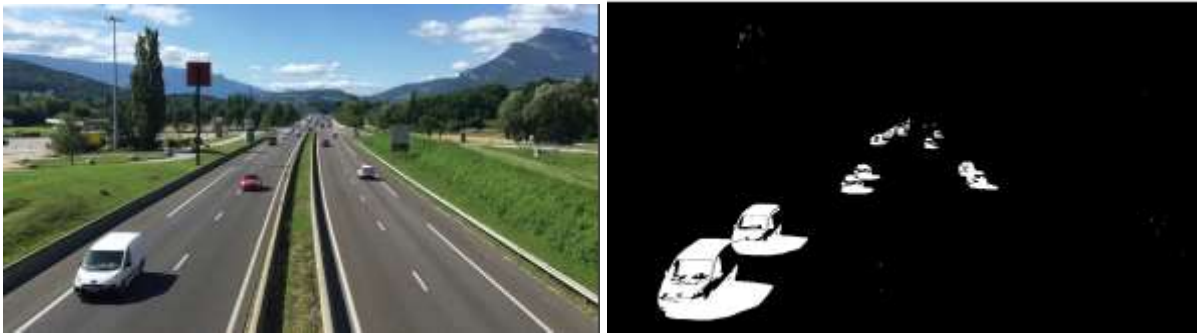


Figure 2. Background Subtraction (Removing the background).

Another important process in image processing is segmentation. Image segmentation is a method in computer vision where groups of pixels with similar characteristics, such as the same color, or elements with a common boundary, line, circle, ellipse, or polygon shape, are separated. Image segmentation is classified as edge detection, region-based classification, boundary detection, or any combination of these methods [5]. Initially, it is necessary to convert the image into a grayscale image.

Using the ``rgb2gray( )`` function, a shape's 3-channel RGB image is converted into a 1-channel monochromatic image. To obtain the grayscale value, the average of the red, green, and blue pixel values for each pixel is used, which is a simple method to transform a color image's 3D array into a 2D grayscale array. This combines the luminance or brightness values of each color band to create a common matrix for the accepted grayscale.

K-means segmentation is a widely used machine learning method in image processing for dividing an image into distinct regions or clusters based on pixel similarity. The algorithm operates by iteratively grouping pixels into k clusters, where each cluster is represented by its centroid (the average value of the pixels' values in the cluster). Implementing K-means segmentation is efficient and relatively straightforward, and it is broadly used in various processes such as image analysis, object detection, and image compression.



Figure 3. Grayscale Image.

K-means segmentation works as follows:

Initialization: The algorithm begins by randomly selecting k initial cluster centers. These centers can be chosen randomly from the data points or using a heuristic approach.

Assignment: Each pixel in the image is then assigned to the nearest cluster center based on similarity in the feature space. This proximity is typically measured using a distance metric such as Euclidean distance.

$$d(p, q) = \sqrt{(p_1 - q_1)^2 + (p_2 - q_2)^2 + \dots + (p_n - q_n)^2} = \sqrt{\sum_{k=1}^n (p_k - q_k)^2}. \quad (2)$$

Euclidean distance for the distance between two points [6].

Update: After all pixels have been assigned to clusters, the centers are updated by calculating the average value of all pixels assigned to each cluster. This step recalculates the center positions to better represent the clusters.

Iteration: Steps 2 and 3 are iteratively repeated until convergence is reached, where the centers change insignificantly between iterations or a predetermined number of iterations is achieved.

Result: Once the algorithm converges, each pixel in the image will belong to one of the k clusters, and the image is accordingly segmented into regions. Each segment represents an area of similar pixel values, and the centers serve as distinct colors for each segment. K-means segmentation has several advantages, including its simplicity, efficiency, and fast performance on large datasets.

K-means segmentation remains a widely used and effective method for image segmentation, especially in scenarios where computational efficiency is crucial and the number of clusters is known or can be estimated. Furthermore, variations and enhancements of the basic K-means algorithm, such as fuzzy K-means and spectral clustering, have been developed to address some of its limitations and extend its applicability to more complex segmentation tasks [7].



Figure 4. Segmentation via K-means.

Analyzing and preprocessing CCTV images play a crucial role in various applications, including surveillance, security, and video analysis. This article reviewed several methods of preprocessing images aimed at enhancing the quality of CCTV images and extracting data for further analysis. Image segmentation serves as a fundamental method for dividing images into separate segments or objects, facilitating subsequent analytical tasks. Additionally, methods for reducing noise, detecting edges, and improving the overall visual quality of CCTV images were explored. The Gaussian filter is considered one of the most optimal filters [8-11]. Furthermore, converting CCTV images to grayscale can reduce computational complexity, enhance processing efficiency, and simplify various analytical tasks such as object detection and recognition.

In conclusion, the combination of image segmentation, filtering, conversion to grayscale, and background removal techniques are powerful tools for analyzing and processing CCTV images. Together, these methods contribute to improving the quality, reliability, and interpretation of CCTV data, thereby enhancing the effectiveness of surveillance systems and increasing model accuracy. Generally, the methods discussed above form the foundation for ongoing research and the development of applications involving CCTV images.

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Rezyume: Videokuzatuv tizimlari, videokuzatuv qurilmalari va ular uchun dasturiy ta'minot ishlab chiqish ko'plab amaliy muammolarni hal qilish imkonini beradi. Videokuzatuv qurilmalaridan olingan tasvirlardan foydalangan holda amaliy masalani hal qilishning eng muhim jihatlardan biri bu tasvirlarni qayta ishlashdir. Tasvirni qayta ishlash jarayoni topshirilgan vazifaga qarab farq qilishi mumkin. Bugungi kunda ta'lim, sog'liqni saqlash, sanoat, ishlab chiqarish va umuman barcha sohalarida tasvirlarni qayta ishlash jarayoni mavjud va topshiriq bo'yicha to'g'ri modelni ishlab chiqish orqali tasvirlardan olingan natijalarni yaxshilash mumkin. Ob'ektni tasniflash, segmentatsiyalash va tanib olish uchun tasvirlarda bajariladigan jarayonlarning aniqligi juda muhim va yuqori darajadagi aniqlik topshirilgan vazifaga mos keladigan amaliy echimni ishlab chiqish qobiliyatini oshiradi [1]. O'quv ma'lumotlari to'plamining sifati va uning belgilangan talablarga muvofiqligi ham modelning aniqligini oshirish va uning to'g'ri ishlashi uchun asos bo'ladi. Maqolada video kuzatuv tizimlarining tasvirini qayta ishlashning eng muhim va zarur bosqichlari va olingan natijalar muhokama qilinadi.

Резюме: Системы видеонаблюдения, устройства видеонаблюдения и разработка программного обеспечения для них позволяют решать многие практические задачи. Одним из важнейших аспектов решения практической задачи с использованием изображений, полученных с устройств видеонаблюдения, является повторная обработка этих изображений. Процедура обработки изображения может варьироваться в зависимости от поставленной задачи. Сегодня в образовании, здравоохранении, промышленности, производстве и вообще во всех сферах существует процесс, связанный с повторной обработкой изображений, и улучшение результатов, полученных с помощью изображений, путем разработки правильной модели согласно задаче, возможно. Точность процессов, выполняемых на изображениях для классификации, сегментации и распознавания объектов,

очень важна, а более высокий уровень точности увеличивает возможность разработки практического решения, подходящего для поставленной задачи [1]. Качество набора обучающих данных и его соответствие заданным требованиям также составляют основу повышения точности модели и ее правильного функционирования. В статье рассмотрены наиболее важные и необходимые этапы обработки изображений систем видеонаблюдения и полученные результаты.

Kalit so'zlar: tasvirni oldindan qayta ishlash, video kuzatuv, kompyuterni ko'rish, OpenCV, tasvirni segmentatsiyalash, tasvirni filtrlash, kulrang rang, fonni olib tashlash.

Ключевые слова: предварительная обработка изображений, видеонаблюдение, компьютерное зрение, OpenCV, сегментация изображений, фильтрация изображений, оттенки серого, вычитание фона.

PROCESS OF CREATION MOBILE APPLICATION IN PYTHON LANGUAGE

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Summary: *The article is devoted to the process of creating a mobile application in Python using various frameworks and platforms. The article defines and characterizes mobile applications and the Python language, lists and compares various frameworks and platforms for creating mobile applications in Python, such as Kivy, PyQt and BeeWare, provides an example of creating a simple mobile application in Python using the Kivy framework, describes steps to launch and test a mobile application in Python on different mobile devices.*

Key words: *Python, mobile applications, Kivy, PyQt, BeeWare, framework.*

Introduction

Mobile applications are programs that run on smartphones, tablets, and other mobile devices. Mobile apps can have different functions and purposes such as games, education, entertainment, business, etc. Creating mobile applications is an interesting and demanding process that requires knowledge of programming languages, frameworks, tools, and platforms [1].

Analysis and results

The purpose of this paper is to describe the process of creating a mobile application in Python language using different frameworks and platforms.

One of the popular programming languages for creating mobile applications is Python. Python is a high-level, interpreted, multi-paradigm programming language that is characterized by simple, readable, and flexible code. Python supports many programming paradigms such as procedural, object-oriented, functional, and aspect-oriented programming. Python also has a rich standard library and a huge number of third-party modules and packages for different purposes and tasks.

To create mobile applications in Python, you can use various frameworks and platforms that provide ready-made components and tools to develop, test and run applications on different mobile devices. Some of these frameworks and platforms are described below :

Kivy is a cross-platform framework for creating graphical user interfaces (GUIs) and multimedia applications in Python. Kivy supports application development for Windows, Linux, macOS, Android and iOS. Kivy uses its own KV markup language to describe the application interface and link it to Python logic. Kivy also provides various widgets, animations, events, properties and other elements to create interactive and adaptive applications [2].

PyQt is a binding to the Qt library for the Python language. Qt is a cross-platform library for creating GUIs and applications using C++. PyQt allows you to use all the features of Qt in Python applications. PyQt supports application development for Windows, Linux, macOS, Android, and iOS. PyQt uses the XML markup language QML to describe the application interface and link it to Python logic. PyQt also provides various widgets, graphics, animations, signals and slots, and other elements to create modern and functional applications.

BeeWare is a set of tools for building native Python applications. BeeWare supports application development for Windows, Linux, macOS, Android and iOS. BeeWare uses native operating system components to create the application interface without using third-party libraries. BeeWare also provides various utilities for packaging, testing and debugging applications.

To create a mobile application in Python language, the following steps should be followed [3]:

- Select a framework or platform. Depending on the purpose, functionality and design of the app, you need to select a suitable framework or platform for developing the app. For example, if

you need to create a simple and fast application with a cross-platform GUI, you can use Kivy. If you need to create a more complex and professional application with a native GUI, you can use PyQt or BeeWare

- Install the necessary tools. To develop a Python application, you must install the Python interpreter and code editor or integrated development environment (IDE). In addition, you must install the framework or platform chosen to develop the application, as well as the additional modules and packages required to run the application. For example, to use Kivy, you must install Kivy and its dependencies using the `pip install kivy` command. To use PyQt, you must install PyQt and Qt Designer using the `pip install pyqt5` command. To use BeeWare, you must install BeeWare and its tools using the `pip install beeware` command.

- Create an application project. To create an application project, you must create a folder named application and in it create a Python code file with a `.py` extension. For example, to create an application named HelloWorld, you would create a folder named HelloWorld and in it create a file called `main.py`. Depending on the chosen framework or platform, you may also need to create additional files, such as a `.kv` interface markup file for Kivy or a `.qrc` resource file for PyQt.

- Write application code. To write application code, you should use the syntax and structure of the Python language, as well as elements and functions of the chosen framework or platform. The application code should consist of two main parts: logic and interface. The logic is the part of the code that defines the behavior and functionality of the application. The interface is the part of the code that defines the appearance and interaction of the application with the user. For example, to create a simple application that displays the text "Hello World" on the screen, you can write the following code in Kivy:

```
import kivy # Import the Kivy module
kivy.require('1.11.1') # Specify the minimum version of Kivy
from kivy.app import App # Import the App class from the app module
from kivy.uix.label import Label # Import the Label class from the uix.label module
class HelloWorldApp(App): # Create a HelloWorldApp class that inherits the App class
    def build(self): # Override the build method, which returns the root widget of the application
        return Label(text='Hello World') # Return a Label widget with the text "Hello World".
app = HelloWorldApp() # Create an instance of the HelloWorldApp class.
```

To run and test a Python application using the Kivy framework, the following steps should be performed:

Launch the application on the computer. To run the application on the computer, you need to open a terminal or command line and go to the folder with the application project. You should then run the `python main.py` command, which will launch the Python interpreter and execute the `main.py` file. After that, a window with the application interface should open and you can see and interact with it on the computer [5].

Run the application on a mobile device. To run an application on a mobile device, you need to package the application into an executable file that can be installed and run on the mobile device. To do this, you need to use a special tool called Buildozer. Buildozer is a tool that automates the process of creating Android and iOS executables from Python applications using Kivy or other frameworks. To use Buildozer, you need to install it using the `pip install buildozer` command. Then you need to create a `buildozer.spec` configuration file in the app project folder where you need to specify various parameters for building the app such as name, version, description, icon, permissions, etc. After that, you need to run the `buildozer init` command, which will create a configuration file with default settings. Then you need to edit the configuration file as per the requirements of the application. After that you need to run the `buildozer android debug deploy run` command, which will create an Android executable file and upload it to the connected mobile device via USB cable. After that, you can run the application on the mobile device and test its performance.

Test the application. To test an application, you need to verify that it works correctly and meets the specified requirements and expectations. For this, various types of testing such as functional, performance, security and others need to be done. Various tools and techniques such as manual testing, automated testing, unit testing, integration testing, system testing, regression testing and others can be used for testing [6].

Conclusion/Recommendations

In this paper, we have covered the process of creating a mobile application in Python language using various frameworks and platforms. We defined and characterized mobile applications and Python language, listed and compared different frameworks and platforms for creating Python mobile applications such as Kivy, PyQt and BeeWare, gave an example of creating a simple Python mobile application using Kivy framework, described the steps of running and testing a Python mobile application on different mobile devices.

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Rezyume: *Maqola turli xil platformalar yordamida Pythonda mobil ilovani yaratish jarayoniga bag'ishlangan. Maqolada mobil ilovalar va Python tili tavsiflangan, Pythonda mobil ilovalar yaratish uchun Kivy, PyQt va BeeWare kabi turli platformalar sanab o'tilgan va taqqoslangan. Kivy yordamida Pythonda oddiy mobil ilovani yaratish misol qilib taqdim etilgan, turli mobil qurilmalarda Pythonda mobil ilovani ishga tushirish va sinab ko'rish bosqichlari keltirilgan.*

Резюме: *Статья посвящена процессу создания мобильного приложения на языке Python с использованием различных фреймворков и платформ. В статье дается определение и характеристика мобильных приложений и языка Python, перечисляются и сравниваются различные фреймворки и платформы для создания мобильных приложений на языке Python, такие как Kivy, PyQt и BeeWare, приводится пример создания простого мобильного приложения на языке Python с использованием фреймворка Kivy, описываются шаги запуска и тестирования мобильного приложения на языке Python на разных мобильных устройствах.*

Kalit so'zlar: Python, mobil ilovalar, Kivy, PyQt, BeeWare, ramka.

Ключевые слова: Python, мобильные приложения, Kivy, PyQt, BeeWare, фреймворк.

UDC 620.9

IMPROVING ENERGY EFFICIENCY IN THE REPUBLIC OF UZBEKISTAN ON THE BASIS OF MODERN ENERGY-SAVING TECHNOLOGIES

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Summary: The article is devoted to the issues of increasing energy efficiency in the Republic of Uzbekistan based on modern energy saving technologies. The current level of energy intensity of the economy and the reasons for the inefficient use of energy resources, which are an obstacle to achieving sustainable economic growth in the long term, are analyzed.

Key words: energy system, energy efficiency, energy saving, renewable energy, energy audit

Introduction

Ensuring energy efficiency helps strengthen the country's energy security, reduce the cost of industrial products and their competitiveness in the market, and solve environmental problems in energy production. Currently, an important task is the practical implementation of energy efficiency goals based on low-cost measures, supported by the necessary financial and human resources. Much remains to be done to create the institutional framework to promote energy efficiency goals. Available energy efficiency reserves cannot always be realized due to shortcomings in the legislative framework or their weak application. It is necessary to create conditions to attract investment in energy efficiency projects.

Main part

Based on the structure of electricity generation, by 2030, Uzbekistan's goal is to compensate for the growing electricity deficit by increasing the share of renewable energy sources to 25% of the total volume [1].

This will create unresolved problems of reducing the reliability of the energy system of Uzbekistan and the sustainability of parallel work with the United Energy System of Central Asia and Russia. [2].

At the same time, the existing technical potential for energy saving in Uzbekistan is at least 20% of the annual production of electricity and heat.

Energy intensity is presented as the ratio of energy resource consumption to GDP; it decreases with the development of energy-saving production technologies. The unit of measurement for energy intensity is koe/\$15p – kilogram of oil equivalent per US dollar at constant exchange rates, prices and purchasing power parity 2015 [3].

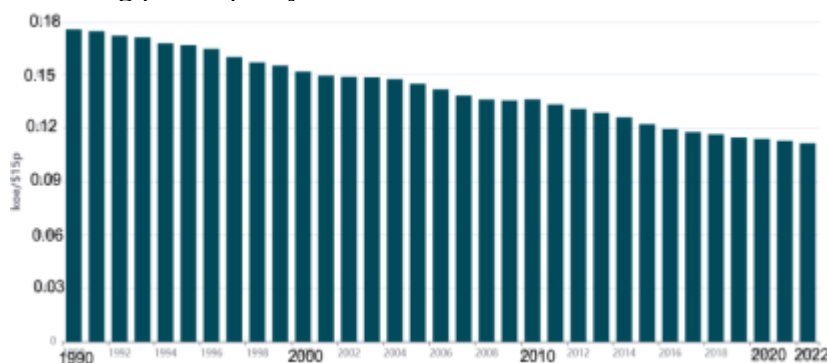


Fig. 1. Global trend in energy intensity koe/\$15p, 1990–2022

Globally, global energy intensity decreased by 1.2% in 2022; in the period 2009–2019 it was 1.9% per year. In 2022, global energy consumption increased by 2.1%, and GDP growth by 3%. At the same time, the values and trends of energy intensity differ significantly for different countries of the world due to different economic structures. Countries with high specific energy consumption

(koe/\$15p, Fig.1) include Iran – 0.251, Kuwait – 0.228, Venezuela – 0.206, Russia – 0.204, Ukraine – 0.193, South Africa – 0.187, Taiwan – 0.182, Uzbekistan – 0.179, Canada – 0.173, Nigeria – 0.161, China – 0.145, Kazakhstan – 0.1414. [3].

The high energy intensity of production and its low energy efficiency in Uzbekistan are a serious obstacle to the sustainable economic development of the country, and therefore, the problem of increasing the energy efficiency of production is a priority.

The energy intensity of GDP in Uzbekistan reaches 1 toe/1000 US dollars, which is 4–5 times more than in developed countries of the world. At the same time, primary energy consumption in Uzbekistan per person is approximately 5 times less than in the USA, and 2.5 times less than in Russia. The reasons for such a high current level of energy intensity of the economy are:

- ineffectiveness of existing economic incentives for energy conservation;
- relatively low level of domestic prices for energy raw materials and products of their processing and the resulting lack of interest at all levels of government and among the population in ensuring the rational use and economical consumption of fuel and energy;
- low equipment of energy consumers with technical means of accounting and control over the consumption of energy resources;
- high energy consumption of production processes due to the large share of outdated main production equipment;
- and most importantly, the absence at enterprises of production services for energy saving and energy efficiency;
- insufficient awareness of the population on energy saving issues.

Inefficient use of energy resources is the main obstacle to achieving sustainable economic growth of the national economy in the long term.

The reasons for this situation are well known. This is both the lack of interest in enterprise management and the inability of technical personnel to develop a feasibility study for measures to improve energy efficiency.

What needs to be done in this direction first? The practice of developed countries [5–8] shows that energy conservation measures should be an integral part of a comprehensive state program for managing an enterprise - industry - economy, only in this case the results of energy conservation will be significant and long-lasting.

Issues of saving fuel, heat and electricity should be considered in connection with saving total production resources, i.e., as an element of resource conservation. The effectiveness and priority of energy-saving measures should be determined based on not only energy, but also social environmental and economic assessments.

In terms of importance, the second component of the energy efficiency strategy (EUI), after pricing, considered to be the institutional aspect, which ensures coordination and motivation of all structures interested in EIE (manufacturers, designer's, builders, and investors).

The 3rd component of EIE is training and dissemination of information. All these components should have mechanisms of financial and economic incentives instead of an administrative and regulatory system of energy management and penalties.

The absolute priority among energy-saving measures both in the fuel and energy complex and among consumers is low-cost measures carried out by improving the organization of the functioning of measures, introducing a system of material incentives, and strict compliance with the rules of energy use.

A fundamental change in production technology usually requires large capital expenditures and pays off in 5–7 years or more, which will require significant investments. With limited financial resources, energy technologies occupy a special place in the technical competition for investments since they influence all other technologies.

Technical competition for innovative investments.

The realization of energy saving potential can be carried out based on modern energy saving technologies in the following directions [4]:

In energy:

- combined generation of heat and electrical energy (gas turbine and combined cycle plants);
- increasing the recovery rate of oil and gas and increasing the efficiency of their processing and transportation;
- coal enrichment at the mining site and the introduction of effective combustion technologies;

• adjustable electric drive, etc.

In the housing and communal services sector:

- equipping all consumers with energy monitoring and consumption devices;
- use of panels with improved heat-shielding properties;
- decentralized energy supply;
- use of heat pumps;
- application for lighting energy efficient (gas discharge and LED) lamps;
- use of low-energy household equipment, etc.

In the building materials industry:

- replacement of the technology of the wet method of producing cement clinker with a dry one;
- production of ceramic bricks with increased voids;
- production of products based on waste (ash, slag, etc.);
- increasing the efficiency of fuel use, recycling waste gases, etc.

In agriculture:

- advanced water use technologies;
- optimization of modes of main canals for machine irrigation;
- improving the structure of the agricultural machinery fleet, etc.

By transport:

The most important direction in energy saving is the introduction of renewable and alternative energy sources in all sectors of the economy with an increase in their share in the energy balance in accordance with the dynamics of the depletion of fossil fuels as the capacity of energy storage devices increases. If this does not work with existing renewable energy technologies and energy tariffs, then a solution should be sought in grant/interest-free investments.

In this case, the problems of reducing the environmental load on the environment are simultaneously solved.

With the involvement of foreign capital, it is advisable to create demonstration zones of high energy efficiency, which has been successfully implemented in many countries of Eastern Europe and Russia.

Based on the experience of advanced countries, it is advisable to create special structures responsible on a national scale for implementing state policy in the field of energy saving [5-7].

Energy management system. Solving any problems of energy saving and increasing the energy efficiency of production requires the creation and operation of a clear energy management system. The enterprise energy management system must have a direct connection between current monitoring and management (Fig. 2).

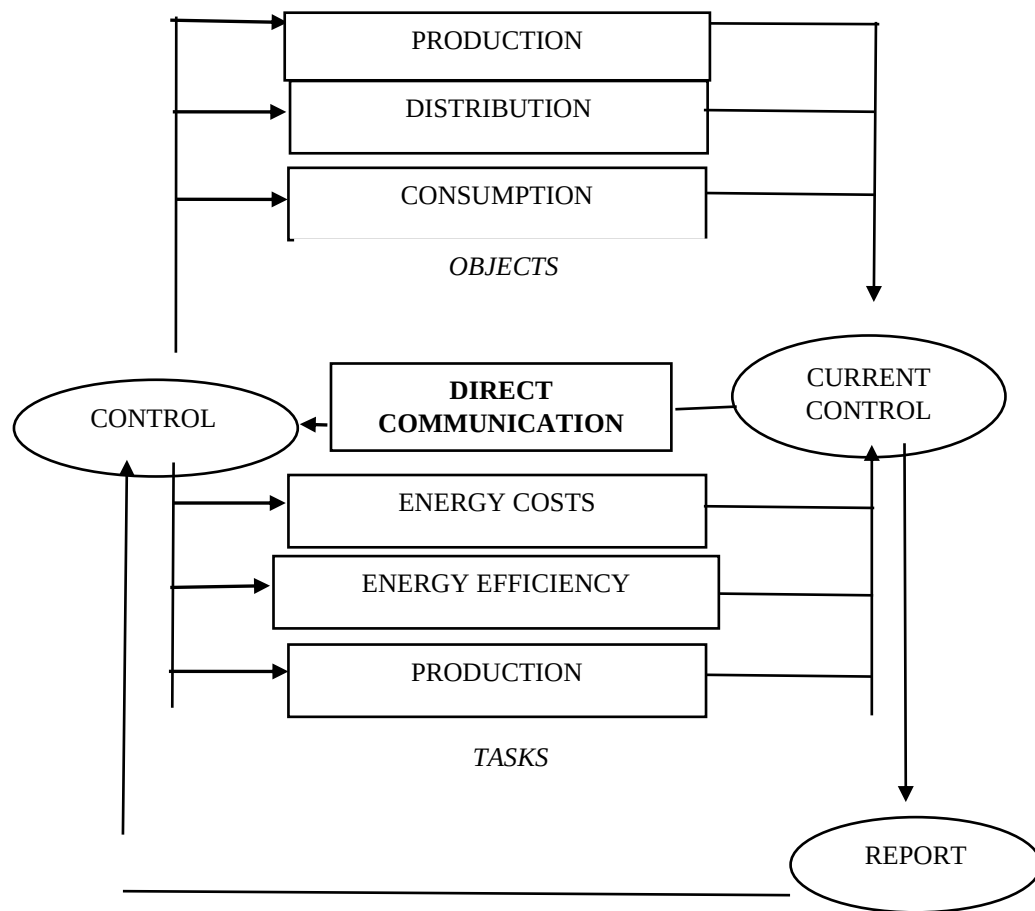


Fig. 2. Energy management system

In turn, setting and solving problems in energy management systems is impossible without a detailed energy audit (survey) of the current state of energy use at enterprises.

In Uzbekistan, energy surveys (energy audits) provided for by the Law of the Republic of Uzbekistan “On the Rational Use of Energy” have not yet been carried out in full. It's connected with:

- incomplete development of certain regulatory documents provided for by the Law;
- lack of trained specialists both in auditing and in production.

Energy management or energy management is based on control using instruments. The introduction of commercial energy metering devices for payment is only the first and necessary stage. A significantly larger volume of various stationary and portable devices is needed to establish ongoing monitoring of energy consumption and analyze opportunities for increasing energy efficiency. Not only large companies, but also small enterprises in developed countries today use programs for continuous monitoring of energy consumption with computer data processing (Monitor-ing@Targeting) and setting energy saving goals.

The costs required to conduct energy audits and organize energy saving work are not commensurate with the effect that can be obtained as a result of the implementation of recommendations and proposals. The economic effect of investments in this area, even in the best companies in the world with a high level of energy technology, is an order of magnitude greater than the volume of investments.

Thus, the solution to both problems (conducting audits and monitoring energy consumption) requires the purchase or in-house production of technical metering devices and control of energy consumption, as well as the training of specialists for audit and production services in energy management (energy management). Considering global experience, it is necessary to create energy

saving services at all large enterprises, coordinating their work with regional energy management centers for electricity, heat and gas supply.

In conclusion, we present some proposals from Uzbekistan specialists on energy saving and energy efficiency:

- Mandatory introduction of the position of energy manager at large enterprises with energy consumption in the amount determined by Government Decree in accordance with the Law on Energy Saving. At the same time, the energy manager must have a certificate of completion of a refresher course in accredited training centers in the areas of energy management, energy audit, energy saving and energy efficiency improvement (by industry). To train energy managers, it is necessary to create accredited training centers. Currently, work is underway with the JICA Foundation (Japan) to create a real training center at the Research Institute of Renewable Energy Sources under the Ministry of Energy of the Republic of Uzbekistan;

- Develop rules and mechanisms for concluding contracts for the supply of energy resources, rules that stimulate their savings.

- Development and implementation of mechanisms for a voluntary agreement between energy-intensive enterprises and regulators on energy saving, which establishes mutual obligations. This practice has become widespread in the EU. Voluntary agreements that provide incentives and incentives for energy conservation in the form of incentives and tax deductions are usually aimed at energy-intensive enterprises where mandatory energy management systems (EMS) and energy audits have a large impact on the result (for example, Denmark and Sweden);

However, these types of energy saving activities are difficult to quantify in advance and determine the savings results in order to set realistic targets for the Voluntary Agreement.

On the other hand, in the UK, Slovenia and Germany, tax deductions or exemptions, as well as deductions or exemptions from environmental duties, depend on the fulfillment of quantitative indicators;

- To stimulate the introduction of energy efficient technologies, approve a list of objects and technologies that relate to high energy efficiency objects and technologies, providing them with appropriate customs and tax benefits.

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Rezyume: *Maqola zamonaviy energiya tejovchi texnologiyalar asosida O'zbekiston Respublikasida energiya samaradorligini oshirish masalalariga bag'ishlangan. Iqtisodiyotning hozirgi energiya zichligi darajasi va uzoq muddatli istiqbolda barqaror iqtisodiy o'sishga*

erishishga to'sqinlik qiladigan energiya manbalaridan samarasiz foydalanish sabablari tahlil qilindi.

Резюме: Статья посвящена вопросам повышения энергоэффективности в Республике Узбекистан на основе современных энергосберегающих технологий. Проанализирован современный уровень энергоемкости экономики и причины неэффективного использования энергоресурсов, которые являются препятствием для достижения устойчивого экономического роста в долгосрочной перспективе.

Kalit so'zlar: energiya tizimi, energiya samaradorligi, energiyani tejash, energiya auditi.

Ключевые слова: энергосистема, энергоэффективность, энергосбережение, энергоаудит.

EDUCATIONAL, GEOGRAPHIC TEACHING, AND THE DEVELOPER'S OBJECTIVES

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Summary: *This article presents scientific opinions and views on issues related to the teaching of geography.*

Key words: *the lesson's objective, Geographical education, learning objectives, aims for upbringing and development, concept, training in science and methodology, educational service, methodological foundation, society, individual, and modernization.*

The desired result of a specific action or behavior is called a goal. It is also stated as a dream or intention based on the deadline for reaching the goal. No action, no matter how tiny, is taken without intention in Islam. If this is the case, it is evident that educational initiatives designed to enhance students' personalities have a noble goal as well.

Every time a new session is planned, it starts with a goal and the learning objectives needed to reach it. However, figuring out the lesson's objective is a far harder process. A thorough comprehension of the broad purpose objectives of the subject matter being studied is a prerequisite for its accurate definition. From a wider perspective, it is imperative to comprehend and be aware of the processes involved in determining the aims and purposes of a given academic discipline.

If one were to conceptualize the lesson's goal as a circle, it would have three sectors: academic, educational, and developmental. A spiritually developed student is the product of education, and the components that shape and enrich him are represented by the pieces in the center of the circle: education and educational goals. Once the lesson's objective is understood, tasks to accomplish it are identified. The best approach for the educational process, teaching techniques, and didactic tools are then chosen in order to finish the goals. The ability to correctly set the goal ensures the lesson's effectiveness.

Occasionally, the goal of a lesson is stated in an arbitrary, one-sided manner, such as "testing students' knowledge, skills, and competencies in the subject," or "providing students with deep knowledge of the subject." Training skills like description, imagination, recall, and observation are typically not given much priority in the session. The State Education Standard defines the criteria for these attributes, nevertheless, and these standards are part of its requirements.

At all levels of the lifelong learning system, geographical education is a fundamental and unalienable part of the pedagogical process that shapes students' personalities and helps them achieve the overall objectives of these educational establishments. Geography education also shapes students' scientific conceptions of the Earth, their socioeconomic knowledge, their understanding of the interdependence of nature and society, and the geographical objects, processes, and events that occur in different nations and regions of the world.

Chapter 4 of the **Resolution of the Cabinet of Ministers of the Republic of Uzbekistan No.187 dated April 6, 2017** defines the main goals and objectives of geographical education: the main goal of teaching nature and geography in general secondary, secondary specialized, and vocational education:

- the development of fundamental and general skills in geography and natural science among students;
- the interdependence of society and nature, geographical objects, processes, and events, the Earth's natural landscape, the rational use of nature, the development of critical thinking skills regarding global environmental issues, the comprehension and protection of nature, the skill of applying theoretical knowledge in practice;

- the growth and development of students' capacity to use their understanding of geography in real-world applications by using life's imagination to summarize their practical experiences.

The primary responsibilities of teaching natural science and geography in general secondary, secondary specialized, and vocational education:

- instill in students a sense of love for the world around them, for their homeland,
- formation of skills in conservation and protection of nature, practical application of theoretical knowledge;
- observation and analysis of nature, the formation of national and universal values in it;
- acquisition of knowledge necessary for social life and lifelong education;
- acquiring thinking and knowledge in accordance with the requirements of modernity, world standards in the field of education and the interests of national development and at the same time learning to use them in everyday life.

Teachers must understand the elements of educational content and how students assimilate it in order to carry out the aforementioned primary duties of geographical education, accomplish the effectiveness of teaching geography, and plan and regulate the cognitive activity of students. Today's students' ability to learn geography, their ability to acquire the skills and knowledge needed to engage in study, employment, and social activities, as well as their significance to the growth of the national economy, all affect how effective geography instruction is.

And as a result of learning about geography and receiving an education, they finally show themselves in the form of students' worldview, faith, nature, society, and personalities. The abilities, growth, and mental and physical maturation of the pupils serve as indicators of it.

In the general education system, every geography course has unique features. These elements specify geography's goal. The goals of each class's geography course must be known by the geography instructor. As with other academic disciplines, there are three categories into which geography education can be classified: developmental, educational, and educational.

The following are the academic objectives of the lesson:

- provide the student with a firm understanding of the fundamentals of geography, including applied, economic, social, and natural geography.
- providing secondary school, academic lyceum, and vocational college students with the chance to learn about economics, the ecology, and geopolitics while guiding them toward a career;
- providing students with tools for researching geographical objects and phenomena. development of abilities to use certain techniques (methods);
- highlight the importance of ecological, economic, and social geography as well as practical geography in addressing the most pressing issues facing the country's economy.

For instance, resolving the Aral Sea issue, accelerating the erosion process brought on by disregarding agrotechnical guidelines during soil reclamation and its prevention, and creating the geographical framework necessary for Uzbekistan to become a great nation;

- instruct students in the use of geographic maps, references, and supplementary literature, help them develop the ability to apply their theoretical understanding of geography to new situations and in practice. Formation of geographical culture among students.

The following are some of the objectives of upbringing:

- instilling in students a sense of pride in the strength and prosperity of our motherland;
- instructing them on how to view the relationship between nature and society from a didactic standpoint;
- providing them with a morally sound education, emphasizing that protecting and loving their motherland is every citizen's highest responsibility;
- assisting students in finding a career that suits them and a comfortable work environment;

The following are some of the developmental objectives:

- broadening students' perspectives on the scientific world;
- improving their ability to use textbooks and other reading materials;

- giving students the practical skills they need to work independently with maps and without assistance;
- and fostering a culture of speaking and communication among students.

Additionally, the following objectives are meant to pique students' curiosity:

- stimulate their interest in geographical concepts and issues;
- provide them with chances to hone their speaking, thinking, and observational skills;
- teach them how to solve geographical puzzles within their means and to form a cohesive perspective on the processes and events that are affecting them.

Geography serves a variety of purposes because it is taught in practically every grade. There are three categories into which geography education goals can be placed.

1.Academic purposes: In order to provide opportunities for the growth of life and the creation of society, teach students the fundamentals of the natural sciences as well as the technical and economic aspects of nature protection and its wise use. This includes teaching them the principles of economics, geography, cartography, and other geographical sciences, provide economic and environmental education to students: guarantee that pupils possess the innate ability to learn about geographical and economic-geographical objects and phenomena: cultivating in pupils a sense of place-based awareness, teaching them the use of maps and reference materials, and preparing them to read news articles every day. Development of students' skills to enhance their understanding of geography and related disciplines, in-depth familiarity with the natural and economic geography of their country,

2.Upbringing goals: to instill in students a proper scientific understanding of nature, economics, and the connection between the two. The development of scientific pride and patriotism among students. Describe the nature of concerns including how to ensure employment, govern the economies of many nations, and make effective use of natural resources. In the era of modern scientific and technological advancement, it aids students in discovering their calling in life, in vocational training, and in general. development of traits like pride in your nation's economic accomplishments and a sense of true mastery over the society you live in.

3. Development of students' cognitive activities. formation and growth of skills including speaking, memory, thinking, and observation in students. Encourage pupils to use all of their skills to solve geographic puzzles. enhances your capacity to relate your ideas and opinions to the map directly and to approach geographical objects and events holistically.

The educational objective and geography curriculum are strongly intertwined. Thus, scientific development of geographical education is necessary to elevate the educational objective to a higher level. While maintaining a strong scientific and political focus, educational objectives also need to include professional, organic, environmental, and economic knowledge into daily living.

Programs, textbooks, instructional tools, and organizational structures within the educational system are all strongly tied to the objectives of geography education. Over time, geography education goals in schools also evolve. These shifts will get more intense in the future. The advancement of science and technology has an impact on qualitative shifts in geography as well.

The method of teaching geography will not be impacted by educational reforms implemented every ten to fifteen years. Programs and curricula for geography education will therefore undergo significant modifications. Thus, altering geography's content has little bearing on the educational objectives. There are numerous challenges in implementing geography education in schools when the objectives of the course are not clearly stated. The following are some possible ways that these issues could show themselves.

1. Without specific goals, creating plans gets harder.
2. Without a precise definition of the goal, methods cannot be defined.
3. It is challenging to develop efficient methods of assessing students' understanding, etc., in the absence of clear objectives for teaching geography.
4. Without a clear idea of what geographical education will cover in the next 20 to 25 years, it is challenging to establish the subject's educational objectives.

Consequently, identifying the goal of teaching geography is necessary before assessing its significance. Aerial photography, television, and films were introduced into geography lectures in the early 1950s, replacing the maps and few images that were used a century before. The objectives of teaching geography remain unaffected by the appearance of a wide range of educational instruments in the field today.

Geography has improved learning materials through the use of ICTs (information and communication technologies), space photography, computers, and other visual aids. Technology has started to show up in schooling. The milieu in which students live now is vastly different from that of 20–30 years ago; they inhabit a sophisticated and advanced cultural setting.

Students no longer just rely on their education, teachers, textbooks, and other instructional tools as their primary source of information. The creation of students' perspective is greatly influenced by the diverse extracurricular sources, newspapers, magazines, radio, television, videos, and Internet materials that have emerged during the process of learning information.

Students find it challenging to focus their learning in a particular direction and order because a large portion of the material that is presented to them is random. How much this knowledge will affect pupils' accurate comprehension of the item or event is unknown. The primary goal is to instill a scientific worldview in them by teaching them how to evaluate this material and discern between opinions and facts.

Specifically, ongoing educational efforts are required to ensure that content shared on the Internet does not adversely affect students' education. First of all, since life is not about material possessions, no one should be held captive by "luxury slavery," when they devote their entire existence to the convenience of owning a smartphone or a state-of-the-art vehicle, living in the most renowned neighborhood and dressing in the most costly clothing) should be thoroughly discussed in economic and social geography classes.

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Rezyume: Ushbu maqolada geografiya o'qitishga oid masalalar yuzasidan ilmiy fikr va qarashlar keltirilgan.

Резюме: В статье представлены научные мнения и взгляды по вопросам преподавания географии.

Kalit so'zlar: dars maqsadi, geografik ta'lim, o'quv maqsadlari, tarbiya va rivojlanish maqsadlari, tushuncha, fan va metodika bo'yicha kadrlar tayyorlash, ta'lim xizmati, metodik asos, jamiyat, shaxs va modernizatsiya.

Ключевые слова: цель урока, географическое образование, цели обучения, цели воспитания и развития, концепция, научно-методическая подготовка, образовательная услуга, методическая основа, общество, личность, модернизация.

«JASLAR TV» CHANEL. MEDIA CRITICAL ANALYSES

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Summary: *In this article, the author analyzed the state of program preparation, genre specifics, and format issues. In addition, the author of the TV channel's program analyzed the media from a critical aspect.*

Key words: *TV viewer, program block, photo picture, video sequence.*

Introduction. The TV channel “Jaslar TV” became the first TV channel in the Republic of Karakalpakstan to broadcast private and national TV programs. Well, what is the current situation with the TV channel, what is the main thing people pay attention to, we tried to pay attention to these aspects. The article analyzes the features of the TV channel in preparing programs, the variety of genres from the point of view of media criticism.

Old genres in news blogs

The blog of educational programs on the «Jaslar TV» channel is limited to only one program “Karakalpakstan Online”. Representatives of the TV channel say that the program will be broadcast for 15 minutes, but in practice some numbers do not exceed 10 minutes.

The episode of August 6, 2021 lasted 6 minutes 54 seconds; initially, the announcement of the educational program was read by the presenter. Original story by I.V. It began with a report on the exhibition “It all started with a plan”, organized at the Savitsky State Museum. As we mentioned above, the plot was presented in the form of a photo report, designed for old television genres. For a story that lasted 2 minutes 10 seconds, more than ten photographs were selected, due to the lack of photographs and the time of the message, the photographs were repeated twice, in addition, the lack of proportionality of the texts in the story. The information related to the history of the museum in the correspondent's text is disappointing.

The following story was prepared for a republican competition for preschool education workers and lasted 2 minutes 3 seconds. However, the plot initially began with 8 photographs, and the continuation of the plot died with video views. In our opinion, the plot should have uniform content, since it can confuse the viewer [1].

The August 6, 2021 episode of the show lasted 8 minutes and 58 seconds and featured 3 segments. An employee of the Ministry of Justice of the Republic of Karakalpakstan spoke about the original conspiracy, what are the rights and responsibilities of the executioners in the upcoming elections. It should be noted that in a content program, one expert thinking about elections, responsibilities, right in front of the screen for 2 minutes 34 seconds is sure to bore the audience. It is clear that a TV viewer who constantly watches an educational program will switch to another channel after such a story [2].

The next story lasted 1 minute and 10 seconds, mainly talking about creative exams held at the Nukus State Pedagogical Institute. 5 images chosen for the photo report did not match the selected text. For example, the text talked about the number of applicants to the educational institution, and the pictures showed scenes from exams. In our opinion, the report could have been more complete if the circumstances of the examination process and the applicants' opinions about the examinations had taken place.

The goal of “Karakalpakstan Online” is to introduce viewers to the latest news from our republic. However, if the technical imperfection of the TV channel pushes a return to old genres, then the lack of real specialists causes a discrepancy between the text and the plot. First of all, in order to quickly and with the preparation of a report from the spot broadcast news in the republic, technical support must be high, and this aspect is the most painful point of the TV channel. Incorrect selection of elements in the plot, text, composition, editing, etc. connected with specialists, the main hosts of the program are students of the Faculty of Journalism of KSU.

Students can work in accordance with their aspirations, but it is difficult to conclude that they have fully mastered the specifics of broadcast journalism.

From “The Best Day” to “Youth Life.”

A morning entertainment show would be “The Best Day Ever” and the show lasts about fifteen minutes. Five minutes may be too short for a morning entertainment slot, and the facts of the show's columns show that the creators still have some work to do. The show's plots consist only of excerpts taken from Internet information sites. For example, the “Insta News” section will feature new video clips released by Karakalpak, Uzbek and Kazakh show business stars on the Instagram social network. In addition, interesting videos are shown on the Internet under the “Interesting Video” section. The Life Hack section provides views on various vital situations. To tell the truth, the show may be suitable for morning entertainment, but the lack of ideas in the creative process lets the show down. In our opinion, it is appropriate to include films with personal ideas in the format of an entertainment show.

Among the original shows on the channel, one can highlight the show “Shipaker”. The show, prepared according to the genre in the form of an interview, mainly talks about human health, the prevention of various diseases and their vaccination with the participation of prominent medical specialists of the republic.

For an interview to be constructive, a journalist needs experience and preparation for interviews. The host of the “A doctor” program, Ulmeken Saparova, lacks these qualities. For example, during a conversation with an expert, the presenter's questions are so simple that it is easy for the expert to answer them. In addition to the simplicity of the questions, you can find situations where the presenter tries to enliven the conversation by repeating expert opinions: “We eat instant foods that cook quickly. Rashes appear on the face. What should we do to prevent this?” “This will be a period of concealment of the disease, without clinical symptoms. There are levels for this. Can you tell me about the vaccination methods at these levels?” [3]. There are many questions in this direction.

In simple terms, we can say that the program takes place in the form of an interview-report, because doctors only give information about the disease. If viewers had the opportunity to ask questions during the program, the broadcast would be even livelier. In other words, we would be talking about practical methods of vaccination against various diseases. This ensures that the broadcast is lively and effective.

One of the most popular programs on the TV channel is “Youth Life”, because the presenters at the beginning of the program announce that our youth can receive interesting information through the air. In fact, this is not so; there are enough reasons to say so.

A similar program, namely “Youth Time”, was broadcast by the Karakalpakstan TV channel. This show also dealt with the lives of young people. Analogies appear even when looking at “Youth Life”. The work of the Youth agency, the initial section of the program, is given as official information. On the one hand, there are no permanent display columns; one column is given in one issue and disappears in the next. And the latest broadcast was prepared entirely on the basis of Internet data. There are flaws in the plots and texts. For example, in the July 19 episode of the program, after the “Thank you” section, a new story began, and this was followed by a question and answer session with the audience sitting in the amphitheater. After several viewings, from the words of the presenter, one could understand what it was about, what kind of event was being organized. This situation confuses the viewer and leads to the formation of a different opinion.

Three TV channels without TV programs

Any TV channel that respects its audience will work on the basis of a TV program. The reason is that, on the one hand, this is respect, and on the other, it determines the audience's trust in the channel. These aspects are not unique to Youth TV. For example, “Congratulations” [4], i.e. “Congratulations” can continue depending on the number of congratulations sent to the teletomans on their happy days. We can say that the Hello Youth program, which airs in the mornings, is an analogue of Congratulations. Only in the program, along with congratulations, congratulations and

good wishes come via SMS and are read out by the presenter. The time of this show also varies, it also depends on the number of SMS. It is clear that the broadcast time of entertainment programs varies, but the “Karakalpakstan Online” program, which is considered educational, can last 8 minutes, and sometimes more than 10 minutes. It is noticeable that the duration of the transmission depends on the amount of news.

In addition, the untimely launch of some programs reduces the confidence of the viewer who wants to watch the program. For example, the announcement of the show “In the guest” was aired two or three times. It's also funny that the show's producers say that the show has been off the air for so long, "it looks like they screwed up in the editing process."

However, the organization of “Youth parties” by the TV channel and their live broadcast raised the spirits of several thousand Karakalpak youth and united them around one idea. In our opinion, programs must have a face, that is, the program must be constantly led by one or members of the creative team; the arrival of young creators and presenters on the TV channel and their rapid disappearance reduces the level of the program. It's difficult to balance cost-effectiveness and quality. But flight from economy and reduction in quality will destroy the viewer's trust in the TV channel.

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4. https://www.youtube.com/watch?v=7JQj9Ay_zbY&t=10s

Rezyume: *Ushbu maqolada muallif Qoraqalpog'iston xususiy telekanallarning eng ilg'ori hisoblangan «Jaslar TV» telekanalida ko'rsatuvlarni tayyorlash, janrlar xususiyatlari, format masalalari tahliliga tortilgan. Muallif asosan telekanal ko'rsatuvlarini tanqidiy nuqtai nazaridan tahlil qilishga harakat qilgan.*

Резюме: *В этой статье автор проанализировал состояние подготовки передач, жанровую специфику, вопросы формата. К тому же автор передачи телеканала анализировал в медиа критическом аспекте.*

Kalit so'zlar: *Teletamoshabin, dasturlar blogi, fotorasm, videoko'rinish, internet ma'lumotlari.*

Ключевые слова: *телезритель, программный блок, фото картинка, видеоряд.*

INFORMATION TECHNOLOGY IN THE PHYSICAL CULTURE

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Summary: *the article analyzes the issues relating to the application of information technology in managing the sphere of physical culture and sports.*

Key words: *Information technology, information and methodological support, expert systems.*

One of the main tools of informatisation of society is information technologies. They make it possible to fundamentally change the life activities of each person. The development of a strategy for the development and use of information technologies in all spheres of human activity is one of the key problems of strategic planning both at the national and global levels.

Thus, the issues of mastering modern information and communication technologies their use becomes one of the main components of professional training of any specialist, including a specialist in the field of physical culture and sport. This requires the development and implementation in the educational process of faculties and institutes of physical culture of professionally oriented software and software-pedagogical tools and courses aimed at mastering the necessary knowledge, as well as the accumulation of personal experience of their use in professional pedagogical and sports activities.

The use of information technologies in physical culture and sport is aimed at:

- development of personality and preparation of future specialists for comfortable life in the conditions of information society;
- gradual intensification of all levels of educational and training processes.

The use of modern information technologies in the educational and training process is becoming particularly relevant and requires constant generalisation and exchange of experience. Despite certain difficulties associated with organisational, material and technical, scientific and methodological aspects of the development and implementation of modern information technologies in the field of physical culture and sport, they arouse a certain interest [1]. There is a need for transition from traditional means to the use of modern information and communication technologies that allow to collect, process and transfer information more effectively, to conduct independent work and self-education, to qualitatively change the content, methods and organisational forms of education, training of highly qualified athletes and referees, physical culture and health work with the population [2].

With this in mind, it is possible to distinguish the directions of the use of information technology in physical culture and sport. So, information and computer technologies are used:

- as a learning tool that improves the teaching process and increases its effectiveness. In this case, the possibilities of software and methodological support of modern computers are realised in order to communicate knowledge, to simulate educational, training and competitive situations, to carry out training and to control the results of training;
- as a means of information and methodological support and management of educational and organisational process in educational institutions, sports organisations, etc.;
- as a means of automation of processes of control, correction of results of educational and training activity and computer testing of physical, mental, functional and psychological states of an educated;
- as a means of automating the processing of competition and research results;

Currently, the optimisation of athlete's training planning is on the way of creating expert systems and programmes close to them in terms of content. Expert systems are complex software systems that integrate the knowledge of specialists in specific subject areas and replicate this expertise to advise less skilled users. According to the developers of expert systems, this type of

application programme is the most appropriate for solving tasks of this type. To date, expert systems have been developed for planning the training of middle-distance runners and weightlifters, as well as athletes in jumping athletics. Software has been developed that allows load planning in shooting.

Application programmes are being actively created and improved to track the dynamics of the athletes' condition by entering the necessary parameters. The information is transmitted to the computer by means of sensors. This makes it possible to increase efficiency and avoid possible errors in the training process. Video analysis programmes are also used.

The possibilities of these technologies allow to include new topics reflecting modern scientific achievements, the study of the essence of which until recently was not possible due to the difficulties of conceptual nature or difficulties associated with the need to process large amounts of information for its educational interpretation. At the same time, an important innovation is the use of distributed information resource for educational purposes, which determines the trend of open education development [3].

The use of IT is related to the development of programmes for recreational physical culture. Programmes in this area can be divided into diagnostic, diagnostic-recommendatory and control. In the first case, the programme allows the specialist to make a quicker diagnosis; in the second case, along with the diagnosis, the user is offered a certain set of recommendations corresponding to the identified level of health and motor activity. In the third case, the computer interacts with the user on the principle of feedback: it issues tasks, controls their fulfilment, and, based on the results of new tests, develops appropriate recommendations. In the last case we are talking about the creation of the "Personal Trainer" system. Table 2 presents information about computer programmes for health promotion published in the journal Theory and Practice of Physical Culture.

In the conditions of the modern world, the informatisation of society is becoming more and more extensive every day, but there is still a problem of equipping educational institutions with modern equipment and software. However, work is being actively carried out to introduce modern information technologies in all areas of the education system, sports and at all stages, in the field of physical culture in schools and universities.

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Rezyume: Maqolada jismoniy tarbiya va sport sohasini boshqarishda axborot texnologiyalarini qo'llash bilan bog'liq masalalar tahlil qilinadi.

Резюме: в статье анализируются вопросы, связанные с применением информационных технологий в управлении сферой физической культуры и спорта.

Kalit so'zlar: Axborot texnologiyalari, axborot-metodik ta'minot, ekspert tizimlari.

Ключевые слова: Информационные технологии, информационно-методическое обеспечение, экспертные системы.

THE DEVELOPMENT OF UZBEK KURASH AND ITS ROLE IN YOUTH EDUCATION

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Summary: *This article contains information on the education of student youth as modern personnel, the prospects of Uzbek national kurash due to independence, its role in youth education, and the prestige of today's kurash sport in international arenas. It also systematically includes requirements for further strengthening the reach for training qualified personnel, trainers, and referees for the field.*

Key words: *Independence, continent, Tazim, Kurash, Halal, arena, sport, federation, International Kurash Association, Universiade.*

Kurash, officially acknowledged as our white national sport, has garnered significant attention ever since our nation's independence. It is evident from our white nation's early years of independence that physical education and sports received significant attention, supporting our president's assertion that "Uzbekistan is a country of sports" was not in vain.

From the first years of our independence, the sport of kurash, which is now popular throughout the world's sports arenas, started to develop with distinct attention and viewpoints. For instance, historical tours honoring the great thinkers and artists who shaped our nation during its early years of independence. In honor of our great-grandfather Amir Temur, tours started in 1992 in the Kashkadarya region's Shahrisabz district and the city of Khiva in the Khorezm region. Every two years, an international kurash competition for the presidential award has been conducted in Termiz, Surkhandarya area, in honor of our grandpa Al-Hakimat-Termizi, a renowned hadith scholar, since 1993. Every two years, international wrestlers assemble in this oasis of Surkhan, the country of Alpomish, which is regarded as the pearl of Uzbekistan's south, to compete and assess their talent and training levels. For us Surkhandarya folks, it is a pleasure to concentrate on the city of Termiz.

The significance of these international competitions lies in the fact that the emerging generations in every nation where kurash sports competitions are held are courageous, honorable, patriotic, friendly, and confident in their ability to win. The husband handles duties like parenting young males. In addition to the spiritual impact of our kurash in international arenas, other pakhlovans such as O'ral To'raev, Rustam Ergashev, Erali Makhmarasulov, Toshtemir Mukhammadiev, Abdulla Tangriev, Davlat Choriev, Farkhod Jolliev, Samijon Ubaydullaev, Abdulla Kholiyorov, Mukhsin Khisomiddinov elevate the stature of Uzbekistan's national sport. [1.3]

In addition to teaching the next generation to be strong, resilient, and well-rounded individuals, kurash has grown in significance as a means of teaching young people how to face challenges head-on and to do it in a fair and brave manner. The Uzbek Cup and the Uzbekistan Championship have been conducted in kurash since our independence. Simultaneously, our opinion is supported by the inclusion of the kurash sport in the schedule of third-stage sports competitions "Umid nihollar," "Barkamol Avlod," and "Universiade," as well as the positive atmosphere of these events. Everyone can see that it is crucial for kurash fans worldwide, for everyone to participate in kurash, and for their health, that kurash be included in the schedules of major international tournaments and sporting events, as well as for sports competitions involving wrestlers of all ages.

On the initiative of our first president, I.A. Karimov, the 1999 World Kurash Championship was hosted in our capital city of Tashkent. Today, on November 4, 2020 PQ-4881, our president, Sh.M. Mirziyoev, signed the agreement. "Kurash will remain a national sport until 2025." The universal innovation of "bringing to the stage" was the emphasis given to the signed conflict. [2]

National kurash federations were founded in other nations on other continents of the world as a consequence of the direct assistance of our state and the efforts made by the Kurash Federation

of Uzbekistan to popularize kurash. 129 national federations from five continents came together to form the International Kurash Association on September 6, 1998.

The World Anti-Doping Agency recognized the International Kurash Association in 2010, which is regarded as a crucial prerequisite for granting them access to the Olympic Games schedule. Kurash was the first sport in history to be featured at the 36th General Assembly of the Olympic Council of Asia, which took place on September 20, 2017. It was included as a stand-alone sport to the 2018 Asian Summer Games program hosted in Indonesia. It was also added to the Asian Summer Games programming for 2022 in China and 2026 in Japan. [4.6]

In 2017, there were 25,000 people engaged in kurash in our country, and by 2018, this figure has exceeded 40,000 people, making up 0.1% of the total population of the country.

Since our independence, kurash has been able to carry out significant and noble missions, such as hosting Uzbekistan's first Asian and World Championships, international competitions, and displaying our athletes to the globe. Kurash's inclusion in the Uzbekistan, Asian, World, and Summer Asian Games programs since 2018 is a sign that the sport is progressing, given the Republic of Uzbekistan's recent independence. When it comes to instilling a sense of patriotism in young people, the words "Tazim," "Kurash," "Halal," "Yonbosh," and many others that sound similar in the pure Uzbek language during kurash matches have a special meaning and significance.

As a conclusion, we should state that the history of the sport's origins and the preparations that will be a fantastic instrument for young people's health are included in the marketing and promotion of kurash, which has emerged in international arenas with the honor of our freedom. It's important to communicate that this is a sport. To our kurash athletes, to our mentors who give their all to help students succeed, to work hard on themselves and perform Uzbek in international arenas, to sing Uzbek Uzbek in the victory band, and to sing the national anthem of our independent Uzbekistan at the conclusion of each phrase. We hope they have great success in making their clans proud.

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Rezyume: Ushbu maqolada o'zbek milliy kurashining istiqboli va uning yoshlar tarbiyasidagi o'rni hamda bugungi kundagi kurash sport turining dunyo arenalaridagi nufuzi bilan birga yoshlarni malakali kadrlar etib tarbiyalash, trenerlar va hakamlar tayyorlashga bo'lgan etiborni yanada takomillashtirishga oid tafsilyalar berilgan.

Резюме: В данной статье рассмотрены перспективы узбекского национального кураша, влияние спорта кураша на мировых аренах, и ее роль в воспитании молодежи как квалифицированных кадров, совершенствовании к подготовке тренеров и судей.

Kalit so‘zlar: Istiqlol, qit’a, Tazim, Kurash, Halol, arena, sport, fediratsiya, Xalqaro Kurash Assotsiatsiyasi, Universiada.

Ключевые слова: Независимость, континент, Тазим, Кураш, Халяль, арена, спорт, федерация, Международная ассоциация борьбы, Универсиада.

**INCREASING THE EFFICIENCY OF SERVICE SECTOR MANAGEMENT IN THE
CONDITIONS OF DIGITALIZATION OF THE ECONOMY**

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Summary: *The article updates the issues of management efficiency as the basis for improving the competitiveness of hotel business in the Republic of Uzbekistan. Intensification of innovation activity is possible as a result of personnel provision taking into account modern requirements of the domestic tourism industry. It is also obvious that revenues from the hotel industry occupy a high share of the income of the state. Taking into account the above, it is necessary to increase the share of hotel services of domestic operators in the common market of hotel services.*

Key words: *hotel industry, competitiveness, franchising expansion of domestic hotel chains, innovation, branding, investment attractiveness, staffing.*

The increase in the well-being of the population in the world determines a colossal increase in the movement of large masses of people in the field of tourism, which is to a large extent, objectively and subjectively, facilitated by the expansion of openness of national states, overcoming fears of spy mania, industrial espionage, and theft of state secrets. In many ways, this is also determined by the development in the modern world of transport, communications, logistics based on global digitalization, when any client, in principle, anywhere in the world has a real opportunity to obtain all the necessary information, say, about a tourist tour, about a tour operator, about a range of services and about their tariffs, about food, about hospitality, about excursions, etc.[5]

The service sector of every country in the world clearly and ambiguously reacts to this global trend, since the chains of these services created in this way create a well-known system that generates a synergistic / additional effect by combining their efforts, which of course objectively increases the profitability / profit of their activities, by combining efforts both each country, and chains and services as a whole, including due to the well-known overcoming of the seasonality of flows of tourists / travelers from different countries of the world.[3] It is known that natural and climatic conditions vary significantly across continents. Some tourists / travelers want to go to the sea, to the warmth, to the sun, to exclusive fruits / vegetables, to entertainment, to sights, while others want to ski, ride on dog sleds, ride reindeer, admire volcanoes and geysers, or get certain medical services in a particular country, taking into account differences in the level and quality of healthcare development, as well as in tariffs for these services.

In other words, there are a lot of objective and subjective reasons for non-economic migration of the population in the modern world, and the satisfaction of these growing needs is the economic basis for creating the functioning and development of the service sector both in different countries, and for combining their efforts on the basis of differentiation of services by price and quality, by tariffs, by volume and complexity of services, by segmentation of consumers / buyers of these services.

The modern world is characterized by internationalization in all spheres. Borders between states become arbitrary, because everyone can travel freely in almost any country. In this regard, the modern tourism market and specifically the hotel industry has acquired incredible volumes.[4]

In the hotel industry market, for decades now, there has been a trend towards the formation of hotel chains, mutual integration of hotels and improving the quality of the hotel product. And this is a real basis for checking whether the Russian hotel industry is successfully responding to this trend and whether the policies it has undertaken are successful.

According to the World Tourism Organization, tourism income for 2021 in advanced countries is: in the USA - \$211 billion (in 2022, income increased to \$214 billion); in Spain – \$68 billion (in 2022 \$74 billion); in France \$61 billion (in 2022 \$68 billion), etc. [7].

This indicates the low competitiveness of domestic hotel chains. Few of them are truly international. In our own local markets they are losing share to foreign ones. Therefore, it is necessary to establish the causes and propose probable solutions [2].

The reason for the failure of domestic chains is problems with management, because it is he who is called upon to ensure the integrity and competitiveness of the organization, and in modern conditions this is ensured by a complex influence on various components of the organization and a high speed of response to a rapidly changing, turbulent environment [3].

In order for our hotel enterprises to be able to provide decent competition, i.e. to quickly expand and attract more clients, it is necessary to improve a whole range of parameters related to the provision of services [4]. To improve the domestic hotel product, hotel chains could take the following measures.

Firstly, it is necessary to increase the competitiveness and, consequently, the investment attractiveness of domestic hotel chains to attract new franchisees. And the basis of competitiveness is innovative activity, the introduction of innovations into the hotel product of the Republic of Uzbekistan in order to give it unique consumer properties [3]. In our country there are institutes that train personnel for the hotel industry, but the feedback between the hotel industry and these universities is not close enough. In our opinion, these institutions have accumulated sufficient innovative potential to improve the hotel industry and implement developments. And feedback will help institutions receive the most current information about trends unfolding in the market and the experience of a particular enterprise in order to develop relevant solutions. Thus, institutions will act as a basis for increasing the investment attractiveness of domestic chains through innovative activities.

Secondly, universities need to train personnel with a vector for work in domestic chains and, accordingly, first of all, give them knowledge related to management in the context of franchising. In this way, students will gain knowledge of effective management in a direction that is relevant to them and the country. At the same time, high-quality training should include students acquiring the skills to motivate staff, understand the importance of updating the configuration of the room stock, etc., since in these aspects Russian chains are not the most attractive places to work for young professionals, which is a blow to their competitiveness;

Thirdly, develop courses and activities for training entrepreneurs in the field of franchising, in order to reduce the risk of a negative outcome of this activity;

Further, fourthly, it is advisable to develop measures to support or preferential financing to stimulate the franchising expansion of domestic hotel chains. This will add attractiveness to our hotel chains when choosing a franchise;

Create courses for management and chain personnel on key aspects of the hotel product they provide, and in those areas in which our hotel chains are inferior to foreign ones - this is internal marketing (in particular, staff motivation), external marketing (in particular, branding, corporate identity of chains, drawing up a franchise agreement, searching for clients and partners, marketing analysis), management, strategic management, etc.[6]

Summarizing the above, it is necessary to emphasize the importance of implementing the identified activities in the presented content, which will make it possible to comprehensively influence the problems of the development of domestic chains and will certainly increase their efficiency.

The implementation of these measures will not only help to increase the level of competitiveness of domestic hotel chains, taking into account the specific features of modern competition, primarily the turbulent nature of changes, but will also make it possible to comprehensively and effectively influence the problems of the development of domestic chains.

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Rezyume: *Maqolada O'zbekiston Respublikasida mehmonxona biznesining raqobatbardoshligini oshirishning asosi sifatida boshqaruv samaradorligi masalalari yangilanadi. Innovatsion faoliyatni faollashtirish ichki turizm industriyasining zamonaviy talablarini hisobga olgan holda kadrlar bilan ta'minlash natijasida mumkin. Bundan tashqari, mehmonxona sanoatidan tushadigan daromadlar davlat daromadlarining katta qismini egallashi aniq. Yuqoridagilarni hisobga olgan holda, mehmonxona xizmatlari umumiy bozorida mahalliy operatorlarning mehmonxona xizmatlari ulushini oshirish zarur.*

Резюме: *В статье актуализируются вопросы эффективности управления как основы повышения конкурентоспособности гостиничного бизнеса в Республике Узбекистан. Активизация инновационной деятельности возможна в результате кадрового обеспечения с учетом современных требований отечественной туристической отрасли. Также очевидно, что доходы от гостиничного бизнеса занимают высокую долю доходов государства. Учитывая вышеизложенное, необходимо увеличить долю гостиничных услуг отечественных операторов на общем рынке гостиничных услуг.*

Kalit so'zlar: *mehmonxona sanoati, raqobatbardoshlik, mahalliy mehmonxona tarmoqlarini franchayzingni kengaytirish, innovatsiyalar, brending, investitsion jozibadorlik, kadrlar.*

Ключевые слова: *гостиничная отрасль, конкурентоспособность, франчайзинговая экспансия отечественных гостиничных сетей, инновации, брендинг, инвестиционная привлекательность, кадровое обеспечение.*

THE INFLUENCE OF PHYSICAL EDUCATION IN THE FORMATION OF PHYSICAL QUALITIES OF STUDENTS

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Summary: This article examines the influence of physical education on the formation of physical qualities, as well as the relationship with motor skills.

Key words: Physical qualities, speed, strength, endurance, dexterity, flexibility, physical culture, sport, healthy lifestyle (HLS), physical activity.

Relevance: In modern times, sport is an integral component in the life of every person, including students. Our universities actively promote healthy lifestyle, and students actively adhere to a healthy lifestyle, which indicates that students' life values are changing in the right direction. The rapid development of the sports environment gives hope for a healthy generation, besides, physical culture is given a huge influence at all levels of children's education, including colleges, technical schools, universities.

The development of their physical qualities will always be relevant for a person at any age. Someone has adopted these traits through their parents, and someone has to work until they get the desired result. Some of these qualities can help a person in life and even in an unforeseen situation.

The object of the study - physical qualities of students..

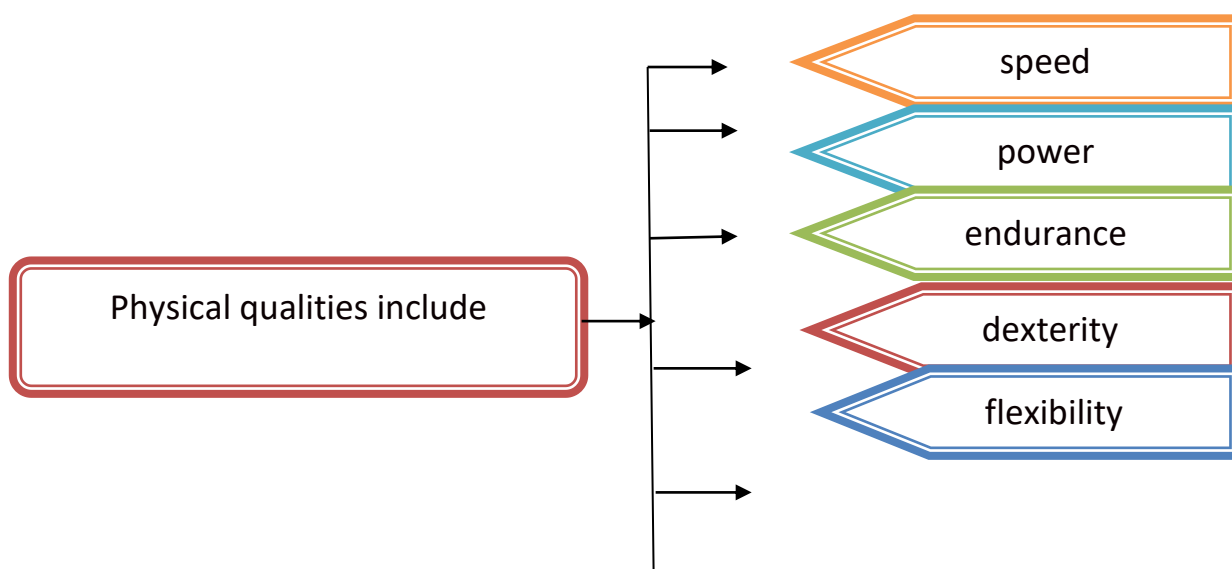
The subject of study- characteristics and patterns of development of physical qualities.

The purpose of the study- to give a pedagogical characteristic of physical quality and identify patterns of its development.

Research objectives:

- . to characterize physical qualities;
- . to determine the main patterns of the development of physical qualities based on the analysis of literary sources;
- . to analyze the results of the study and summarize them.

Methods: A consultation was held with a physical education teacher, literature and articles on this topic were reviewed.



One of the main tasks that physical education solves is the development of human physical qualities. Physical qualities are a set of biological and mental properties of a person's personality, expressing his physical readiness to carry out active motor actions. Physical qualities include: speed, strength, endurance, agility, flexibility.[2]

Let's consider brief characteristics of these qualities:

-Speed is the ability of a person to perform the maximum number of movements in a minimum period of time. To develop this physical quality, exercises at a fast pace are used-sprints, relay races, etc.

-Strength is a person's ability to overcome external resistance or resist it through muscular efforts (strains). Exercises that develop this physical quality include: barbell squats, barbell pushing, rope climbing.

- Endurance is the ability of muscles to do work. To develop this physical quality, it is necessary to use various physical exercises that are performed for a long time-running, walking, skiing, swimming.

- Dexterity is the ability of muscles to do work. This ability depends on the intensity of the supply of nutrients to muscle cells, which, in turn, depends on the body's ability to produce these substances. This quality is best developed in gymnastic exercises, figure skating.

-Flexibility is a person's ability to perform movements with a large amplitude, one of the most important physical qualities in physical education and sports. The development of this quality occurs best when performing stretching exercises, exercises at the Swedish wall.

The formation of physical qualities is associated with significant physical exertion, the growth of such a load should be strictly individual. Failure to comply with the load can lead to serious health problems. The formation of physical qualities is realized both in the process of general and special physical training. [1]

Physical qualities of a person are always closely related to motor skills and abilities, as well as volitional qualities. The manifestation of strength, speed, endurance and dexterity requires appropriate displays of endurance, perseverance, and often courage [3].

The strong-willed qualities that are acquired in the process of physical education help in other areas. The education of human physical qualities is one of the important tasks of physical education.

Conclusion. Based on all of the above, everyone should exercise, especially a young growing body. Because regular physical activity develops endurance, willpower and other useful qualities. The owners of these traits are more successful in their work, because they can take their assignments more responsibly. Physical activity is also responsible for keeping the body in good shape. The presence of excess weight in a person may indicate that a person may have health problems that may make it difficult for him to work. Therefore, it is worth remembering that regular physical activity is the key to success.

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Rezyume: Ushbu maqolada jismoniy tarbiyaning jismoniy fazilatlarni shakllantirishga ta'siri, shuningdek, vosita qobiliyatlari bilan bog'liqligi ko'rib chiqiladi.

Резюме: В данной статье рассматривается влияние занятий изической культурой на формирование физических качеств, а также связь с двигательными навыками.

Kalit so'zlar: Jismoniy sifatlar, tezlik, kuch, chidamlilik, epchillik, moslashuvchanlik, jismoniy madaniyat, sport, sog'lom turmush tarzi (HS), jismoniy faollik.

Ключевые слова: Физические качества, скорость, сила, выносливость, ловкость, гибкость, физическая культура, спорт, здоровый образ жизни (ЗОЖ), двигательная активность.

**CULTIVATING INTERCULTURAL COMPETENCE: METHODOICAL LESSON
APPROACHES FOR ENHANCED CROSS-CULTURAL COMMUNICATION**

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Summary: *In our increasingly interconnected world, intercultural competence is a fundamental skill for effective cross-cultural communication and collaboration. This paper delves into methodical lesson approaches, specifically tailored for the unique cultural context of Karakalpakstan and Uzbekistan, to foster intercultural competence. By reviewing international research, implementing these approaches in local educational settings, and offering practical recommendations, the study empowers students to engage confidently and respectfully in diverse cultural interactions, both within their distinctive region and in the global arena.*

Key words: *intercultural competence, methodical lesson approaches, pedagogical strategies.*

1. Introduction

In an increasingly globalized world, intercultural competence has emerged as an indispensable skill for individuals, organizations, and nations alike. As globalization breaks down geographical and cultural barriers, the ability to navigate diverse cultural landscapes, communicate effectively, and foster mutual understanding becomes paramount. Intercultural competence encompasses not only linguistic proficiency but also the awareness, empathy, and adaptability required to engage with people from different cultural backgrounds.

This paper is dedicated to investigating methodical lesson approaches for the development of intercultural competence, an essential skill that transcends borders and enhances personal, educational, and professional interactions. The significance of intercultural competence cannot be overstated, as it promotes cross-cultural collaboration, minimizes misunderstandings, and contributes to global harmony.

Our aim in this paper is to provide a comprehensive overview of methodical lesson approaches designed to cultivate intercultural competence. We will explore pedagogical strategies that enable educators to effectively teach and instill these essential skills in their students. By dissecting the multifaceted dimensions of intercultural competence and presenting practical lesson plans and exercises, we aspire to equip educators with the knowledge and tools necessary to foster intercultural competence in their students. This paper underscores the critical role educators play in nurturing individuals who can thrive in an interconnected, multicultural world, bridging gaps and building relationships across diverse cultural contexts.

2. Literature Review:

Existing Research on Intercultural Competence and Its Significance:

Intercultural competence has garnered significant attention in academic research and practical applications due to its growing importance in a globalized world. A comprehensive review of existing research reveals the following key findings:

Global Perspective:

On a global scale, intercultural competence has been recognized as a vital skill in promoting successful interactions among individuals from diverse cultural backgrounds. Researchers like Chen and Starosta (2000) have emphasized the role of intercultural competence in reducing misunderstandings and conflicts in multicultural settings.

Scholars such as Bennett (1993) have outlined developmental models of intercultural sensitivity, emphasizing the need to move from ethnocentrism to ethnorelativism. These models provide a framework for understanding the stages of intercultural competence development.

The significance of intercultural competence is particularly evident in business and international relations. Studies by Black and Mendenhall (1990) have emphasized its role in effective cross-cultural negotiations and international business ventures.

Context of Karakalpakstan and Uzbekistan:

Research on intercultural competence within the context of Karakalpakstan and Uzbekistan is relatively scarce but gaining attention. In the Central Asian region, including Karakalpakstan and Uzbekistan, the importance of intercultural competence is accentuated due to the historical and contemporary ties with diverse cultures.

Local researchers like Azamatov (2018) and Karimova (2021) have explored the challenges and opportunities for intercultural competence development in Uzbekistan. They have highlighted the role of intercultural competence in fostering regional cooperation and communication.

Karakalpakstan, with its unique cultural heritage, has also attracted the attention of scholars. Studies by Akhmedov (2017) have discussed the challenges faced by Karakalpakstan in balancing its distinct cultural identity with the demands of global interactions.

International collaborations, such as the partnership between Karakalpak State University and the University of World Economy and Diplomacy in Uzbekistan, have produced research on intercultural competence within the region. These studies emphasize the need for context-specific pedagogical approaches.

While research in these regions is still emerging, it is increasingly recognized that intercultural competence is a valuable asset for navigating the complex cultural dynamics within Karakalpakstan and Uzbekistan. As these societies continue to engage with the broader world, understanding and developing intercultural competence remains a pressing concern.

3. Pedagogical Strategies for Teaching Intercultural Competence:

The development of intercultural competence requires systematic pedagogical approaches that encompass cognitive, affective, and behavioral dimensions. International research has identified several pedagogical strategies that can effectively foster intercultural competence. These strategies are not only applicable globally but also hold relevance for the context of Karakalpakstan and Uzbekistan.

Drawing from International Research:

Experiential Learning: Experiential learning, which involves direct experiences with diverse cultures, has been widely acknowledged as a powerful tool for intercultural competence development (Vande Berg, 2009). Activities such as study abroad programs, cultural immersions, and intercultural dialogues provide students with real-world exposure to different cultures, enhancing their cross-cultural understanding.

Cultural Self-Reflection: Pedagogical strategies that encourage students to reflect on their own cultural identity and biases are essential. Cultural self-reflection activities, such as journaling, self-assessment tools, and cultural autobiographies, help individuals recognize their own cultural lens and biases (Bennett, 1993).

Critical Incidents and Case Studies: The analysis of critical incidents and case studies, where students discuss real-life intercultural challenges and scenarios, is a method that promotes problem-solving and cultural empathy (Deardorff, 2006).

Relevance and Applicability in Karakalpakstan and Uzbekistan:

Experiential Learning in Local Contexts: While study abroad programs are valuable, they may not always be feasible for all students. Local experiential learning opportunities within Karakalpakstan and Uzbekistan can include cross-cultural community service projects, internships, and cultural exchange events.

Promoting Cultural Self-Reflection: Cultural self-reflection is highly relevant in the context of Karakalpakstan and Uzbekistan, where individuals have a unique cultural heritage and may benefit from exploring their cultural identities and biases in relation to other cultures in the region.

Localizing Critical Incidents: Critical incidents and case studies can be tailored to the specific cultural dynamics and challenges faced in Karakalpakstan and Uzbekistan. These incidents can reflect real-life cross-cultural interactions, aiding students in addressing region-specific intercultural dilemmas.

By adapting these pedagogical strategies to the local context, educators in Karakalpakstan and Uzbekistan can effectively promote intercultural competence. This customization ensures that students are not only equipped with a global perspective but also have the cultural awareness and skills to navigate the rich and diverse cultural landscape of their own region and beyond.

4. Methodical Lesson Approaches:

A variety of methodical lesson approaches have been identified and designed to foster intercultural competence, both within and beyond the region. These approaches encompass:

- **Role-play Exercises:** Role-play activities allow students to simulate real-world cross-cultural interactions. For instance, "Cultural Exchange Negotiations" involves students taking on roles from different cultural backgrounds and negotiating various scenarios, promoting cultural awareness and adaptability.

- **Cultural Immersion Activities:** Cultural immersion involves students engaging deeply with the culture they are studying. A "Cultural Potluck" exercise encourages students to prepare and share dishes from different cultures in the region, enhancing cultural understanding and respect.

- **Real-world Applications:** Real-world application exercises focus on tangible, practical experiences. "Community Outreach Projects" encourage students to work in diverse communities within Karakalpakstan and Uzbekistan, applying their intercultural skills in meaningful ways.

Example Exercises:

1. Role-play Exercise: "Cross-Cultural Business Negotiations"

- Students are divided into groups representing different cultures.
- Each group is assigned a specific business negotiation scenario with cultural nuances.
- They engage in negotiations, aiming to understand and adapt to each other's cultural communication styles.

2. Cultural Immersion Activity: "Local Cultural Festivals"

- Students visit and actively participate in local cultural festivals within Karakalpakstan and Uzbekistan.
- They document their experiences, noting cultural practices, traditions, and local customs.
- After the festival, students reflect on their observations and insights, emphasizing the importance of cultural immersion.

3. Real-world Application Exercise: "Youth Exchange Program"

- Students collaborate with peers from different cultures in the region through a structured youth exchange program.
- During the exchange, they engage in community service projects, fostering teamwork and intercultural communication.

These methodical lesson approaches and exercises are designed to provide students with immersive, interactive, and culturally sensitive experiences that enhance their intercultural competence within the unique context of Karakalpakstan and Uzbekistan.

5. Implementation and Outcomes:

Application in Educational Context: The methodical lesson approaches introduced in this paper were implemented within educational settings in Karakalpakstan and Uzbekistan. Educators adopted these approaches in classrooms, incorporating exercises, role-plays, and cultural immersion activities into their curricula.

Reported Outcomes and Improvements: The outcomes of these implementations were promising. Students who participated in these methodical lessons demonstrated notable improvements in their intercultural competence. They exhibited increased cultural awareness, empathy, and adaptability. Furthermore, they displayed a greater capacity to engage in cross-cultural interactions with confidence and respect.

6. Discussion:

Effectiveness of Methodical Approaches: The methodical approaches employed in this study proved to be effective in enhancing intercultural competence among students in Karakalpakstan. The combination of role-play, cultural immersion, and real-world applications allowed students to gain practical experiences, apply cultural sensitivity, and adapt to diverse cultural contexts.

Challenges and Potential Solutions: While the results were largely positive, challenges were also encountered during implementation. Some students faced difficulties in adapting to new cultural contexts, and educators sometimes struggled to incorporate these approaches into their existing curricula. However, these challenges could be addressed through ongoing teacher training and support, as well as refining the approaches to better suit local needs and constraints.

7. Practical Recommendations:

Implementing Methodical Lesson Approaches: For educators seeking to implement these methodical lesson approaches in their own classrooms, several practical recommendations are offered:

- Provide training and resources to educators on how to effectively incorporate intercultural competence activities into their lessons.
- Encourage collaboration between educators and the local community to create opportunities for cultural immersion and real-world applications.
- Adapt lesson approaches to meet the specific needs and cultural dynamics of the region, ensuring that they remain relevant and sensitive to local contexts.

8. Conclusion:

In conclusion, this paper has explored the development of intercultural competence through methodical lesson approaches within the unique cultural context of Karakalpakstan and Uzbekistan. By drawing from international research, tailoring these approaches to the region's cultural diversity, and implementing them in educational settings, significant improvements in students' intercultural competence were observed.

As the world becomes increasingly interconnected, the ability to engage effectively with individuals from diverse cultural backgrounds is paramount. The methodical approaches presented in this paper have demonstrated their potential to equip students with the skills necessary to thrive in a globalized world.

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Rezyume: Bizning tobora o'zaro bog'langan dunyomizda madaniyatlararo kompetentsiya samarali madaniyatlararo muloqot va hamkorlik uchun asosiy mahoratdir. Ushbu maqolada madaniyatlararo kompetentsiyani rivojlantirish uchun O'zbekistonning va Qoraqalpog'iston o'ziga xos madaniy sharoitiga moslashtirilgan darslarga uslubiy yondashuvlar ko'rib chiqiladi. Xalqaro tadqiqotlarni tahlil qilish, ushbu yondashuvlarni mahalliy ta'lim sharoitlariga tatbiq etish va amaliy tavsiyalar berish orqali o'rganish talabalarga o'z mintaqasida ham, global miqyosda ham turli madaniy o'zaro munosabatlarda ishonchli va hurmat bilan ishtirok etish imkonini beradi.

Резюме: В нашем все более взаимосвязанном мире межкультурная компетентность является фундаментальным навыком для эффективного межкультурного общения и сотрудничества. В данной статье рассматриваются методические подходы к урокам, специально адаптированные к уникальному культурному контексту Узбекистана и Каракалпакстана, для развития межкультурной компетентности. Анализируя международные исследования, внедряя эти подходы в местные образовательные учреждения и предлагая практические рекомендации, исследование дает студентам

возможность уверенно и уважительно участвовать в разнообразных культурных взаимодействиях как в пределах своего региона, так и на глобальной арене.

Kalit so'zlar: *madaniyatlararo kompetentsiya, dars uslubiy yondashuvlar, pedagogik strategiyalar.*

Ключевые слова: *межкультурная компетентность, методические подходы урока, педагогические стратегии.*

THE SIGNIFICANCE OF SHARE CAPITAL IN THE DEVELOPMENT OF SECURITIES MARKET IN FOREIGN COUNTRIES

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***Summary:** The article describes the importance of equity capital in the development of the stock market in foreign countries. According to him, the participation of investor categories in share capital, the role of large shareholders in companies in the CIS countries and the situation of the issue in Uzbekistan were analyzed within the framework of the state's modern macroeconomic policy. Based on the results of the analysis, scientific conclusions were formed.*

***Key words:** privatization of enterprises, equity capital, privatization, corporate governance, national economy, stock market, company managers, minority shareholder, share value*

Introduction. From the privatization experience of developed and developing countries, it is known that the structure of share capital resulting from the privatization of enterprises has a direct impact on the financial results of the privatized companies and emission and investment activities in the securities market. The most important problem is the slow involvement of minority (small) shareholders, who have few opportunities, in the corporate governance of the company, as well as the prioritization of the specific interests of employee shareholders, which delays or impedes the restructuring of companies [1].

Thus, the question of what proportion of the share capital structure will be able to increase the emission and investment activity of the country's enterprises and revive the national economy as a whole is still a subject of debate. Therefore, an analytical review of theoretical views and empirical studies on the structure of share capital (property), the efficiency of financial and economic activities of companies and their emission and investment activities in the securities market (SM) is useful for the conditions of Uzbekistan.

Currently, there are a number of theoretical and empirical studies by foreign economists and scientists on the relationship between the structure of a company's share capital, its performance and its activities in the securities market, and their analytical research is important for developing important conclusions and recommendations useful for Uzbekistan.

Since the second half of the 20th century, issues of the influence of the structure of share capital on the financial results of open companies, corporate relations between shareholders and managers (agents) of companies, and their impact on the stock market have been studied. It should be noted that these issues have different solutions in different countries, including Uzbekistan.

In global practice, as a result of a reduction in the authorized capital, minority shareholders were unable to control the value of shares owned by OZ, and as a result, the right to manage them was transferred to special managers. In this regard, the main problem of corporate governance is conflicts between managers and minority shareholders pursuing their personal interests. The theoretical solution to this problem is embodied in the new rules of corporate governance policy [2], the connection between the structure of share capital, the company's activities, financial results and the stock market is well expressed.

In addition to the above problems associated with minority shareholders, one can also clearly see the occurrence of losses associated with the concentration of share capital, that is, large shareholders. As a result of a decrease in the liquidity of shares in foreign markets, an increase in the cost of raising capital or a limitation in the ability of investors to diversify their investments appears as a negative consequence of ownership concentration. In addition, concentration of ownership leads to additional control by SM managers, which can be used when the level of equity distribution is high and whose shares are highly liquid. A number of scientific papers published in subsequent years noted that excessive concentration of ownership leads to excessive control, which destroys the initiative of managers.

Research methodology. This article uses the following methods: scientific analysis, generalization and abstraction of theoretical data, precise processing of statistical data, observation, comparison, induction and deduction.

Literature review. According to Sh. Saidullaev, who conducted scientific research on the problems of financial instruments, including public placement of shares on the securities market, “the securities market is considered the main segment of the financial market, and in this segment securities are issued and traded” [3]. This study also examined the problems of development of the securities market in our republic:

The researcher classified the problems of the stock market and the IPO market into 2 large groups within his scientific focus. S. Karimov, who studied the activities of the organized securities market of our country - the "Tashkent" Republican Stock Exchange, analyzed the "Uzbekistan Composite Index" (UCI), which reflects the general situation of stock issuers included in the quotation sheet of the "Tashkent" Republican Stock Exchange.



Figure 1. Problems of developing the securities market in Uzbekistan [3]

According to the results of the research, it is noted that as a result of a number of changes in this index in 2022, significant changes were made in the development trends of the securities market in Uzbekistan [4]. Changes in this index are shown in the following picture:

According to D. Rustamova, who conducted scientific research on the problems of regulating the securities market, “foreign developed countries widely use the role of the regulator in regulating the securities market [5].” In this regard, the researcher, based on the results of his research, assessed the activities of institutions regulating the securities market in Uzbekistan. During the study, it was especially noted that in our country, instead of a unified approach to regulating the securities market, the practice of regulating this market activity is being used by various institutions in our country. In this regard, the results of the effectiveness of the activities of the Ministry of Economy and Finance (formerly the Ministry of Finance), the Central Bank and the Agency for State Asset Management were studied.

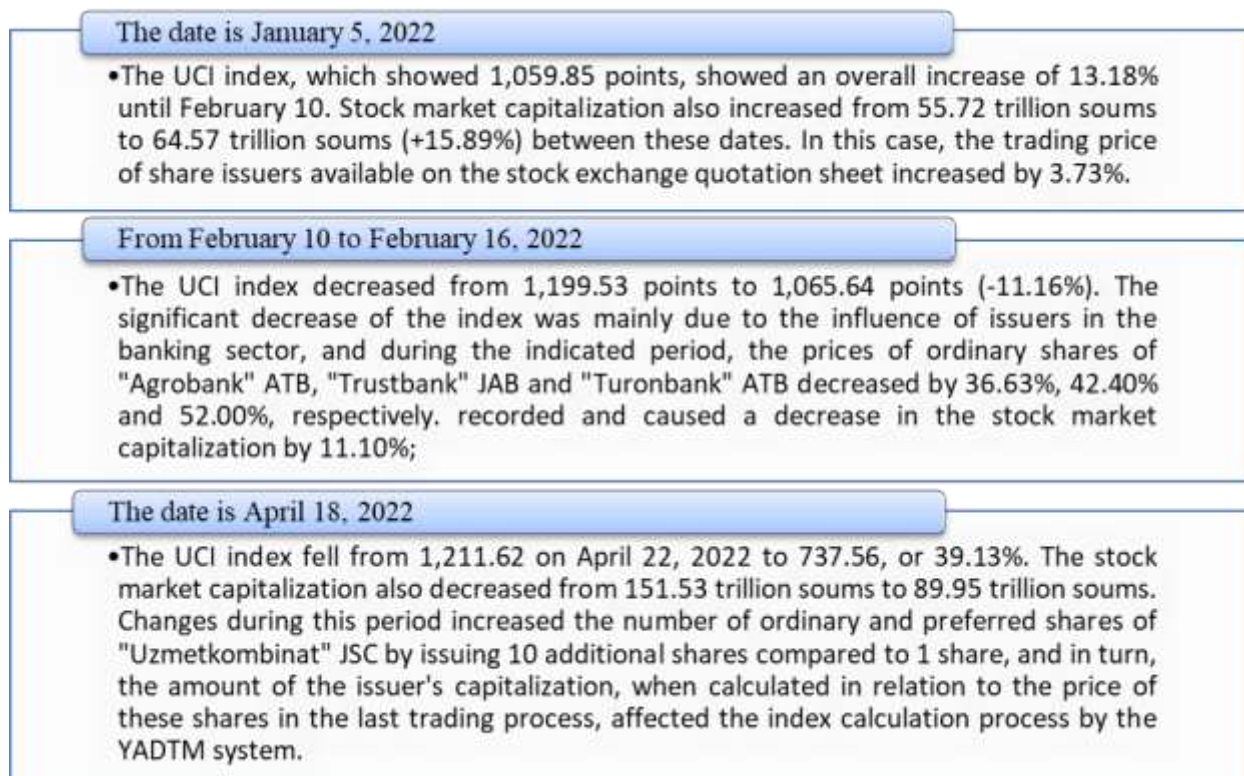


Figure 2. Change in the Uzbekistan Composite Index (UCI) on the stock market of Uzbekistan [4]

Analysis and results. Over the next twenty years (until the last global financial and economic crisis), state ownership (share) was criticized as ineffective ownership. However, during the last global financial crisis (2008-2009), developed countries showed a tendency to nationalize private companies as a temporary anti-crisis measure based on the introduction of state shares.

- as can be seen from the table data, in the period before the global financial and economic crisis we can observe that the state's share in the authorized capital in developed and developing countries is very low, and vice versa. During the crisis, the state's share increased significantly, and we see that this the indicator in Uzbekistan is in a stable state. Concentration of shares (the presence of the state and large strategic shareholders) in developing countries, including emerging economies, has a positive effect on company performance and the size of the securities market. Based on this, we can say that in different countries the relationship between the structure of share capital, the efficiency of the company's financial activities and the stock market is different.

Table 1.

Participation of categories of investors in the authorized capital, % [6]

Categories of investors	Uzbekistan	USA	GFR	China	Poland	Russian
During the years of the world financial and economic crisis						
Individuals	2,2	18,3	11,2	30,5	10,0	13,1
Legal entities	34,9	56,6	62,8	36,6	46,0	62,0
State	62,9	25,1	26,0	32,9	44,0	24,9
Total:	100	100	100	100	100	100
2017-2023 years						
Individuals	9,8	38,4	16,0	31,5	20,0	23,7
Legal entities	42,4	61,6	78,0	37,6	50,0	61,6
State	47,8	0,0	6,0	30,9	30,0	14,7
Total:	100	100	100	100	100	100

In Russia, Belarus and Ukraine, employee property has a positive effect on the company's activities. It has been determined that there is a non-linear relationship between ownership concentration and entrepreneurial activity, that is, the most efficient firms are represented by average ownership concentration, measured by the proportion of shares owned by large shareholders. Taking into account the “exact similarity” of large shareholders, performance indicators were negative in companies with high shareholder concentration.

Based on the analysis of the above studies, we can say that:

- currently, the analysis of the structure of share capital, the efficiency of financial and economic activities of companies and their emission and investment activities on the securities market has specific features for each country;
- in the process of transition to a market economy, the efficiency of the company and the profitability of shares do not depend on its legal status;
- it is possible to increase the profitability and performance of the company's shares by finding the optimal point in the structure of its property;
- in this process, the relationship between the management system and shareholders is influenced not only by the financial performance of the company, the quality of its products, but also by its results.

table 2

The role of large shareholders in companies in the CIS countries [7]

State	In share capital, %											
	Manegers		Personal		State		Domestic investors		Foreign investors		Small investors	
	2012	2022	2012	2022	2012	2022	2012	2022	2012	2022	2012	2022
Georgia	41.5	53.6	9.4	10.4	41.1	23.3	4.9	8.0	1.0	2.2	2.0	2.2
Kazakhstan	23.1	29.4	10.7	8.2	34.8	16.1	23.6	30.2	4.4	6.8	3.4	9.3
Kyrgyzstan	28.1	34.4	38.3	36.4	12.4	5.6	16.8	18.9	2.2	2.3	2.2	2.4
Moldova	7.2	18.3	21.6	19.7	38.6	23.8	24.7	22.6	0.3	2.1	7.6	13.5
Ukraine	14.6	46.2	23.6	15.3	42.6	15.4	18.9	17.7	0.3	0.9	0.2	4.5
Russia	25.4	36.3	26.0	23.3	23.5	14.7	23.4	21.5	1.6	3.8	0.1	0.4

In some developing CIS countries, the privatization of company capital and direct participation of shareholders in its management activities lead to improved efficiency and profitability. In particular, in these countries the shares of labor and the state are high, and the share of other shareholders is small. However, the share of foreign investors is increasing.

Based on the above conclusions, it is advisable to analyze the situation of this issue in the conditions of Uzbekistan within the framework of the modern macroeconomic policy of the state.

Because this policy is now the main factor of the results that arise from the redistribution of equity capital from insider shareholders through the stock market to outside large strategic investors in the post-privatization period, and as a result, ownership is concentrated in the hands of such investors, and this confirms that they can be achieved.

The financial performance, share price and ownership structure of companies created during the privatization process in Uzbekistan are interdependent, and they are all influenced by the government's macroeconomic policies. In this case, maintaining the state's share in the authorized funds of joint stock companies (JSCs) ensures a certain level of stability.

At the same time, the activity of companies in SM has slowed down somewhat. Their issuing and investment activities are not as significant as those of commercial banks.

Between 2003 and 2009, several joint stock companies that were not of strategic importance were sold to transfer state stakes into private ownership, and most small joint stock companies were transformed into limited liability companies due to the fact that the authorized capital was less than 400 thousand US dollars and for other reasons, the number of companies decreased by two times.

Summary. In conclusion, we can say that the structure of equity capital of Uzbek companies - as a factor influencing the financial results of companies and their activities in SM - is gradually improving in a positive direction. But like most developing countries, they still have it (capitalism of controlling interests). This makes it somewhat difficult to protect the rights of shareholders and their active participation in the corporate governance of companies. This situation has a negative impact on attracting investors to the development of companies through China. However, despite this, the financial performance of large companies is growing from year to year thanks to the efforts of the state.

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Rezyume: Maqolada xorijiy davlatlarda aksiyadorlik kapitalining qimmatli qogozlar bozori rivojlanishidagi ahamiyati bayon etilgan. Unga kóra, aksiyadorlik kapitalida investor toifalarining ishtiroki, MDH davlatlarida yirik aksiyadorlarning kompaniyalardagi roli va kórilayotgan masalaning Ózbekiston sharoitidagi holati davlatning zamonaviy makroiqtisodiy siyosati doirasida tahlil qilingan. Tahlil natijalari asosida ilmiy xulosalar shakllantirilgan.

Резюме: В статье описывается значение акционерного капитала в развитии фондового рынка зарубежных стран. По его словам, в рамках современной макроэкономической политики государства проанализированы участие категорий инвесторов в уставном капитале, роль крупных акционеров в компаниях стран СНГ и ситуация с вопросом в Узбекистане. По результатам анализа были сформированы научные выводы.

Kalit soʻzlar: korxonalarni davlat tasarrufidan chiqarish, aksiyadorlik kapitali, xususiylashtirish, korporativ boshqaruv, milliy iqtisodiyot, qimmatli qogozlar bozori, kompaniya menejrlari, minoritar aksiyador, aksiyalar qiymati

Ключевые слова: приватизация предприятий, акционерный капитал, приватизация, корпоративное управление, национальная экономика, фондовый рынок, менеджеры компаний, миноритарный акционер, стоимость акций.

**ACHIEVEMENTS AND SHORTCOMINGS IN THE FIELD OF SERICULTURE OF
KHOREZM DURING THE SECOND WORLD WAR**

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Summary: *This article analyzes the activities of the silk industry in the Khorezm region, as well as the existing achievements and shortcomings in this area. In 1941, direct war began on the territory of the former union and the transfer of all industries to the military department, as well as the conscription of the population to the front, caused a sharp reduction in labor resources in all industries. Cocooning, which is one of the leading branches of agriculture, received significant development even during the most difficult periods of the war of 1941-1942. Silk products were continuously delivered to the front during the war.*

Key words: *Khorezm, Khiva, Urgench, cocoon, sericulture, labor, reward, silkworm, World War II.*

Access.

During the difficult and difficult years of the Second World War, our homeland became a strong supply base for the front, the industrial enterprises here were adapted to the military sphere, and their activities were directed to the needs of the front. Our citizens mobilized all their strength and capabilities to restore more than a hundred factories and factories that were moved to Uzbekistan.

According to the sources, in the early stages of the war, women took the initiative in many regions of the republic, organized various events and encouraged everyone to work together. For example: In 1942, many housewives took part in a women's rally organized in Urganch, and they urged all women to work in industrial enterprises to replace men who had gone to the front. As a result, by 1943, 1,300 women worked in Urganch enterprises [2; B.2].

Literature analysis and methodology.

During the Second World War, a specific research work was not carried out that reflected the development of the cocoon cultivation and silk industry, the achievements and shortcomings in this field. But there are a number of literatures and articles covering this field, in which the attention given to the silk industry during the Second World War, the silk fabrics and clothes made in these years, and their sending to the front, and the activities of the workers who worked in this field are discussed. In addition, periodical publications and archival documents of the war years contain information on the development of the silk industry.

Although there was no separate study on the activities of the silk industry in Uzbekistan during the Second World War, to a certain extent these issues and information were reflected in the three-volume book *Uzbekskaya SSR v gody Velikoy Otechestvennoy voyny (1941-1945 gg.)* (1981, 1983, 1985). In addition, Kh. Babadjanov's dissertation entitled "Transformation processes in the economy of Uzbekistan during the Second World War" provided information on silk cultivation in the republic. The situation of the silk industry in the province and the people working in this industry are mainly covered in one of the periodicals of 1941-1945 "Truth of Khorezm". M. Matniyazov's "History of Khorezm" Volume II also contains brief information on this area. "Statistic collection" published by collective authors in 1964 also included reports on the activities of all branches of the region, including silk cultivation. In 1995, published by collective authors, "Memorial book of the Republic of Uzbekistan" and "Memorial" books related to Khorezm region also provided brief information on the silk industry.

The methodological basis of the research is the principle of objectivity and historicity. A statistical method was also used in the analysis of the data in the article.

Discussion.

Cocooning, which is important for the national economy and defense, is one of the leading branches of the republic's agricultural production. During the war, cocoon cultivation grew. In the years after the war, the production of cocoons did not increase, but the total weight did not decrease due to the sharp reduction of the feed base. Because most of the farms began to produce more products than before the war.

In general, during the war, Uzbekistan's agriculture supplied the country with 4 million 806 thousand tons of cotton, 541 thousand tons of cocoons, 1 million 283 thousand tons of grain, 482 thousand tons of potatoes and vegetables, 159 thousand tons of meat and other products [9; B.3.].

During the war, silk production was 693 tons in the republic and 3 tons in the region [1; B.73.]. Production of silk fabric in the republic was 4,534,000 meters before the war, but in 1945 it was 4,725,000 meters, and 75,000 meters of silk fabric were produced in the region [1; B.76.]. In the most difficult years of the war - 1941-1942, growers, cotton farmers, cattle breeders showed courage, strengthened labor discipline in every way and achieved high performance.

Results.

The war also required the development of sericulture, one of the important branches of Uzbekistan's agriculture. Until 1940, silk production in the republic was mainly carried out individually. On March 13, 1941, the Central Committee of the CPSU (b) adopted the decision "On the procedures for the further development of silk production in Uzbekistan" in order to increase the production of silk products in the country and train qualified specialists engaged in silk production. In this decision, specific tasks of increasing silk production and increasing cocoon productivity in the republic were specified.

In order to develop sericulture in Uzbekistan, first of all, it was necessary to train enough sericulture specialists. Because silk was considered one of the most important raw materials for industrial enterprises. Therefore, in August 1941, the Central Committee of the CPSU (b) and the Council of People's Commissars adopted a decision to train silk workers in the republic. In September 1941, as well as in all regions of our republic, special courses were opened in Khorezm region to train specialists in silk production. One such course was organized under the Urganch Agricultural Secondary School, where mostly women studied. Khorezm women, like all women in the republic, worked selflessly for the purpose of developing silk production and providing raw materials for the front and behind the front. As a result, good results were achieved in sericulture. For example, the cocoons of the "Kalinin" collective farm in Shavot district were able to get 60.7 kilograms of cocoons from each box of cocoon seeds. Some cocooning women, including the members of Sora Murodova, head of Hazorasp district, received 130 kilograms of cocoon seeds instead of 60 kilograms, members of Nurjon Karimova, head of "Red East" collective farm, and Hayat Nazarova, head of "Stakhanov" collective farm, received 100 kilograms of cocoons from a box [3; B.4.].

In accordance with the decision of the government on March 1, 1941, the heads of the sericulture brigades and units with the highest yield of cocoons were given a reward in the amount of 106 thousand 47 soums. From this, Gurlan district farmers received 23,129 soums, Khazorasp district farmers received 25,998 soums. Mulberry seedlings were planted on an additional 12,249 hectares of land in the province this year to provide worms with enough leaves [7; B.2.].

In 1941, the weavers of the Umid artel in Khiva took high-quality silk from the cocoons, wove silk in the copy of Andijan, Namangan, made silk scarves and sent them to the front. Soliya Rozmetova, a silk weaver of Artel, worked tirelessly and fulfilled the set plan with 400% more [4; B.2.].

The team of the local industry of Khanka District worked selflessly and achieved a new victory. Promkombinat completed the annual production plan by 102.6 percent ahead of schedule. The weaving workshop of Promkombinat, headed by Rahimajon Azizova, achieved high production figures and fulfilled the annual task by 350%. Among the women artisans, along with Khonimjon Abdullaeva, Bika Otajonova, Orinboy Jumaniozov, Rozmat Nurillaev, they performed the daily task at 180-200% and showed new examples [5; B.4.].

In 1942, the Prezidium of the Supreme Soviet of the Uzbek SSR awarded some of the cocoons who achieved good results in the implementation of cocooning military plans and the development of cocooning with the Medal of Honor of the Supreme Soviet of the Uzbek SSR. Among the awardees were the following people from Khorezm region.

1. Rakhim Karimov is the chairman of the "Communist" collective farm in the Sarapayon village council of Khanka district.

2. Karim Jumaniyazov - the foreman of the collective farm "White Gold" in the Karamozi village council of Khanka district.

3. Bozorgul Toshboeva - head of the section of the "Pakhtakor" collective farm in the Komsomol village council of the Mangit district.

4. Maryam Bekmonova is the head of the collective farm named after Lenin in Pushkin village council of Mangit district.

5. Kurbanboy Tojiev - chairman of the Beshmergan village council of Shavot district.

6. Sharifa Ibrokhimova - head of the unit of the Kalinin collective farm in the Kalinin village council of Yangiariq district.

7. Momojon Kalandarova - head of the collective farm named Kuybyshev in Frunze village council of Yangiariq district.

8. Rakhmat Boronov - the brigade leader of the collective farm named after Stalin in the village council of Karovul, Urganch district.

9. Roziya Karimova - the brigade leader of the Kuybishev collective farm in the village council of Urganch District.

10. Yaqut Turdieva - head of the collective farm "Red soldier" in Chakkasholikor village council, Urganch district.

11. Roziya Ismoilova - the head of the unit of the 17th Party Sezdi collective farm in the Kirov village council of the Urganch district.

12. Sherpajon Masharipova - head of the section of the "Bolshevik" collective farm in Chakkasholikor village council, Urganch district.

13. Otajon Kuryozov - the chairman of the collective farm "84th regiment" of the Uzbek village council of Koshkopir district.

14. Norjon Matmurodova - head of the brigade of the collective farm named after Voroshilov in the Koshkopir village council of Koshkopir district.

15. Maryam Otajonova - the brigade leader of the "Spark" collective farm in the Pakhtakor village council of Khiva district.

16. Poshsha Rajabova - head of the unit of the 17th Party Sezdi collective farm in Eshimjiyron village council, Gurlan district.

17. Yakut Safaeva - the foreman of the Lenin collective farm, Gurlan district.

18. Poshsho Rakhimova - head of unit of Olga collective farm in Shong'i village council, Gurlan district.

19. Zevar Masharipova - the brigade leader of the collective farm "Erkin" in the Jangati village council of Khazorasp district.

20. Bika Sobirova is the foreman of the Stakhanov collective farm in the Five Village Soviet.

21. Gulkhan Ollaberganova - brigade leader of "Erkin" collective farm in Jangati village council.

22. Guljon Masharipova - the head of the regional cocooning office.

23. Ismail Rozimatov - Koshkopir district agrotechnician.

24. Rakhima Ollaberganova - Gurlan district agrotechnician.

25. Yakut Mukhtarova - chief microscopist of the Urganch seed plant [8; B.2.].

During the Second World War, they treated people who were unfit for production and invalids. They paid special attention to teaching them new professions. In the periodicals of December 1941, it was mentioned that 50 people were being trained in manufacturing enterprises in

Urganch, 35 people in the artel of the blind and disabled in Khiva, and 25 people in the artel of the deaf [6; B.4.].

Conclusion.

During the Second World War, the Khorezm people showed their bravery in the field of silk production as well as in other fields. Sericulture, one of the main branches of agriculture, developed despite the difficulties. Residents of the region worked tirelessly to develop this industry, and the plans set by the state were fulfilled in excess. New mulberry saplings were planted, the mulberry fields were expanded, and the workers did not stop growing silkworms and getting abundant harvest of cocoons.

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Rezyume: Mazkur maqolada Xorazm viloyatida ipakchilik sohasi faoliyati va sohadagi mavjud yutuq va kamchiliklar tahlil qilinadi. 1941 yilda sobiq ittifoq hududida bevosita urush boshlanishi va barcha sohalarni harbiy izga o'tkazilishi hamda aholini frontga jalb qilinishi barcha sohalarda mehnat resurslarini keskin kamayishiga sabab bo'ldi. Qishloq xo'jaligining etakchi tarmoqlaridan bo'lgan pillachilik urushning eng qiyin davrlari bo'lgan 1941-1942 yillarda ham ancha rivojlandi. Urush yillarida frontga ham ipakchilik mahsulotlari doimiy ravishda etkazilib turildi.

Резюме: В данной статье анализируется деятельность шелковой промышленности Хорезмской области, а также имеющиеся достижения и недостатки в этой сфере. В 1941 году на территории бывшего союза началась непосредственная война и передача всех отраслей в военное ведомство, а также призыв населения на фронт вызвали резкое сокращение трудовых ресурсов во всех отраслях. Коконирование, являющееся одной из ведущих отраслей сельского хозяйства, получило значительное развитие даже в самые тяжелые периоды войны 1941-1942 гг. Шелковые изделия во время войны непрерывно доставлялись на фронт.

Kalit so'zlar: Xorazm, Xiva, Urganch, pilla, ipakchilik, mehnat, mukofot, ipak qurti, ikkinchi jahon urushi.

Ключевые слова: Хорезм, Хива, Ургенч, кокон, шелководство, труд, награда, тутовый шелкопряд, Вторая мировая война.

IMPROVEMENT OF FORCE AND SPEED-FORCE QUALITIES OF HIGHLY QUALIFIED FREESTYLE WRESTLERS

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Summary: *This article considers the improvement of power and speed-force training of highly qualified freestyle wrestlers. Developed a set of exercises for the development of general and special physical training of wrestlers.*

Key words: *wrestling, training load, physical training, complex exercise*

Actuality. In the rapidly growing trend of development of the world sport and the role of freestyle wrestling increases. In particular, the share of men in the growth of freestyle wrestlers is constantly increasing. This, in turn, places high demands on their preparation. These processes require the development of improved methodologies based on new approaches to training wrestlers. Physical training of the wrestlers is an important task. Planned reforms are being carried out in our Republic with regard to the further development of sports wrestling and the increase in the number of sports involved. In particular, the tasks are set to conduct organizational and practical and promotional work to attract to the activities of freestyle wrestling and their development as professional athletes» [1].

In the freestyle wrestling, strength and speed-force exercises are of particular importance, which are an important factor in improving the skills and special indicators of wrestlers. The problem of rationalization of means and methods of strength and speed-force training of athletes is constantly taken into account by scientists and practitioners (Verkhoshansky Yu.1988, Karimov F. 2020, Salamov R.S. 2018, Ivankov K.E. 2019, G.S. Tumanyan 2009) [2,3]. Recently, a number of aspects have been updated concerning the optimal ratio of loads in different directions, the sequence of their inclusion in the speed-force training of freestyle wrestlers of different skill levels and training [4].

The purpose of the study - Improving the strength qualities of 18-20 year-old qualified freestyle wrestlers in different weight categories at the stage of sports development.

The object of the study is the process of training qualified 18-20 year-old freestyle wrestlers engaged in the School of Higher Sports Excellence of the city of Nukus.

Methods and organization of research:

Literature analysis;

Pedagogical supervision;

Theoretical analysis;

Pilot evaluation;

Pedagogical experiment-test;

Mathematical statistics;

Research findings and discussion. It is known that the strength and speed of freestyle wrestlers are important to achieve high results. However, in strength training, it is advisable to use the right training load, so that the muscles of the wrestlers are not only adapted to loads, but also have a high speed. To improve the physical training of wrestlers, we proposed a set of control exercises.

The first mesocycle - training sessions with weights, starting with the preparation of the athlete's body mass. When working with a bar, the weight and number of repetitions vary to some extent. Optimal repetitions are minimal when performing exercises on large scales. During exercise, it is important to keep body and breathe properly. Recommended weights are required to increase muscle strength. And repetitive exercises with low weight have little effect on muscle stimuli [3].

The second mesocycle is an aerobic period. At this time, the training load increases by 10-15%. Exercises of varying intensity and alternating cycles in one workout lead to less fatigue, with

little effect on the nervous system. According to sports medicine researchers, the use of long-term aerobic work to moderate improves ATF resynthesis in the athlete's body, increasing the energy substrates of the body. Therefore, light weight wrestlers are the most endurance [4].

The third mesocycle is aerobic-anaerobic training. During this period, the fighters work on both special and general physical training. Analyzing the first mesocycle, we developed a set of exercises for weight wrestlers and on gym. The complex consists of a series of exercises affecting the limbs, muscles of the back, legs. In the following table we recommend to include weightlifting exercises in the training of wrestlers.

At the stage of pedagogical experiment, special exercises were widely used during the physical training of wrestlers in increasing the strength qualities of freestyle wrestlers and their physical condition (strength) was improved and introduced into practice.

In view of the above, a survey was conducted among athletes engaged in highly qualified freestyle wrestlers. The questionnaire involved 70 respondents (35 qualified trainers and 35 qualified freestyle wrestlers. Below you can find the questions of the questionnaire (see. 1 table.).

Table. 1

Results of questionnaire conducted with respondents consisting of qualified freestyle wrestlers and coaches

№	Questionnaire	Responses			
		C - n=35		S - n=35	
		Yes	No	Yes	No
		S/%	S/%	S/%	S/%
1.	Is the period of general physical training of qualified athletes significant?	20/57	15/43	24/66	11/34
2.	Is the introduction of new training programs for general physical training of qualified athletes effective?	21/60	14/40	19/54	16/46
3.	Is the role of general physical training of the athlete significant in competitive activity?	30/86	5/14	32/91	3/9
4.	Does the planning of the general physical training period affect the physical state?	20/57	15/43	25/71	10/29
5.	Is the correct organization of general physical preparation trainings on achievements in international competitions of qualified athletes?	25/71	10/29	25/71	10/29
6.	Would it be advisable to devote the bulk of general physical preparation training to the training of qualified athletes?	20/57	15/43	35/100	0/0
7.	Do you consider special weightlifting exercises useful in developing the strength of the muscles of the legs and hands?	29/83	6/17	30/86	5/14
8.	Do you consider it effective to carry out exercises with weights during general physical training?	30/86	5/14	31/89	4/11
9.	Is the sport of weightlifting high in increasing the speed and strength qualities of qualified athletes during the general physical preparation?	19/54	16/46	25/71	10/29
10	Do you think that the introduction of special weightlifting exercises into the training program will help improve physical qualities in the preparation of qualified athletes?	30/86	5/14	100/0	0/0

It is known that the process of training qualified freestyle wrestlers at the stage of sports development involves the development of individual functions and systems of the body based on consideration of gender and sensitive periods of development of motor qualities and functional

capabilities freestyle wrestlers. Therefore, the individual approach to training should ensure the level of biological maturity, functional state and level of physical fitness, as well as the ability of the athlete to adapt to loads of different orientation, volume and intensity. [5]

To assess the level of development of speed-force and strength qualities the most important control standards: 100 meters, pull-up on the turnstile 20 sec, push-ups 20 sec, long jumps from place (cm), shuttle run 3 10 m (s), run on the bridge 5 times, flip on the bridge 5 times, throw over the hip, throw over the shoulder, mill throw.

At the beginning and end of the experiment experimental group of free style wrestlers in sports improvement groups.

Table 1

№	General physical preparation and special physical training indicators	Early in the experiment			At the end of the experiment		
		X	σ	V%	X	σ	%
1	100 m run	13	0,2	1,8	12,4	0,2	2,2
2	Pull-up on the bar 20 sec	8,4	1,07	12,7	10,5	0,97	8,4
3	Push-ups 20 sec	12,5	1,08	6,9	13,8	1,03	5,8
4	Long jump from place (cm)	211,2	6,4	3,03	217	4,6	2,1
5	Shuttle running 4x10 m (s)	6.9	0.7	10.4	6.7	0.5	8.95
6	Coups on the bridge 5 times	7.4	0,3	4,7	6,5	0,4	6
7	Jump on the bridge 5 times	8.02	0,3	4,7	6,9	0,4	6
8	Throw over the hip	10	0,9	9,4	11,6	0,5	4,4
9	Throw over the shoulder	11	0,8	7,4	12,5	0,8	6,6
10	Mill throw	8	0,6	8,3	10	1,3	13,3

As the tables show, before and after the experimental group the physical fitness of freestyle wrestlers has increased reliably:

- the average of 100 m run improved from 13 seconds to 12,4 seconds
- pull-up on the bar 20 sec from 8.4 to 10.5 seconds
- push-up 20 sec from 12.5 to 13.8
- long jump from place (cm) from 211.2 to 217
- shuttle running 4x10 m (sec) from 6.9 to 6.7
- coups on the bridge 5 times from 7,4 to 6.5
- jump on the bridge 5 times from 8.02 to 6.9
- throw over the hip from 8.02 to 11.6
- throw over the shoulder from 11 to 11.5
- mill throw from 8 to 10.

Methods and means that increase the effectiveness of training invisibly increasing the volume and intensity of activities contributes to the full development of functional reserves of the athlete's body. This provision provides for the need to use systemic and structural approaches in the development of power and speed-force abilities of qualified athletes, in the generalization of

experimental information, confirming the effectiveness of scientific research and training methodologies for athletes. The use of the method of circuit training with regular exercises with a rest period is defined as an effective method for developing speed and strength qualities.

Analysis of the dynamics of the obtained results shows that in the physical training of 18-20 year-old wrestlers from weightlifting exercises with the help of statistical and dynamic exercises in accordance with traditional means and with the help of special exercises, developed by us has made it possible to develop very effective power abilities.

Conclusion: The conclusion of the lesson plan studied during the experiment allows to improve the quality of strength and endurance of 18-20 year-old qualified freestyle wrestlers. During the general physical preparation period, the recommended workout plan is a convenient and effective tool. For the organization of the training process designed to improve the strength of the wrestlers of the School of Higher Sports Excellence of the city of Nukus, the use of the following:

As a condition to improve the attitude to training exercises should be given priority to competitive activities. The introduction of this into the educational process can significantly increase the interest in the classes of 18-20 year-old qualified freestyle wrestlers. Competitions and competitive exercises should be convenient for each student, not requiring special effort, interesting and expedient emotional organization.

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Rezyume: *Ushbu maqolada yuqori malakali erkin kurashchilarning kuch va tezkor-kuch tayyorgarligini takomillashtirish masalalari muhokama qilinadi. Kurashchilarning umumiy va maxsus jismoniy tayyorgarligini rivojlantirish uchun mashqlar majmuasi ishlab chiqilgan.*

Резюме: *В данной статье рассматриваются совершенствования силовых и скоростно-силовых подготовки высококвалифицированных борцов вольного стиля. Разработана комплекс упражнений для развития общей и специальной физической подготовки борцов.*

Kalit soʻzlar: *Erkin kurash, oʻquv yuklamasi, jismoniy tayyorgarlik, kompleks mashq.*

Ключевые слова: *Вольная борьба, тренировочная нагрузка, физическая подготовка, комплекс упражнения.*

UDK: 903.2 (903.01/ 903.21)

HISTORY OF STUDY OF USTYURT MESOLITHIC MONUMENTS

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Summary: *The article examines the history of archaeological study of the Mesolithic monuments of Ustyurt and Kizilkum and the possibility of revising existing archaeological materials, as well as raising the study of the Mesolithic period in Uzbekistan to a new modern level.*

Key words: *Ustyurt, Kyzylkum, archaeological research, Mesolithic, E.B. Bizhanov, A.V. Vinogradov, N.U Kholmatov, Machai, Kushilish, Sazagan 1, Aydabol, Churuk, Kartpaykum.*

On the territory of present-day Uzbekistan, 10,000 years ago, a new era in the history of primitive society took shape - the Mesolithic (lat. Middle Stone Age).

In the Mesolithic era, a more humid climate existed in the vast expanses of the plain zone of Central Asia. Tugai forests grew along the rivers and in marshy lowlands. Here were found microlithic items, small flint tools of geometric outlines, characterizing the Mesolithic era.

Several monuments are known on the territory of Uzbekistan: Machai, Kushilish, Sazagan 1, Ustyurt and Kyzylkum monuments and Obishir 1-5, Ashchi-kul, points 2, 3 and 16 in Fergana.

To date, about 30 stratified sites and more than 200 sites of the Mesolithic era have been identified in Central Asia, most of which correspond to the territory of Uzbekistan. These monuments can be divided into two groups: the first group consists of cave monuments Obishir 1-5, Machai, Kushilish, Karakamar and Ochilgor; the second group of monuments is the discovery of the site: Aydabol 25, Lavlakon 24, Charbakti, etc. In general, the Mesolithic of Central Asia covers the 11th-7th millennia BC. [1, 58; 2, 74-77; 3, 34; 4, 48; 5, 60].

The territory of Ustyurt is of great importance in the study of the Mesolithic of Uzbekistan. In the second half of the twentieth century, E. B. Bizhanov and A.V. Vinogradov discovered about 20 Mesolithic monuments here. They are mainly monuments [4, 48].

According to researchers, these monuments are located in takyr, salt marshes, sandy massifs, on the banks of the dry riverbed of ancient water sources. The sites of Aydabol, Churuk, Kartpaykum, Alan massif and Tailak and others have such a topography. Long-term monuments include Aydabol 25 (more than 2000 finds), Aktaylak (14000 finds), Kiyikshingrav 2 (12000 finds). Short-term monuments are Aydabol 15 (83 finds), Churuk 2 (84 finds), Sumbetimer 1 (263 finds) [4, 29]. In addition, there are hundreds of medium-sized monuments, such as Aydabol 10 (about 400 finds), Aydabol 16 (about 5000 finds), Aktyube 2 (more than 5000 finds) [6, 33].

According to A.V. Vinogradov among these monuments with 200 to 1000 artifacts are one-time or seasonal sites [4, 28]. According to the classification of K. Flannery and F. Hole, the Mesolithic monuments of Ustyurt are divided into three types [7, 162-163].

1. seasonal, main camps;
2. shelters for the separation of prey hunting;
3. short-term intermediate parking.

Numerous and multifunctional stone tools were found from the sites of the first group. The second group of monuments is intended for finishing the hide and carcass of hunting objects, and therefore they are limited to a set of special stone tools. The tools of the third group, although similar to the first group, are characterized by a small number of stone products.

According to E. B. Bizhanov, the sites of Aydabol 16, 25, 6, 9, 11, 21, 22 can be confidently attributed to the Mesolithic, and the memorial location of Zharinuduk is conventionally considered the Mesolithic. Locations Aktaylak 1 (complex 1), Aktobe 2, Churuk 2 (complexes 1 and 2), Churuk 7, Sulama, Churuk 3 (complex 2) E.B. Bizhanov attributed it to the Late Mesolithic [8, 74-75] or the Early Neolithic.

The sites of the Mesolithic of Ustyurt are characterized by a large percentage of microlithic technology of cleavage. In the secondary processing in most of the projects, blunt retouching was used. Also in the set of these industries are shell ornaments.

The origin of the Ustyurt Mesolithic is still unknown. According to E.B. Bizhanov, a mixed and peculiar local culture was formed in Ustyurt under the influence of the Mesolithic of the Caspian and Southern Urals (Bizhanov E.B., [6, 33; 9, 23].

As an example, he cites the presence and similarity of the Mesolithic trapeziums of the Caspian and Ustyurt. At the same time, E.B. Bizhanov also pauses about the differences. Between them, and speaking about the peculiarities of the Ustyurt Mesolithic, he notes that the Ustyurt Mesolithic grew from local Middle Paleolithic monuments, such as Esen 2 and Churuk 12 [10, 522; 11, 76].

On the territory of Surkhandarya, separate points of the Mesolithic epoch were discovered [12, 10-11; 13, 243]. These include finds around the ancient settlement of Ayrtam and near Old Termez. These finds consist of wedge-shaped and prismatic cores for microblades, side-scrapers, retouched flakes and blades, incisors and large points. A.P. Okladnikov and U.I. Islamov genetically link them with the Samarkand site and the Obishir 1-5 monuments [13, 12; 14, 9-11].

In recent years, the Khorezm archaeological and ethnographic expedition headed by A.V. Vinogradov, there are many Mesolithic localities without cultural strata on the territory of Kyzylkum, such as Lalyakan, Daryasai, Echkiliksay, Ayakagitma, Charbakti (protozarafshan) in Central Kyzylkum.

The industry of the Lalyakan sites (Lyavakan 13, 24, 41, 54, 87, 107, 212 \ 11, 222 \ 1, 348, 418 and, in some cases, the Lalyakan sites 120 and 121) are characterized by the technique of splitting prismatic micro-plates. Among the secondary processing, products with blunt retouching prevail. Also, these industries are characterized by the retouching from the ventral side of blanks. Stone tools include microliths, scrapers, notched-notched microplates, penny points, short trapezoids and parallelograms, elongated segments, asymmetric triangular tools, and leaf-shaped points with a special insert.

The industry of the Mesolithic monuments of Daryayosai and Echkiliksay looks different (Uchashi 84, 85, 159, etc.). They contain many scrapers processed from flakes of plates, blunt plates resembling Chatelperron knives, plates with notched-notched retouch, incisors, asymmetric triangular tools, trapeziums of the yangel type, and there are also asymmetric trapezoids.

Mesolithic items were also found in Ayakagitma (Ayakagitma 5, 86, 367, etc.). Among them there are single elongated trapezoids, "horned", rectangular, asymmetric and elongated large triangular tools.

The industries of the Karakir 1 and Charbakti 1 monuments in the Charbakti valley look still differently. They are characterized by blunt-edged micro-blades, blades with dentate-notched retouch, points with retouched edges, scrapers processed on truncated flakes and blades, trihedrally processed symmetric and asymmetric short trapezoids, elongated and short triangular tools.

From the territories of Central Kyzyl Kum, only the Kokpatassoy 1 locality is known. Its industry is characterized by the presence of microlithoid cutting techniques. Conical cores predominate among the cores. The industry set also includes knife-like blades, end-scrapers, large blades with notched-notch retouching, incisors, micro-blades with blunt edge retouching. Geometric microliths are not found. A.V. Vinogradov explains the diverse appearance of the Mesolithic monuments of Lalyakan, Daryasai, Echkiliksay, Ayakagitma, Charbakti and Central Kyzylkum by the fact that they belong to different chronological periods and, together with them, they are, possibly, different versions of one single culture. But the origin and cultural identity of these monuments is not yet clear enough.

Peculiar Mesolithic localities were also found in the valley of the Zarafshan River, in its middle and lower reaches. Archaeological research carried out in the Charbakti valley of the ancient lower Zarafshan revealed more than 60 sites of the Mesolithic and Neolithic times [15, 12-13; 16, 27-43; 17, 25-34].

Among them, the industries of the Charbakti monuments 11, 12, 23, 27, 41 differ sharply from the neighboring Keltaminar complexes. These industries contain cores, high-shaped end-scrapers, chisel and pebble tools, retouched flakes and triangular points that are characteristic of the mountainous Late Paleolithic and Mesolithic of Central Asia. Therefore, researchers relatively date back to the early Mesolithic era. The emergence of Mesolithic complexes from Charbakti makes it possible to fill the void between the Samarkand Late Paleolithic site and the Sazagan Neolithic culture.

In recent years, Mesolithic monuments have been discovered in the Karatepa mountain range in the middle reaches of the Zarafshan. These include the cave monuments Karakamar Ochilgor. N.U Kholmatov discovered from these sites chisel tools, high-form scrapers worked on flakes, cores and rough tools on blades.

The Mesolithic monuments in the middle reaches of the Zarafshan include Sazagan 1 and the lower layers of Sazagan 2, located in the Karatepa mountains. The Sazagan 1 site is located on the second terrace of the left bank adyrs of the valley of the same name. The monument was studied in 1966-1977. in the first stage of the study, the collection of materials and stratigraphic studies were carried out here. The excavations were carried out in 1971-1972, first by D. N. Lev, then by M. Dzh. Dzhurakulov. It turned out that the cultural layers of Sazan 1 were destroyed by agricultural work in historical time. Nevertheless, two cultural horizons have been identified here, of which 2,300 specimens have been collected. stone products. Among the materials are prismatic, cone-shaped, butt cores, blades, micro-blades, chippers, retouchers, devices for squeezing equipment, scrapers, cutters, retracted flakes and blades. Lifting materials are very similar to those that were obtained as a result of excavation of the cultural horizons of the Sazagan 1 site, with the exception of one leaf-shaped biface from the excavation. The industry of the site is both flake and blade (74% flakes and 20.1% blades). The share of micro-plates is large, they make up 36.3% of all plates and 22.2% of all processed stones of the complex. In this respect, the industry of Sazagan 1 differs from the “mountainous Neolithic” and approaches the Neolithic industry of Central Fergana.

The industry of Sazagan 1 is characterized not by geometric tools, but by thick scrapers, chisel tools, and incisor-shaped products. These tools, although they do not constitute a large number among the items with secondary processing (most of the tools are retouched otzepas and blades), are defining elements of the nature of this industry [18, 41].

Comprehensive paleogeographic and archaeological studies in the territories of Uzboy, Amu Darya, Zarafshan, Kyzilkum and the Central Asian Mesopotamia indicate that these territories were densely populated during the late Pleistocene and early Holocene. The discovered monuments in various ecological conditions indicate that there were favorable natural conditions for human existence. The Mesolithic tribes living in these territories lived in different natural conditions, continued their cultural development and laid the foundation for the further evolution of the Stone Age cultures.

Economy of the Mesolithic tribes. Of course, the importance of studying the Mesolithic monuments of Uzbekistan is great, or it gives us for the first time an idea about the types of economy, about the life of the Mesolithic tribes of Uzbekistan.

Man has made great strides in improving the tools of labor. Already in the Paleolithic, throwing spears - darts were invented. Then man acquired a bow and arrow, which was a huge achievement in the history of mankind. Now it was possible to hunt birds, small swift-footed animals that rarely fell prey to humans in the Paleolithic era.

The bow was essentially the first mechanism invented by man. In the Mesolithic era, the microlitization of guns reaches a height of. Different shapes of geometric tools appear. The era from the appearance of onions to the invention of ceramics covers the period from about the 10th to the 5th millennium BC. e. and is called the Mesolithic.

The animal world has also changed. Before that, hunting in mountainous areas, like the previous era, was roe deer, mountain goats and rams, and in the lowland areas - bison, gazelle, horses, hares. Hunting could not be a reliable source of food. This set before the person the task of

finding new forms of economy, new means of subsistence. Following the change in the landscape and fauna, the way of life of the people of the Stone Age also changed.

According to the faunal remains, paleogeographic and functional data of the materials of the Obishir 1-5 site, representatives of this culture were hunters and gatherers. They hunted Siberian deer, argali, gazelle, deer, etc. animals. The main hunting weapon was a bow and arrow; individual arrows were found from the sites of Obishir and Central Fergana. Stone tools also indicate that hunting was the main business of the economy. In the economy of this culture, the processing of skins and the manufacture of various things from them played an important role. In the economy of representatives of this culture, leather processing played an important role. The existence of collecting is evidenced by stone sickles and grain grinders found from the Mader locality [19, 127-142; 20, 112].

In general, representatives of the Obishir culture were engaged in wandering hunting in the foothill and desert zones [21, 163].

According to the quantitative indicators of labor tools, it can be said that there were main long-term camps (Obishir 5, Sarik-Suv, etc.), short-term shelters (point 3, Ittak-Kala 1, etc.) and locations for cutting hunting prey (Ashi - Cool, Mader 11, 2 and point 16, Taipak 3).

To study the economic activity of the Mesolithic tribes of Central Asia, we use a number of sources. This information about the natural environment of the study area, about the visible and quantitative composition of the fauna, the nature of its distribution in the layer, the functional purpose of tools, etc.

Cattle breeding in their economy in this era did not yet exist or did not play a decisive role. The bones of small ruminants from domestic animals were found in the upper layer at Obishir 5 Cave and Machai Cave. The most famous are the presence of cattle bones in both layers of Machai Cave. Hence, it remains to accept that the inhabitants of the cave raised sheep, goats, and possibly cattle. At least there is reason to talk about the initial stage of the timing of large horned animals. Now it is difficult to decide with certainty the question of whether the territory of Uzbekistan will be found as an independent center for the development of cattle breeding or be part of the Central Asian cattle breeding center.

In the economy of the Mesolithic populations of Ustyurt, traceological data testify, and it is mainly of an appropriating nature. The main occupation of the population in this era was hunting and gathering. In the household, the main place was occupied by the processing of bones, wood and hides. The Mesolithic population of Ustyurt lived in cultural contacts with the cultures of adjacent territories and played an important role in the development of the subsequent Neolithic era.

On the basis of the achievements made by the Mesolithic tribes of the south, it became possible for their transition from gathering to the cultivation of cultivated plants - to agriculture and breeding of domestic animals. Equally naturally, in the course of time, the inhabitants of the steppes and mountain regions, probably with the help of their settled neighbors, switched from hunting wild animals to cattle breeding. The first farmers and pastoralists owe all this to their predecessors, the people of the Mesolithic time, in which the first cracks in the ancient consuming economy, which dominated for several million years, began, when the search for new sources of livelihood, new forms of life and culture. These first timid steps of the Mesolithic people prepared a great turning point - the transition to a productive economy, and with it many other progressive changes in all areas of culture and human life.

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Rezyume: *Maqolada Ustyurt va Qizilqum mezolit yodgorliklarini arxeologik o'rganish tarixi va mavjud arxeologik materiallarni qayta ko'rib chiqish, shuningdek, O'zbekistonda mezolit davrini o'rganishni yangi zamonaviy bosqichga ko'tarish imkoniyatlari ko'rib chiqiladi.*

Резюме: *В статье рассматривается история археологического изучения мезолитических памятников Устюрта и Кызылкума и возможность пересмотра существующих археологических материалов, а также поднятия изучения мезолита в Узбекистане на новый современный уровень.*

Kalit so'zlar: *Ustyurt, Qizilqum, arxeologik tadqiqotlar, mezolit, E.B. Bijanov, A.Vinogradov, N.U. Xolmatov, Machay, Kushilish, Sazag'on 1, Aydabol, Churuk, Kartpaykum.*

Ключевые слова: *Устюрт, Кызылкум, археологические исследования, мезолит, Е.Б. Бижанов, А.В. Виноградов, Н.У. Холматов, Мачай, Кушилиш, Сазаган 1, Айдабол, Чурук, Картпайкум.*

**LEADING PRACTICES OF DEVELOPING PASSENGER TRANSPORT SERVICES IN
FOREIGN COUNTRIES**

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Summary: *In the course of research on the organization of passenger transportation by road, cases that have been implemented and are being implemented abroad in the field of passenger road transport were reviewed and analyzed.*

Key words: *Transport, innovation, passenger transportation, transport services, region, transport infrastructure, transport fund.*

In most developed countries, passenger road transport is not considered a traditional entity affected by the price mechanism. Usually, when one or another passenger car transport company operates alone in a city or region, the rent is determined by the state. That is why the state helps in providing funds for the losses suffered by passenger car transport companies.

In some countries, it is determined by law who (the state, region, or local government) will pay for the damage of passenger vehicles. The level of this contribution varies depending on the importance of the use of passenger road transport (statewide, regional or local). For example, in Italy in 1982, a national transport fund was established. The main purpose of this fund is to provide loans to passenger car transport companies for their normal operation [1]. The role of the state in financing the damage of passenger car transport is growing. Every three years, the Ministry of Transport changes the percentage of passenger car transport costs that should be reimbursed from the revenue received according to the established tariff. This percentage ranges from 27% (Naples) to 34% (Rome) in Italian cities.

Germany has a unique feature of state intervention in passenger car transport damage financing. Revenue from passengers transported by passenger car transport covers 50% of its costs. However, although state laws do not provide for the direct intervention of the Federal Government in the compensation of passenger car transport damage, if it is justified that the tariff is set lower than the actual one for the purpose of social protection of the population, according to the law in advance compensation is assigned. Also, according to the set of current laws, the disabled and some people in need of social protection have the right to use of passenger car transport free of charge. In compensating for these benefits granted by the state, the government pays a fixed percentage of compensation to the passenger car transport companies. This percentage varies annually depending on the importance of passenger car transport and its geographic location. The rest of the damage should be covered by the transport companies themselves. However, passenger car transport companies benefit from certain taxes in the country, so at the same time they cover a certain percentage of the loss with funds from local companies [2].

"Divlin Vaz" company in Ireland serves a city of 1.2 million inhabitants. Revenue from transportation tariffs covers 85% of operating costs. The rest of the company's losses will be covered by officially allocated funds. The state strictly controls the costs of passenger car transport enterprises, and requires them to fulfill the assigned tasks.

United States passenger motor vehicle damage financing remains a national challenge. Revenue from passenger transport does not cover the operating costs of passenger road transport. Therefore, it relies on grants from local, state and federal governments. In some states, a similar form of compensation for passenger motor vehicle damage is used, as well.

1) In cities with more than 100,000 inhabitants, 40% of the costs of passenger car transport companies are covered by themselves, and the remaining 60% is covered by the funds allocated by the state authorities;

2) In cities with a population of less than 100,000, passenger car transport companies are expected to cover more than 36% of their expenses themselves, and 64% from the funds

allocated by the states.

In Switzerland, the confederation and the cantonal authorities jointly finance the losses of the passenger car transport companies under the public transport law adopted in 1985. It should be noted that in this country, great attention is paid to improving the quality of transport services for the population. This is clearly defined in Clause II of the federal law on passenger motor transport, i.e. "preferential tariff in order to improve the quality and culture of transport services to the population of the confederation and cantonal authorities, and to improve social, environmental and economic conditions has the right to demand designation. Compensation for the damage of transport enterprises is entrusted to the local government." [3]

In addition, the European Union (EU) transport policy includes the direction of increasing and improving competitiveness in the network for the purpose of rational use of resources in the road complex.

This direction includes:

- improving and developing the quality of roads;
- implementation of measures to improve the motor transport system, including improvement of logistics and management areas;
- introduction of uniform border and social standards (proper organization of work and rest of drivers, implementation of general driver training program);
- unification of control and penalty systems, etc.

While studying the experiences of the above-mentioned countries on the use of passenger car transport services, it is permissible to dwell on their specific characteristics.

In Japan, reforms are being implemented to expand and modernize the road network. This can be explained by the short length of road per square kilometer in Japan until the 1990s. At that time, the length of highways in Japan was 4368 kilometers. For comparison, this figure was more than 80,000 kilometers in the USA, more than 8,000 kilometers in Germany, and more than 6,000 kilometers in France, Italy and Great Britain. And then, in the last decade, the length of the highway network almost doubled. The reason for this is that more than 60 percent of the total cost of investment in the highway network in Japan. Currently, the length of highways is about 14,000 kilometers, and works are being carried out to develop the network of city bus lines.

The development of agglomerations in any country is a natural but complex process that requires the development of all types of communications and, first of all, transport. This can be clearly seen in the example of urban agglomerations in countries with a much higher level of GDP. At the same time, studies conducted in such countries show that the insufficient development of transport systems and traffic jams lead to the loss of up to 9% of GDP annually, while in China this figure reaches 10%.

The largest number of urban agglomerations were formed and continue to be formed in European countries. This process is facilitated by the relatively short distance between large settlements, which does not exceed 200 km.

Ensuring the mobility of the population is one of the main goals of the Swiss railways Schweizerische Bundesbahnen (SBB). For more than 20 years, SBB has been using the concept of "combined mobility", which involves the use of several modes of transport to provide passengers with a "door-to-door" journey. In order to organize movement within the agglomeration in Switzerland, they operate according to agreed schedules and have a single passenger information system, an integrated system for monitoring and paying for trips, and a system for monitoring the quality of transport services.[4].

American railroads are unique in that they pay little attention to passenger traffic. Today, only three areas are relatively convenient to travel by rail: the Chicago metropolitan area, the Boston-Richmond route through the New York metropolitan area, Philadelphia, and Washington, D.C., and California. Relatively heavy passenger train traffic occurs along the Canadian border, Florida, and part of the East Coast. The coverage of the rest of the region by the passenger rail

transport route network is extremely low: either there are no railway lines at all, or the intensity of passenger trains does not exceed one pair per day. Under these circumstances, Amtrak's system of bus routes connecting rail stations with non-rail (or rail but not passenger) areas is essential to the company's operations.

As air transport took a leading place in the United States, in North America the air transport company SAS Airlines and the railroad Amtrak made the first attempts in the field of "mixed passenger service". SAS Airlines issues a two-part travel document for air travel from the United States to Sweden and Denmark, the second of which is used for travel from the designated airport to the desired city rather than within the country. Since the beginning of the 21st century, airlines around the world have actively cooperated with rail transport to ensure that airports are connected to the railway industry is the active development of intercity bus services by major railway companies.

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Rezyume: *Avtomobil transportida yo'lovchi tashishni tashkil etish bo'yicha olib borilgan izlanishlar jarayonida yo'lovchi avtomobil transporti sohasida xorijda joriy etilgan va joriy etilayotgan holatlar ko'rib chiqildi va tahlil qilindi.*

Резюме: *В ходе исследований по организации пассажирских перевозок на автомобильном транспорте были рассмотрены, проанализированы кейсы, реализованные и реализуемые за рубежом в сфере пассажирских автомобильных перевозок.*

Kalit so'zlar. *Transport, innovatsiya, yo'lovchi tashish, transport xizmatlari, mintaq, transport infratuzilmasi, transport fondi.*

Ключевые слова: *Транспорт, инновация, пассажирские перевозки, транспортные услуги, регион, транспортная инфраструктура, транспортный фонд.*

**THE IMPACT OF THE DIGITAL ECONOMY ON THE DEVELOPMENT OF TOURISM
IN UZBEKISTAN**

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Summary: *This article provides an overview of the impact of the digital economy on tourism in Uzbekistan. It reflects the main ways in which digital technologies influence the development of the tourism industry in the country*

Key words: *tourism, economics, digital economy, information and communication technologies, Uzbekistan.*

The most important component of e-business is e-commerce. E-commerce refers to any forms of transactions in which the interaction of the parties is carried out using the capabilities of information and telecommunication technologies, systems and networks. E-commerce is a means of doing business on a global scale. It allows companies to interact more fully with suppliers and respond more quickly to customer requests and expectations. Companies have the opportunity to choose suppliers regardless of geographic location, as well as the opportunity to enter the global market with their goods and services.

E-commerce is only one of the components of e-business, which is limited to conducting transactions using electronic systems, for example, selling goods or providing services via the Internet. One of the striking manifestations of globalization in Uzbekistan is the active development of international tourism, which has been growing dynamically in recent years. At the same time, the market for online travel services is the fastest growing sector of the world economy. Foreign tourists, when planning and organizing their trips around Uzbekistan, use the capabilities of the Internet, which actively influences the development of the tourism market in Uzbekistan. However, the coronavirus pandemic and related restrictions have had the most negative consequences specifically for international tourism. Analysts at the Economist Intelligence Unit (EIU) estimated the possible losses of the global tourism industry from coronavirus at \$80 billion. And we must take into account that the pandemic is still ongoing. According to virologists in the UK and Germany, the pandemic could last from one to two years, which will slow down the recovery of the tourism services market. However, it is necessary to take into account that in the current conditions, competition between countries to attract international tourists will sharply intensify. And it is precisely in these difficult times that the deepening of the digitalization processes of national tourism will be one of the main factors in increasing the competitiveness of the tourism industry [4].

Tourism has become the most important area of economic activity both for the world economy as a whole and for the national economies of many countries. Uzbekistan has enormous tourism potential. The country is considered one of the centers of tourism not only in Central Asia, but throughout the world. In addition, tourism and the hospitality industry is an information-rich area where the collection, transmission and processing of digital information are of great importance in decision-making at all levels of tourism management. In this regard, the formation of a new paradigm of the digital economy directly concerns the tourism sector, which is already actively using new information and communication technologies of the digital economy [1].

The President pointed out that in the modern world, digital technologies play a decisive role in all areas. In 2019, Uzbekistan improved its position by eight points in the International Index for the Development of Information and Communication Technologies, but still lags behind other countries.

Although the formation of a “digital economy” will require appropriate infrastructure, huge funds and labor resources, this should be done today, otherwise tomorrow will be too late, he said.

For the next five years, the priority task for Uzbekistan will be an accelerated transition to the digital economy [2].

Today, the digital economy accounts for up to 15.5 percent of global gross domestic product. Over the past 15 years, the digital economy has been growing 2.5 times faster than global GDP. Our country plans to double the gross domestic product. An important role in achieving this goal is played by the mechanisms of the digital economy. In recent years, the concept of “digital city” has become increasingly widespread around the world. It is planned that, taking into account the experience accumulated in this area, the “digital Tashkent” system will be introduced. After two years of testing of this system, the generated ready-made software will be implemented in other regions of the country.

The digital economy is a unique type of business in which the most important resource in the sphere of production, distribution, exchange and consumption is digital information and corresponding data management methods [3].

Information support and digitalization of tourism act as the most important factor in its development, which has become especially important in recent years in the context of the development and emergence of the digital economy.

Today, about 80% of tourists around the world plan their trips online. Türkiye, for example, has announced that it is ready to invest heavily in digital marketing for its tourism industry. Sri Lanka has announced the launch of a major digital promotion of the country as an attractive destination for tourists. Indonesia, in response to Airbnb's international expansion, has launched its own rental booking network with government support.

Digitalization of tourism can be divided into external and internal. In the first case, we are talking about the systematic transfer of communications with the client to the digital environment: people no longer have time for personal meetings with travel agents to discuss vacation options. Often the country and hotel have already been chosen - we have learned to search for information on the Internet on our own. Therefore, it remains to find a point of contact with the tour operator, which usually becomes its website. On the site, the user will also not be left alone with questions: an employee in the chat or a chatbot will immediately join in the communication. The defining moments here are the speed of response and the effectiveness of resolving the client's issue. Today, there are dozens of technology startups operating in the tourism industry all over the world that are striving to bring interesting ideas to the tourism industry.

Uzbekistan, with its rich historical heritage and cultural attractions, is an attractive destination for tourists. In recent years, the country has been actively using the opportunities provided by the digital economy to develop the tourism industry. Here's how the digital economy affects the development of tourism in Uzbekistan:

1. Marketing and Promotion:

- Digital platforms: Tourism organizations and government agencies in Uzbekistan actively use digital platforms such as websites, social networks and mobile applications to promote tourism services and attractions.

- Virtual tours: Creating virtual tours allows potential tourists to get a preview of the attractions of Uzbekistan and motivates them to visit the country in reality.

2. Improved Service and Experience:

- Electronic booking: Digital technologies facilitate the process of booking hotels, tours and transport, which makes travel to Uzbekistan more convenient and accessible for tourists from all over the world.

- Mobile applications: Development of mobile applications for tourists allows them to easily find information about attractions, routes, restaurants and other infrastructure.

3. Increased Availability of Information:

- Digital Guides: Creating digital guides and information resources in various languages helps tourists obtain useful information about the culture, history and traditions of Uzbekistan.

- **Reviews and Ratings:** Review and rating sites and apps allow travelers to share their travel experiences and help other travelers make informed decisions.

4. Development of Tourist Infrastructure:

- **Electronic Payments:** The introduction of electronic payment systems helps to simplify payment for tourism services and increase the security of transactions for tourists.

- **Digital Technologies in Hospitality:** The introduction of digital technologies, such as smart home systems and virtual assistants, in the hotel business increases the level of comfort and convenience for tourists.

The digital economy plays a key role in the development of tourism in Uzbekistan, making the country more accessible and attractive to international and domestic tourists. This helps to increase tourism income, create new jobs and develop the economy as a whole.

This article provides an overview of the impact of the digital economy on tourism in Uzbekistan. It reflects the main ways in which digital technologies influence the development of the tourism industry in the country.

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Rezyume. *Ushbu maqolada raqamli iqtisodiyotning O‘zbekiston turizmiga ta’siri haqida umumiy ma’lumot berilgan. Unda raqamli texnologiyalarning mamlakatda turizm industriyasi rivojiga ta’sir etishining asosiy usullari aks ettirilgan.*

Резюме. *Эта статья представляет обзор влияния цифровой экономики на туризм в Узбекистане. В ней отражены основные способы, которыми цифровые технологии влияют на развитие туристической индустрии в стране.*

Kalit so'zlar: *turizm, iqtisodiyot, raqamli iqtisodiyot, axborot-kommunikatsiya texnologiyalari, O'zbekiston.*

Ключевые слова: *туризм, экономика, цифровая экономика, информационно-коммуникационные технологии, Узбекистан.*

UDC. 330

ANALYSIS OF FINANCIAL INDICATORS OF AGRICULTURAL BUSINESS SUBJECTS

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Summary: *In the article, scientific-theoretical research, analysis of statistical data, the practice of evaluating financial and economic indicators and scientific proposals aimed at its improvement are developed in order to ensure the economic efficiency of agricultural business entities.*

Key words: *agricultural business entities, financial stability, profitability, labor resource, income, cost, profit.*

Introduction

Through the analysis of the stability of the financial situation, an assessment is made of how the enterprise managed its financial resources during a certain period. First of all, the state of financial resources should correspond to the requirements of the market and the development of the enterprise, because the financial stability below the level of demand weakens the solvency of the enterprise, and leads to a lack of funds for the development of production. Therefore, the effective formation, distribution and use of financial resources represent the essence of financial stability.

In most of the economic literature, financial strength (stability) and balance sheet liquidity are defined in the same way, and the determined indicator is understood as either financial strength or balance sheet liquidity, that is, the ability of enterprises to repay borrowed debts.

Analysis of literature on the topic

Financial stability and balance sheet liquidity are two different financial indicators that have their own meaning and represent the financial activity of enterprises from different perspectives. This is what is said in the textbook "Analysis of the financial situation of enterprises" by our respected teacher E.A. Akromov, one of the economists [1].

The essence of financial stability is that it is necessary to limit the system of indicators used for measuring and evaluating financial stability.

Accordingly, according to V.G. Artemenko, M.V. Bellendir, financial stability represents the efficiency of the formation, distribution and use of the company's financial resources [2].

According to A.D. Sheremet, R.S. Sayfulin, financial strength and ability to pay have the same meaning, and it is stated that ability to pay represents the outward appearance of financial strength [3].

According to Yu.Umavov's conclusion, the result itself does not adequately describe the labor activity, because it does not show at what price the resources were involved; high or low efficiency can be achieved by using one type of resource; the appropriateness of this or that event allows to determine the economic efficiency indicator; The essence of the efficiency category is revealed when comparing resources with costs [4].

The indicator of financial stability is an indicator of a complex quality, which is:

- the ability of enterprises to maintain production in the period of complex market relations;
- that there is an opportunity to freely use the company's funds;
- that it is possible to sell products without stopping production;
- overall stability of enterprises;
- that enterprises are properly managed;
- that the financial resources available in enterprises meet the requirements of market relations;
- shows the level of resources that cover the needs of enterprises for reserves and expenses.

Therefore, financial stability is determined by the formation of financial resources of enterprises and their use. The financial stability of the enterprise is affected by all directions of economic and production activity of enterprises. It is affected by both internal and external factors and conditions.

We can indicate the following as internal factors:

- stability of production in the enterprise;
- organization of production;
- production management;
- the size of the authorized fund of the enterprise;
- the ratio of the company's expenses and income;
- the ratio of sources of own funds and company liabilities;
- the composition of the company's working capital.

As enterprises are in economic relations with other economic entities during their activities, external factors also affect the financial stability of enterprises. Among such factors we can include the following:

- the state of the enterprise in the commodity market;
- export and import relations of the enterprise;
- activity of the enterprise in business relations with other enterprises;
- relations with banks, debtor and creditor enterprises;
- economic policy, tax, price implemented in the republic and finance, banking policy, technique, technology policy.

Thus, financial strength is affected by the situation, factors, and conditions inside and outside the enterprise, and it can be seen that the level of financial strength has a great impact on the current and future activities of enterprises.

Financial stability is a comprehensive indicator that reflects the results of all aspects of the enterprise's activity. Enterprises that have achieved financial stability will have the following characteristics: bozor munosabatlarini har xil sharoitlarida ham faoliyat yurita olishi;

- free movement of funds of the enterprise;
- compliance of financial resources with market requirements;
- the state of financial resources can ensure production development and solvency, creditworthiness;
- coverage of production reserves and costs with resources.

Analysis and results

In order to draw a correct conclusion about indicators, first of all, it is necessary to classify them on a scientific basis. The use of coefficients is important in assessing the financial condition of economic entities. In particular, it is possible to evaluate certain aspects of the financial situation through financial coefficients.

In the table below, we analyze the most commonly used financial coefficients in the practice of agricultural entities of our republic.

Table 1

Analysis of financial coefficients of "Sharipov Ilham" farm

№	Indicators	2018 y	2022 y	Change (+,-)
	1	2	3	4=3-2
1	Coefficient of financial independence	0,183	0,674	+0,491
2	Solvency coefficient	1,224	3,069	+1,845
3	Ratio coefficient between debt and own funds	4,449	0,483	-3,966
4	Coefficient of coverage of reserves and expenses with own resources	0,534	8,692	+8,158
5	Coefficient of quick mobility of funds	1,000	1,000	+0,000

Source. Information on the Sharipov Ilham farm.

According to the information in the table, we use financial coefficients based on the accounting balance to make an accurate assessment of the financial situation of the economic entity. Accordingly, the coefficient of financial independence of the enterprise increased by 0.491 coefficient or 2.68% compared to the beginning of the year. The solvency ratio increased by 1,845 ratios compared to the beginning of the year. The change of these coefficients in this order indicates that the company's financial condition is improving somewhat at the end of the year compared to the beginning of this year. In addition, it is necessary to negatively assess the increase in the share of the company's liabilities in relation to its own funds, that is, it is a sign that the company's liabilities have increased. The mobility of funds increased by 8,158 coefficients at the end of the year compared to the beginning of the year. This allows the enterprise to more fully meet the demand for working capital. In general, when the company's financial coefficients were studied based on the company's data, the change of these coefficients was positive.

Asset liquidity of the company's balance sheet is a measure of asset liquidity, and solvency (ability to pay) represents a break from debts on time and in full. A necessary and important condition of solvency is liquidity.

Table 2

Analysis of the solvency of "Sharipov Ilham" farm

Funds for payment	Line number	Report amount at the end of the year, thousand soms	Payment debts	Line number	Report amount at the end of the year, thousand soms
1	2	3	4	5	6
1. Funds, i.e. funds in the cash register and account number	330-340	-	1. Accounts (debts) payable to suppliers and contractors	610	60687
2. Currency funds	350	-	2. Debts for payments to the budget	680	82670
3. Short-term investments, other funds and current assets	360-380	-	3. Overdue obligations for taxes and mandatory payments	650	-
4. Finished product	170	-	4. Property and personal insurance debts	700	
5. Accounts receivable	210	409425	5. Debts for payments to targeted state funds	690	1228
			6. Debts for payment of wages	720	
			7. Short-term loans and debts	730-740	
			8. Other current obligations	-	
Funds for total payment	Xxx	409425	Total payment arrears	Xxx	144585
A lot of debt repayment obligations	Xxx	-	Excess (surplus) of payment funds from payment debts	Xxx	264840
Balance	Xxx	409425	Balance	Xxx	409425

Source. Information on the Sharipov Ilham farm.

It can be seen from the data of Table 2 that the economic entity we are analyzing is considered solvent in the current period. That is, the total payment funds of the enterprise were 409,425 thousand soums, while the total payment debts amounted to 144,585 thousand soums. It can be seen that the company's payment funds were 264,840 thousand soums more than the payment debts. This indicates that the company has absolute solvency. In addition, if we pay attention to the composition of payment funds, the basis of it is accounts receivable (409,425 thousand soums). This indicates that the company does not have quick payment ability at the same time. Debts from suppliers and other similar obligations form the basis of payment debts. This means that these debts should be paid off in a short period of time.

Conclusions and suggestions

An important part of financial analysis is the study of the effective use of working capital, in which working capital is especially the movement of stocks, work-in-progress, finished goods, receivables, cash and foreign currency, and securities. learning is important.

The following factors affect the circulation of current assets and their effectiveness:

- change in the amount of net income received from the sale of products (work performed, services provided);
- changes in the average annual value of tangible assets and so on.

Table 3

Analysis of working capital circulation of "Sharipov Ilham" farm

Indicator name	Past year	Reporting year	Difference (+,-)
1	2	3	4=3-2
1. Net income from the sale of products (work, services), thousand soums	956199,50	1127831,80	171632,30
2. Total goods - material reserves, thousand soums	36532,70	34430,70	-2102
3. Coefficient of turnover of material reserves (working capital) (1/2)	26,174	32,757	+6,583
4. Cycle period of material reserves (working capital), in days ((2nd row*360)/1st row)	13,7	10,9	-2,8
5. Rotation weight coefficient (2/1)	0,038	0,030	-0,008
6. Free (-) or additional (+) attraction of funds due to acceleration or deceleration of circulation:			
a) per day	X	X	-2,8
b) in the amount, in thousand soums (1127831.80x(-2.8)/360	X	X	-8772,03

Source. Information on the Sharipov Ilham farm.

It can be seen from the data of the table that the amount of net income from the sale of products in the economic entity we are analyzing has increased by 171632.30 thousand soums this year. Accordingly, the value of inventory decreased by -2102 thousand soums. As a result of this, the turnover coefficient of the inventory was increased from 26,174 coefficients of the previous year to 32,757 coefficients by the reporting year. The cycle period was reduced by 2.8 days compared to last year, that is, it was accelerated. As a result of the acceleration of the turnover of the company's inventory, the release of funds from the turnover of the company amounted to 8772.03 thousand soums. Such results can be evaluated as a positive indicator for the company.

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Rezyume: *Maqolada qishloq xo'jaligi xo'jalik yurituvchi sub'yektlar faoliyatining iqtisodiy samaradorligini ta'minlash maqsadida ilmiy-nazariy tadqiqotlar, statistik ma'lumotlar tahlili, moliyaviy-iqtisodiy ko'rsatkichlarni baholash amaliyoti va uni takomillashtirishga qaratilgan ilmiy takliflar ishlab chiqilgan.*

Резюме: *В статье в целях обеспечения экономической эффективности деятельности субъектов сельского хозяйства разработаны научно-теоретические исследования, анализ статистических данных, практика оценки финансово-экономических показателей и научные предложения, направленные на ее улучшение.*

Kalit so'zlar: *qishloq xo'jaligi tadbirkorligi sub'ektlari, moliyaviy barqarorlik, rentabellik, mehnat resurslari, daromad, tannarx, foyda.*

Ключевые слова: *субъекты сельскохозяйственного предпринимательства, финансовая устойчивость, рентабельность, трудовой ресурс, доход, себестоимость, прибыль.*

UDC 336.76

ANALYSIS OF THE CAPITAL MARKET IN THE ECONOMY OF THE REPUBLIC OF UZBEKISTAN

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Summary: *The article theoretically studied the role of the capital market in stimulating economic growth, discussed measures implemented in Uzbekistan for the development of the capital market, and also made recommendations regarding the role of the capital market in stimulating economic growth.*

Key words: *capital market, stock market, economic growth, stock exchange, securities*

The economy of any country cannot be imagined without the constant movement of money. The constant movement of money finds its expression in the buying and selling relationship between the parties, that is, the seller and the buyer, and it is this relationship that determines the nature of the financial market. Today, the development of the capital or stock market is recognized as one of the priorities for the formation of the modern financial market, where the buyer buys not only money, but also other types of financial instruments, including securities (shares, bonds, certificates of deposit, promissory notes, futures and other similar etc.) can also carry out trade operations.

In recent years, the economy of our country is increasingly opening up to the global economy, creating many opportunities for the development of the financial market, including the capital market. The role of the state in the effective use of such opportunities is extremely high, and the following main regulatory and legal documents adopted by our government in recent years ensure the development of the capital market:

According to the Decree of the President of the Republic of Uzbekistan dated April 13, 2021 "On measures for the further development of the capital market" No. PF-6207, the target indicators of the development of the capital market for the years 2021-2023 were developed, and these are the main indicators of the development of the capital market in our country until 2023. determined the directions (see table 1);

1 – table.

Target indicators to be achieved as a result of the implementation of the capital market development program in 2021-2023 [1]

T/r	Name of indicators	Unit of measure	Years			
			2020 (in practice)	2021	2022	2023
1.	Market capitalization based on freely traded securities	trillion soums	1,9	4,9	14,5	45
2.	Total value of securities in free circulation	in percent (Relative to GDP)	0,3	0,7	1,9	5
3.	Total value of corporate bonds	trillion soums	0,16	0,75	1,88	3,94
		in percent (Relative to GDP)	0,03	0,1	0,3	0,5
4.	The number of population and business entities covered by the "Finance and Investment Literacy"	program	–	5000	20000	40000
5.	Number of investment account numbers	Deposit accounts active during the year	4000	6000	10000	20000

6.	The part of the projects within the framework of regional investment programs financed by issuing securities	in percentage (in relation to the value of the regional investment program)	—	1	3	5

The Decree of the President of the Republic of Uzbekistan dated January 28, 2022 "On the development strategy of the new Uzbekistan for 2022-2026" No. PF-60 has defined several important tasks for the development of the securities market in the national economy [2]. An example of this is to allow the purchase of state securities by non-residents, to increase liquidity in the corporate securities market, and to attract foreign investors and international financial institutions to privatization processes in enterprises with a state share, and many other such measures - activities;

By the Decision of the President of the Republic of Uzbekistan dated September 2, 2023 "On additional measures - activities for the development of the capital market" No. given As one of the most important measures in this Decision, it can be pointed out that the regulatory function of the Ministry of Economy and Finance, which was responsible for the country's stock market until now, will be transferred to the National Agency for Prospective Projects [3];

According to the Decree of the President of the Republic of Uzbekistan dated September 11, 2023 "On the strategy of Uzbekistan - 2030" No. PF-158, it was noted that the stock market of Uzbekistan should grow by more than 20 times by 2030. means that it is given [4].

Based on the above, we can say that the development of the capital market in our country is given priority at the state level, and all this will certainly not fail to show its positive results in the near future. At this point, we would like to continue our thoughts on the theoretical aspects of the capital market. The capital market, as its name suggests, is pro-capitalist, which means that private property is prioritized and guaranteed [5].

In other words, the stock market collects temporarily idle funds, turns them into loan capital, and then distributes them among the participants of the production process. In this case, buying and selling operations are carried out with securities, especially shares of enterprises and government bonds.

In Uzbekistan, such buying and selling operations are carried out online through www.fondbozori.uz, which is the sole trading system platform of the "Tashkent" Republican Stock Exchange. It is one of the transparent entities of the capital market infrastructure in the country, which includes concepts such as supply and demand, pure competition, quotation and listing categories.

It should be noted that stock exchanges are an integral part of the capital market of any country. In other words, there is no way to develop a real capital market without a stock exchange. Therefore, we would like to dwell on some data showing the participation of the "Tashkent" Republican Stock Exchange in the country's capital market.

As we mentioned above, in the Decree of the President of the Republic of Uzbekistan dated April 13, 2021 No. PF-6207, there is a list of 15 organizations (in the language of the stock exchange - issuers) that should go to IPO during the years 2021-2023, that is, whose shares should be publicly placed through the stock exchange. (see table 2).

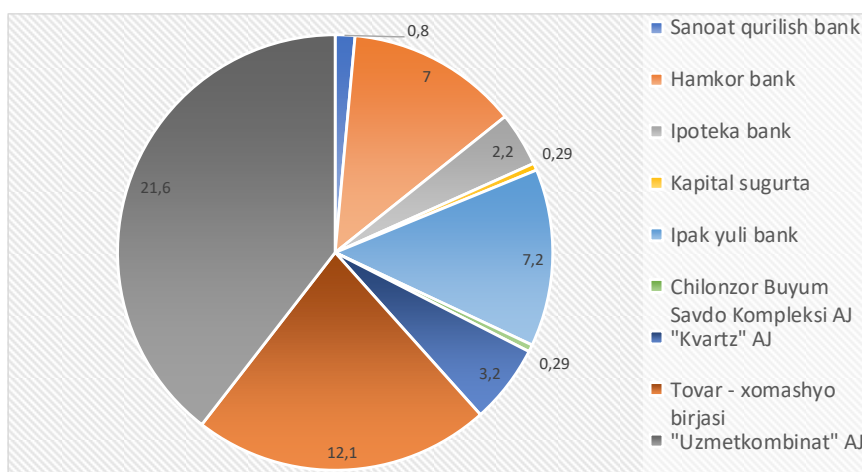
2 – table.

List of enterprises whose shares are scheduled to be placed publicly through the stock exchange in 2021-2023 [6]

T/R	COMPANY NAME
1.	"Uzbekistan metallurgical combine" JSC
2.	"Uzbekneftgaz" JSC
3.	"Uzmilliy Bank" JSC

4.	"Xalq Bank" AT
5.	"Agro bank" ATB
6.	"Mikrokreditbank" ATB
7.	"Biznesni Rivojlantirish Bank"
8.	"Uzagrosugurta" JSC
9.	"Kurilishmashlizing" JSC
10.	"Uzbekinvest" JSC
11.	"Uzbekistan airways" JSC
12.	"Uztransgaz" JSC
13.	"Almalik KMK" JSC
14.	"Navoi KMK" JSC
15.	"Uzavtosanoat" JSC

All of the entities listed in Table 2 are state-owned entities, and since they are large entities and banks, they have a greater chance of going to IPO. The companies on this list are scheduled to go public in 2021-2023, and figure 1 shows which of them have achieved such a result so far. As can be seen from the picture, only one company among the organizations listed in table 2, that is "Uzbekiston metallurgiya kombinati" JSC, managed to enter the IPO. We hope that the effective implementation of the Decision of the President of the Republic of Uzbekistan No. PQ-291 dated September 2, 2023 will allow the remaining 14 organizations to go to IPO in the near future.



1 – picture.

The best organizations by the volume of transactions concluded in 2023 at the "Tashkent" Republican Stock Exchange [7]

If we pay attention to picture 1 again, here are 8 more organizations, except JSC "O'zbekiston Metallurgiya Kombinati" listed in the Decree of the President of the Republic of Uzbekistan dated April 13, 2021 No. it is evident from the given information. In particular, "Uzbekistan Metallurgy Kombinati" JSC (21.6 billion soums), Commodity Exchange of the Republic of Uzbekistan (12.1 billion soums), Silk Road Bank (7, 2 billion soums) and Hamkorbank (7 billion soums).

As can be seen from the above, certain positive results are being achieved in the development of the stock exchange, which is one of the most important objects of the capital market infrastructure, and more such results will stimulate not only the development of the stock market, but also the growth of the country's economy. Because the development of the stock exchange, on the one hand, allows for the formation of additional investment resources for organizations, on the other hand, it provides an opportunity to earn additional income for representatives of the population, that is, individuals, who are interested in the operations of the stock exchange.

If we focus on the experience of developed countries, the development of the financial market and its structural change will directly depend on the level of development of the capital

market. Indeed, in recent years, a lot of noteworthy work in this direction has been carried out in our country, and the adoption and practical implementation of a number of important regulatory and legal documents mentioned above can be a proof of our opinion. In particular, it is no exaggeration to say that the Decision of the President of the Republic of Uzbekistan dated September 2, 2023 No. PQ-291 "On additional measures - activities for the development of the capital market" was one of the important documents that made a fundamental turn in this regard.

This Decision was adopted in order to further develop the capital market, improve the infrastructure of the capital market, encourage the attraction of investors to the capital market, as well as simplify the processes of participation of foreign investors in the local stock market and ensure the protection of their rights and interests. Therefore, below we would like to briefly touch upon the conditions created for the development of the country's capital market by this Decision. As we have mentioned above, in accordance with this Decision, the tasks, functions and powers of the Ministry of Economy and Finance to regulate the activities of the capital market, including securities trade organizers and the central depository of securities, development of corporate governance, as well as supervision of the activities of insurance organizations, were transferred to the National Agency for Prospective Projects.

At the same time, the National Agency for Prospective Projects was designated as the competent authority for the implementation of regulatory, licensing and permitting procedures in these areas. In addition, the National Agency for Prospective Projects was entrusted with the task of implementing the "Road Map" for the development of the capital market in 2023-2025.

Also, with the Decision, it is expected to introduce a special legal regime "Regulatory sandbox" in the field of the capital market, within the framework of which the main concepts used in the capital market, special rules on the activities and operations of foreign participants in the capital market, as well as ensuring the confidentiality of information about the owners of securities and their property mechanisms for the protection of their rights were approved.

The capital market of Uzbekistan is really in need of regulation and consolidation. For example, shares and corporate bonds are traded on the "Tashkent" Republican Stock Exchange, while government securities issued by the Central Bank of the Republic of Uzbekistan, that is, government bonds, are traded on the "Uzbekistan" Republican Currency Exchange. As a result, the already small capital market is divided into two. Accounting and storage of financial instruments is also carried out in two separate depositories.

In accordance with the decision, the activities of the Central Depository of Securities on the implementation of accounts in money based on the results of securities transactions, as well as the implementation of centralized clearing and the activity of the National Clearing Center established under the Republican Currency Exchange as a "Central Counterparty" are regulated by the Central Bank of Uzbekistan. Also, until May 1, 2024, a representative account will be opened at the Central Bank for the implementation of accounts and books for the National Clearing Center and the Central Depository of Securities, and from January 1, 2025, a single account of state and corporate securities will be maintained at the Central Depository of Securities.

In general, it is possible to add more such facilities, and the main goal of their introduction is to ensure the development of the country's capital market on the basis of international requirements and standards. As this article focuses on the role of the capital market in stimulating economic growth, below are our recommendations in this regard:

- the development of the capital market, including the stock market, which is an integral part of the capital market, has a significant impact on the growth of GDP, which is the main macroeconomic indicator of the country. In fact, a developed capital market accelerates the flow of various types of capital flows into the country's economy, that is, portfolio investments, foreign direct investments, and others. This further expands the production and service capabilities of economic sectors;

- the development of the capital market, including the stock market, creates the basis for an increase in the level of economic activity of the population and sources of official income. If we

focus on the experience of developed countries, people have a number of formal additional income opportunities in addition to their wages, and earning income through the stock exchange is one of the most important among such opportunities. At this point, we would like to emphasize that the level of economic activity of the population and the increase in official sources of additional income are factors that ensure economic growth in the country;

- the development of the capital market affects the development of the system that protects the rights and interests of foreign investors in the country, which leads to the strengthening of the country's position in the global market.

If we pay attention to the history of the highly developed countries of the world, such as Japan and Germany, they gradually created all the opportunities for the free movement of US investors, which are recognized as the most developed countries in the world market. We see the result of this in the current level of development in these countries. To sum up, today Uzbekistan is trying to create a capital market that meets international standards and can ensure the protection of investors in order to ensure the attraction of additional capital and investments to the country's economy and to create all the comfort and conditions for the growth of the population's well-being.

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2. Decree of the President of the Republic of Uzbekistan dated January 28, 2022 "On the new development strategy of Uzbekistan for 2022-2026" No. PF-60. www.lex.uz
3. Decision of the President of the Republic of Uzbekistan dated September 2, 2023 "On additional measures for the development of the capital market" No. PQ-291. www.lex.uz
4. Decree of the President of the Republic of Uzbekistan dated September 11, 2023 "On the strategy of Uzbekistan - 2030" No. PF-158. www.lex.uz
5. "For the capital market to develop, property rights must be fully guaranteed." Interview with the agency director. www.kun.uz
6. Decree of the President of the Republic of Uzbekistan dated April 13, 2021 No. PF-6207 "On measures for further development of the capital market". www.lex.uz
7. Official website of the "Tashkent" Republican Stock Exchange. www.uzse.uz

Rezyume: Maqolada kapital bozorining iqtisodiy o'sishni rag'batlantirishdagi roli nazariy jihatdan o'rganilgan, O'zbekistonda kapital bozorini rivojlantirish bo'yicha amalga oshirilayotgan chora-tadbirlar muhokama qilingan, shuningdek, kapital bozorining iqtisodiy o'sishni rag'batlantirishdagi roli bo'yicha tavsiyalar berilgan.

Резюме: В статье теоретически изучена роль рынка капитала в стимулировании экономического роста, рассмотрены меры, реализуемые в Узбекистане для развития рынка капитала, а также даны рекомендации относительно роли рынка капитала в стимулировании экономического роста.

Kalit so'zlar: kapital bozori, fond bozori, iqtisodiy o'sish, fond birjasi, qimmatli qog'ozlar

Ключевые слова: рынок капитала, фондовый рынок, экономический рост, фондовая биржа, ценные бумаги.

TRADITIONALISM AND MODERNITY IN KARAKALPAK FOLK CULTURE

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Summary: *This article explores the interplay between traditionalism and modernity in karakalpak folk culture. Through an analysis of scholarly literature, field observations, and interviews, it examines how traditional cultural practices and values have evolved and adapted in the face of modernizing influences. The findings indicate that while some traditional elements have diminished, others remain strong and continue to shape karakalpak identity. Karakalpaks have selectively retained, modified, or reinterpreted traditions to fit changing circumstances. The article discusses the cultural and social implications of this dynamic between tradition and modernity.*

Key words: *Karakalpaks, Central Asia, folk culture, tradition, modernization, cultural change, environmental crises, cultural heritage.*

INTRODUCTION

The Karakalpaks are a Turkic ethnic group primarily residing in Uzbekistan's autonomous Karakalpakstan Republic. With a distinct language and rich cultural heritage, they have long inhabited the lower Amu Darya delta near the Aral Sea. Karakalpak folk culture encompasses oral literature, music, dance, visual arts, festivals, and a nomadic lifestyle intricately tied to the arid landscape.

In recent decades, Karakalpakstan has undergone significant changes due to Soviet modernization policies, environmental crises, political upheavals, and globalization [4.55-79]. These have inevitably impacted traditional ways of life. This article investigates how Karakalpak folk culture has responded to the pressures and possibilities of modernity. How have traditions been maintained, adapted, or transformed? What does this reveal about cultural resilience and identity?

The article first reviews relevant literature and outlines the methods used. It then presents key findings, analyzes their implications, and situates them within broader scholarly discourses. The conclusion reflects on the complex interplay of tradition and modernity in shaping contemporary Karakalpak folk culture.

METHODS AND LITERATURE REVIEW

This study combines an extensive literature review with ethnographic fieldwork conducted in Karakalpakstan in 2019. It builds upon previous scholarship on Karakalpak history, society, and culture, as well as theoretical frameworks in anthropology and cultural studies.

Foundational works by Karakalpak scholars like Esbergenov, Alimov, and Beketaev provide historical and ethnographic context. They detail the development of folk traditions in arts, language, religion, and subsistence practices. Other regional experts offer comparative perspectives from neighboring Central Asian and Turkic cultures.

The literature on late Soviet and post-Soviet transformations crucially informs this analysis. Akiner, Fierman, and Zerubavel examine how Soviet modernization policies disrupted traditional lifestyles while also spurring national consolidation. Environmental histories by Micklin and White chronicle the devastating impact of the Aral Sea disaster. More recent studies explore how Karakalpaks have coped with and contested the sea's desiccation through cultural expressions. [12.98-116]

The fieldwork component involved three weeks of participant observation in villages and towns across Karakalpakstan. Fifteen semi-structured interviews were conducted with a range of interlocutors including folk artists, elders, cultural activists, and young people. Ethnographic observations focused on ritual occasions, craft workshops, musical performances, and everyday social interactions. The following sections organize the key findings from this research.

RESULTS

Oral Literature and Storytelling. Karakalpak oral literature comprises a vast body of epic tales, folk songs, proverbs, and other genres transmitted across generations. The heroic epic *Qırq Qız* (Forty Girls), recounting the adventures of forty female warriors, remains widely popular. Bards (*zhiraws*) historically performed epics at communal gatherings, but this practice has become rare.

However, storytelling has found new forms and audiences. Several interviewees described folktale collections being used in school curricula to teach language and instill cultural pride. The epic *Edige*, previously taboo for its theme of rebellion against authority, has been reworked into novels and stage plays since independence. Digital media has enabled wider dissemination of oral traditions.

Music and Dance. Karakalpak music features unique instruments like the *qobız* (horsehair fiddle) and *duwtar* (two-stringed lute), and genres like *baqsı* (shamanic healing music). Many folk songs and *küys* (instrumental pieces) evoke the sounds of nature or nomadic life. *Yar-yar* wedding songs, performed by women, are still common.

While older genres have declined, new syncretic forms have emerged. Ensembles like *Ayqanat* and *Mereke* blend Karakalpak melodies with electric guitars and synthesizers. The annual *Shark Taronalari* international music festival in Nukus showcases both traditional and innovative performances.

Similarly, Karakalpak dance has evolved. The *aydım oynı*, a circle dance with intricate hand and arm movements, is now often presented in stylized form by professional troupes. Breakdancing has grown popular among urban youth, sometimes incorporating Karakalpak moves and costumes.

Visual Arts and Handicrafts. Carpet weaving, embroidery, and yurt-making are among the most celebrated Karakalpak folk arts. Older weavers interviewed took pride in their mastery of traditional motifs and techniques passed down matrilineally. Some lamented mass-produced textiles displacing handmade crafts.

However, artisans have also catered to new markets and tastes. Innovative carpet designs, sometimes sold online, incorporate brighter colors and abstract patterns alongside conventional florals and latticework. Yurt models have become popular tourist souvenirs. *Raushan Serikbaeva*, founder of the *Kızıl Gul* crafts cooperative, spoke of training young women in traditional skills to produce items like handbags for eco-conscious global consumers.

Festivals and Life-Cycle Rituals. Many Karakalpak festivals revolve around the agricultural and pastoral calendar. *Nawrız*, the springtime new year celebration, was banned during the Soviet era but has been officially revived since independence. The traditional *Nawrız* dish *naurız közhe* is now mass-produced and sold in supermarkets.

Life-cycle rituals have also undergone changes. Elaborate wedding festivities have become shorter due to economic constraints. The *qırqınan shıǵarıw* ceremony, marking an infant's first forty days, sometimes incorporates medical advice alongside traditional blessings and gift-giving. Funeral customs blend Muslim practices with mourning songs and lamentations rooted in pre-Islamic belief.

ANALYSIS

The results reveal how Karakalpak folk culture has dynamically adapted to the conditions of modernity. Rather than a simple binary of tradition versus modernity, there is a complex spectrum of cultural forms and practices. Some traditions have attenuated due to social and economic disruptions, but others have found reinvention and resurgence.

Hobsbawm's concept of "invented tradition" aptly characterizes the reconstructed *Nawrız* celebrations and revived epic performances. These are not static survivals from an unchanging past, but selective re-imaginings serving present ideological needs, especially cultural nationalism. Meanwhile, innovative fusions in music and design reflect the creative appropriation of foreign elements.

The ongoing engagement with ancestral villages and landscapes, even among urbanized Karakalpaks, affirms Appadurai's insight that locality is not a given but produced through social

practice. Amid displacements wrought by the Aral Sea disaster and political economic restructuring, acts of returning and remembering forge meaningful connections to heritage.

The different trajectories of folk practices - diminishment, revival, transformation - suggest that modernity is not a monolithic force erasing tradition. Rather, Karakalpaks have selectively adopted, rejected, and remixed elements of the modern based on shifting contexts and aspirations. Importantly, modernity itself is not external to Karakalpak society but actively negotiated from within.

DISCUSSION

These findings contribute to wider scholarly debates on the fate of tradition in globalizing societies. They challenge simplistic narratives of inevitable cultural homogenization or loss. Karakalpak folk culture exemplifies what some anthropologists term "alternative" or "multiple" modernities. It charts a distinctive path informed by local histories and sensibilities.

The Karakalpak case also illuminates the politics of cultural heritage in post-Soviet Central Asia. The Soviet experience, while disruptive, provided certain tools and techniques for codifying and enshrining folk traditions. Post-independence leaders have deployed reconstructed heritage to bolster national identities. Yet, grassroots actors also harness folk culture for local agendas, sometimes diverging from official scripts.

Comparative research could explore how the Karakalpak trajectory resembles or differs from other Turkic groups and indigenous societies worldwide grappling with modernization. More granular studies could further tease out variations by region, class, generation, and gender in Karakalpaks' cultural adaptations and attitudes.

Applied scholars and policymakers could draw lessons for cultural sustainability. Supporting culture-bearers, documentation, and transmission is crucial, but should be balanced with openness to innovation and hybridity. Imposing rigid, purist visions of tradition can stifle its organic evolution. Cultural resilience rests in plasticity as much as preservation.

CONCLUSION

This article has shown how Karakalpak folk culture has remained a vital force while adapting to the sweeping transformations of Soviet and post-Soviet modernity. From oral literature to music, visual arts to festivals, and the rhythms of everyday life, Karakalpaks have engaged in a complex dance of continuity and change. Certain traditions have waned, but others have found reinvention and renewal.

Theoretically, this case troubles dichotomies of tradition versus modernity, revealing a dynamic interplay between the two. Modernity is not a singular, external force but diversely experienced and negotiated. Tradition is not an inert heritage but an evolving resource for identity and innovation.

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Rezyume: *Ushbu maqola qoraqalpoq xalq madaniyatida an'anaviylik va zamonaviylikning o'zaro ta'sirini o'rganadi. Ilmiy adabiyotlarni tahlil qilish, kuzatuvlar va intervyularga asoslanib, u an'anaviy madaniy amaliyotlar va qadriyatlar modernizatsiya qiluvchi ta'sirlar oldida qanday rivojlanganligi va moslashganligini ko'rib chiqadi. Natijalar shuni ko'rsatadiki, ba'zi an'anaviy elementlar zaiflashgan bo'lsa-da, boshqalari kuchli bo'lib qolmoqda va qoraqalpoqlarning o'ziga xosligini shakllantirishda davom etmoqda. Qoraqalpoqlar an'analarni o'zgaruvchan sharoitlarga mos ravishda tanlab saqlab qolgan, o'zgartirgan yoki qayta talqin qilgan. Maqolada an'ana va zamonaviylik o'rtasidagi ushbu dinamikaning madaniy va ijtimoiy oqibatlari muhokama qilinadi.*

Резюме: *В этой статье исследуется взаимодействие традиционализма и современности в каракалпакской народной культуре. На основе анализа научной литературы, полевых наблюдений и интервью в ней рассматривается, как традиционные культурные практики и ценности эволюционировали и адаптировались перед лицом модернизирующих влияний. Полученные данные указывают на то, что, хотя некоторые традиционные элементы ослабли, другие остаются сильными и продолжают формировать идентичность каракалпаков. Каракалпаки избирательно сохраняли, модифицировали или переосмысливали традиции в соответствии с меняющимися обстоятельствами. В статье обсуждаются культурные и социальные последствия этой динамики между традицией и современностью.*

Kalit so'zlar: *Qoraqalpoq, Markaziy Osiyo, xalq madaniyati, an'ana, modernizatsiya, madaniy o'zgarishlar, ekologik inqirozlar, madaniy meros.*

Ключевые слова: *Каракалпаки, Центральная Азия, народная культура, традиция, модернизация, культурные изменения, экологические кризисы, культурное наследие.*

THE ROLE OF FOLKLORE IN UPBRINGING CHILDREN

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Summary: The article recommends a sequence of scenarios in the folklore of the Karakalpak folklore for the promotion of the nation's severity, background's inheritances, word corals, the role of theatre in bringing up the youth. The educational value of the national traditions has been clarified in order to develop youth's consciousness and speeches.

Key words: monologue, dialogue, nation, oral creations, theatre, stage, folklore, national dwellings, creativity, speech, education.

Every nation have their own customs. There are a lot of cultural inheritances which have been linking with ancestry for ages. Oral verbal creations are considered one of the most inviolable, and the most spiritual wealth.

Karimov I. A. underlined particularly in the book "Elevated civilization is invincible power" "We can't imagine the nation's culture, history and customs without vital value." Cultural inheritance is served as one of the necessary manual.

We can confidently say that verbal creations are full with history and dreams, love for nation and full with colored patterns which can reveal the nation. [8.5]

Karakalpak nation have their own rich verbal inheritance. Folk-roles, which have been spiritual food for ages, are particular for children and youth. Karakalpak nation have a lot of folk-role creations for children. All these creations are exchanged basing on the generation's ages and the elementary creations are helpful to increase babies' speaking skills and habits and others are for the youth who understand the meaning of the words, help to learn the mother tongue deeply. Counting (sanamashlar) teaches children to count and they learn words by counting, children's game which is tempered (tawlamashlar) is the game between children and parents by asking the questions, tongue-twister (janiltpashlar) games help children speak rightly and clearly, riddles make children think and search and other folk-role's genres are nation pedagogical creatures.

Counting (sanamashlar)

Wrist-for one

Bolter- for two

Top- for three

Bed- for four

Perambulator-for five.

Tempered games (tawlamashlar)

Baby, baby- froggy baby

Why you have a flat head?

Because of wearing iron hat

And wearing the hat.

baby, baby –froggy baby,

Why you have foot flat?

Because if wearing iron boot

And tightening the boot

Riddles

A little pot

Make you go forward (eyes)

Karakalpak nation are heartfelt and jolly people. These habits are handed down by mother's milk and father's blood make people laugh and spread offence saying "the one bundle of wood –ha, ha" (bir baw pishen –ha,ha). The laughter which is soaked in karakalpak soul plays the main role in children's folk-role.

There are a lot of genres in children folk-roles such as crooked speech and nonsense speech make people laugh, “falsehood songs” (otirik qosiqlar) which are based on exaggerated words, words make mistake (janiltplashlar) which are based on the games between parents and children. All these statements can help to increase children’s imagination and dream and make them create. [10.115].

Mistaken words (shalgitplashlar)

Can turkey born?
Turkey?-can born
Who says?
I say
are you honest?
yes, sure
oh, how can camel born turkey(tuyetawiq; camel hen)

Falsehood song.

Make beetle graze sheep
Make cut the grass
Can talk just be a new born
Can sing a song and well walk.

Yaramazan- kurban hayt song.

Different types of genres occupy the children’s heart. Genres which can’t occupy children’s heart, neither can in the adults’ heart. So genres are interesting for children, can be interesting for adults and remind the adults about their sweet child hood.

The great dates, which are waited for deeply by karakalpak people, saying such as announcement (jarlamalar; Navruz, Ramazan), counting is based on the games to count, shouting mouth (gum-gum) games are used before beginning the games are fixed children’s spirit firmly and can be handed down the next generation.

Announcement (jarlama)

White door opened
Blue door opened
Come white sister in law
A lot of money pour.

Counting (sanamash)

Apples roll, roll
Go along the canal
Who catches the apple
Leaves the game.

Mash mash mashali game.

The games are the great target of the genres. Each game has its own top and end. Among the games interval stages are among the games too.

Interval stages are consist of apples (shaqirmalar), selecting (tanlamalar) is used by throwing lots, beginning are used to begin the games and spreading (tarqalma) are used to end the games.

All these mean that each children’s game has its own composition.

Appeals (shaqirma)

Flying six geese in the sky
Have a few arrows to fire
Who doesn’t play the game
Has a scab father.

Selecting (tanlama)

Mash mash mashali
Let’s open the market mash

Let`s take each other hand
Let`s play the seek.
Not a long ... (baya baya bayag`i)

The jest genres play the top place in children`s folks. Mockery games underlie the educational mean. And these creations are differed from several genres.

Among the jest genres giving the nick names (play the great role for adults), seeking the week points; which make laugh others. The intelligent can interpret all the jests rightly and can correct own shortages.

Mockery (dalke, mazaq)

Baby, baby –calls
Eats bread cryingly
Has at home a dog
Has a cat flea.

Song for caprise (qiljaq)

Oh, oh a poor
Cry and cry
Cry loudly, loudly
call mother loudly. [7.486-510]

Pupils go to the musical school are taught in the actor and actress classes show their skills in Navruz holiday, stages the games from karakalpak folk-roles.

Every custom is directed to educate people especially the youth to be humanity, polite and well behaved person. Because of different events our nation have lots of things but not verbal creations. They have been saved as pupil of the eye.

Because of the likeness of their tongues and religions of neighboring nations and moving from one to another tribes and the changes of their tribes society rules. They could base under themselves.

We all could imagine about their historical creations, surroundings, lives, happiness and sadness, customs basing all the creations.

There is saying that the knowledge people rose till 1% in 1917 year, in 1928 till 6% and in 1934 year till 32%.

Folkloristic subject has been doing the best for oral creations for 200 years, so it isn`t idly work to understand the meaning of the strength of words and study them by scientific way. People who study folk-role genres are required to know deeply the history literature, mother tongue and other science.

It can`t be canceled that each nation`s customs were formed by obvious power rules of tribes.

During the 1927-29 years when Arab letters changed into Latin letters, enlightenment people such as young writers, play writers, down shine troupe were carried out who weighed on their first steps on ethno folk-role direction by collecting the materials strolling among the people, could publish the priceless works as “Egidiler sawatınan” and “Karakalpak folk-roles” which are done for our grammar rules and enlightens. [3.10]

In 30th years XX century the youth who could enter the Moscow Institute named after Lunacharsky and could enlarge their thoughts and views to the world, could become more perfect translator, could play on the stage professionally and could open the Renaissance for Karakalpak nation. [11.8]

The question “What role plays the oral verbal creations to the theatre?” can be asked by the readers. They are closely connected with each other. Because they have basic point. The leaders of these two traders work with audience in monologue and dialogue. Stanislavski K. S. “We should show the people`s spiritual world and people`s life on the stage.” This theory is always used by

them. For example to announce the beginning of the wedding and read the leader's announcement, dance the nation's dances show the nation's customs: all of them we can see on the stage.

In ancient Greek said that without any theatres, stages, words, moving, gestures couldn't get into the audience souls. Stanislavski K. S. could state his own theory about the theatre and this theory has been playing in great and leader role in the whole world theatres.

Nowadays we can meet the pupils who can't speak clearly, who have speaking deformity. And the musical schools which are situated in the towns and countryside can help for such pupils. Their they can take part in brunches as choreographic, singers, Europe musical instruments and theatre trade. All these brunches are considered as "the stage words".

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Rezyume: Maqolada qoraqalpoq folkloridagi stsenariylarning kelib chiqishini, marjon so'zini, yoshlarni tarbiyalashda teatrning rolini ilgari surish uchun izchilligi taklif etiladi. Yoshlarning sanasi va nutqlarini rivojlantirish uchun milliy an'analarning tarbiya qadriyati tushuntirildi.

Резюме: В статье рекомендуется последовательность сценариев в фольклоре фольклора каракалпака для продвижения тяжести нации, наследственности происхождения, слова кораллы, роль театра в воспитании молодежи. Разъяснена воспитательная ценность национальных традиций для развития сознания и речей молодежи.

Kalit so'zlar: monolog, muloqot, millat, og'zaki ijodkorlik, teatr, saxna, folklor, milliy uy-joylar, ijodkorlik, nutq, ta'lim.

Ключевые слова: монолог, диалог, нация, устное творчество, театр, сцена, фольклор, национальные жилища, творчество, речь, образование.

PHYSICAL PREPARATION OF WOMEN IN THE NATIONAL WRESTLING

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Summary: *There are many tools to provide physical fitness of women who are engaged in martial arts, in other words, theory and practice, or who want to engage in it. In order to win and compete at a fast pace, keeping the ability to work from the beginning to the end, the physical qualities of our female wrestlers, as well as the level of technical-tactical and mental perfection, should be extremely high.*

Key words: *fight, technique and tactics, percentage, agility, dexterity, strength, qualities*

Of course, physical training is of particular importance for women who are preparing for big fights and prestigious competitions. In this, the athlete-wrestler should develop his physical strength, increase the speed of his movements, form the ability to conduct the meeting at a high speed, and develop agility and dexterity in his movements on a large scale. Success will come naturally only when such qualities and qualities are accumulated during the struggle. It is also worth saying that if any of these listed qualities are lacking, it will be very difficult to achieve success during competitions. A physically strong wrestler-athlete will initially be quite successful in competitions. However, it is not out of the question that at the end of the fight, he will lose to a physically weaker, but tougher wrestler who has trained for a long time. In some cases, it can be the opposite of what we are saying. In other words, a strong opponent will physically crush a strong, determined and strong-willed wrestler. Having participated in many competitions, competitions, tournaments and championships, we watched and made sure that various situations happened [1]. However, in any case, our female athletes will have to develop and develop the necessary physical qualities, skills and abilities, and work tirelessly on this path. One thing must be said, the process of physical training should not be carried out blindly or at risk. If a wrestler notices any weaknesses in himself, it is advisable to work on them. For the harmonious development of physical qualities and qualities, it is very important for a wrestler to train constantly, with a specific goal in mind, using special tools. It should not be forgotten that the physical training and training of female wrestlers is a pedagogical process, which includes technical and tactical, mental-volitional and theoretical training. All these tasks are solved in a single pedagogical process in interdependence and connection. It is an important task of the coaches to ensure that the female wrestlers choose this or that training and conduct it appropriately. The coach should be fully aware of the wrestler's capabilities and weaknesses in training, be able to correctly assess the situation, and know exactly how developed the wrestler's mental and willpower qualities are. Let him plan and conduct the training accordingly. A female wrestler who has undergone physical training according to the purpose should have the following opportunities: - participate in 4-6 matches in one day, each of these matches is 8-10 minutes, and increase the competition with opponents at a high speed need-it is necessary to fulfill the requirements of physical training according to the norms (normatives) given in the table. In order to develop physical qualities and qualities, it is necessary to work according to the possibilities, to know the norm while conducting exercises [2]. For example, it is important to determine the distance and speed of the run, the weight of the barbell or work with the opponent. There is no question that straining and trying hard to do more than possible can injure an athlete. Physical strength is created and increased during exercise. We must never forget this. Each participant should gradually increase the number of exercises according to his strength and ability. It is well known that strength-building exercises take the leading place in improving the physical fitness of female wrestlers. Strength-building tools are weight-bearing exercises (such as barbells, kettlebells, your own weight, an opponent's weight, and other objects). For the development of physical strength, it is important to choose exercises that develop strength based on the nature of the struggle. A Chinese wall cannot be placed between the concepts of strength and endurance. These two qualities are closely related to each other. To imagine the first of them without the second leads to a mistake. If a wrestler is strong but not resilient, he can quickly go down during a fight. If it is

durable but lacks strength, that is also bad. However, it should not be forgotten that a resilient person is not without strength. It is considered appropriate to use the "as much as possible" method in developing flexibility and finding content. The essence of this method is that the wrestler repeats the exercise many times without straining until he is tired and stops. Then he rests for two to three minutes and continues the exercise until he is tired again. Of course, the number and intensity of repetitions of the exercises should be based on the level of training of the wrestler. For example, let's say a wrestler can sit up with a 100-kilogram barbell, but to perform a sit-up, he does 30-40 reps with a 40-kilogram barbell. When he gets tired, he rests and then continues the exercise. Thus, this situation can be repeated several times. This exercise can be performed with a higher load, that is, with a load at the level of 60-70 percent of the absolute weight. However, with the increase in strength, there is also a decrease in speed. Therefore, it is better to be careful when exercising with too much weight [3]. It is good to always keep in mind that fast and "explosive" performance of strength-building exercises is the main essence of the so-called "as much as possible" method. As a means of developing and building quick strength, from the exercises of throwing stones of different weights, heavy filled balls, sandbags and other heavy objects in different directions (forward, backward, turning, jumping) use is appropriate. It should be said that in recent years, representatives of various sports are using isometric exercises that increase strength. They develop absolute strength and the ability to stretch in a long standing position. The essence of isometric exercises is that the wrestler lifts a certain amount (50-90 percent of the absolute value) of the load and keeps it for a few seconds in a position that affects certain groups of body muscles. For example, a wrestler holds a barbell on his shoulders or his partner, his opponent, bends his knees at different angles and holds for 12-15 seconds. This exercise can be repeated 20-30 times. Isometric exercises can be combined with other strength-building exercises. That is, in order to quickly restore the ability to work, it uses muscle relaxation and stretching exercises. In the process of performing isometric exercises, it is necessary to increase their weight (load) and the number of repetitions. Strength-building exercises are best used during the training period. Therefore, physical development, qualitative changes are carried out in this period. Coaches encourage women wrestlers to perform large-scale strength exercises, and do not forget to give them time to rest and recover. Strength and quickness are the twin physical attributes that are so important to a wrestler. If a person lacks physical strength, it will be difficult to perform the exercise quickly and accurately. On the other hand, if the wrestler wants to perform with great strength, but lacks speed, in such a situation, the opponent defends himself with speed, restores his balance and frustrates the attack. Therefore, it means that strength and agility exercises are combined in a complex way, which gives a great effect. It should be noted that speed of movement usually develops more slowly than strength and endurance. Most wrestlers show quickness when a specific situation arises during a match. That is, in this case, the wrestler quickly notices and determines the situation and implements the necessary convenient method. The quick movement of the wrestler is evident and appreciated as he performs his wrestling moves and other movements with agility at an incredible speed. To increase speed, it is advisable to choose exercises - necessary actions depending on availability during competitions. Special training exercises are factors that increase speed. Also, it is necessary to gradually increase their speed and perform the technique correctly when performing a sample of actions. So, if the movement technique is repeated incorrectly, it can get used to it, and later during the meeting, the technique of actions may be broken. In order to improve agility, it is useful for wrestlers to prepare for exercises performed with a partner, that is, various methods of disequilibrium, to perform an action, to return to the initial stage of the action without abandoning it. These exercises are continued until the movement speed reaches the desired level. This can be repeated 30-40 times [4]. It is advisable to set a meeting with light weight partners during the preparatory exercises to further strengthen the quick movement, to make a deeper decision. Doing auxiliary sports in increasing speed gives good results. In particular, playing basketball and football is a good tool for improving agility for wrestlers. In addition, doing acrobatic and some gymnastic exercises at high speed also gives good results. It is necessary to take into account the inclusion of physical and special training

exercises in all training sessions, starting with morning gymnastics. Such exercises are usually held at the beginning of training sessions. Therefore, it is not recommended to perform quick exercises after the athlete is tired. One fact that must always be remembered is that only a wrestler with an extremely high level of endurance is able to compete at a fast pace and maintain his work capacity from the beginning to the end of the competition. In later years, the one-day wrestling competition increased the number of matches, and at the same time, the pace of the wrestling increased and became much more intense. This requires current wrestlers to be ready to hold 5-8 matches in one day in major tournaments. As we get closer to the final match, the time of the competition becomes longer and more intense. It is very difficult for wrestlers with relatively low endurance to achieve victories in such competitions. As long as the wrestler wants to be constantly bright and victorious in big competitions, he should constantly work on increasing general and special endurance. A wrestler must gradually increase the demands placed on his limbs. Methodologically and physiologically, it is preferable that the increase in loading is in the form of a "staircase" and begins after several preparatory exercises. Members get used to it, adapt and get used to the given "burdens". Climbing the stairs, reaching the "peak" state directly depends on the athlete's level of training. The growth of sports performance is inextricably linked with the increase of the load in training sessions. If the training load remains the same for a long time, then the wrestler's limbs will become accustomed to it, and this may cause the athlete to lose competitions later on. It is better to be careful. So, in conclusion, we should mention that in order to win the competitions and maintain the ability to work from the beginning to the end of the competition at a fast pace, the physical qualities, technical-tactical and mental perfection of our female wrestlers must be extremely high. It is necessary.

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Rezyume: *Kurash san'ati, boshqacha aytganda, nazariya va amaliyot bilan shug'ullanadigan yoki u bilan shug'ullanmoqchi bo'lgan ayollarning jismoniy tayyorgarligini ta'minlash uchun ko'plab vositalar mavjud. Boshidan to oxirigacha mehnat qobiliyatini saqlab, g'alaba qozonish va tez sur'atda kurash olib borish uchun polvonlarimizning jismoniy sifatlari, texnik-taktik va ruhiy barkamollik darajasi nihoyatda yuqori bo'lishi kerak.*

Резюме: *В боевых искусствах, иначе говоря, в теории и практике существует множество инструментов, позволяющих обеспечить физическую подготовленность женщин, которые занимаются или хотят им заниматься. Чтобы сохранить способность работать от начала до конца, побеждать и бороться в быстром темпе, физические качества, технико-тактическое и психическое совершенство наших борцов должны быть чрезвычайно высокими.*

Kalit so'zlar: *kurash, texnika va taktika, foiz, chaqqonlik, epchillik, kuch, sifatlar.*

Ключевые слова: *борьба, техника и тактика, процент, ловкость, ловкость, сила, качества*

INNOVATIONS IN EDUCATION AND THEIR IMPORTANCE

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Summary: *This article is focused on the meaning and content of innovation and innovative activity and the descriptions given to them by Uzbek scientists and scientists from foreign countries. Besides that the article comprises different opinions and approaches on the descriptions, attitudes articles given to "Innovation" and "Innovative activity" in the framework of the laws on "Innovative activity", "Education" and "Science and scientific activity".*

Key words: *innovation, innovative activity, innovative processes, economy of knowledge, digital economy, professional innovative activity.*

President Shavkat Mirziyoev, speaking about the organization of the scientific and medical center for the introduction of innovations in the student town of Tashkent, said, "Our most important task is to create an environment of innovation in the world of our people. If there is no innovation, there will be no development if there is no backwardness in any field. "If we don't make changes to our people quickly, if we don't develop skills in people, we won't be able to keep up with the speed of today's era, the unprecedented achievements of science and technology," he said.

The special features of the development of science and technology in our country are the innovation of teaching in the educational system and the retention of advanced foreign experiences. allows for rapid development.

How will our country be in terms of innovation in the next 5 years developed? This is evaluated by value experts, prestigious population-distance ratings of the development of the countries of the world. The level of innovative development of countries is measured by the Global Innovation Index (GII). GII evaluates the innovation potential of 131 countries with the help of more than 80 indicators - the annual ranking of the innovation potential and achievements of the countries in the field of innovation was determined based on the evaluation criteria created by world intellectual property institution, INSTAD population-distance business school of Farangistan and Cornell University. Uzbeks currently take 82nd place in this rating and in the innovation development strategy of the Republic of Uzbekistan, by 2030, it is required to enter the ranks of the top 50 countries of this rating.

Every day we hear many things related to innovation. Although the concepts of what innovation is, what purposes it serves, are forming in the minds of people, let's stop at this understanding at first. Innovation is a combination of products and processes required by the market, and processes related to ensuring productivity.

The name "innovation" comes from the Latin word "novacio" and expresses the essence of renewal (change), development in some field. Even if the concept of innovation is used more as an economic father, its legal content and the coasts of development of clean technologies by countries are getting enriched. Innovation appeared in scientific legal literature in the 19th century.

The Law of the Republic of Uzbekistan on Innovation Movement means the regulation of relations related to innovation processes in the Republic, according to the Law, the organization of clean essays of the innovation movement, including the action to ensure their implementation in the field of productivity.

The Decision "On further strengthening of the infrastructure of scientific and research centers and measures to promote innovative activity" approved by the President was an important step in the direction of innovative activity and its development. The options specified in the decision will improve the daily working conditions of our scientists and ensure that the quality indicators of the scientific-research works performed by them will reach the level of population-distance requirements. It is worth mentioning that Uzbekistan has strengthened the unity of science and production, supported fundamental studies in the development of science and technology,

created a solid foundation for approximate works (essays) and innovative ideas. It is commendable that under the rule of our President, the reforms in the direction of the creation of innovative centers for the production of high-tech scientific products, the stimulation of their activity, and the widespread introduction of scientific and innovative products into practice are being implemented.

In the Address of the President of the Republic of Uzbekistan to the House of Representatives, it was mentioned that our country has entered the stage of innovative development in order to achieve modern development. "Innovation means the future. We must start building our great future... on the basis of these innovative ideas. Innovative development and our transition to a digital economy are not alone. The reason is that in this time of rapid development, who will win? The country that relies on pure thought, pure idea, and innovation will win."

"Innovation" and "innovative action" are defined in the Law of the Republic of Uzbekistan "On Innovative Action" as follows: "innovation is an innovation that is included in civil relations or is used for individual needs, the use of which ensures the achievement of a large socio-economic goal. "clean essay" is defined as "innovative action - organization of clean essays, including the action to ensure their use and utilization in production".

In the 1930s, the concept of innovation was introduced by Y. Shumpeter, and it meant the changes in the processes of product creation, sales, and distribution that occur due to the lack of technical, technological, and organizational decisions.

The achievements of science and technology are widely used in economic, social and other fields. The rapid introduction of modern innovative technologies is an important condition for the rapid development of the Republic of Uzbekistan. In this field, the Law of the Republic of Uzbekistan "On Science and Scientific Activity" (29. 10. 2019 Vol. No. ORQ-576) was adopted, which was related to the field of science and scientific activity. consists of regulation. The law has a great interest as it is oriented towards the development of science and research on the basis of innovative action. in its 19th chapter called "The main directions of development of science and technology", "The main directions of development of science and technology, the resilience of the national economy and its efficient achievement, the increase of labor productivity, the opening of clean industries, "It will be developed in order to provide a scientific solution to the problems related to improving the quality of the people's living standards, science and education system".

This, in turn, allows to increase the innovative movement. Many of the innovative changes come into our lives with industrial goods and are aimed at improving and easing our manufacturing conditions. For example, the transition from electron beam televisions and monitors to liquid crystal screens. The introduction of mobile communications is an example of innovation. In general, any product that arouses the interest of buyers can be an example of innovation. That is, many cameras, video cameras and other products are based on innovative innovations.

"Green light" for innovations in Uzbekistan. The emergence of innovations is the culmination of many years of hard work. However, innovation is more difficult to implement than to create. President Shavkat Mirziyoyev signed the decree "On the establishment of the Ministry of Innovation Development of the Republic of Uzbekistan" in order to introduce the "green light" to innovations in Uzbekistan.

The tasks of the Ministry of Cleanliness are to promote the achievements of scientific research and innovation in the country, to develop effective mechanisms in this field, to establish laboratories with scientific and experimental specialists, high-tech centers, technoparks and other innovative structures.

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Rezyume: maqolada innovatsiya va innovatsion harakatning mazmuni va ahamiyati, ularga berilgan xorijiy va O'zbekistonlik olimlar tomonidan berilgan ta'riflar keltirilgan. Shuningdek, "Innovatsion harakat haqida", "Ta'lim haqida" va "Ilim-fan va ilmiy harakat haqida qoidalar" "Innovatsiya" va "Innovatsion harakat"ga berilgan tushunchalar, nuqtai nazarlar bo'yicha fikr-mulohazalar berilgan.

Резюме: данная статья посвящена смыслу и содержанию инноваций и инновационной деятельности и описаниям, данным им узбекскими учеными и учеными зарубежных стран. Кроме того, в статье собраны различные мнения и подходы к характеристикам, отношениям статей «Инновация» и «Инновационная деятельность» в рамках законов «Об инновационной деятельности», «Образовании» и «Науке и научной деятельности».

Kalit so'zlar: innovatsiya, innovatsion harakat, innovatsion jarayonlar, bilimlar iqtisodiyoti, raqamli iqtisodiyot, hunarmandchilik innovatsion harakati.

Ключевые слова: инновации, инновационная деятельность, инновационные процессы, экономика знаний, цифровая экономика, профессиональная инновационная деятельность.

SPECIFIC CHARACTERISTICS OF THE LOCATION AND DENSITY OF URBAN SETTLEMENTS OF THE REPUBLIC OF KARAKALPAKSTAN

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Summary: *The criteria used to analyze the urbanization process are presented in the example of the Republic of Karakalpakstan. It was developed using a special methodology to calculate indicators that allow determining the level of urbanization of the entire country and its individual regions. Assessing the level of urbanization of the region, the authors analyze indicators such as the ratio of the urban area to the total area of the region; average population of cities; the ratio of the number of cities and towns of the region; The share of urban residents from the population of the Republic of Karakalpakstan; urban population density; density of the urban network. As a result, all data were analyzed in the form of tables, diagrams and maps. The authors' recommendations are presented.*

Key words: *urbanization, degree of urbanization, geourbanistics, geoecistics, city population, average population, city population density, city network density.*

Introduction. The process of urbanization is considered one of the processes necessary for the economic and social development of any country. While various practical works on increasing the level of urbanization have been carried out around the world, the work of accelerating these processes has received attention in our country for recent years. That is why several decisions and assignments have been developed and are being implemented in our Republic for the development of the urbanization process.

It is worth noting that the government of the Republic is implementing a number of reforms to improve the urban planning system. In particular, on January 5, 2016, the Cabinet of Ministers of the Republic of Uzbekistan - on measures to further improve the procedure for the development of urban planning documents for the development and construction of the territories of cities and urban settlements, dated February 8, 2017, Uzbekistan Decisions of the President of the Republic on the action strategy for the further development of the Republic of Uzbekistan have been developed [1]. In the same year, on January 28, 2022, the President of the Republic of Uzbekistan adopted the decision No. PD-30 on the implementation of the development strategy of New Uzbekistan for 2022-2026 [2]. In this regard, it is necessary to further increase the level of urbanization of the Republic of Uzbekistan, to increase the regional economy by 1.4-1.6 times through the proportional development of regions, and to implement a program of practical measures for cities and districts with unsatisfactory socio-economic development rating indicators. These include a number of issues such as development and implementation.

Study history: Among the directions of modern geography, the process of urbanization has been organized for decades in the field of geoecology, including G. M. Lappo, E. N. Pertsik, B. S. Khorev with the most famous and effective studies in the field of geourbanism [3.504] and T. G. Nefedova's scientific works are noteworthy. At the same time, works in the field of Geourbanistics are not only theoretically important, but also have practical applications.

The relevance of this direction of economic and social geography has been preserved for decades and was manifested in the research of young scientists, which was expressed not only by urban geographers, but also in dissertation studies and scientific articles by representatives of other disciplines. All researchers consider different aspects of Geourbanistic problems.

When it comes to the development of the urban settlement and the formation of urban systems, this means the urbanization of the area. There are serious studies on the assessment of the level of urbanization of the region but there is no universally accepted method for this. The last situation determines the urgency of considering alternative methods of determining the level of urbanization of countries and regions.

The purpose of this article is to develop an author's method of evaluating the urbanization of the region and to analyze the urbanization of the territory of the Republic of Karakalpakstan based on public statistical data. [11].

In 1974, E.L.Faibusovich tried to consider the issue of the level of urbanization on the example of some regions of the European part of the RSFSR . In this work, the methodology for calculating the urbanization of the area was based on the methodology proposed by I.V.Zorin and I.V.Kanzebovskaya.

Perhaps due to the low popularity of the above publications, poor research on this problem did not continue for a long time. Since that time, the socio-economic development of the country required a detailed review of the methodology for evaluating the urbanization process. The problems of the growth and importance of urban agglomerations, the growth of large cities and the fate of small cities are becoming increasingly acute and require the study of the urbanization of the territory. Scientific works dedicated to solving this problem have not been in local geography for several decades. And finally, in the first years of the 21st century, R. A. Popov addressed the issue we are considering at the level of dissertation studies and fundamental scientific articles.

To support the need to continue such research today, the young scientist M.Yu.Mikryukov indirectly said: "Continuation of the large urban phase of urbanization in Russia will lead to migration and natural decline of the population in both medium and small cities of the country, as well as in most of its monogorods. brings" [5.26]. In this work, the author connects the fate of the monocities he is studying with their position in the system of urban location. The specific characteristics of these systems are mainly determined by the differences in the level of urbanization of their (mono-cities) localization regions.

Forming the main directions of the development of geourbanism, E.N.Pertsik emphasized "the creation of urbanization within the framework of the geographical theory of the city, the general interdisciplinary theory of urbanization" [4.428]. The results of our research show the need to develop the theoretical directions of urbanism in this direction. Difficulties in city life are related to the excessively high level of urbanization of the area. Therefore, scientific work should be aimed at determining the optimal level of urbanization of the region.

In our country, we have a number of scientists who have conducted scientific research in the field of urbanization. If Z. Akramov, T. Raimov organized the cities of Uzbekistan economically and geographically, the subject of O.B.Ota-Mirzayev's research dissertation was the geodemographic study of urban settlements and the management of urbanization at the national-territorial level (in the case of the Republic of Uzbekistan). A.Soliyev first organized the cities of Central Asia in the 1980s, and later he left a significant mark in the scientific research of the economy and urbanization process of our region. E. Ahmedov organized the process of urbanization in the years of independence, while A.Qayumov analyzed the interrelationships of urbanization and demographic processes. The topic of S. Tashtayeva, M.Egamberdiyev's scientific work was related to the economic and geographical development of cities. There is no clear and fully written scientific work on the development of the cities of the Republic of Karakalpakstan and the level of urbanization, but some issues of the development of the cities of the Republic of Karakalpakstan have been organized by E.K.Umarov, G.Khodjayeva, and N.Embergenov in their scientific works.

Materials and methods. If the formation of a city in any region is the result of political, social, economic and historical processes, the development of the city is expressed in the development of production forces. In terms of the formation of the network and system of regional cities, it has not changed much compared to 1989. During the years of independence, changes were observed only in the number of towns (increased from 11 to 26).

As of the end of 2023, there are 12 cities and 26 towns in the Republic of Karakalpakstan, and the total urbanization rate is 49.0 percent (Table 1). Among them, only the city of Nukus is among the 18 large cities of Uzbekistan (population: 334,600 people. 2023). The cities of Beruni, Tortkul, Khodjeli, Takhiatas, Chimbay, whose population is more than other cities, make up 32.8% of the urban population of the Republic of Karakalpakstan.

The analysis shows that the population of the city is increasing in terms of numbers, firstly, changes in the administrative-territorial system of the Republic, i.e. granting the city status to newly established district centers, and secondly, migrants coming to the Republic from abroad are concentrated mainly in cities. In general, it is obvious that the level of urbanization of the Republic of Karakalpakstan is lower than the average indicator of the Republic of Uzbekistan, and the indicators are maintained.

In 2009, due to urban changes, 11 rural settlements of the region were given the status of towns. As a result, the overall urbanization rate increased from 48.7% in 2005 to 50.1%. There are many new towns, especially in Tortkul, Amudarya districts. 5 such statuses were created in Tortkul, 3 in Amudarya, 1 each in Beruni, Takhiatas, and Chimbay districts.

The number of urban settlements and urbanization in the Republic of Karakalpakstan its level has been steadily increasing until 2010, and it is observed that it is slowly decreasing until now. For example, in 1970, 33.5% of the urban population lived in only 11 urban areas of the Republic of Karakalpakstan, but by 1989, it increased to 48.1% or 583,700 people in 23 urban areas. In 2010, 50.1 percent of urban residents lived in 26 urban areas, and by 2023, the total number of urban residents will reach 49.0 percent or 967,300 people. (Table 1).

Table 1

Urban settlements and urbanization of the Republic of Karakalpakstan level dynamics

Republic of Karakalpakstan	Years							
	1939	1959	1970	1979	1989	2005	2015	2023
Urbanization rate (in %)	12,2	27,2	33,5	41,9	48,1	48,7	49,5	49,0
Cities	3	4	7	9	12	12	12	12
Towns	-	1	4	7	11	13	26	26
Total:	3	5	11	16	23	25	36	36

Table: compiled on the basis of the data of the Statistics Department of the Republic of Karakalpakstan

Currently, the Republic of Namangan, Fergana, Andijan and Karakalpakstan are leading in terms of the relative number of people living in urban areas, and the lowest level is observed in the Khorezm region.[6.292]. The high rate of this indicator in the Republic of Karakalpakstan does not indicate the industrial potential of this region, but rather the limited conditions for the development of intensive agriculture in these areas.

The development of cities and the process of urbanization has its own characteristics in different regions of the Republic of Karakalpakstan. The network of rayon cities is denser mainly in Nukus and its agglomeration and southern regions. On the contrary, it is a little rarer in Beruni, Tortkul, Kungrad and Chimbay districts.[7.35].

The Republic of Karakalpakstan contains 3.2% of the total urban areas, the density of cities and settlements is very low, 0.2 per thousand square kilometers (in the republic, this indicator is 2.6). The slow development of the regional urban structure is related to the natural and climatic conditions of the region, the size of the area and the level of development and integration of the city-forming networks. Therefore, the territorial structure of the cities of the republic was divided based on their geographical location and in which part of the region they were formed.

Table 2

Network of cities in the territories of the Republic of Karakalpakstan density (2023)

№	Administrative-territorial division of the Republic of Karakalpakstan	Territory (thousand km2)	Total cities	Townships	Urban lattice density
1	Republic of Karakalpakstan	166,59	12	26	0,2
2	Nukus	0,22	1	1	9,0
subdistricts:					

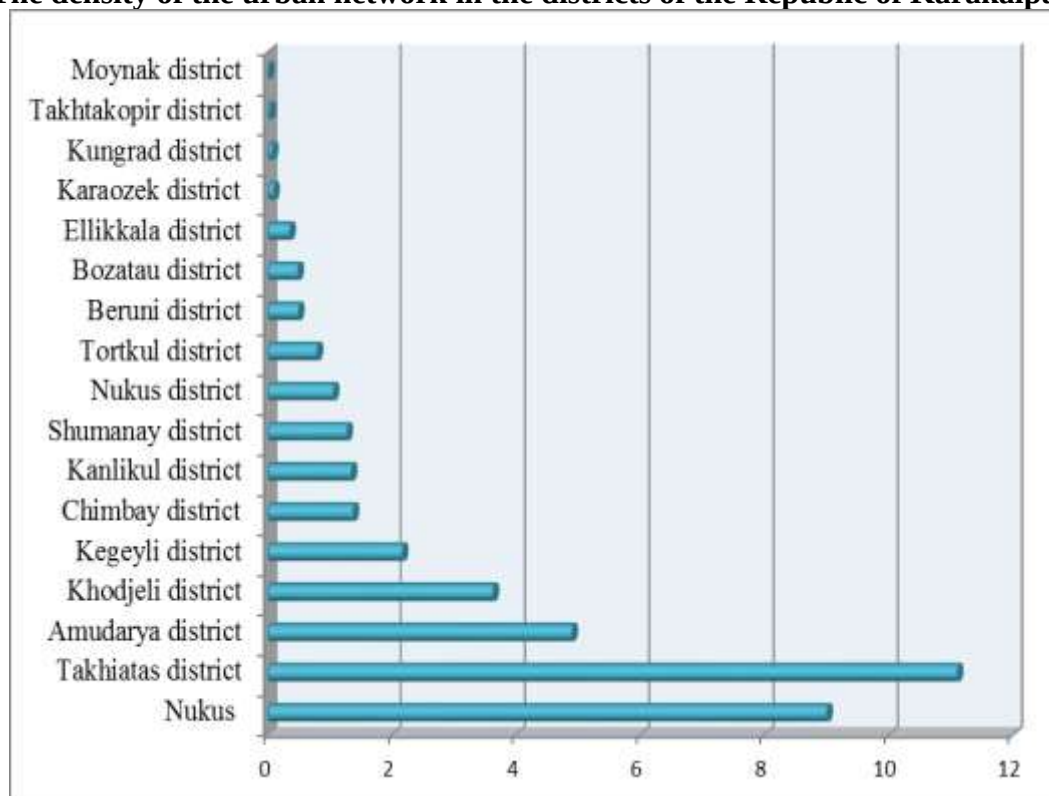
3	Amudarya	1,02	1	4	4,9
4	Beruni	3,95	1	1	0,5
5	Bozatau	2,04		1	0,49
6	Karaozek	5,89		1	0,1
7	Kegeyli	0,92	1	1	2,17
8	Kungrad	76,00	1	5	0,08
9	Kanlikul	0,74		1	1,35
10	Moynak	37,88	1		0,02
11	Nukus	0,94		1	1,06
12	Takhiatas	0,18	1	1	11,1
13	Takhtakopir	21,12		1	0,047
14	Tortkul	7,48	1	5	0,8
15	Khodjeli	0,55	1	1	3,63
16	Chimbay	1,44	1	1	1,38
17	Shumanay	0,78	1		1,28
18	Ellikkala	5,42	1	1	0,36

Table: compiled on the basis of the data of the Statistics Department of the Republic of Karakalpakstan

Using the above table in the form of a graphic diagram, we got a clear view of the density of the urban network in the districts of the Republic of Karakalpakstan.

Diagram 1

The density of the urban network in the districts of the Republic of Karakalpakstan



As can be seen in this diagram, among the districts of the Republic of Karakalpakstan, the density of the urban network is high in Takhiyatas district, followed by Amudarya, Khodjeli, Kegeyli, Chimbay, Kanlikul, Shumanay districts. The way of determining the density of the network of such cities is determined by the area of the territory, the ratio of the number of cities and towns, these data cannot fully show the development indicators of the level of urbanization in the territory.

Results and discussions: The main indicator of determining the level of urbanization of the organized area was usually determined by the percentage of the population of the city in the total population. Therefore, we calculated the share of the urban population in the regions of the Republic of Karakalpakstan and obtained the following data on the development indicators of the level of urbanization in the regions of the Republic of Karakalpakstan.

Table 3

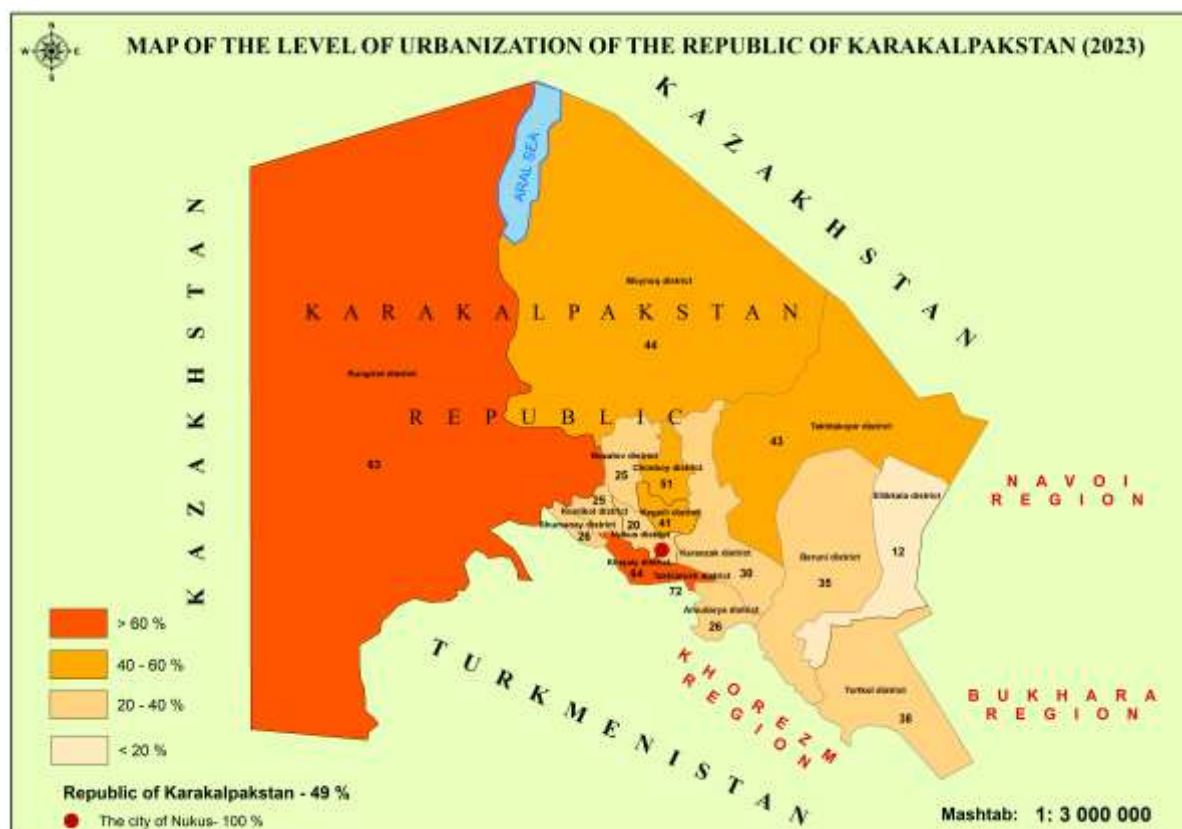
Indicators of the share of urban population in the districts of the Republic of Karakalpakstan

№	Administrative-territorial division of the Republic of Karakalpakstan	2023			Urbanization rate (in % percent)
		Total population	including:		
			urban population	rural population	
1	Republic Of Karakalpakstan	1 976,2	967,3	1 008,9	49
2	Nukus	334,6	334,6	0,0	100
	subdistricts:				
3	Amudarya	208,6	53,9	154,7	26
4	Beruni	201,2	71,0	130,2	35
5	Bozatau	21,9	5,5	16,4	25
6	Karaozek	54,1	16,4	37,7	30
7	Kegeyli	74,2	30,0	44,2	41
8	Kungrad	134,6	85,0	49,6	63
9	Kanlikul	53,1	13,4	39,7	25
10	Moynak	33,4	14,8	18,6	44
11	Nukus	52,9	10,7	42,2	20
12	Takhiatas	76,3	54,6	21,7	72
13	Takhtakopir	39,0	16,8	22,2	43
14	Tortkul	224,7	84,7	140,0	38
15	Khodjeli	127,2	81,1	46,1	64
16	Chimbay	115,1	59,1	56,0	51
17	Shumanay	57,6	15,1	42,5	26
18	Ellikkala	167,7	20,6	147,1	12

Table: compiled on the basis of the data of the Statistics Department of the Republic of Karakalpakstan

On the basis of the above table, we have developed a map showing the percentage of urban population in the regions of the Republic of Karakalpakstan, that is, the degree of urbanization.

Map1



The map was developed by the authors.

As can be clearly seen on the map, among the districts of the Republic of Karakalpakstan, in terms of the percentage of the urban population greater than the rural population, the districts of Takhiatas (72%), Khodjeli (64%), Kungrad (63%), Chimbay (51%) are at the forefront, Shumanay (26%), Amudarya (26%), Kanlikul (25%), Bozatau (25%), Nukus (20%), Ellikkala (12%). The size of the land area of the Republic of Karakalpakstan and the size of the districts located in it differ sharply from each other. Therefore, the above indicators based on the level of urbanization cannot be compared with each other. We need to develop a more comprehensive formula for determining the level of urbanization for our region.

In order to develop the urbanization process, the center of the Republic of Karakalpakstan is the city of Nukus and the formation of growth centers such as Kungrad, Chimbay, Turtkul or Beruni, connecting its agglomeration on three sides, for example, Nukus, Nukus-Chimbay, Nukus - It is desirable to establish specific corridors in the Kungrad railway and their influence zone.

Currently, the Republic of Karakalpakstan is receiving various privileges from our country, in particular, building transport and other infrastructures, attracting foreign investments, creating joint ventures, and developing small business and entrepreneurship. The development of growth poles and centers in the region is carried out within the framework of programs specially developed by the state.

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Rezyume: Qoraqalpog'iston Respublikasi misolida urbanizatsiya jarayonini tahlil qilish uchun ishlatiladigan mezonlar keltirilgan. Butun mamlakat va uning alohida mintaqalarining urbanizatsiya darajasini aniqlashga imkon beradigan ko'rsatkichlarni hisoblash uchun maxsus metodologiyadan foydalanib ishlangan. Hududning urbanizatsiya darajasini baholab, mualliflar shahar hududi mintaqasining umumiy maydoniga nisbati kabi ko'rsatkichlarni tahlil qilgan. Shuningdek, shaharlarning o'rtacha aholisi, mintaqaning shahar va shaharchalari sonining nisbati, Qoraqalpog'iston Respublikasi shahar aholisining ulushi, shahar aholisining zichligi, shahar tarmoqlarining zichligi aniqlangan. Natijada barcha ma'lumotlar jadval, diagramma va xarita shakliga keltirilib tahlil etilib mualliflarning tavsiyalari keltirilgan.

Резюме: на примере Республики Каракалпакстан приведены критерии, используемые для анализа процесса урбанизации. Разработана с использованием специальной методики расчета показателей, позволяющих определить уровень урбанизации всей страны и отдельных ее регионов. Оценивая степень урбанизации территории, авторы анализируют такие показатели, как отношение городской территории к общей площади региона; среднее население городов; соотношение количества городов и поселков региона; Доля городского населения от населения Республики Каракалпакстан; плотность городского населения; плотность сети городов. В результате вся информация выводится и анализируется в виде таблиц, диаграмм и карт. Приведены рекомендации авторов.

Kalit so'zlar: urbanizatsiya, urbanizatsiya darajasi, geourbanistika, geoekestika, shahar aholisi, o'rtacha aholi soni, shahar aholisining zichligi, shaharlar tarmog'ining zichligi.

Ключевые слова: урбанизация, уровень урбанизации, геOURBANISTIKA, геOEKISTIKA, городское население, средняя численность населения, плотность городского населения, плотность сети городов.

ENVIRONMENTAL COVERAGE ON KARAKALPAK TELEVISION

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Summary: *This article examines in detail the topic of ecology, which is now considered one of the global problems in the world, and the importance of its coverage on television. The topic of ecology was mainly analyzed using the example of the current Karakalpak television. Based on the analysis, territorial environmental problems have been identified*

Key words: *Ecology, topic, problem, television, classification, interview, reportage, Aral Sea.*

Introduction

The problem of ecology has become one of the main issues in all spheres of society today. Because the activities of each sphere are closely related to nature and the environment. Environmental problems arise due to the lack of timely elimination of the problem, due to the indifferent attitude of the population. At the moment, the role of the media is also considered special. The reason lies in the objective coverage of any topic and the awakening of public opinion on these issues, so that the ability to show that the problem is a real problem, its harmful aspects for humanity and society are part of the main task of the media. Therefore, in this work, we have set ourselves the goal of focusing on such issues as the extent to which ecology and related topics are covered and disclosed on television, which is considered an integral part of the mass media, in particular on Karakalpak television.

The main part

First, we will talk about Karakalpak television, Karakalpak television began its activity in the 60s of the last century, and since then has been firmly moving through the stages of its development. In this work, our goal was to briefly dwell on the history of the first broadcasts of Karakalpak television.

In the initial stages of the development of Karakalpak television, it was somewhat problematic to provide film clips and photographs. It is appropriate to note that many of the information transmitted in the "TV News" in those years bored viewers [1; 27]. Despite this, a number of broadcasts from the political and social editorial office began to be broadcast. It began to acquire a new form and content of the program on socio-political topics, such as "Direct conversation", "Topical interview", "People's Control Screen" and others. Also, on the part of the literary and artistic editorial staff, many programs were broadcast that left good impressions on the audience. Since the beginning of 1989, the literary and artistic department has prepared for the public and presented the programs "Writer and Time", "Heritage", "Creative portrait", "Conversation", TV shows "Instructions of ancestors - the source of wisdom", "Ravshan" ("Contemplation"), performances "The Word about Music", "Sing Bakhshi (storytellers)" and other programs. At the same time, such programs as "Concert Essay", "Fund of our spiritual Wealth", "Our guests", "Our calendar", "Writers in cotton fields" took place from the television screen.

In the TV magazine "Volna" there were conversations and literary critics about new good works, poets and writers informed about their works and spoke about the masters of the artistic word, about the demands of literature and today's time facing them, about problems in creativity. The departments of the magazine "Literature and Today" and "Literary Criticism" had their own special place among their admirers. In these broadcasts, the reflections expressed on the topic by writers and literary critics such as T.Allanazarov, K.Sultanov, I.Kurbanbayev, A.Alymov, S.Bahadyrova, T.Mambetniyazov left indelible impressions among the public.

Since 1971, more than 100 broadcasts of the TV magazine "Volna" have been presented to viewers on the Karakalpak television screen. In those years, opinions and disputes about literary issues and literary criticism were conducted in polemics, good reviews were expressed about the

masters of the stage and the work of artists, writers and poets introduced viewers to their new works.

Of the famous creative personalities J.Aimurzaev, T.Zhumamuratov, I.Yusupov, T.Kaipbergenov, S.Abbazov, T.Kabulov, K.Rakhmanov, U.Pirzhanov, O.Abdirakhmanov, J.Izbaskanov and others began their journalistic activities through the television screen and talked about their new works. Young talented poets and writers also took part in the categories "Page of young writers", "Bouquet for girls" of the TV magazine.

The Heritage program, which was prepared every two months, began to be introduced into the broadcast network since 1973, in order to get acquainted with the customs and traditions of our people, with their oral and written literary monuments. For the first time, Professor K.Maksetov hosted the program, then scientists A.Alymov, D.Aimuratov talked in detail about folk musical instruments like dutar, kobyz and others, about the origin of some folk instruments, about their performers with the participation of specialists and historians. Wonderful and informative broadcasts were also prepared about the exhibits of the museum halls. At the same time, the Heritage program covered the archaeological sites of the territory and issues of their protection. In particular, archaeologists expressed their opinions on the study of historical monuments such as «Guldursin», «Ayazkala», «Koy Kyrylgan kala», «Topyrak kala», «Burkut kala».

The program "Meeting" was broadcast with the invitation of a famous writer, artist and a meeting with a creative personality, and with the answer of this personality to questions of interest to many viewers. Most of these meetings were held in large halls, many of which were recorded using a television station.

As researcher Dilfuza Kamalova said, the press today remains one of the main means of filling the consciousness of mankind, not only humanity, but also the whole society with various information [2; 18-21]. Including television. To date, the number of broadcasts of Karakalpak television has increased significantly. And the duration of the broadcasts has also expanded. Genre successes are also felt. As an example, one can cite informational broadcasts: "Hello, Karakalpakstan!", "News", "Weekly", from analytical broadcasts - "Point of view", "Mirror of Justice", "Free opinion", programs "Man and nature", "Talking directly", "Conversation with a deputy", "Reform steps", "Economy and us", art programs "Memory", "Life Lessons", programs "Cinema + Theater", "Golden Heritage", "Rainbow", "Knowledge-ring", "Think, understand, find", "Magic World", "Swallow", "Literature and Time", "Who is smarter, who is faster", "Search", "Hello, Karakalpakstan!", "Pearl words", "Winged songs", "Great Legacy", "Bon Appetit", "Flight of youth", "Cinema + Theater", "Great personalities", "Magic of melodies", "Meeting", "Fun starts", "For girls..." and others. In the preparation of these broadcasts, the skill of journalists - K.Dauletmuratov, A.Oteniyazova, U.Abdizhamilova, R.Khamidova, B.Esmurzayeva, D.Allamberganova, L.Seydanova, V.Sarieva, L.Esemuratova, U.Yerimbetova, S.Zhumanazarova - should be particularly noted. [3; 159-162].

Generally speaking, we think it advisable to study the stages of development of Karakalpak television, dividing them into the following stages:

- 1960-1991 ;
- 1991-2016 ;
- 2017-2021 ;
- the period from 2022 to the present day.

During these periods, there have been achievements in the genre diversity of Karakalpak television shows. And this testifies to the successful creative activity of journalists in the spirit of the times.

On Karakalpak television, programs on the topic of ecology are mainly covered in the program "Man and Nature". At the moment, it is worth noting that recently Karakalpakstan television has been replenished with much more experienced journalists, and it is clear that most of them specialize in the topic of ecology. In particular, K.Dauletmuratov, L.Seydanova, L.Esemuratova, etc. Of these, the activities of journalist Karmibai Dauletmuratov can be cited

separately. For many years, he was a co-creator of the show "Man and Nature" as a solo author. This program was also changed from time to time to the term "man, nature, ecology". But the content of the show, its focus remained unchanged even in the time interval. In these shows, you can see that it is mainly about man and his attitude to nature, the environment, the disappearance of nature and the prevention of similar problems. This is the same material, and researcher Perkhan Allambergenova, who conducted a number of research works on its author Karimbai Dauletmuratov, says that several programs were broadcast under the heading "Man, Nature, ecology" under the authorship of the chief editor of television Karimbai Dauletmuratov. We have repeatedly analyzed the first of them and came to the conclusion that this material was prepared in the form of a television article. The material is devoted to the problem of the Aral Sea. But the topic itself does not fully reveal that the show belongs to the genre of the article. Such confirmation appears as a result of in-depth study of the material. Here is an example from a TV text:

"Since the second half of the 20th century, a huge catastrophe has arisen in the Aral Sea region as a result of a sharp increase in the population around the Bassey River, the development of large deserts without taking into account the supply of water from the Amu Darya to the Syr Darya, the import of river water through large channels such as Karakam, Amu-Bukhara, Amu-Zang".

The thirty-minute material contains a lot of figures and examples. They can give us reason to say that this show is a television article. But, it should be noted, this problematic show did not appear on the air for some time, and after it aired, its author was dismissed from the post of editor-in-chief. This fact causes every leader, practitioner and researcher in the field of journalism to be deeply confused" [7].

Here, researcher Perkhan Allambergenova also showed that journalist Karimbai Dauletmuratov is a mature specialist in his profession. He was also able to show that a journalist can make extensive use of the possibilities of various methods and genres of journalism when revealing a topic.

In the media coverage of the topic of ecology, it is clear that in most cases humanity does not use the flow from nature, as a result of which the disappearance of the Aral Sea is illuminated by artistic and literary feelings. In our opinion, ecology would be desirable if clear facts, when covering the topic, showed ways out of trouble, based on the opinions of scientists. The reason is that the main purpose of journalism is also considered to show the audience how to find problems and solve them.

It is also worth noting that one of the tasks facing environmental journalism is to provide accurate information to the audience, train people in environmental knowledge and organize their clear actions. Regardless of what thematic environmental journalism reveals, it paints environmental awareness, environmental ethics, and environmental economics, which are often a global issue.

Since the last years of the 90s of the last 20th century, the topic of ecology began to appear on the Karakalpak TV channel as a separate direction. The reason is that the majority of the population of Karakalpakstan lives in rural areas, so rural residents also have the opportunity to use television as a means of obtaining information and receive cheap, easy information. Thus, bringing information about the ecologically difficult situation in Karakalpakstan to the population through television shows is an effective method compared to other types of mass media. If we approach the issue more deeply, then a number of programs are running on the Karakalpakstan TV channel, which today focus on issues of nature, the environment, and environmental friendliness. Of these, "Nature and man", "Ecolife", etc. Therefore, it is necessary to take into account TV shows on an environment-dependent topic in other da programs. For example, information programs "Xabar" (Information) often contain both informational and analytical displays related to the topic. One of the direct environmental programs on Karakalpak television, as we said above, is the show "Man and Nature". Its presenter and author was Karimbai Dauletmuratov, winner of the "Honored Journalist of the Republic of Uzbekistan" award.

The program begins with the title "Man and Nature", and the presenter goes to the word and begins with a story about the main direction, the theme of the show. That's how every show starts. Focusing on the number of programs broadcast on September 18, 2020, it will tell about the negative phenomena witnessed by the Amu Darya in cooperation with the Committee on Ecology and Environmental Protection of Karakalpakstan, tells about the importance of our people in agriculture and daily life. That is, the emphasis is on the abandonment of household waste along the river and its harm to the cleanliness of the environment.

In his speech, the journalist, starting from the very beginning of the program, highlights the main causes of the problem. In his speech, he noted that "household waste extracted from the river water storage and nearby kitchens, from places where fish are cooked and sold, are dumped directly onto the riverbank. Even some families have built a mill and other buildings along the river". This is how the main direction of the transmission, the occurrence of a problem in it, gives information about the damage to the nature of the weaving base and the beauty of the surroundings of the river. However, in an interview, a professional interprets the topic more broadly, and the opinion of the population is also listened to on this issue. The author also criticizes the fact that the public has plunged even deeper into the problem and the appearance of illegal quarries for the selection of cars, the illegal extraction of about 250-300 hectares of land, which no one pays attention to, since the cars that came to pick up the ball are not limited to leaving household waste here.

After listening to the expert's opinion, the presenter in her speech also talks about the emergence of new landfills, their land, water resources, air pollution with various wastes, also criticizes the so-called inattention of people, criticizing those responsible for the industry, as well as for being indifferent to this issue. In addition, the author complains that all types of household waste have been disposed of, and even hospital waste is a sad situation.

Journalist Karimbai Dauletmuratov conducts not only a journalistic investigation to eliminate environmental problems, but also conducts an environmental raid with relevant specialists.

In its conclusion, the Program concludes the comments with comments: "Indeed, the level of household waste pollution of our nature, which we once considered a powerful, powerful force, is growing. Recently, the idea that nature is self-healing has been established. If we do not try to collect what we have produced and used ourselves, and then dispose of it as waste, then the amount of waste in nature will continue to increase. Therefore, tomorrow, whoever remains empty will call on everyone to take part in ensuring the cleanliness of the environment."

The author will indicate a solution to any problem, as well as a way to fix the problem. This can be understood as one of the author's own styles.

In the issue dated January 19, 2021, the author also raises the issues of weaving, the transformation of desert territories into green zones. At the same time, major projects that are being implemented at the level of state policy to prevent environmental problems are also being discontinued today. That is, about carrying out landscaping works in more arid areas of the Aral Sea.

The journalist tries to use different genres of journalism in the preparation of the program. Of course, this is a good method and skill. Because at the moment, the problem of preserving the audience also stands for itself, so that the TV audience does not lose its audience.

Conclusion

Generally speaking, in the broadcasts authored by journalist Karimbai Dauletmuratov, we will witness his personal research, along with his views, the analysis of expert opinions and their analysis of the degree of truthfulness. Of course, this, in turn, requires great responsibility, resourcefulness, and therefore professional skill from the author.

The fact is that today the consequences of an environmental disaster are great, and this is obvious to everyone. Therefore, the population needs to understand that relations with the environment and nature must be well established. In such a situation, the media must approach the issue wisely and professionally.

It can be seen on Karakalpak television that even in broadcasts that have not recently been devoted to special ecology, environmental problems are highlighted. For example, information appears in entertainment and artistic, literary and journalistic broadcasts. But they do not show aspects of a deep approach to the problem.

Covering the topic of ecology, it should be noted that the opinion of the audience, as well as industry experts, along with the journalist, is very necessary in the broadcasts. But this is a sad situation when letters with thoughtful content do not come from the viewers themselves, compared with the opinions of journalists working on television. Whatever type of media it may belong to, it is advisable to study the result of coverage of materials, taking into account the opinions and suggestions of the audience and draw appropriate conclusions from this. Television editors should be involved in organizing meetings with the audience, usually hosting a TV show. The reason is that studying the audience's attitude to TV shows will become the basis for further improving the quality of future broadcasts. This, in turn, increases the audience's interest in television.

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Rezyume: Ushbu maqolada bugungi kunda jahondagi global muammolardan sanalgan ekologiya mavzusi va uning televidenieda yoritilishi ahamiyati atroflicha o'rganilgan. Ekologiya mavzusi asosan hozirgi Qoraqalpog'iston televideniesi misolida tahlil qilingan. Tahlillar asosida hududdagi ekologik muammolar ochib berilgan.

Резюме: В этой статье подробно рассматривается тема экологии, которая сегодня считается одной из глобальных проблем в мире, и важность ее освещения на телевидении. Тема экологии в основном анализировалась на примере нынешнего Каракалпакского телевидения. На основе анализа выявлены территориальные экологические проблемы.

Kalit so'zlar: Ekologiya, mavzu, muammo, televidenie, tasnif, intervyu, reportaj, Orol dengizi.

Ключевые слова: Экология, тема, проблема, телевидение, классификация, интервью, репортаж, Аральское море.

**WAYS TO MINIMIZE RISKS REGARDING INFORMATION PROVIDED BY
BORROWERS**

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Summary: *In this article, one of the most important measures to increase the creditworthiness of enterprises is the scientific improvement of the methods of transition to the practice of assessment by dividing the obligations in direct calculations into internal and external obligations.*

Key words: *Credit risks, creditworthiness, private capital, solvency and insolvency.*

In the conditions of the market economy, the necessary tools are developed to analyze the risks in the information system of the users of the data of economic entities. At the same time, the goals of data users are clear and in most cases conflicting. For example, if the state budget is aware of the estimated prices of real estate under care from the debtors' point of view, the creditors' expectations are that there is less risk in the price system, which is estimated at the minimum prices of the property.

It is necessary to assess the reliability of information during the analysis of the risk system. As a result of the reason analysis, the reliability of the information is determined by the degree of reliability of the information, first of all, balance sheet information. In opinion of E. Jones [1] that "balance gives an answer to the question of risk in business" is correctly. Economists generally consider it necessary to know the amount of the company's personal capital when assessing the risk, because depending on its level, the company's economic efficiency or economic efficiency is assessed.

The short-term loans of private capital companies are calculated as an indication of the total assets of the company, and its composition includes the company's charter capital, reserve capital, joint capital, undistributed profit (recovered loss), purchased private shares, and other targeted income. The asset of the private capital economic entity is maintained in the park in the middle of all thanks. Private capital, labor output, and property ownership, and co-investment may increase or decrease depending on the results of other services. According to economists, due to the accumulation of the amount of undisbursed profit in the annual average of the equity capital, as a result, the share of the equity capital is the result of the accumulation, but together with the increase of the annual average value of the equity capital, the level of profitability of the equity capital remains unchanged. decreases. The reduction of the share of private capital, while the profit of the utility company, has led to the increase of the profitability of private capital. It should be noted that the goal of full access to the data is negatively proportional to the goal of naturalization.

The authorized capital played the most important role in the formation of personal capital during the development of companies, as well as in joint-stock companies. During the formation of the company, the size of the authorized capital, the share of the total private capital in most companies, for example, in joint-stock companies, reached 90%.

The need to manage credit risks and various risks is considered one of the most important issues in the context of the globalization of the market economy and the globalization of the international economy.

When talking about credit risks, attention should be paid to the nature and meaning of these risks, the reasons for their occurrence, and social and economic consequences.

Transactions related to risks occur in the process of active operations in the operation of interbank banking. Commercial banks can provide loans as well as investment operations in the form of asset operations related to risk.

Bank risks are different from the point of view of their appearance, and all of them are explained by the fact that the money that was spent in the form of a loan does not return in full.

The risk of credit risk or debt repayment comes from the reluctance of the creditor to change the terms of the loan in order to repay the loan in a timely manner. Credit risk is considered to be one of the most common risks in banking. Finally, commercial banks should pay special attention to this process in their credit policy.

Repayment of the received loan in a timely manner is considered as a condition of unfaithfulness to the replacement of credit conditions, full repayment of loans, partial repayment (in this case, the interest of the received loans is also included in the commission payments) or the postponement of the term.

Credit risk is characterized by the risk of not being able to pay the debts due in accordance with the terms of the loan agreement.

The most effective solution to the risk management of banks is achieved only through constant monitoring of the creditworthiness of debtors and financial stability. At the same time, attention was paid to liquidity and autonomy risks.

Credit risk is determined by the impossibility of obtaining a loan due to the level of indebtedness, the lack of proper cash flow, financial difficulties, the low business reputation of the owners of the company, or the superiority of criminal feelings.

Finally, the joint state bodies were exposed to these risks due to the pressure of individuals.

Low level of employee satisfaction, public social tension, and bribery have a strong impact on the level of credit risks.

The assessment of credit risks first begins with acquaintance with potential borrowers. In this, the client's reputation, professionalism, production, marketing and financial management skills are evaluated. It is necessary to pay great attention to how well the credit system is prepared, how well it meets the economic, social, and environmental goals, and the purpose of the credit is also important for the bank, borrowing, social strata, network, and region. It gives the opportunity to make important decisions based on the favorable credit terms. This process allows to assess the client's creditworthiness, financial situation, and the movement of money loans. The final process is the formalization process of the loan agreement.

As an important part of risk management, the formulation of the payment schedule and the summary of its continuous monitoring are considered. This process takes into account operational credit monitoring. The purpose of his work is to find ways to make hard loans.

It is reported that there are many cases of non-payment, delays and delays in the period of the received loans. Among its important reasons, the following can be included:

- collection of accounts receivable; low liquidity coefficient;
- purchase of sales volume; operational damage; the excessive accumulation of reserves is also maintained;
- management of important clients, ability of business partners to take out loans, avoidance of contacts with the bank, cancellation or delay of the required notifications, etc.

Factors that mitigate risks include:

- assessment of the client's creditworthiness (prevention measures, risk prevention);
- the size of the debt and the level of potential dependence;
- joint financing of the project, financing due to small debts of one party; the fact that the management of the enterprise is working with hard loans;
- protection of the acknowledgments agreed in the contract (notice provision, provision, fines, fall payment); monitoring of the working conditions of the employees (economic analysis department, safety department, etc.);
- cases of remaining legally responsible, etc. Actions aimed at reducing credit risk (minimal consequences, damages):
- diversification of credit portfolio;
- modeling of alternative cash flows;
- the exact amount of loans given to one client;

- providing discounted loans; - it is possible to enter the sale of debts to this person with deductions.

The following factors can be included in the business factors of risk mitigation: assessment of the client's creditworthiness (preventive actions, risk prevention; limits of the borrower's representativeness depending on the size of the loan and the degree of potential dependence; joint financing of the location, a loan based on the small amounts of separate debts) should be trained in the management of the company completeness of loan processing; provision of contractual obligations (information provision, security, fines, late payments); employment status of employees (economic analysis department, security department, etc.); legal liability status e.t.c.

Actions aimed at reducing credit risk (minimum consequences, damages): diversification of credit portfolio; modeling of alternative cash flows; the exact amount of loans given to one client; providing discounted loans; Debts can be sold with discounts to this individual.

The practical actions of improving the creditworthiness of the banks, the changes occurring in the financial situation of the bank are determined based on the results. In other words, the jobs defined in the companies that are able to pay, and the jobs that are defined in the companies that are not able to pay, and are not financially stable, are sharply separated. If one of them tries to maintain financial stability, the other one starts to try to get rid of it.

Some of the most important ways to apply for bankruptcy or creditworthiness include the following:

Assets and liabilities of banks are reviewed. How can you understand its content?

In order to accelerate the turnover of liquid funds in factories, the write-off of excess current assets, the addition of surplus and intangible assets to the line of current funds due to the necessity of production (it can be sold, destroyed, write-off in other ways), the write-off of receivables and payables (in types), short All long-term financial investments are targeted.

Due to the negative correlation between the debts of the debtor and the debts of the debtor, it is not due to the bankruptcy of the financial situation, but it should be traced back to the generations of the management of the production. In other words, there is a lack of sales, an increase in production costs, and an improper pricing policy.

In case of lack of funds, business opportunities should be determined in advance. In case of impunity, asking for a loan from another subject was not economically feasible.

The non-production period of the banks, the balance sheet of the business should be reduced, stopped, or financed by private loans.

Banks should set strict regulations on money loans and circulation of cash equivalents, and it should be carried out in a stable manner. In addition, it is necessary to draw up a clear procedure for the use of funds for debt settlement.

Due to the possibility of accelerating the circulation of funds, it is necessary to pay more attention to the modern forms of accounting books, which are used, stopped, and so on.

It is necessary to pay attention to the investment activity of the banks in order to ensure the creditworthiness of the banks. Investment activity - this borrowing has sharply reduced its repayment. It is said that one of the reasons for the increase in the creditworthiness of the factories is due to the focus on the amount of short-term loans. In this case, the surplus of current assets disrupts the status quo and leads to bankruptcy.

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Rezyume: Ushbu maqolada korxonalarning kreditga layoqatliligini oshirishning eng muhim chora-tadbirlaridan biri to'g'ridan-to'g'ri hisob-kitoblardagi majburiyatlarni ichki va tashqi majburiyatlarga bo'lish orqali baholash amaliyotiga o'tish usullarini ilmiy takomillashtirishdir.

Резюме: В данной статье одним из важнейших мероприятий по повышению кредитоспособности предприятий является научное совершенствование методов перехода к практике оценки путем разделения обязательств в прямых расчетах на внутренние и внешние обязательства.

Kalit so'zlar: Kredit riskleri, kreditke uqipliligi, jeke capital, to'lemge uqiplilik ham to'lemge qabiletsizlik.

Ключевые слова: Kredit risklari, kreditga layoqatlilik, xususiy kapital, to'lov qobiliyati va to'lovga layoqatsizlik.

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**THE APPEARANCE OF "NEWS" INFORMATIONAL SHOW IN KARAKALPAKSTAN
TV CHANNEL AND ITS TRENDS OF DEVELOPMENT**

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Summary: *The main goal of today's television channels is to broadcast the events that are important for people living in a live broadcast, in a special format, in a special design, following the main principles of journalism due to the change in the genre of programs. All types of news broadcasts on TV channels work on the same principle and purpose. However, their delivery method and style are drastically different from each other. Some of them are presented in the form of a short account, and others in the form of a show. As for the viewer, it depends on the information, content, format, plots, shots, and even the image of the presenter. In most broadcasts, the editor-in-chief's conscious news editing works to meet the demands of the audience.*

Key words: *Television, television network, content analysis, human resources*

The mass media industry is responsible for delivering news to the general public. These include news agencies, news magazines, news channels, news websites, etc. In the territory of the Republic of Karakalpakstan, various mass media performing such a task publish regional news.

"Karakalpakstan" Tv channel. Karakalpakstan Television is the first channel in the Karakalpak language in the Republic of Karakalpakstan, and the first shows began to broadcast on November 5, 1964. On the basis of people's demand for information, 5-minute "Tele news" in Karakalpak and Russian languages were prepared for the initial directions of the television.

Starting from May 1965, "Korakalpakistan" television shows increased from 2 hours to 2.5 hours, and began to broadcast 4 days a week. From January 1966, the duration of the shows reached 3 hours, and from Saturday of the week, the shows were given every day of the week. Including, on weekends and holidays, from 12:00 noon, children's programs such as "Youngers are our guest", "Labor requires bravery", "Poets for children" began to be broadcast. On November 29, 1966, after the decision on "Measures for the further development of television in Karakalpakstan" was adopted, a broadcast television station (PTS) was acquired, and it was possible to prepare programs remotely.

In 1992, the television was named the National Television and Radio Broadcasting Company.

After gaining independence, "Korakalpakistan" television became part of Uzbeksdan TRK (now Uzbeksdan MTRK). In 2002, the television and radio company of the Republic of Karakalpakstan was established. Since June 1 of this year, the program "Good Morning, Karakalpakstan" has been added to the broadcast network. Since April 2013, the television has switched to digital format.¹

Audience: active 38-60 year olds;

Area: 98% in the Republic of Karakalpakstan;

Thematic direction: universal;

Competitions: "Youth TV", "Otv", "Etv"

Television thematics is universal, it broadcasts social-political, scientific-cultural and educational news, orientations and shows, local and foreign films, serials and cartoons.

Information show "News". On November 5, 1964, at 7:00 p.m. local time, the title "Nukus shows" appeared on televisions of some houses in the cities of Nukus, Taqiyatas and Khojeli. On this day, "News" was published in Karakalpak and Russian languages. The first singers – Orazgul O'teniyazova and Svetlana Shapochnikova - told the reports of the labor teams against the backdrop

¹<https://www.mtrk.uz/uz/regional/qoragalpoq/>

of photo shoots. The first TV programs were prepared in the Karakalpak language by G'alim Seytnazarov and Qarmis Dosanov, and in Russian by Viktor Kopalov. Sitting at the control panel of the first career, Quwat Ábdireymov and Kiyik Ábdireymova released the first show. The first teleoperators were P. A. Begimov and Q. Ernazarov. G'alim Seytnazarov was one of the first TV journalists who contributed the most to the development of Karakalpakstan television genres. He not only participated in the preparation of "television programs", but also laid the foundation for the increase of television genres. People's favorite informational channel "News" was given the name "News" and it was given in the form of rotating globes, and it was done despite many difficulties.



Including G'.Seytnazarov used to read all the materials read by the announcer, the texts of the speakers, and watched the titles and decorations and used to watch movies, magazines and TV movies before the broadcast.

Since 1965, Karakalpakstan television, which initially broadcast only a few minutes of news a day, has been presenting 2.5-hour TV programs four times a week. Over the last years, the broadcasting hours and days have been extended.² By 2023, programs will be broadcast in the Karakalpak language 1 time and 2 times in Russian and Uzbek languages 1 time in the interval of 25-33 minutes.

"News" is the main information channel of the TV channel, and "Weekly" news program is also broadcast at the end of the week. It will be given in the Karakalpak language at 20:00. The broadcast time is on average 30 minutes, and the average number of materials presented there is between 3-5 materials. Certainly very little, if we stop at the content chronology of the show. 18. 06. 2022, a total of six materials were given for twenty-four minutes, of which 2 news, 1 reportage, 3 accounts were given, the reporter was Jamila Jánibekova. If we take a look at the chronological consistency, first the message prepared by Hamida Sultamuratova on the content of "Additions and changes to the Constitution of the Republic of Uzbekistan" was given in the three-way broadcast held at KSU, behind-the-scenes conflict and 2 interviews were given. The message ends with the introduction - the main section. The following report was prepared on the basis of the three-part conference held at NMPI, dedicated to "Constitutional reform promotion, including today's environmental problems". 1 interview, video plot was given in the message. The following material was prepared in the genre of reportage, the content of which consisted of sub-frame text and 1 interview. H. Sultamuratova started with the introduction, gave general information about the object, and then started talking about the works going on in the object. Additional speech elements were also used, content questions were given in the interview.

"Genre structure of "Khabar" informational series"

Genre is a genre format	Total Materials (10 broadcast)
Informational message	19
News	8
Account	18

²"[[Ózbek tili|ózbekshe]] Qoraqalpog'iston. Teleradiokompaniya haqida[[Category:non-English tekstli maqalalar]]"

Interview	124
Report	12
Video plot (elements of video plot)	24
Advertising	2
Mobile interview	5
Mobile reportage	1

Among them: Message: full and short. The materials in the genre of the account are prepared according to the decision of the president. Interviews: informative, informative-analytical. Interviews: informative, analytical, portrait interviews. Reports: thematic, special, problem types were used.

Categories of interviews given %

Interviews with experts	Interviews with participants
57	43

In the materials given in the main genre, we saw and studied the types of interviews in the "Karakalpakstan" television analysis: informative, informative-analytical, portrait interviews.

Interview typology

(Use in 10 materials %)

Informative	Informative-analytic	Portrait
40,4	9,4	38,5

Most of the reports given in "News" show were given in the reportage and other materials with the position of introduction->specific section->additional information. Below we present the information we found in this regard. Reporter: We saw that Hamiyda Sultanmuratova prepared stand-up, video stories, and archival materials in her reports. Among them, the questions in the interviews are given on the topic of the material, and the respondent should be encouraged not to leave the circle of the topic. Use additional reports, info-analytical interviews, video clips.

Introduction to the materials prepared by **Arzayim Berdimuratova**, here we see the transition from general information to the culmination. Conjunctions often occur in texts.

We can see that the materials prepared in the style of **Aybek Kengashbaev** began with culmination. Using presentations in reports, the interview remains clear and interactive. In the materials prepared by him, we can feel the speed. Stand-ups are often used, journalistic style is used in texts, and in the materials prepared for the holiday issues, there are more idioms, but in some materials, spelling mistakes are also noticeable. For example: in the issue of 7. 03. 2022, he made a big mistake when he said the word "pgididentim". The materials are prepared interactively, and the content is well prepared. In general, communication with the audience is established.³

We have seen that most of the materials prepared by **Qálbiyke Tolegenova** consisted of general remarks, therefore the materials end with a culmination after the introduction. Additional obituaries, video plots were not provided. Interviews are widely used, for example: in the issue of 13.06.2022, 3 interviews were given in one material. Including spelling errors and mistakes. For example: the word "turmis" is used as "turmush". Stand up was used in some reports. Interview questions are not engaging. In the 17. 06. 2022 issue, 11 interviews were given in an 11-minute report. It's more like a conversation genre than a reportage.

Timur Orazov. During the studies, if we saw that the journalist used good texts, the style of starting from the culmination, stand ups was almost noticeable. The interviews he conducted were clear, but the texts used a lot of conjunctions. We consider this a defect. The reason is that the audience forgets the information given at the beginning until the end of the speech. There is no

³ https://youtu.be/kvXA0z2n7_4

opportunity to re-watch or read telematerials in case of misunderstanding. Considering these aspects, journalists should refrain from "long-winded" statements. It's more of a newspaper style. We can conclude that the journalist's tone of voice is positive, and therefore, the news prepared by him is presented with his personal qualities.

In the materials prepared by **Venera Salieva** style, it starts with the introduction section and ends with the culmination. Brings additional mourning. We made the text of the sub-frame using place phrases to make it attractive to the audience. We had the opportunity to prepare short and concise interviews with famous scientists and specialists related to the material, in order to provide facts and additional information in the material. Having a style uses texts that are convenient for the young audience, have an attractive appearance, and contain content. We did not find any spelling mistakes in any of the materials we collected.

We can say that the reports prepared by **Sayathan Jumanazarova** are very lively. The reason is that she starts her reportage in a slightly different style with additional comments from stand up. We can see the use of the info-analytical genre of interviewing, as well as positions such as detailed study of the assignment given by additional personnel and video plots.

Television information channels "Youth" TV, "Otv", "Etv" channels can be considered a literal mentor for informational shows. For 60 years, the content of the news show has been introducing news to its audience.

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Rezume: *Ko'rsatuvlar janrining o'zgarishi munosabati bilan jurnalistikaning asosiy tamoyillariga amal qilgan holda, insonlar uchun muhim bo'lgan voqealarni alohida formatda, maxsus dizaynda jonli efirda namoyish etish bugungi telekanallarning asosiy maqsadi hisoblanadi. Telekanallardagi barcha turdagi axborot dasturlari bir tamoyil va maqsadda ishlaydi. Biroq, ularning uslubi va taqdimot uslubi bir-biridan tubdan farq qiladi. Ularning ba'zilar hikoya shaklida, boshqalari ko'rgazma shaklida taqdim etiladi. Tomoshabinga kelsak, bu ma'lumot, mazmun, format, hikoyalar, kadrlar va hattoki boshlovchining qiyofasiga bog'liq. Ko'pgina dasturlarda bosh muharrir tomonidan yangiliklarni ongli ravishda tahrirlash tomoshabinlar talablarini qondirish uchun ishlaydi.*

Резюме: *Основная цель современных телеканалов – транслировать важные для живущих людей события в прямом эфире, в особом формате, в особом оформлении, следуя основным принципам журналистики в связи с изменением жанра программ. Все виды новостных передач на телеканалах работают по одному и тому же принципу и цели. Однако их способ и стиль подачи кардинально отличаются друг от друга. Некоторые из них представлены в виде короткого рассказа, другие – в форме шоу. Что касается зрителя, то он зависит от информации, содержания, формата, сюжетов, кадров и даже имиджа ведущего. В большинстве передач сознательное редактирование новостей главным редактором работает на удовлетворение запросов аудитории.*

Kalit so'zlar: *Televideniya, televidenie tarmog'i, kontent tahlili, kadrlar.*

Ключевые слова: *Телевидение, телевизионная сеть, контент-анализ, человеческие ресурсы.*

**MECHANISMS FOR ASSESSING TEACHERS' PEDAGOGICAL SKILLS IN
IMPROVING THE QUALITY OF EDUCATION**

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Summary: *In today's world, where the emphasis on the quality of education is intensifying more than ever, the role of teacher evaluation is becoming more and more significant. This study aims to investigate various mechanisms for evaluating pedagogical performance and determine their impact on improving the quality of the educational process.*

The methodology of teaching evaluation includes a comprehensive analysis of the tools and approaches used to assess teaching effectiveness. It ranges from qualification requirements and length of teaching experience to measuring the satisfaction of students and their parents. The study considers both traditional methods, such as lesson observation and analyzing student performance, and innovative approaches, including formative assessment and the use of information technology.

Keywords: *Assessment of teaching skills, quality of education, professional development of teachers, innovative approaches in assessment, formative assessment, feedback in education, teacher motivation, teaching effectiveness, pedagogy, information technology in education, teacher self-improvement, lesson observation, education improvement*

Introduction.

The introduction to the importance of teaching excellence for quality education emphasizes the important role of teachers in the educational process. Pedagogical excellence does not just affect the transmission of knowledge, but also determines the quality of learning by contributing to the development of students' skills and competencies, which in turn improves the overall quality of the educational system. In this context, pedagogical excellence includes not only in-depth knowledge of the subject and teaching methodology, but also the ability to motivate students, the use of innovative approaches and technologies in education, and the ability to adapt to the different educational needs of students.

Effective evaluation of teaching excellence becomes a key tool not only to recognize and stimulate teachers' professional development, but also to identify areas for improvement, thus contributing to the quality of the educational process as a whole. Teacher evaluation through mechanisms such as self-assessment, feedback from colleagues and students, appraisal and professional development allows the formation of a system of continuous professional development, which directly affects the effectiveness of learning and student development.

Overview of the current situation in the field of teacher evaluation.

Currently, teacher evaluation is a multidimensional and complex process that varies from country to country, region to region, education system to education system, and even institution to institution. Despite this, several key trends and approaches that have recently been gaining popularity internationally can be identified.

1. Professional standards for teachers: Many countries have introduced professional standards that define the basic requirements for teachers' knowledge, skills and competencies. These standards serve as a basis for the development of teacher assessment tools.

2. Teacher portfolios: The introduction of portfolios as an evaluation method allows teachers to demonstrate their achievements, teaching methods and professional development. Portfolios can include both self-assessment and feedback from colleagues and students, providing a multi-dimensional view of teaching performance.

3. Lesson observations: Regular lesson observations by colleagues or administrators provide an objective assessment of the teacher's on-the-job performance. It is an approach that emphasizes practical application of pedagogical skills and techniques.

4. Feedback from students: Increasingly, student opinions and evaluations are being incorporated into the evaluation process to provide insight into how effectively the teacher's pedagogy is promoting student learning and engagement.

5. Professional development: Teacher evaluation is increasingly linked to teacher professional development programs, emphasizing continuous improvement and learning rather than just identifying weaknesses.

However, there are also certain challenges facing evaluation systems in different countries. These relate, for example, to standardizing evaluation processes, ensuring their objectivity and transparency, and taking into account the individual approach to assessing each teacher's teaching skills. In addition, an important aspect is maintaining teacher motivation in the face of evaluation procedures that are perceived not as punishment but as an opportunity for growth and development.

Theoretical aspects of pedagogical mastery.

Pedagogical mastery is a complex and multifaceted concept that encompasses a range of professional and personal qualities of a teacher, which contributes to improving the quality of education and the effectiveness of the learning process. It includes knowledge of psychology, pedagogy, specialized disciplines, as well as skills and abilities to organize the educational process, its methodology and technologies.

The key components of pedagogical mastery are:

1. In-depth knowledge of the subject - confident mastery of the teacher's subject, its methodologies and the ability to present information in an accessible and interesting way for students.

2. Methodological literacy - the ability to choose the most appropriate methods and techniques of work to achieve educational goals, taking into account the characteristics of students.

3. Communication skills - the ability to establish effective interaction with students, colleagues and parents, using various communication strategies and technologies.

4. Psychological competence - knowledge of the basics of development and age psychology, the ability to quickly find an approach to each student, as well as the ability to create a favorable educational environment.

5. Innovativeness - readiness and ability to introduce new technologies and methods in the educational process, as well as constant self-renewal of their knowledge and skills.

6. Reflexion and self-analysis - the ability to self-assess one's activity, to reflect on the results of one's professional intervention for further professional and personal growth.

7. Motivational ability - the ability to motivate students to learning and self-improvement, to create conditions for the development of their interest in the subject.

Assessment of pedagogical skills taking into account these key components allows not only to objectively analyze and evaluate the teacher's work, but also to identify potential opportunities for his/her further development and improvement in the professional sphere. This requires a balanced approach that includes self-assessment, peer assessment, as well as the use of tools for external evaluation of teachers' professional performance.

Review of models of pedagogical excellence.

In recent years, many models of pedagogical excellence have emerged, aimed at assessing and improving the quality of educational activities. Let's consider some of them:

1. Danielson's model

One of the most famous and widely used models is Charlotte Danielson's framework model of pedagogical excellence. This model divides teaching activities into four domains: planning and preparation, classroom environment, teaching, and professional responsibilities. Each domain is further divided into components and elements, allowing for a thorough analysis of the teacher's activities[1].

2. International Teacher Standards (InTASC)

The International Association of State Colleges and Universities of Education Sciences (InTASC) standards describe the essential knowledge, skills, and abilities teachers need to organize

an effective educational process. These standards include an understanding of instructional content, a variety of teaching methods, and the ability to adapt to the needs of diverse learners.

3. The Cambridge Primary Review model.

This model focuses on creating an educational program based on the development and learning of the whole person. It emphasizes the importance of equal access to education, meeting individual educational needs, and preparing students for an active social life.

4. Professional standards for teachers in Australia

In Australia, standards have been developed that describe different levels of excellence, from novice teacher to expert. These standards include knowledge, practice and professional interaction as key aspects of teaching excellence.

Cross-cultural research on teaching excellence

In addition to specific models and standards, there are cross-cultural studies that investigate different aspects of teaching excellence in different cultural and educational contexts. Such studies expand the understanding of how teacher education is implemented in different countries and how best practices can be adapted in a global context.

Models of pedagogical excellence are multifaceted and depend on the educational systems in which they are applied. An important feature of contemporary pedagogy is the drive to globalize and adapt global best practices and standards, while remaining attentive to local specificities and needs.

Modern methods and mechanisms of evaluation.

Certification of teachers:

Attestation of teachers is one of the most important tools for assessing the professional skills and qualifications of teachers, which directly affects the quality of education. This process is designed to confirm a teacher's compliance with the given standards and requirements, as well as to stimulate his/her professional growth.

The main principles and procedures of teacher certification are:

1. Objectivity and transparency: Attestation should be conducted on the basis of clearly defined criteria and standards about which teachers should be informed in advance.
2. Regularity: Teacher appraisals are usually conducted at regular intervals to determine the dynamics of a teacher's professional development, for example, every 3-5 years.
3. Comprehensiveness: The certification process assesses various aspects of a teacher's performance, including methodological work, level of subject knowledge, ability to innovate, and ability to work with students and their parents.
4. Multistage: The certification procedure may include several stages, from self-assessment and documentation to direct observation of lessons and interviews.
5. Developmental: Assessment not only confirms qualifications, but also helps to identify needs for further training and professional development.

Classroom observation:

Classroom observation is a key element of modern teacher evaluation methods, providing direct insight into a teacher's working methods, interactions with students, and the effectiveness of instructional strategies used. This evaluation method includes several approaches and techniques[2].

Observation approaches and techniques:

1. Structured observation: Uses clearly defined criteria and assessment tools (e.g., checklists or charts) to systematically collect data on specific aspects of the instructional process.
2. Unstructured observation: Based on free forms of observation, where the observer focuses on the process in a more open and flexible manner that allows for the identification of non-obvious aspects of classroom interaction.
3. Peer observation: Includes observations conducted by fellow teachers, which facilitates the sharing of professional experiences and practices among educators.
4. Self-observation: When teachers analyze their own practice through videotaped lessons or self-reflection, which encourages professional development and self-improvement.

Feedback:

Feedback plays a critical role in evaluating and developing teacher excellence. It helps teachers understand the perceptions and effectiveness of their work from both students and colleagues, which is a valuable resource for professional growth and instructional improvement.

Methods of collecting and analyzing feedback:

1. Questionnaires and surveys: Structured questionnaires, posted both in paper format and online, allow for the collection of opinions from a large group of students or colleagues about various aspects of learning and teaching practice.

2. Interviews and one-to-one meetings: Provide an opportunity for more in-depth and open discussion, details and case studies of teaching practice.

3. Self-evaluation: Includes critical analysis of the teacher's own work based on criteria and standards. This may be accompanied by reflection in the form of a diary, blog or portfolio.

4. Peer Evaluation: Peers evaluate instructional materials, teaching methods, and teacher's interaction with the class. This type of feedback promotes sharing and professional learning within the team.

5. Lesson observation: Includes both formal and informal observation of lessons, followed by discussion and provision of constructive feedback.

Recommendations for improving evaluation mechanisms.

1. Establishment of uniform evaluation standards and criteria: Defining clear, objective and harmonized standards will make the evaluation process more transparent and fair.

2. Competence and training of evaluators: Training evaluators in the necessary skills and methodologies for quality evaluation will increase the reliability and validity of the evaluation process.

3. Integrating formative and summative assessment: Using a combination of the two approaches not only helps to measure attainment, but also supports motivation and continuous development of learners and teachers.

4. Introducing peer assessment among teachers: Mutual assessment and sharing of experiences among teachers promotes professional development and fosters mutual understanding and cooperation within the teaching community.

5. Base evaluation on data: Using objective data and analytics utilities to assess and analyze results helps identify areas for improvement and allows for tracking of progress.

6. Embracing technology and innovation: Integrating digital tools and platforms to collect and analyze data and provide continuous feedback can significantly improve the quality and effectiveness of assessment.

Examples of successful practices and innovative approaches.

- Singapore: Singapore's Teaching Excellence Model combines the development of teachers' professional competencies with continuous self-improvement and consideration of individual student needs. The model includes the active implementation of innovative methods and approaches, as well as strict adherence to national and international standards of educational quality.

- Finland: Finland focuses on the professional development of teachers in the context of their work. The system encourages self-study and peer support, and teaching excellence is assessed through self-reflection and peer evaluation.

- The Netherlands: The Netherlands has successfully implemented a video observation system for lesson evaluation. This approach allows for objective observations and provides teachers with concrete recommendations to improve teaching methods, classroom management and interaction with students.

Conclusion.

Teacher evaluation plays a critical role in improving the quality of education. A systematic and purposeful approach to evaluation provides an opportunity not only to identify strengths and areas for improvement in each teacher's practice, but also promotes the dissemination of effective

teaching and learning practices. This creates a basis for continuous professional development of teachers and improvement of the quality of education provided.

The introduction of evaluation mechanisms based on clear, objective criteria and standards should be accompanied by ongoing professional development and support for teachers. It is important that evaluation of teaching skills is not perceived as a threat or a means of control, but as a tool for development and improvement. Providing constructive feedback, providing opportunities for learning and self-improvement, and encouraging teacher creativity and innovative approaches to teaching are key.

In conclusion, improving mechanisms for assessing teaching excellence requires a balance between clear standards, supporting teachers' professional development and introducing innovative approaches to learning and assessment. Such an approach will not only improve the quality of education, but will also help students to develop the necessary knowledge, skills and competencies that will help them successfully adapt to an ever-changing world.

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Rezyume: *Ta'lim sifatiga e'tibor har qachongidan ham kuchayib borayotgan zamonaviy dunyoda pedagogik mahoratni baholashning roli tobora muhim ahamiyat kasb etmoqda. Ushbu maqola pedagogik faoliyatni baholashning turli mexanizmlarini o'rganishga va ularning o'quv jarayoni sifatini oshirishga ta'sirini aniqlashga qaratilgan.*

Pedagogik mahoratni baholash metodologiyasi o'qitish samaradorligini baholash uchun ishlatiladigan vositalar va yondashuvlarni har tomonlama tahlil qilishni o'z ichiga oladi. Bu pedagogik tajribaning malakasi va davomiyligi talablaridan tortib, o'quvchilar va ularning ota-onalarining qoniqishini o'lchashgacha. Maqola darslarni kuzatish va o'quvchilar natijalarini tahlil qilish kabi an'anaviy usullarni, shuningdek, axborot texnologiyalarini shakllantirish va ulardan foydalanishni o'z ichiga olgan innovatsion yondashuvlarni ko'rib chiqadi.

Резюме. *В современном мире, где акцент на качество образования усиливается как никогда ранее, роль оценки педагогического мастерства становится всё более значимой. Это исследование направлено на изучение различных механизмов оценки педагогической деятельности и определение их влияния на повышение качества образовательного процесса.*

Методология оценки педагогического мастерства включает в себя комплексный анализ инструментов и подходов, используемых для оценки эффективности преподавания. Она варьируется от требований к квалификации и продолжительности педагогического опыта до измерения удовлетворенности учащихся и их родителей. В исследовании рассмотрены как традиционные методы, такие как наблюдение за уроками и анализ результатов учащихся, так и инновационные подходы, включая формирующее оценивание и использование информационных технологий.

Kalit soʻzlar. Pedagogik mahoratni baholash, taʼlim sifati, oʻqituvchilarning malakasini oshirish, baholashda innovatsion yondashuvlar, shakllantiruvchi baholash, oʻqituvchilarning motivatsiyasi, oʻqitish samaradorligi, pedagogik faoliyat, taʼlimda axborot texnologiyalari, oʻqituvchilarning oʻzini oʻzi takomillashtirish, darslarni kuzatish, taʼlim darajasini oshirish.

Ключевые слова. Оценка педагогического мастерства, качество образования, профессиональное развитие учителей, инновационные подходы в оценке, формирующее оценивание, обратная связь в образовании, мотивация педагогов, эффективность преподавания, педагогическая деятельность, информационные технологии в образовании, самосовершенствование учителей, наблюдение за уроками, повышение уровня образования.

**IT IS PERFORMED IN AN AGRICULTURAL PLANE LABOR PRODUCTIVITY OF
AEROCHEMICAL WORKS EVALUATION**

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Summary: *The article considers the economic assessment of the efficiency of using agricultural aircraft and ground equipment for the rational planning of methods of mechanization of chemical works. Such estimates can serve as preliminary information for ordering new technologies and determining the amount of chemical work for ground vehicles and aircraft. As an object of research, methods for determining the economic efficiency indicators of the OVH-600 tractor sprayer and agricultural aircraft during cotton defoliation were considered.*

Analysis of the calculation results shows that the aviation method of mechanization of cotton defoliation works allows for an increase in labor productivity by 6.3 times compared with a ground machine.

Keywords: *economic efficiency of aviation chemical works, human labor costs, OVH-600 sprayer, agricultural aircraft, labor productivity, capital investments.*

A mutual economic assessment of the efficiency of using a special agricultural plane (QXS) and an erusti machine serves as a basis for rational planning of methods of mechanization of chemical works. Such evaluation data can serve as a baseline for ordering new equipment and determining the scope of chemical work for heavy machinery and aircraft.

The economic effect of the use of aviation in agriculture can be conditionally divided not only into direct (direct) or relative, but also general and comparative effects.

The direct economic effect of aérochemical works can be reflected in the following:

- saving human labor costs;
- reduction of production costs in field processing;
- additional harvest due to increased productivity;
- reduction of loss of agricultural products;
- save chemical preparations.

Relative (indirect) economic efficiency can consist of the partial release of labor and equipment and the effect of reducing processing time on the yield.

The economic effect of increased productivity due to the use of aviation can be considered only as a result of the use of aérochemical technologies. Economic efficiency can also be characterized by costs and natural indicators.

The main cost indicators that determine the economic efficiency of aérochemical works are as follows:

- capital funds allocated to aviation chemical works;
- timely implementation of productivity and processing in optimal agrotechnical terms;
- production cost;
- annual economic performance;
- repayment period of capital funds.

Examples of natural indicators are:

- consumption of fuel and lubricants;
- freed workers and others.

We consider the methods of determining the economic efficiency indicators of the OVX-600 tractor sprayer and the agricultural aircraft (QXS) in cotton defoliation. We consider that the technical efficiency of work on the compared options is the same, and therefore we do not take into account the results of work in the evaluation. We take the parameters of the OVX-600 sprayer as a basis for comparison [1].

Labor productivity. We will determine this according to the information given below.

Total treated area:

$$Q_{um} = 200000 \text{ ha} [2, 6];$$

Chemical liquid used for 1 (one) hectare of land:

$$q = 25 \text{ l/ha} [3];$$

Performance of the OVX-600 sprayer:

$$\text{in one hour } Q_{hours} = 2.5 \text{ ha/hour,}$$

$$\text{in a day } Q_{days} = 2, 5 \times 8 \text{ hours} = 20 \text{ ha /day,}$$

$$\text{in one season } Q_{season} = 20 \times 20 \text{ days} = 400 \text{ ha/season.}$$

the number of OVX-600s needed in one season ($N_{OVX-600}$):

$$N_{OVX-600} = Q_{um} : Q_{season} = 200000 : 400 = 500.$$

We calculate the indicators of the agricultural plane.

Productivity of QXS :

In an hour

$$Q_{hour} = \frac{60 \cdot m_{kim}}{q \cdot T_s} = \frac{60 \cdot 1000}{25 \cdot 32} = 75 \text{ ha/hour;}$$

this on the ground $T_s = 32$ minutes – one full flight time of the plane [4, 8] ;

$m_{kim} = 1000$ kg of chemical liquid to be loaded into the QXS bunker.

In one day:

$$Q_{day} = 75 \times 5.6 \text{ hours} = 420 \text{ ha/day;}$$

We assume that the daily working hours of the SRS are 5.6 hours per day. Daytime rest between morning and evening flights should not be less than 3 hours, including lunch [5].

In one season:

$$Q_{season} = 420 \times 20 \text{ days} = 8400 \text{ ha/season.}$$

(N_{QXS}) needed in one season :

$$N_{QXS} = Q_{um} : Q_{season} = 200000 : 8400 = 24 \text{ aircraft.}$$

The OVX-600 sprayer is serviced by one tractor driver and two workers [3, 7]. The aircraft is served by a crew consisting of 1 pilot and 10 workers (Table 1).

In the example under consideration, labor productivity is defined by the area that can be worked by one person on a working day. This is an indicator when using a tractor sprayer:

$$\Pi_{TR} = 20 : 3 = 6,7 \frac{\text{ha}}{\text{man} - \text{day}}$$

will be

When handling aircraft:

$$\Pi_{QXS} = 420 : 10 = 42 \frac{\text{ha}}{\text{man} - \text{day}}$$

will be

The percentage increase in labor productivity when using QXS is as follows:

$$\Pi_p = \frac{\Pi_{QXS} - \Pi_{TR}}{\Pi_{TR}} \cdot 100\% = \frac{42 - 6,7}{6,7} \cdot 100\% = 526,9\%.$$

The time spent on the planned volume of work is reduced by 20 times

$$t = \frac{8400 - 400}{400} = 20.$$

Therefore, in the considered conditions, the aviation method of mechanization of cotton defoliation works allows to increase labor productivity by 6.3 times. Accordingly, the need for tractor drivers and workers will decrease

$$\Xi_T = \frac{Q_{season}}{\Pi_{TR}} - \frac{Q_{season}}{\Pi_{QXS}} = \frac{8400}{6,7} - \frac{8400}{42} = 1054 \text{ man} - \text{day}$$

Table 1.

Specialty	Discharge	Number of people
When working with the OVX-600 tractor sprayer		
Tractor ch i	6	1
Disinfector	6	2
When working with QXS		
Pilot	-	1
Aviation technician and mechanic	-	2
Worker	4	3
What about the signal	3	2
Guard	1	1
Driver	-	1

Capital funds. We determine the capital cost (**K**) for one hectare of land in aerochemical processing in soums by the following formula:

$$K = \frac{C_m \cdot E_c}{\Pi_c},$$

where C_m - the price of equipment, *sm* ;

C_{MTZ-80} = 150 mln.sum, $C_{OVX-600}$ = 20 mln. sum (according to statistics) and of QXS the price of C_{QXS} = 1.2 mlrd. (for example, according to statistics, the market price of the Su-38L aircraft is 120 000 dollars).

$$E_c = \frac{W_{cq}}{W_{\Gamma q}}$$

E_c - the employment coefficient of this equipment in the given aerochemical work season; for QXS, E_c can be taken as 0.1.

W_{cq} - average employment in the season;

$W_{\Gamma q}$ - annual average employment.

When using the OVX-600 sprayer:

$$K_{TR} = \frac{150000000}{1700 \cdot 2,5} + \frac{20000000}{250 \cdot 2,5} = 67294,1 \text{sum/ha}$$

and when using QXS:

$$K_{QXS} = \frac{1200 \cdot 10^6 \cdot 5,6 \cdot 20}{1120 \cdot 8400} = 14285,7 \text{sum/ha.}$$

We include all the calculation results in the table (see Table 2) .

2 - table.

Index name	OVX-600, MTZ-80	QXS	Efficiency (growth, %)
Work volume (total area), <i>thousand hectares</i>	200	200	-
Productivity per hour, <i>hectares</i>	2.5	75	72.5
One day work productivity, <i>hectare</i>	20	420	400
Work productivity in one season, <i>hectare</i>	400	8400	8000
Time consumption of equipment to perform the work of the planned volume (<i>tractor-gun</i>) <i>samol</i> or <i>t-gun</i>	10000	476.2	-
Consumption of human resources to perform the planned work (<i>man-kun</i>)	30000	4762	25238
Labor productivity in one working day, (<i>hectares/people</i>)	6.7	42	6.3 times
Labor productivity in one season, (<i>man-kun</i>)	-	-	1054
Bir hectare qilinadigan capital harajatlar, (<i>with sum/ha</i>)	67300	14300	53000

The analysis of the calculation results shows that under the considered conditions, the aviation method of mechanization of cotton defoliation allows for an increase in labor productivity of 6.3 times. Accordingly, the demand for tractor drivers and workers will decrease. Due to the reduction of labor costs, the amount of human resources per season will be reduced by 1054 man-days, and capital investments will be reduced by 53 000 sums per hectare.

The considered examples are focused on the economic evaluation of technical options and technologies, the use of which is considered not to affect the yield. The change in technology can have a decisive impact on the economic efficiency of production.

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Rezyume: Maqolada kimyoviy ishlarni mexanizatsiyalash usullarini oqilona rejalashtirish uchun qishloq xo'jaligi samolyoti (QXS) va yerusti mashinasidan foydalanish samaradorligini o'zaro iqtisodiy baholash haqida so'z yuritilgan. Bunday baholash ma'lumotlari yangi texnikaga buyurtma berishga hamda yerusti mashinalari va samolyotlar uchun kimyoviy ish hajmini aniqlashga dastlabki ma'lumot bo'lib xizmat qilishi mumkin. Tadqiqot ob'ekti sifatida g'o'zani defoliatsiya qilishda OVX-600 traktor purkagichining va qishloq xo'jaligi samolyoti (QXS)ning iqtisodiy samaradorlik ko'rsatkichlarini aniqlash usullari ko'rib chiqilgan.

Hisoblash natijalarining tahlili shuni ko'rsatadiki, paxta defoliatsiyasi ishlarini mexanizatsiyalashning aviatsiya usuli yerusti mashinasiga nisbatan mehnat unumdorligini 6,3 baravar oshirish imkonini beradi.

Резюме: В статье рассматривается экономическая оценка эффективности использования сельскохозяйственного самолета (СХС) и наземной техники для рационального планирования методов механизации химических работ. Такие оценочные данные могут служить предварительной информацией для заказа новых технологий и определения объема химических работ для наземных машин и самолетов. В качестве объекта исследования были рассмотрены методы определения показателей экономической эффективности тракторного опрыскивателя ОВХ-600 и сельскохозяйственного самолёта (СХС) при дефолиации хлопчатника.

Анализ результатов расчета показывает, что авиационный способ механизации работ по дефолиации хлопка позволяет повысить производительность труда в 6,3 раза по сравнению с наземной машиной.

Kalit so'zlar: *Aviakimyoviy ishlarning iqtisodiy samarasi, inson mehnati xarajatlari, OVX-600 purkagichi, qishloq xo'jaligi samolyoti, mehnat unumdorligi, kapital mablag'lar.*

Ключевые слова: *экономическая эффективность авиакимических работ, затраты человеческого труда, опрыскиватель ОВХ-600, сельскохозяйственный самолет, производительность труда, капитальные вложения.*

SOCIO-PHILOSOPHICAL ANALYSIS OF THE DEVELOPMENT OF ALTRUISM IN YOUNG PEOPLE

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Summary: *This article embarks on a socio-philosophical exploration into the development of altruism among young people, dissecting the intricate web of societal structures, educational paradigms, and technological influences that impact this process. Altruism, defined as a selfless concern for the well-being of others, is posited as a crucial trait for addressing contemporary global challenges. Through a detailed analysis, the paper examines how societal norms often prioritize individual success over community well-being, the dual role of technology as both a barrier and a tool for fostering empathy, and the pivotal role of philosophical education in nurturing ethical reasoning and moral autonomy.*

Keywords: *Altruism, socio-philosophical analysis, youth development, societal norms, philosophical education, empathy, technology and altruism, critical thinking, ethical reasoning, global citizenship.*

Introduction.

Altruism, the selfless concern for the well-being of others without expectation of reward, is a concept that intersects with various philosophical traditions and debates. The philosophical roots of altruism can be traced back through history, revealing a rich tapestry of thought on the nature of selflessness, ethics, and the fundamental interconnectivity of human beings.

One of the earliest and most significant figures in the philosophy of altruism is Auguste Comte. In the 19th century, Comte coined the term "altruisme" as part of his positivist philosophy[1]. For Comte, altruism was a counterbalance to the self-centeredness innate in humans, a necessary ingredient for social harmony and progress. He envisioned a "Religion of Humanity" where altruism, underpinned by a scientific understanding of society, would guide human actions towards the greater good.

Utilitarian philosophers, notably Jeremy Bentham and John Stuart Mill, also contributed to the philosophical underpinnings of altruism. While not using the term "altruism" explicitly, their principle of seeking the "greatest happiness of the greatest number" embodies an altruistic ethos. Utilitarianism posits that actions are right if they promote happiness or pleasure and wrong if they produce unhappiness or pain, with a clear emphasis on the welfare of others as the determinant of moral rightness.

Immanuel Kant, with his deontological ethics, offers a contrast to the consequentialism of utilitarianism. For Kant, actions are morally right based on their adherence to duty, not the outcomes they produce. Altruistic actions, in Kant's view, are those performed out of a sense of duty to others, not for personal gain or even the consequences they might bring about. This perspective underscores the intrinsic value of altruism, divorced from its effects.

Emmanuel Levinas, a 20th-century philosopher, placed the ethical relationship to "the Other" at the heart of his philosophy. For Levinas, ethics begins with the recognition of the Other's vulnerability and the subsequent responsibility this recognition entails. Altruism, in this light, is an inherent demand of the face-to-face encounter with the Other, where concern for the Other's welfare becomes the primary ethical impulsion[2].

In contemporary philosophy, discussions around altruism intersect with debates on global ethics, environmentalism, and the ethics of care. Philosophers like Peter Singer argue for extending altruism not only to all humans regardless of geographical or cultural divides but also to non-human animals, advocating for a radical reevaluation of ethical priorities in light of global poverty, climate change, and animal welfare. Meanwhile, the ethics of care, a feminist philosophical perspective articulated by figures such as Carol Gilligan, underscores the importance of empathy, care, and

interpersonal relationships, offering a nuanced understanding of altruism centered on human connectedness and care for the vulnerable.

Societal Influences on Altruism: A Dialectical Perspective.

Altruism, defined as a selfless concern for the well-being of others without the expectation of reward, is often perceived as an inherent or personal trait. However, from a sociological standpoint, altruism is also deeply influenced by societal structures and cultural norms. Adopting a dialectical perspective can offer insightful analysis into how societal influences shape, and are shaped by, altruistic behaviors, revealing the dynamic interplay between individual agency and social forces.

Dialectical materialism, a concept born out of Marx's and Engels' philosophies, views societal progression as the result of conflicting forces. This conflict-driven model of social change can be applied to understanding altruism, proposing that altruistic behavior emerges from the interaction between societal structures (thesis) and individual initiatives or contradictions (antithesis), leading to a new social synthesis.

Societal norms and values act as a significant driver of altruistic behavior. In cultures that emphasize community welfare and interdependence, such as many collectivist societies, individuals may be more inclined towards altruistic acts as these behaviors are valued, rewarded, and seen as part of one's social responsibility. Education systems that incorporate community service into their curriculum also play a role in fostering altruistic values, suggesting that societal institutions can actively cultivate altruism. The economic structure of a society influences altruistic behaviors in complex ways. Within capitalist systems, the emphasis on competition and individualism might seem to contradict altruistic values. However, a dialectical analysis reveals that within these very structures, movements based on cooperative economics and social enterprises arise as antithetical forces, emphasizing community support and shared prosperity. This tension between individual gain and communal welfare reflects the dialectical dynamics within societal systems, contributing to evolving patterns of altruism.

The role of media and technology introduces another layer of societal influence on altruism. Social media platforms allow for rapid dissemination of information about those in need, mobilizing collective action on an unprecedented scale. However, this also raises questions about the authenticity of online altruistic behaviors-sometimes referred to as 'slacktivism'-and whether these acts lead to meaningful change or serve as another form of social currency. The dialectical tension between genuine altruism and its commodification in the digital age is a pertinent example of how societal influences and individual actions interact.

The emergence of social movements dedicated to environmental conservation, human rights, and social justice reflects a synthesis of individual altruistic impulses within a societal framework that often prioritizes self-interest. These movements, arising from the perceived contradictions between societal values and global challenges, illustrate how altruism can evolve and expand its scope, moving from individual acts of kindness to collective actions aimed at systemic change.

Empirical Insights into Youth Altruism.

Empirical insights into the altruistic behaviors of youth offer a rich understanding of how and why young people engage in selfless actions towards others. These insights, derived from psychological, sociological, and educational research, challenge and deepen our understanding of altruism's roots and manifestations in younger demographics. They underscore the multifaceted influences-including familial, societal, technological, and cognitive factors-that contribute to the development and expression of altruistic behavior.

Research has consistently shown that the family environment plays a critical role in the development of altruistic values and behaviors in children and adolescents. Parents who model altruistic behavior, encourage empathy, and engage their children in discussions about moral and ethical issues are more likely to raise altruistic children. For example, a study by Jessica P. Leibowitz et al., "Origins of Altruism," shows a positive correlation between parental modeling of

helpful behavior and children's readiness to help others, highlighting the importance of early socialization practices in nurturing altruism.

Schools and educational settings are pivotal in promoting altruistic attitudes and behaviors among young people. Programs that incorporate service learning, community service, and social-emotional learning (SEL) curricula have been found to enhance students' empathy, social responsibility, and desire to contribute positively to their communities. Empirical studies, such as those examined by the National Youth Leadership Council, demonstrate that service learning programs not only provide practical benefits to communities but also instill a long-lasting commitment to altruism in young participants.

The digital age has transformed the landscape of altruistic behavior, especially among youth. Social media platforms allow young people to connect with causes, mobilize resources, and engage in collective action on a global scale. However, research into "slacktivism" or "clicktivism" suggests that while online engagement can increase awareness of social issues, it does not always translate into concrete, offline altruistic actions. Despite this, the digital environment has undeniably created new avenues for altruism, as evidenced by the proliferation of crowdfunding campaigns for charitable causes initiated and supported by young individuals.

Empirical research from cognitive psychology offers insights into the developmental trajectory of altruism in youth. Studies on prosocial behavior indicate that even young children are capable of acts of kindness and an understanding of fairness, with these tendencies evolving and becoming more sophisticated with age. Psychological experiments, such as those involving resource allocation games, have shown that factors like empathy, moral reasoning, and perspective-taking ability play a significant role in guiding altruistic decisions among children and adolescents.

The broader societal and cultural context in which young people grow up also significantly impacts their altruistic tendencies. Cultures that emphasize collectivism and community welfare tend to foster higher levels of altruism among their youth, as do societies undergoing challenges that necessitate mutual aid and cooperation. Empirical evidence shows that altruistic behaviors are often a response to perceived social needs and injustices, with young people increasingly engaging in activism and volunteering as a means to effect change.

The Role of Philosophical Education.

The development of altruism in young people cannot be fully understood without considering the intertwining influences of societal structures and philosophical education. A socio-philosophical analysis reveals how philosophical education—broadly defined as education that encourages critical thinking, ethical reasoning, and reflection on life's big questions—can play a pivotal role in fostering altruism among the youth. This form of education does not simply transmit knowledge; it shapes how individuals perceive and interact with the world and others.

Society profoundly influences the values, behaviors, and development of its youth. From the family unit to educational institutions, media, and peer groups, various societal structures contribute to shaping young people's understanding of self and others. For example, a culture that highly values individual achievement over community well-being may inadvertently diminish the importance of altruistic behavior. Conversely, societal structures that emphasize communal support, empathy, and shared responsibilities provide a fertile ground for the nurturing of altruistic tendencies.

In this landscape, philosophical education emerges as a critical tool for cultivating an ethical and altruistic mindset, challenging prevailing societal norms that may otherwise prioritize self-interest.

The Role of Philosophical Education in Fostering Altruism

1. Critical Thinking and Ethical Reasoning: Philosophical education equips young people with tools for critical thinking and ethical reasoning, allowing them to question and understand the complex moral landscapes of their societies. It encourages them to think deeply about concepts of right and wrong, justice and injustice, and the impact of their actions on others.

This reflective capacity is foundational to altruistic behavior, as it fosters a thoughtful consideration of the welfare of others.

2. Empathy and Understanding: By engaging with diverse philosophical texts, thoughts, and discussions, students are exposed to various perspectives and life experiences. This exposure can cultivate empathy, a critical component of altruism. Understanding the struggles, feelings, and viewpoints of others can motivate young individuals to act in ways that benefit those beyond their immediate circles.

3. Community and Interconnection: Philosophical education often highlights themes of community, interdependence, and the interconnectedness of all life. These themes challenge the dominant cultural narratives of individualism and competition, proposing instead a worldview that recognizes the welfare of individuals as inextricably linked to the welfare of others. Such a perspective naturally lends itself to the development of altruistic values.

4. Moral Autonomy: Philosophical education promotes the development of moral autonomy—the capacity to make ethical decisions independently of societal pressures or immediate self-interest. Young people who learn to think for themselves, guided by ethical principles, are more likely to act altruistically, even when such actions run counter to prevailing social norms or personal gain.

5. Global and Cultural Awareness: Finally, philosophical education fosters a sense of global citizenship and cultural awareness. It encourages young people to consider global challenges—such as poverty, inequality, and environmental degradation—from an ethical standpoint, inspiring a commitment to contribute positively to the world beyond their local communities.

Challenges and Prospects.

The socio-philosophical examination of altruism's development in young people presents a nuanced vista of potentials and hurdles. This discourse navigates the intricacies of fostering altruistic values within the framework of contemporary societal dynamics, educational paradigms, and philosophical inquiry. Investigating the challenges and prospects of nurturing a new generation predisposed towards altruism offers valuable insights into shaping future societies rooted in empathy and selfless concern for others.

Challenges in Fostering Altruism

1. Dominant Societal Norms: Modern societies often celebrate individual achievement, material success, and competition, sometimes at the expense of communal welfare and collaborative success. These societal norms can clash with altruistic values, making it challenging to instill a broad acceptance and practice of altruism among young individuals.

2. The Influence of Technology and Media: While technology and media hold the potential to promote altruistic behavior by raising awareness of global issues, they also pose significant challenges. The prevalence of social media and digital platforms has led to concerns regarding empathic decline, as online interactions can lack the depth and emotional resonance of face-to-face engagements. The phenomenon of "slacktivism" illustrates this challenge, where online support for causes does not always translate into tangible actions.

3. Educational Systems: Traditional educational models that prioritize rote learning and academic performance over critical thinking and ethical reasoning may not provide adequate space for philosophical education that fosters altruism. Further, budget constraints and curricular demands can limit the implementation of comprehensive programs geared towards cultivating altruistic values.

4. Economic Inequalities: Socio-economic disparities can hinder the development of altruism. In contexts where young people are primarily focused on survival or succeeding within a competitive economic system, the luxury of engaging in altruistic activities may be perceived as less accessible.

Prospects for Nurturing Altruism.

Despite these challenges, there are significant prospects for nurturing altruism among young individuals, primarily through intentional socio-philosophical endeavors.

1. **Integrative Educational Approaches:** There is an increasing recognition of the importance of holistic education that integrates philosophical inquiry, ethical reasoning, and community engagement into the curriculum. Educational reforms that promote service-learning projects, empathy training, and global citizenship can play a crucial role in fostering altruism.

2. **Leveraging Technology for Social Good:** Technology and digital media, when used ethically, can serve as powerful tools for promoting altruism. Online platforms can facilitate global connections, creating spaces for young people to engage with and contribute to social causes, share stories that foster empathy, and mobilize resources for altruistic endeavors.

3. **Philosophical Spaces and Youth Engagement:** Creating spaces—both within educational settings and in the broader community—for philosophical dialogue and reflection can stimulate critical thinking and ethical exploration. Youth clubs, discussion forums, and workshops focused on ethical inquiry and social responsibility can inspire young people to embrace altruism actively.

4. **Empowering Youth as Agents of Change:** Empowering young individuals to see themselves as capable of effecting positive change in their communities and beyond is critical. This involves not only providing the philosophical and ethical grounding but also the practical skills and opportunities to engage in altruistic activities, thereby reinforcing the idea that their actions can have a meaningful impact.

5. **Cross-Cultural and Global Initiatives:** Promoting cross-cultural understanding and global awareness through exchange programs, collaborative international projects, and inclusive dialogues can inspire a sense of shared humanity and collective responsibility, foundational to altruistic actions.

In the journey toward understanding the development of altruism in young people through a socio-philosophical lens, we've navigated through various terrains—pondering the roles of societal norms, educational structures, technology, and philosophical education. This exploration has revealed both the intricate challenges and the profound prospects inherent in nurturing altruistic values and behaviors among the youth. The conclusion of this analysis aims to synthesize these insights, offering a future-oriented perspective on the cultivation of altruism in a rapidly evolving societal context.

Altruism, viewed not merely as random acts of kindness but as a sustained ethical orientation towards the welfare of others, is essential for addressing the myriad social, environmental, and global challenges facing humanity. Our investigation underscores the notion that altruism's roots are deeply entwined with the fabric of societal norms, the influence of technology, the structures of education, and the critical role of philosophical inquiry. Each of these factors plays a pivotal role in shaping young people's values and actions, for better or worse.

The Path Forward: Fostering Altruism in an Evolving Society.

1. **Redefining Societal Norms:** To cultivate altruism, there is a need for a societal shift that values collective well-being and communal success alongside individual achievement. This entails a broader cultural recognition of altruism as integral to personal success and societal health.

2. **Leveraging Technology Ethically:** While acknowledging the challenges posed by digital media, societies must also harness technology's potential for promoting altruism. Organized online campaigns, platforms for social activism, and digital tools for community mobilization can play crucial roles in encouraging altruistic behavior among the youth.

3. **Revolutionizing Education:** Educational systems require a paradigm shift towards integrating philosophical education, ethics, and critical thinking into the curriculum. Education should not only impart knowledge but also nurture empathy, ethical reasoning, and a commitment to social justice.

4. **Promoting Philosophical Inquiry:** Establishing platforms for philosophical dialogue and critical reflection can empower young people to question, understand, and ethically engage with the world. Philosophy, in its broadest sense, provides the tools for a deep understanding of

altruism's importance and challenges young minds to envision ways to embody these values in their lives.

5. Empowering Youth as Change Agents: Finally, empowering young individuals to see themselves as capable of driving positive change is crucial. This involves providing both the philosophical groundwork for altruism and practical opportunities for engaging in selfless actions. Highlighting examples of youth-led initiatives that have made significant impacts can inspire others to take action.

Conclusion.

The development of altruism in young people is a multifaceted challenge that calls for a concerted effort from all sectors of society. Through a socio-philosophical approach, it becomes clear that fostering altruism is not merely an educational endeavor but a societal imperative that requires rethinking prevailing norms, judiciously employing technology, revolutionizing educational paradigms, and encouraging philosophical engagement. The prospect of nurturing a generation inclined towards altruism holds the promise of a more compassionate, equitable, and sustainable world. As such, the cultivation of altruistic values and behaviors among the youth stands as a beacon of hope and a path forward in confronting the challenges of our time, ensuring that the legacy of altruism continues to thrive and expand in the hearts and actions of future generations.

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Rezyume: Ushbu maqolada yoshlarda altruizmining rivojlanishini ijtimoiy-falsafiy o'rganish, ijtimoiy tuzilmalar, ta'lim paradigmalari va ushbu jarayonga ta'sir etuvchi texnologik ta'sirlarning murakkab tarmog'i tahlil qilinadi. Boshqalarning farovonligi uchun fidokorona g'amxo'rlik sifatida ta'riflangan altruizm zamonaviy global muammolarni hal qilishning eng muhim xususiyati hisoblanadi. Batafsil tahlilga asoslanib, maqolada ijtimoiy me'yorlar ko'pincha jamiyat farovonligidan ko'ra individual muvaffaqiyatga qanday e'tibor qaratishi, empatiyani rivojlantirish uchun to'siq va vosita sifatida texnologiyaning ikki tomonlama roli va axloqiy fikrlash va axloqiy avtonomiyani tarbiyalashda falsafiy ta'limning asosiy roli o'rganiladi.

Резюме: В данной статье предпринимается социально-философское исследование развития альтруизма у молодежи, анализируется сложная паутина социальных структур, образовательных парадигм и технологических влияний, влияющих на этот процесс. Альтруизм, определяемый как бескорыстная забота о благополучии других, считается важнейшей чертой для решения современных глобальных проблем. На основе детального анализа в статье исследуется, как социальные нормы часто ставят во главу угла индивидуальный успех, а не благополучие сообщества, двойная роль технологий как барьера и инструмента для развития эмпатии, а также ключевая роль философского образования в воспитании этического мышления и моральной автономии.

Kalit so'zlar: altruizm, ijtimoiy-falsafiy tahlil, yoshlarning rivojlanishi, ijtimoiy normalar, falsafiy ta'lim, empatiya, texnologiya va altruizm, tanqidiy fikrlash, axloqiy fikrlash, global fuqarolik.

Ключевые слова: альтруизм, социально-философский анализ, развитие молодежи, социальные нормы, философское образование, эмпатия, технология и альтруизм, критическое мышление, этическое мышление, глобальное гражданство.

INNOVATIVE METHODS OF TEACHING ENGLISH IN THE DIGITAL AGE

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Summary: *In an era of rapid technological development, classical approaches to teaching English are undergoing significant changes. The article "Innovative methods of teaching English in the Digital Age" provides an in-depth analysis of current trends in the field of English teaching and demonstrates how digital tools and innovative methods can be used to improve the learning process. The authors discuss the role of mobile applications, game mechanics, the use of video content, as well as the potential of virtual and augmented reality in learning. In addition, the article offers tips and recommendations to teachers on how to effectively integrate these innovations into the curriculum to increase student motivation and engagement.*

Keywords: *Innovative teaching methods, digital age, English language teaching, mobile applications for learning languages, gamification in education, virtual reality (VR) in learning, augmented reality (AR) in education, interactive learning materials, video content in learning, digital tools in teaching, feedback and evaluation in the digital age, self-study language teaching, language exchange and practice, technology in education*

Introduction.

In today's increasingly globalized and interconnected world, English language proficiency is of immense importance. English not only remains the leading medium of international communication in fields such as science, education, information technology and business, but it has also become a critical tool for personal and professional growth. In this information age, when most of the world's knowledge is available in English, proficiency in this language offers unlimited opportunities for learning, career and cultural exchange.

With the development of digital technology and the increasing availability of the Internet, English language teaching methods are also undergoing significant changes. Traditional approaches are gradually being supplemented or even replaced by innovative methods, making language learning more flexible, interactive and accessible. Digital tools and resources such as online courses, mobile applications, virtual classrooms and online language partner exchanges are opening up new horizons for education and allowing people from all over the world to learn anytime, anywhere.

These changes in teaching methods emphasize the importance of adapting to the new realities of the digital age and the need for deeper exploration of the possibilities that these innovative approaches can offer. Learning and applying modern English language teaching methods in the digital age becomes key to developing global competence and successful integration into international society.

The digitalization of education has led to significant changes in the way English is taught and learned. These changes reflect a profound transformation in the approaches to learning, the accessibility of learning materials and the interactivity of the process. Let us look at the key aspects of these changes brought about by the development of digital technologies.

1. Accessibility of learning

Digitalization has greatly increased access to language learning. Previously, learning materials were limited to school textbooks and libraries, but now the Internet provides almost limitless access to learning resources. Anyone with an internet connection can now access audio, video, textual materials and interactive courses.

2. Interactive technologies

Digital technology has brought a high degree of interactivity to the learning process. From mobile apps to virtual classrooms, students can immerse themselves in the language environment, practice the language in real time and receive instant feedback. Tools such as English language

learning games, virtual and augmented reality create an engaging and effective learning environment.

3. Approaches to learning

Digitalization is also contributing to a rethinking of traditional teaching approaches. New methodologies are being introduced, such as the reverse classroom (where theoretical material is studied at home and practical problems are solved in class) or gamification (using game elements to motivate students). This not only makes the learning process more interesting and dynamic, but also improves retention of information.

4. Personal customization of learning

Digital tools make it possible to customize learning programs to the specific needs and preferences of students, taking into account their knowledge, interests, and pace of learning. Artificial intelligence algorithms can customize learning material, providing assignments and materials that are most appropriate for the student's current level.

5. Globalization and cross-cultural communication

The Internet removes boundaries between countries and cultures, providing a platform for global exchange and interaction between students around the world. Online platforms and social media allow students to practice English by interacting with native speakers and students from other countries. This not only helps to improve language skills but also to develop intercultural competence.

The digitalization of education has created new opportunities and challenges for teaching and learning English. Innovative methods have not only made the educational process more efficient and accessible, but have also radically changed approaches to learning, making it more personalized, interactive and connected to real life.

Digital technologies have had a profound impact on language teaching and learning, especially in the context of English. Their impact extends from methods to the accessibility of materials, providing teachers and students with new opportunities for learning and interaction. Understanding how these technologies are transforming language education helps to discover the potential and limits of digital learning tools.

Personalizing learning. One of the key benefits of digital technologies is the ability to tailor curricula and materials to the individual needs of each learner. Artificial intelligence (AI) algorithms can analyze a student's performance in real time and tailor instruction accordingly, focusing on weaknesses and suggesting materials to deepen topics already mastered. This creates a more effective and person-centered learning experience.

Interactivity and engagement. Digital technologies significantly increase the degree of interactivity and involvement of students in the language learning process. Interactive exercises, video games based on language learning, online visas and other digital tools make the learning process more exciting and less monotonous, which is especially important for maintaining student motivation. **Accessibility and global engagement.** The Internet has removed geographical barriers in education, allowing students to communicate vividly with native speakers and participate in international language exchanges without having to leave their home. Online platforms and applications for learning English provide access to rich language resources and promote intercultural discussion and understanding.

Innovations in learning and assessment. Digitalization introduces new tools and approaches to both learning and knowledge assessment. Speech analysis software and computer assessment platforms help students improve pronunciation and grammar by providing instant feedback. AI and machine learning are also beginning to be used to assess the ability to write and perceive spoken language, allowing for a more accurate and objective assessment of the level of language proficiency.

Challenges and obstacles. Despite the significant advantages, the introduction of digital technologies also raises a number of questions and problems. Among them are the need to train teachers to use new technologies, unequal access to digital resources among students from different

socio-economic backgrounds, and concerns about the quality of education with too much dependence on technology.

Digital technologies are radically changing the landscape of English language education, opening up new perspectives for deeper immersion in the language environment, personalization of learning and intercultural communication. However, further research and development of both technologies and methodological approaches are needed to fully realize their potential.

In the digital age, learning English involves much more than traditional teaching methods. Modern technologies provide extensive resources and tools that significantly expand the possibilities for effective language acquisition. Let's take a look at some of the most innovative and popular digital tools and resources that are changing approaches to learning English.

Online courses.

1. Coursera and EdX offer a variety of English language courses, covering grammar, vocabulary, Business English and IELTS or TOEFL test preparation. These platforms collaborate with universities from all over the world to provide quality educational programs.

2. Duolingo is a popular English language learning app that uses game elements to increase student motivation and engagement. With the help of short lessons and interactive tasks, users can learn the language in an easy and fun way.

Learning Applications.

1. Babbel is another application focused on interactive learning of English, including conversational practice and cultural aspects related to the language.

2. Rosetta Stone is an application that immerses the user in English through intuitive language exercises and without translation into their native language, focusing on full immersion.

Platforms for virtual language exchange.

1. Tandem and HelloTalk allow users to practice English by connecting them with native speakers through text messages, voice and video calls. These platforms simplify language exchange by making it accessible and convenient.

2. Italki offers the user the opportunity to interact with professional teachers and native speakers for individual lessons via video chat, which provides a personalized and deep immersion in the language.

Video platforms and podcasts.

1. TED Talks and YouTube offer an extensive collection of educational videos in English on various topics, from science to art. Watching and listening to real-life examples of language use in various contexts is a great way to improve listening comprehension and expand vocabulary.

2. Podcast Addict or Apple Podcasts provide access to thousands of podcasts in English, covering a wide range of interests and topics that can help improve language understanding and active use.

Online resources for self-study.

1. BBC Learning English and the British Council offer free educational materials, including videos, audio recordings, quizzes and grammar tips, which are ideal for self-study of the language.

2. Quizlet is a flashcard creation platform that helps you memorize new vocabulary and grammatical rules through various learning modes and games.

These tools and resources not only simplify access to educational materials, but also make the language learning process more interactive, personalized and fun. The digital age opens up new horizons in English language teaching, making it accessible to everyone anywhere in the world.

Innovative methods of teaching English, such as in-game learning, mobile applications, educational videos, as well as the use of virtual (VR) and augmented reality (AR), are revolutionizing the language learning process, making it more interesting, engaging and effective.

Learning through games. Game learning or gamification attracts the attention of students, increasing their motivation and retention of information. Games such as 'Duolingo' or 'Babbel' offer educational tasks in the form of entertainment, which helps to learn new vocabulary, grammar and

phrases in context. Game elements such as scoring, achievements, levels, and virtual rewards encourage continued learning[3].

Mobile applications. Mobile applications for learning English allow students to study anywhere and anytime. 'Memrise', 'Rosetta Stone', and 'HelloTalk' provide various methods for learning English, including phrase repetition, pronunciation practice, and interaction with native speakers. In addition, many applications use speech recognition technologies to improve pronunciation.

Educational videos. Educational videos on platforms such as YouTube or TED Talks offer access to thousands of hours of content in English, covering a wide range of topics from academic to entertainment. Videos allow you to improve listening and listening comprehension skills, as well as explore cultural aspects and the actual use of language. Virtual (VR) and Augmented Reality (AR). VR and AR technologies represent the next level of immersion in the language environment. VR apps like 'Mondly VR' allow students to interact in the virtual world by practicing language in realistic scenarios, such as when ordering food at a restaurant or when chatting at a train station. AR applications such as 'AR Flashcards' or 'Google Translate' use a smartphone camera to recognize objects in the real world and present their names and descriptions in English, enriching the surrounding reality with language content[6].

These technologies open up new horizons for learning English, making learning more interactive, exciting and appropriate to the individual preferences and needs of students. Innovative teaching methods contribute to a deeper understanding of language and culture, speeding up the learning process and increasing learning satisfaction.

Conclusions and recommendations.

In the digital age, traditional methods of teaching English are being transformed, making the learning process more interactive, flexible and accessible. Teachers seeking to enrich their courses and improve student engagement need to master innovative digital tools. In this article, we will look at tips and recommendations for the implementation of such tools in the educational process.

Explore and Integrate Mobile Applications.

Mobile apps such as Duolingo, Babbel, and Memrise can complement classical learning by offering students interactive exercises for independent practice outside the classroom. Teachers can recommend specific applications for the needs of the curriculum or even introduce small tasks based on these applications.

Use Video Content for Immersion.

Platforms such as YouTube and TED Talks provide a rich set of videos in English on any topic. Teachers can use these resources to develop review assignments, discussions, and critical analysis of the material. This will not only strengthen students' language skills, but also allow them to learn more about culture and the actual use of the language.

Apply The Game Mechanics.

Gamification can make the learning process more fun. Create your own "gaming" course using platforms like Kahoot! or Quizlet, where students can compete with each other or work as a team to achieve learning goals, which increases their engagement and motivation.

Integrate VR and AR for Immersive experiences.

Virtual and augmented reality technologies can offer students unique opportunities to immerse themselves in a language environment. The use of VR applications such as Mondly VR allows students to practice spoken English in virtual scenarios. Teachers can use AR applications to enrich traditional learning materials, making them more interactive.

Create Interactive Learning Materials.

With tools like Google Classroom, Padlet, or Microsoft OneNote, teachers can create interactive learning materials that students can explore at their own pace. This facilitates the process of distance learning and makes materials more accessible to students.

Provide Real Language Practice. Language exchange platforms such as Tandem or HelloTalk allow students to practice English with native speakers through text, voice or video

messages. Teachers can encourage such practice outside the classroom or integrate it as part of the course.

Feedback and Evaluation.

Digital tools are also redefining approaches to evaluation and feedback. Use tools like Google Docs or Turnitin to provide constructive feedback in real time.

The introduction of these innovative methods and tools can significantly enrich the English language learning process and make it more relevant to the digital era in which our students live. It is important for teachers to remain open to new approaches and technologies in order to effectively support and inspire students on their way to language proficiency.

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Rezyume: *Texnologiyalarning jadal rivojlanishi davrida ingliz tilini o'qitishning klassik yondashuvlari sezilarli o'zgarishlarga uchramoqda. Ushbu maqola ingliz tilini o'qitishning hozirgi tendentsiyalarini chuqur tahlil qiladi va o'quv jarayonini yaxshilash uchun raqamli vositalar va innovatsion usullardan qanday foydalanish mumkinligini ko'rsatadi. Mualliflar mobil ilovalar, o'yin mexanikasi, video kontentdan foydalanish va o'rganishda virtual va kengaytirilgan haqiqat imkoniyatlarini muhokama qiladilar. Bundan tashqari, maqolada o'qituvchilarning motivatsiyasi va faolligini oshirish uchun ushbu yangiliklarni o'quv dasturiga qanday qilib samarali kiritish bo'yicha maslahatlar va tavsiyalar berilgan.*

Резюме: *В эпоху стремительного развития технологий классические подходы к обучению английскому языку претерпевают значительные изменения. Статья "Инновационные методы обучения английскому языку в цифровую эпоху" представляет собой глубокий анализ текущих трендов в области преподавания английского языка и демонстрирует, как цифровые инструменты и инновационные методы можно использовать для улучшения учебного процесса. Авторы обсуждают роль мобильных приложений, игровой механики, использование видео контента, а также потенциал виртуальной и дополненной реальности в обучении. Помимо этого, статья предлагает советы и рекомендации преподавателям о том, как эффективно интегрировать эти инновации в учебную программу для повышения мотивации и вовлеченности студентов.*

Kalit so'zlar: *Innovatsion o'qitish usullari, raqamli asr, ingliz tilini o'qitish, mobil tillarni o'rganish dasturlari, ta'limda gamifikatsiya, o'qitishda virtual haqiqat (VR), ta'limda kengaytirilgan haqiqat (AR), interaktiv o'quv materiallari, o'qitishda video tarkib, o'qitishda raqamli vositalar, raqamli asrda fikr-mulohazalar va baholash, o'z-o'zini boshqarish tilni o'qitish, til almashinuvi va amaliyoti, ta'limdagi texnologiyalar*

Ключевые слова: *Инновационные методы обучения, цифровая эпоха, обучение английскому языку, мобильные приложения для изучения языков, геймификация в образовании, виртуальная реальность (VR) в обучении, дополненная реальность (AR) в образовании, интерактивные учебные материалы, видео контент в обучении, цифровые инструменты в преподавании, обратная связь и оценка в цифровую эпоху, самостоятельное обучение языку, языковой обмен и практика, технологии в образовании*

THE ROLE OF SPIRITUAL AND MORAL IMPERATIVES IN THE DEVELOPMENT OF YOUTH CONVERSION CULTURE

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Summary: *This article explores the pivotal role of spiritual and moral imperatives in shaping youth conversion culture, highlighting its importance in personal development, community engagement, ethical leadership, and global citizenship. It emphasizes the integration of spiritual and moral education within youth development programs as essential for fostering a holistic growth mindset, nurturing communities based on compassion and respect, and cultivating future leaders committed to ethical principles and social innovation. By drawing on practical approaches such as curriculum development, mentorship programs, and interfaith dialogues, the article provides a comprehensive overview of how these imperatives contribute to the development of a transformative youth culture.*

Keywords: *Youth conversion culture, spiritual imperatives, moral imperatives, youth development programs, holistic growth, ethical leadership, community engagement, global citizenship, social innovation, interfaith dialogue*

Introduction.

The concept of youth conversion culture, particularly within the realms of spirituality and morality, centers on the transformative journey that young individuals undergo as they adopt and internalize specific spiritual beliefs or moral principles. This transformation often extends beyond personal change, influencing broader social, cultural, or environmental realms. The role of spiritual and moral imperatives in this context is multifaceted, serving to guide, motivate, and shape the behaviors and attitudes of young people in a way that reflects their newly embraced convictions. As these young individuals navigate their formative years, the influence of spiritual beliefs and moral principles can be profound, driving not only personal development but also fostering a collective culture of change among youth populations. This introductory overview aims to explore how spiritual and moral imperatives contribute to the development of youth conversion culture, highlighting their impact on individual identities, community engagement, and broader societal transformation.

Spiritual Foundations.

In the development of youth conversion culture, spiritual foundations play a pivotal role, laying the groundwork for transformative experiences and actions among young people. These foundations offer a rich tapestry of beliefs, practices, and narratives that shape individuals' worldviews, influencing their decisions, behaviors, and ultimately, their contributions to the culture of their communities and society at large. This exploration delves into how such spiritual underpinnings contribute to the molding of youth conversion culture in significant ways.

Offering a Sense of Purpose. Many spiritual traditions emphasize the pursuit of a higher purpose or calling beyond mere self-interest. For young people, this can be particularly appealing as they search for meaning and direction in their lives. Spiritual narratives often provide a framework within which individuals can understand their experiences and struggles, offering a sense of belonging to something greater than themselves. [1]. This broader purpose can inspire young individuals to transcend personal gains, driving them toward altruistic actions and a commitment to societal well-being.

Fostering Introspection and Personal Transformation. Spiritual practices such as meditation, prayer, and contemplation serve as tools for introspection, allowing young people to engage in self-examination and reflection. Through these practices, individuals can confront their inner selves, identify areas for growth, and cultivate virtues such as patience, humility, and compassion. This

internal transformation is a critical aspect of conversion culture, as it underpins the outward actions and lifestyle changes that mark a young person's commitment to their spiritual beliefs.

Encouraging Community and Solidarity. Spiritual teachings often emphasize the importance of community, compassion, and empathy towards others. This aspect of spirituality encourages young individuals not only to seek personal enlightenment but also to engage in collective efforts for the common good. The sense of solidarity fostered by spiritual communities can be a powerful catalyst for social action, as young people join forces to address societal issues, support one another, and promote change. This communal aspect of spirituality contributes to the development of a conversion culture that is inclusive and driven by shared values.

Inspiring Ethical Conduct and Social Justice. Many spiritual traditions highlight the importance of ethical living and social justice. Young people, guided by their spiritual convictions, may become advocates for fairness, equality, and the protection of the vulnerable. This commitment often leads to active participation in social justice initiatives, charitable works, and environmental stewardship, reflecting a conversion culture that is not only inward-looking but also outwardly focused on creating a more compassionate and equitable world.

Providing a Framework for Resilience and Hope. Spiritual foundations offer narratives of hope, redemption, and resilience in the face of adversity. For young individuals navigating the challenges of growing up, these stories can be a source of comfort and strength. [2]. The belief in a transcendent power or a larger cosmic narrative can help young people cope with personal and collective crises, fostering a sense of optimism and the conviction that change is possible. This resilience is integral to the youth conversion culture, as it motivates ongoing engagement and perseverance in the pursuit of personal and societal transformation.

Moral Imperatives.

The role of moral imperatives in shaping the development of youth conversion culture is profound and paramount. Unlike the spiritual foundations that often stem from specific religious or spiritual beliefs, moral imperatives are based on principles of right and wrong, justice, and the welfare of others that transcend particular faith traditions. These imperatives foster a culture of ethical behavior, social responsibility, and advocacy among young people, guiding them towards actions that reflect a commitment to making the world a fairer and more humane place. Here, we explore how moral imperatives contribute to the development of youth conversion culture.

Cultivating Ethical Values. Moral imperatives play a critical role in the development of young individuals' ethical compass. By instilling values such as integrity, honesty, empathy, and respect, these principles guide youths in making decisions that reflect a commitment to doing what is right, not just what is beneficial for themselves. In a youth conversion culture, these ethical values are not merely personal guidelines but serve as the foundation for collective action and mutual accountability, encouraging young people to hold each other to high moral standards.

Promoting Social Responsibility. At the heart of moral imperatives is the notion of social responsibility-the idea that individuals have an obligation to act for the benefit of society at large. For young people, this means recognizing the impact of their actions on others and taking proactive steps to contribute positively to their communities and the world. Whether through volunteer work, activism, or simply practicing kindness in daily interactions, the emphasis on social responsibility in youth conversion culture encourages a shift from self-centeredness to a more inclusive consideration of the well-being of others. [3].

Championing Social Justice and Equality. Moral imperatives often drive young individuals to engage with issues of social justice and equality, urging them to question and challenge systems of oppression, discrimination, and injustice. Youth conversion culture, in this regard, becomes a platform for advocacy and change, as young people motivated by moral principles work towards creating a more equitable society. From participating in peaceful protests to engaging in political discourse, the actions taken are varied but unified by a common goal: to address societal wrongs and promote fairness and justice for all.

Encouraging Environmental Stewardship. A sense of moral responsibility towards the planet

is another critical aspect of youth conversion culture. As awareness of environmental degradation and climate change grows, moral imperatives call on young people to adopt sustainable lifestyles and advocate for policies that protect the environment. This aspect of conversion culture reflects an understanding that ethical living extends beyond human relationships to include how individuals interact with the natural world.

Inspiring Leadership and Community Engagement. Moral imperatives not only shape individual behavior but also inspire leadership among young people. By championing ethical values, social responsibility, and justice, young leaders emerge within their communities, guiding their peers through example and advocacy. This leadership is instrumental in mobilizing collective efforts for change, fostering a sense of solidarity, and encouraging active participation in community and societal development.

The intersection of spirituality and morality plays a crucial role in the development of youth conversion culture, embodying a powerful blend of internal convictions and external actions. This dynamic interplay provides a comprehensive framework that influences young individuals' identities, worldviews, and behaviors. Here, we explore how the convergence of spiritual beliefs and moral imperatives enriches youth conversion culture, fostering a holistic development that impacts both personal transformation and societal change.

Enhancing Personal Growth and Self-Awareness. Spirituality and morality, when intertwined, offer a rich foundation for personal growth and self-awareness among young people. Spirituality fosters a deep connection with the self, the divine, or a higher purpose, encouraging introspection and self-discovery. Morality, on the other hand, provides a clearly defined compass of right and wrong, guiding behavior and decision-making. Together, these aspects facilitate a reflective journey where individuals explore their beliefs, values, and the kind of life they wish to lead. This introspective exploration is fundamental to youth conversion culture, as it underlies the transformative process young individuals undergo.

Strengthening Community Bonds and Social Engagement. The interaction between spirituality and morality is also crucial in building strong community bonds and driving social engagement. Spirituality often emphasizes the interconnectedness of all life and the importance of compassion and empathy, aligning closely with moral principles advocating for justice, equality, and the welfare of others. When young people are motivated by these combined imperatives, they are more likely to engage in collective efforts aimed at community building and societal improvement. This aspect of youth conversion culture fosters a sense of belonging and purpose, as individuals come together to enact change based on shared spiritual and moral values.

Guiding Ethical Leadership and Social Innovation. At the crossroads of spirituality and morality, ethical leadership and social innovation emerge as key components of youth conversion culture. Young leaders inspired by spiritual and moral principles are equipped with a nuanced understanding of ethical considerations, motivating them to lead by example and advocate for positive change. This ethical leadership often translates into social innovation, as young individuals seek creative solutions to societal problems that are informed by their spiritual and moral convictions. Such leadership and innovation are vital for addressing contemporary challenges in ways that are both principled and forward-thinking.

Promoting Interfaith and Intercultural Dialogue. The convergence of spirituality and morality also plays a significant role in encouraging interfaith and intercultural dialogue among young people. By recognizing the common ground shared by different spiritual traditions and moral philosophies, individuals can engage in meaningful conversations that bridge cultural and religious divides. This dialogue is essential to youth conversion culture, as it promotes mutual understanding, respect, and collaboration in pursuit of common goals. Through these exchanges, young people can learn from one another and work together more effectively to address global issues.

Fostering Resilience and Hope. Lastly, the synergistic relationship between spirituality and morality instills resilience and hope in young people, essential qualities for navigating the complexities of the modern world. Spirituality provides a source of comfort and strength in times of

adversity, while morality offers a conviction that actions rooted in ethical principles can lead to positive outcomes. This combination empowers individuals within youth conversion culture to face challenges with optimism, persevering in their efforts to effect change both within themselves and in society at large.

Implementation in Youth Development Programs.

Implementing spiritual and moral imperatives in youth development programs is essential for nurturing well-rounded individuals who are not only equipped with knowledge and skills but are also guided by a strong ethical compass. Such programs can significantly contribute to the development of youth conversion culture, where young people are molded into agents of positive change within their communities. This segment explores practical approaches and benefits of integrating spiritual and moral imperatives into youth development initiatives.

Integrating Spiritual and Moral Education.

1. **Curriculum Development:** Incorporate spiritual and moral education into the program's curriculum. This could involve lessons on ethical decision-making, empathy, compassion, and the importance of community service. Themes from various spiritual traditions can be included to promote inclusivity and understanding.

2. **Reflection and Mindfulness Practices:** Encourage practices such as meditation, prayer, or mindfulness exercises, tailored to accommodate diverse spiritual beliefs. These practices can help young people develop a deeper sense of self-awareness and inner calm, enhancing their emotional and spiritual growth.

3. **Service Learning Projects:** Design service learning or community service initiatives that allow participants to put their spiritual and moral values into action. These projects can range from environmental conservation efforts to supporting local charities, thereby bridging the gap between belief and practice.

Promoting Leadership and Mentorship.

1. **Ethical Leadership Workshops:** Conduct workshops focused on cultivating ethical leadership skills, such as integrity, accountability, and empathy in decision-making. Participants can learn about inspiring leaders who have exemplified these qualities in various fields.

2. **Mentorship Programs:** Pair young individuals with mentors who embody strong spiritual and moral principles. These mentors can provide guidance, support, and real-life examples of how to live out one's values amidst life's challenges.

Fostering Dialogue and Community Engagement.

1. **Interfaith and Intercultural Forums:** Organize events that bring together participants from different spiritual and cultural backgrounds to share and learn from each other's traditions. These forums can foster a sense of global community and respect for diverse perspectives.

2. **Community Dialogues:** Facilitate discussions on pressing societal issues, encouraging participants to explore these challenges through the lens of their spiritual and moral values. These dialogues can spark ideas for collective action and solutions.

Evaluating Impact and Encouraging Continual Growth.

1. **Feedback and Reflection Sessions:** Regularly conduct feedback sessions with participants to reflect on their experiences, growth, and challenges encountered in applying spiritual and moral imperatives in their lives. This feedback can be used to adjust program components as needed.

2. **Continual Learning Opportunities:** Offer resources and opportunities for ongoing learning and engagement with spiritual and moral topics, such as book clubs, webinars, or workshops. This ensures that participants' growth in these areas is continuous.

Benefits for Youth and Society.

Implementing spiritual and moral imperatives in youth development programs offers profound benefits, not only for the participants but for society at large. Individuals who undergo such programs are more likely to exhibit empathy, ethical leadership, and a commitment to service. They are equipped to handle personal and societal challenges with resilience and a positive outlook.

Furthermore, these programs can foster a generation of young people who are actively engaged in creating more inclusive, compassionate, and equitable communities. Ultimately, integrating spiritual and moral imperatives into youth development underscores the importance of nurturing the whole individual-mind, body, and spirit-for holistic well-being and societal transformation.

Conclusion.

The incorporation of spiritual and moral imperatives into the fabric of youth development is not merely an enhancement but a necessity for cultivating a generation capable of leading with wisdom, compassion, and integrity. The convergence of these imperatives within youth conversion culture fosters an environment where personal growth, community engagement, ethical leadership, and global responsibility are deeply intertwined. As we reflect on the role and impact of these imperatives, several key conclusions can be drawn regarding their significance in shaping a positive and transformative youth culture.

Nurturing Holistic Development. Spiritual and moral imperatives address the multifaceted nature of human development, acknowledging that true growth encompasses spiritual, ethical, emotional, and intellectual dimensions. By grounding young individuals in values that transcend material success and emphasize deeper purpose and connectedness, youth conversion culture encourages a holistic approach to life. This comprehensive development is instrumental in preparing young people to face the complexities of the modern world with resilience and a clear sense of purpose.

Building Communities of Compassion and Respect. At the heart of spiritual and moral teachings is the recognition of our shared humanity and the inherent dignity of every individual. By instilling these principles in young people, youth conversion culture cultivates communities characterized by compassion, respect, and mutual support. These values encourage young individuals to look beyond their interests, fostering inclusivity, understanding, and cooperative efforts to address societal challenges.

Fostering Ethical Leadership and Social Innovation. The emphasis on spiritual and moral imperatives equips young individuals with the ethical framework necessary for effective leadership and innovation. These leaders are not only driven by personal achievement but are also committed to serving the greater good, advocating for justice, and finding sustainable solutions to global issues. In cultivating such leaders, youth conversion culture contributes to a more ethical and forward-thinking society.

Promoting Global Citizenship and Responsibility. The integration of spiritual and moral principles in youth development underscores the interconnectedness of all people and our collective responsibility towards each other and the planet. This awareness inspires a sense of global citizenship among young individuals, motivating them to engage with global challenges and contribute to international understanding and cooperation. Youth conversion culture thus plays a crucial role in preparing a generation that is ready and willing to contribute positively to the global community.

The role of spiritual and moral imperatives in the development of youth conversion culture is profound and far-reaching. These imperatives serve as foundational pillars that support the growth of individuals who are not only knowledgeable and skilled but also deeply ethical, compassionate, and responsible. As society continues to evolve, the need for such individuals has never been greater. By fostering a culture that values and promotes these spiritual and moral principles, we can ensure a future led by individuals committed to making a positive and lasting impact on the world. The development of youth conversion culture, therefore, is not just an investment in the individual but an investment in the collective future of humanity.

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Rezyume: Ushbu maqolada yoshlar muomala madaniyatini shakllantirishda ma'naviy-axloqiy imperativlarning asosiy roli o'rganilib, ularning shaxsiy rivojlanishi, jamiyatga ta'siri, axloqiy yetakchilik va global fuqarolik uchun ahamiyati ta'kidlangan. Unda ma'naviy-axloqiy tarbiyaning yoshlarni rivojlantirish dasturlariga integratsiyalashuvi o'sishning yaxlit tafakkurini shakllantirish, rahm-shafqat va hurmatga asoslangan jamoalarni tarbiyalash, axloqiy tamoyillar va ijtimoiy innovatsiyalarga sodiq bo'lajak rahbarlarni tarbiyalash uchun zarur shart sifatida ta'kidlangan. O'quv dasturlarini ishlab chiqish, murabbiylik dasturlari va dinlararo muloqotlar kabi amaliy yondashuvlarga asoslanib, maqola ushbu imperativlar o'zgaruvchan yoshlar madaniyatini rivojlantirishga qanday hissa qo'shishi haqida keng qamrovli ma'lumot beradi.

Резюме: В данной статье исследуется ключевая роль духовно-нравственных императивов в формировании культуры обращения молодежи, подчеркивается их важность для личностного развития, вовлечения в сообщество, этического лидерства и глобального гражданства. В нем подчеркивается интеграция духовно-нравственного воспитания в программы развития молодежи как необходимого условия для формирования целостного мышления роста, воспитания сообществ, основанных на сострадании и уважении, а также воспитания будущих лидеров, приверженных этическим принципам и социальным инновациям. Опираясь на практические подходы, такие как разработка учебных программ, программы наставничества и межконфессиональные диалоги, статья дает всесторонний обзор того, как эти императивы способствуют развитию трансформирующей молодежной культуры.

Kalit so'zlar: yoshlar madaniyati, ma'naviy imperativlar, axloqiy imperativlar, yoshlarni rivojlantirish dasturlari, yaxlit o'sish, axloqiy yetakchilik, jamoatchilikni jalb qilish, global fuqarolik, ijtimoiy innovatsiyalar, dinlararo muloqot

Ключевые слова: молодежная культура обращения, духовные императивы, моральные императивы, программы развития молодежи, целостный рост, этическое лидерство, вовлечение сообщества, глобальное гражданство, социальные инновации, межконфессиональный диалог

RELATIONSHIPS OUTSIDE OF MARRIAGE AS A SPIRITUAL AND MORAL PROBLEM

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Summary: *In this article, as a result of the violation of the national and religious concept of marriage, the number of people living alone has increased, people's attitude towards lifestyle and family values has changed sharply, the role of the male concept as the head of the family in people's thinking has decreased. transition from patriarchy to patriarchy in some families to matriarchy in some families, increase in the number of dysfunctional families, preference of personal and selfish interests over family pride, honor of parents, siblings, neighborhood, egocentrism, individualism in people As a result of increasing materialism, the place of moral and religious values is being replaced by luxury and transitory pleasures, which is the reason for extramarital relations today, amoralistic relations have been analyzed.*

Key words: *extramarital relationship, amoralism, family, individualism, materialism, value, culture, morality, extravert, introvert.*

An extramarital relationship is defined as having a sexual-emotional relationship with a stranger or cheating on the part of a married couple who have been living together after being registered in a religious or legal manner. Extramarital affairs have historically been an immoral practice that destroys family values. If we analyze the mythological, religious and philosophical sources that inform the history of mankind, we can see that extramarital relationships existed in all eras, and even some doctrines supported them. But the society that cares about the future of humanity is disgusted by such immoral relations and is fighting against it.

Extramarital relationships cause immorality, deviate from social norms, undermine ethno-ethical systems, and have a negative impact on the progress of national-religious values. In one region of the world and in a certain period, the reaction to such immoral behavior is perceived differently in another. Cases of physical extermination are also observed in some nations.

In his writings, Sigmund Freud explains that entering into an extramarital relationship depends on a person's moral education and qualities. According to him, human sexual desire (libido) is formed as a result of temperament and educational relations. Mental stress also creates deviant behavior. According to Freud, there are various obstacles in the fulfillment of biological needs of a person, and as a result of the gradual accumulation of these obstacles and tensions, it leads to a deviant state of physiological processes. It is noted that this situation can lead to the emergence of a tendency to extramarital relations in a person or develop as another disease.[1].

Extrovert type people are more likely to engage in extramarital affairs than introvert type people if they are not satisfied with family values due to their active and often risk-taking nature, and if they do not get enough aesthetic pleasure from marriage.

In the course of our scientific research, we tried to analyze several reasons for extramarital relations:

One of the main reasons for this is marriage between minors, as a result of which people are quickly fed up with family, family relationships and spouses, and deviant behavior is formed in them, prone to extramarital relationships;

Secondly, the bride and groom get married without knowing each other well. Their perceptions of family relationships before marriage do not match with real life after marriage;

Thirdly, various changes in human life, positive and negative effects, mental, financial, spiritual depression, career growth or decline, loss of loved ones or various diseases, stress or excitement creates a mood. A person in such a situation is looking for a partner who can really listen to him, understand his pains and sorrows, and help him when he is in trouble. Telling your

spouse about constant problems can also cause family conflicts. For this reason, he looks for a pair that is outside of these cases;

Fourthly, as a result of the birth of children in the family, the main attention and love of the bride and groom are directed to the child. As a result, the couple spends less time together and becomes cold. Unrequited love is sought in extramarital affairs;

Fifthly, due to the fact that the husband or wife is deeply immersed in physical and mental work, he spends less time with his family partner. He doesn't have time to talk with him, to laugh, to feel moments of joy, to share his sad and happy feelings. As a result, emotional separation occurs between them, and the other party looks for another "caretaker";

Sixth, during various tests of life, a person makes decisions based on personal moral-aesthetic ideals and values. Naturally, these decisions do not correspond to the ideals of the spouse. As a result of the conflicts that have arisen, a coldness gradually develops between them, and the phenomenon of amorism occurs. "One of the most common forms of false love, often interpreted as "great love" (even more so in movies and novels), is idolatrous love. If a person cannot rise to the level of being able to understand and perceive his own identity, individuality, which depends on the effective development of his strength, understanding, intelligence, during his maturation, he tends to "deify" the person he loves, to make a goddess out of him. He gives away his strength and opportunities, gives the source of happiness to the person he loves, and worships him as the embodiment of all love, all light, all pleasure. That's why he loses his sense of potential, instead of having his own identity, he loses it in the form of a loved one. Since it is usually impossible for anyone to satisfy the expectations of a person who worships himself for a long time, sooner or later such a "lover" will return to his sincerity, and in search of consolation for his pain, he will begin to search for a new deity, such a search sometimes continues continuously"; [2].

Seventhly, a married couple who could not be independent, make independent decisions and conduct independent activities before reaching the age of marriage wants to rely on their spouse after the wedding. But it will be difficult for young people who have taken a light look at life and have not yet understood family values to live together. In turn, this becomes a motive for extramarital relations, seeking support from the outside;

Eighth, the lack of common interests and interests of the bride and groom living together makes them bored with each other. Lack of common interest and mismatch of interests leads to misunderstanding of each other's aesthetic experiences and exciting feelings. Not feeling moments of joy together for a long time forms a mood of alienation and causes extramarital affairs;

Ninthly, a young person who has not understood the difficulties of life, who has not understood the value of family and human being, who has been influenced by "mass culture" and spent his life in lust, cannot endure family difficulties after marriage. Sometimes she considers family worries and raising children and relationship with her husband to be the same, and this kind of life creates a feeling of boredom in her. He misses the fun of his youth and starts looking for adventures. This is evil, "...the turning back from the state of humanity, the desire to destroy the characteristics of reason, love, and will that are characteristic of a person. Meanwhile, it is a tragic situation. Because although man returns to the animal level, he does not for a second forget that he is human, so evil as a way to solve the problem will never satisfy him. Man's state of evil is a tragic attempt to free himself from the weight of his oppressive human life, which consists in losing himself".[3].

Tenth, the fact that after marriage there is no common family budget, the funds become separate and personal, and quarrels occur without being able to divide the money for expenses, which is a reason for extramarital relations;

Eleventh, this is considered one of the most common reasons, in which a person artificially advances in career or scientific-creative activity, so that he will always be supported by his superiors, no matter how immoral it may be. enter into extramarital relations willingly or under compulsion;

Twelfth, although both of the young people who are getting married are in adulthood, sometimes the worldview of one of them remains in the feeling of a five- to ten-year-old child. In doing so, she transfers her parents' kindness, care, and investigative qualities to her spouse, that is, she looks for them. To give another example, some young men who are attached to their mothers as children do not grow up when they reach adulthood. They treat their spouse like a child. They want to be loved and respected. People of this type like to be loved, but they do not love themselves. Such men are wrapped in their shells and live with their great dreams and hopes. After living with the chosen spouse for some time, after they do not match their imaginary desires, disagreements begin and the family breaks up;

Thirteenth, sometimes there are people whose mothers were indifferent when they were young, and the main upbringing was determined by the father. At first glance, everything seems normal in this family. But if the child is pleased with the father, he praises his child and fulfills what he said. If Bordi-yu doesn't do what he says, he will wear his father's robe upside down. The boy does everything he can to please his father. Later, after his father, he will spend his whole life searching for a similar figure. After marriage, such young men do not pay attention to their spouse, they consider it secondary. The image that is always imprinted in his mind goes on a mission. A woman who trusts him is disappointed by her husband's indifference and neglect and does not consider herself happy with such a person;

Fourteenth, in some families, the lack of affection and neglect of parents is noticeable. They never quarrel, but in the family they are not friendly even to their children. A young girl who is growing up notices these things, she is afraid of the abstraction in the family and wraps herself in her shell. Even when this girl grows up and has a family, she cannot get rid of negative passions. "Furthermore, such alienation creates a strong anxiety and a feeling of dependence due to the lack of support and support, and this gives rise to many masochistic beliefs, which become the only source of strong emotions. Most of such women prefer their husbands not to behave rationally, as in the pamphlet, but to show dates and quarrel, because if they do this, they will be relieved from the nervous tension and fear in their character; In order to end the pain of painful abstract neutrality, in many cases they incite their husbands to behave in this way".[2].

"Anger feelings in young children are forbidden by parents, as a result, children develop nervousness. Moral norms forbid passionate feelings. As a result, emotions undergo a different change in the human mind. This is a kind of psychic energy. This energy comes to the surface through various nervous diseases. Freud calls nervousness caused by emotional feelings an unnatural, necessary stage of psychic development. If a person is consciously aware of the forbidden lustful feelings, he can be cured".[4]. It is necessary for parents to perform such a responsible task, to form understandings of the subtle aspects of family sex culture, immoral causes and tragic consequences of extramarital relations together with the manners of living for young people who are on the threshold of marriage.

Many families are destroyed by extramarital affairs, which are considered immoral. Women do not want such situations because the opportunities gained and lost by both parties after a divorce are different. Women suffer more psychologically and materially from divorces than men.

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Summary: *Ushbu maqolada nikoh to'g'risidagi milliy-diniy tushunchaning buzilishi natijasida yolg'iz yashayotganlar soni ko'payganligi, odamlarning turmush tarzi va oilaviy qadriyatlarga munosabati keskin o'zgarganligi, erkakning oiladagi bosh roli, ba'zi oilalarda patriarxatdan matriarxatga o'tish, disfunktsiyali oilalar sonining ko'payishi, oila g'ururidan shaxsiy*

va g'arazli manfaatlarning ustunligi, ota-ona, aka-ukalar, mahalla-ko'y, qo'shnichilik, egosentrizm, odamlarda individuallik kuchayishi natijasida materializm, axloqiy va diniy qadriyatlar o'rnini dabdaba va o'tkinchi zavq-shavqlar egallab borayotgani, bugungi kunda nikohdan tashqari munosabatlarga sabab bo'layotgan, amoralistik munosabatlar tahlil qilingan.

Резюме: В данной статье в результате нарушения национально-религиозной концепции брака увеличилось количество одиноких людей, резко изменилось отношение людей к образу жизни и семейным ценностям, роль мужской концепции как главенствующей. семьи в мышлении людей уменьшилось. переход от патриархата к патриархату в некоторых семьях к матриархату в некоторых семьях, увеличение числа неблагополучных семей, предпочтение личных и корыстных интересов над семейной гордостью, честью родителей, братьев и сестер, соседства, эгоцентризма, индивидуализма в людях В результате увеличения материализме, место нравственных и религиозных ценностей заменяется роскошью и преходящими удовольствиями, что является причиной внебрачных связей сегодня, анализируются аморальные отношения.

Kalit so'zlar: nikohdan tashqari munosabatlar, amoralizm, oila, individualizm, materializm, qadriyat, madaniyat, axloq, ekstravert, introvert.

Ключевые слова: внебрачные отношения, аморализм, семья, индивидуализм, материализм, ценности, культура, мораль, экстраверт, интроверт.

TEACHING ENGLISH METHODS

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Summary: *This article illustrates how In Uzbekistan, English teaching is a one of the complex task, with different methods used for different parts of the population. The Grammar-Translation Method, also known as the Classical Method, is the oldest method of teaching English and is influenced by classical languages like Latin, Greek, and Sanskrit. It involves students studying speech and syntax in detail, comparing sentences in English and their mother tongue. The method is popular among teachers as it is easy to use and helps students learn vocabulary and phraseology.*

Key words: *method, the way of teaching, language, bilingual.*

In Uzbekistan English is taught in each and every school. English teaching is very complicate task in our country. The way of teaching English is very different in different part of Uzbek pupils. We know that English is taught as a second language in our country. We know that when any language is taught as second language, it becomes very necessary to know for teacher "How and what to teach to students" because it is very difficult for teacher to use suitable method. Uzbek classes have their own problem and one of them is teaching methodology. There is no single method that is to be considered effective and accepted by all.

Methodology is systematic and scientific way of teaching any subject. It guides teacher "How to teach" and "How his teaching may be effective". It is very necessary for teacher to know various types of methods and techniques of teaching English. Method may also be defined as: "The process of planning, selection and grading language materials and items, techniques of teaching, etc." Anthony (1963) defines the term 'Method' as: "It is a particular trick, strategy or contrivance used to accomplish an immediate objective. It must be consistent with a method and harmony with an approach as well." According to W.E Mackey: A Method must include four things viz., Selection of Linguistic Material, and Gradation of Linguistic Material, Techniques of presentation, and Practice by people.

Types of Methods:

1. The Grammar Translation Method
2. The Direct Method
3. The Bilingual Method
4. The Reading Method
5. The Situation Method

The Grammar-Translation Method:

The Grammar-Translation Method is the oldest method of teaching English. This method is also known as the Classical Method. The Grammar-Translation Method dominated European and foreign language teaching from the 1840s to the 1940s. It modified form it continues to be widely used in some parts of the world today. The Grammar-Translation Method was used for the teaching of English in the beginning, under the influence of classical languages like Latin, Greek and Sanskrit. In The Grammar-Translation Method the students first study the parts of speech and syntax in detail. The sentences in English and the mother tongue were compared and contrasted side by side. The Grammar-Translation Method was the offspring of German scholarship. It was first known in the United States as the Prussian Method.

The Grammar-Translation Method is called old method of teaching. To use of this method is vary easy for teacher. This method is also called classical method because it is very helpful in learning the classical language like Sanskrit, Persian, Arabic, Latin and Greek etc. In this method the mother tongue is used to teach English. This method is very famous in average teacher because it is very easy for them to use this method. In English words, phrases and sentences are taught with

the help of this method. It tells that every thing in English should be taught by translating into mother tongue. It is believed that vocabulary and phraseology of a foreign language can be learnt through translating its meaning into the mother tongue and the teacher points out the grammatical point and rules.

Characteristics :The unit of teaching is word, not a sentence. It means vocabulary is taught in the form of isolated words. It considers grammar as a soul of language. Grammatical rules of teaching of English are explained into mother tongue. This method does not help in development of linguistic competence of learner. English grammar is taught through rules, translation, definition and comparative study of mother tongue grammar. Grammar is taught deductively. The main function of language learning, communication is ignored. Reading and writing are the major focus.

Advantage:

When words and phrases are translated into mother tongue, his understanding of those words become very better and quicker. The Grammar-Translation Method develops the art of translation. In this method the child associates foreign words with translated words so strong memory bond is created. The use of mother tongue helps the children in vocabulary getting. It saves time and more effective. The words and phrase are easily learnt and explained if translation method is used. The working knowledge of mother tongue helps them to learn grammar of a foreign language.

The principle of "to proceed from known to unknown" is followed. Through this method we can test the ability of comprehension of our students and we can know the form of understanding the subject matter. English grammar can be easily taught by comparing with the grammar of mother tongue.

Disadvantage:

The Grammar-Translation Method does not emphasis on the basic skills like listening and speaking etc. It is not possible to translate important aspect of spoken language like pronunciation, articulation, intonation, pauses, pitch. There are words, idioms, phrases in English for which words can not be translated into mother tongue. For example; prepositions and propositional phrases. Language learning means speaking and reading but translation in mother tongue prevents

students to read and speak in English. Student gets no opportunities to participate in the discussion of the unit. Some of linguistic items can not be translated into mother tongue like article a, an, the. Translation into mother tongue affects the originality of the words. It affects the sense and beauty of the words. It prevents students to think directly in English. Students first think in mother tongue and then in English. Thus it prevents establishing of direct bond between thought and expression.

The Direct Method:

Child learns his mother tongue naturally and without practice. It means child learns mother tongue directly. An attempt to teach the language as one could in learning mother tongue is known as the Direct Method. It is also called natural method because it is learnt naturally like mother tongue or first language. It is very difficult to bring exact environment in which mother tongue or first language

is acquired, so later the same method became popular called Direct Method. This method was against of Grammar-Translation method. The extreme use of mother tongue affected the naturalness of language. The students did not learn language but practiced of acquiring mother tongue or first language. In this method same environment is created to learn second or foreign language but learning second learning is not natural process. It depends on the will of the learner to learn for his own development. So teaching of second language or first language by observing the principles of language acquisition is the Direct Method. Prof. P. Gurrey in *Teaching of English as a Foreign Language* (1966) comments:

Essentially, it (The Direct Method) is a Principle, not a teaching method, a system that operates through many methods, a way of handling the new language and of presenting to the class. It demands a direct bond that is a direct association between word and thing and between sentence

and idea, between experience and expression instead of an indirect one through the mother tongue. The Direct Method was quite successful in private language schools. The Direct Method overemphasized and distorted the similarities between naturalistic first language learning and classroom foreign language learning. This method represented the product of enlightened amateurism. Henry Sweet viewed that it offered innovations at the level of teaching procedures but lacked a through methodological basis. Its main focus was on the exclusive use of the target language in the classroom. Sauveur opened a language school in Boston in the late 1860s. His method soon became referred to as the Natural Method. Sauveur and other believers in the Natural Method argued that a foreign language could be taught without translation or the use of the learner's native tongue. Webster's New International Dictionary notes:

Direct Method is a method of teaching a foreign language, especially a modern language through conversation, discussion and reading in the language itself, without the use of the pupil's language, without translation, and without the study of formal grammar. The first words are taught by pointing to objects or pictures or by performing actions.

The German scholar Franke wrote on the psychological principles of direct association between forms and meanings in the target language. For him a language could best be taught by using it actively in the class room. Teacher must encourage direct and spontaneous use of the foreign language in the class room. Learners would be able to induce rules of grammar. The teacher replaced the textbook in the early stages of learning. Speaking began with proper attention to pronunciation. Famous words could be used to teach new vocabulary, using name, demonstration and pictures. These natural language learning principles provided the formation for what came to be famous as the Direct Method.

Enthusiastic supporters of the Direct Method introduced it in France and Germany. It becomes widely known in the United States through its use by Sauveur and Maximilan Berlitz in successful commercial language schools.

Characteristics of Direct Method:

There is no interference of mother tongue. In TG method at first child comes with the contact of mother tongue and after with the target language. In this method, there is direct bond of target language. Child thinks into target language and express into target language. Unit of teaching is sentence. Teacher performs such activities which tell the meaning of the sentence in the context. Teacher performs an action related to the sentence which shows meaning of the sentence.

Direct Method is full of activities. The teacher shows object or performs the action to clear his concept. Direct Method is interesting and, natural for learners. Teacher shows the meaning of the sentence with help of gestures, postures and action. It enable student to establish direct bond between words and expression.

The teaching learning process is carried out in English environment.

Advantage: This method is called natural method. The English is taught as the child learns his mother tongue. The pronunciation, accent, intonation and rhythm are essential for better and effective communication. This method helps to speak language effectively.

This method is based on the principle of "Learning by Doing". Thus this method is scientific and very effective. New teaching points were introduced orally. Both comprehension and speech were taught. It observes scientific path of language acquisition: LSRW.

To learn any language means speak that language with fluently. Thus this method creates this ability in students.

Methods

This method helps learners to enjoy the language. So the learners start using the language without fear. Correct use of grammar and pronunciation were emphasized. Grammar was taught inductively.

Disadvantage: For every sentence or subject matter, the teacher can not perform an action and show any object. It means that every subject matter can not be explained by an action or showing any object. This method is not useful in over crowded classes. This method does not help in

important aspect of language learning like reading and writing. To use this method in the class, the teacher should be mastered in subject. He should have active command on his teaching. He should be a perfect teacher. This method requires many audio visual aids, which are very expensive so our schools can not afford such equipments.

The Bilingual Method:

In Uzbekistan many languages are spoken. To make teaching effective, the appropriate methods have to be applied in teaching learning process. For this process we need huge fund. We know that teaching materials are very costly so we can not use them in teaching activities. There are basic requirements like school building, blackboard, language laboratory, language rooms and problem of over crowded class. How can we solve these problems? We need large amount for this. Through specific method the teaching can be made effective due to many problems. Only there is one obstacle which can solve this problem and that is use of mother tongue in teaching of English. This method is improved version of audio visual aid. Dr. J. Dodson of the University College of Wases has developed this method during 1967 to 1972. This method is known as Bilingual method because of proper use of mother tongue is allowed. The use of mother tongue is one of the resources of this method. There is drilling of the pattern to enable learners to master basic required sentence pattern which is effective practice of this method. In the Bilingual Method, two languages, this is the mother tongue and the language to be learnt are used. In this method, the mother tongue is used only to explain the meanings go difficult words. Mother tongue equivalent of English words are given and the use of the mother tongue is gradually dropped as the students' progress in learning the language. Thus the Bilingual Method recommended a restricted use of the mother tongue only by the teacher and not by the pupils. It also provided for intensive practice of patterns in English, helping the formation of correct language habits.

Characteristics of Bilingual Method:

Due to use of judicious use of mother tongue, the leaner can easily grasp the situation of learning English. He can learn target language easily through this method. The learner can learn abstract ideas easily in mother tongue while in secondary environment it is very difficult for learner. It saves time and money because of use of mother tongue. For secondary environment we need extra ordinary talented teacher and larger investment of fund.

Methods: In primary environment student can assimilate message very quickly and easily. It makes teaching vary interesting and effective.

Advantage:

Bilingual Method saves time and learning to make effective use of learners' mother tongue to understand content quickly. The teacher can provide them enough drilling or pattern practice due to time saved. Bilingual method helps learner to developing both fluency and accuracy in the target the language. An average teacher can use this method easily and effectively. In this method there is no need of audio visual aids other technology so this method is very useful for every teacher. This method is boon for all those institutions where limited facilities are available.

Disadvantage: Extreme use of mother tongue makes student inactive to learn foreign language. He becomes master of mother tongue but not Second language. Teacher should be master in use of mother tongue while teaching second language. The teacher should have the knowledge of use of both methods while teaching English. If teacher is not innovative in her teaching learning practice, she follows the rules of grammar translation method. This method can easily degenerate into the translation method.

It is used only in the earlier stages of learning the language. Students become weak in the target language because he will try to learn every language through mother tongue. It requires a curriculum developed specially for this method otherwise it is difficult to teach target language in classroom. Bilingual method is used for rural and urban schools.

Conclusion: In Uzbekistan, English teaching is a complex task, with different methods used for different parts of students. Teaching English as a second language is challenging, and teachers must know various methods and techniques to be effective. Methodology is a systematic and

scientific approach to teaching English, guiding teachers in planning, selecting, and grading language materials and items. There are several methods, including the Grammar-Translation Method, which is the oldest and most popular. This method, also known as the Classical Method, focuses on teaching English words, phrases, and sentences in the mother tongue. It is believed that vocabulary and phraseology of a foreign language can be learned through translating its meaning into the mother tongue. However, this method does not help in developing the learner's linguistic competence. Grammar is taught through rules, translation, definition, and comparative study of mother tongue grammar, with reading and writing being the main focus.

The Grammar-Translation Method is a teaching method that focuses on translating words and phrases into the native language, enhancing comprehension and vocabulary. The Direct Method, on the other hand, is a natural method that teaches the mother tongue naturally without practice. This method is popular because it creates an environment similar to the first language acquisition. However, the extreme use of the mother tongue affects the naturalness of language acquisition. The Direct Method demands a direct association between words, ideas, experiences, and expression, rather than an indirect one through the mother tongue. It has been successful in private language schools.

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Rezyume: Ushbu maqolada O'zbekistonda ingliz tilini o'qitish murakkab vazifalardan biri bo'lib, aholining turli qatlamlari uchun turli usullar qo'llanilayotgani ko'rsatilgan. Grammatika-tarjima usuli, shuningdek, klassik usul sifatida ham tanilgan, ingliz tilini o'qitishning eng qadimgi usuli bo'lib, unga lotin, yunon va sanskrit kabi klassik tillar ta'sir ko'rsatadi. Bu talabalar nutq va sintaksisni batafsil o'rganishni, ingliz tili va ona tilidagi jumalarni solishtirishni o'z ichiga oladi. Usul o'qituvchilar orasida mashhurdir, chunki undan foydalanish oson va o'quvchilarga lug'at va frazeologiyani o'rganishga yordam beradi.

Резюме: В этой статье показано, что в Узбекистане преподавание английского языка является одной из сложных задач, при этом для разных слоев населения используются разные методы. Метод грамматического перевода, также известный как классический метод, является старейшим методом преподавания английского языка и основан на таких классических языках, как латынь, греческий и санскрит. В нем учащиеся подробно изучают речь и синтаксис, сравнивают предложения на английском и родном языках. Метод популярен среди преподавателей, поскольку он прост в использовании и помогает учащимся усвоить словарный запас и фразеологию.

Kalit so'zlar: usul, o'qitish usuli, til, ikki tilli.

Ключевые слова: метод, способ обучения, язык, билингвальный.

UDK:182.2

PHILOSOPHICAL ANALYSIS OF THE THEORY OF EXISTENCE IN ISLAMIC DOCTRINE

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Summary: *The factors, criteria and their historical-philosophical essence, the epistemological basis of theological views, which influenced the emergence, development and reaching the highest level of ontological and theological views in Islamic teaching in the era of globalization and the clash of civilizations in the world it has become an urgent task to study the reasons for the harmony of humanism, intellectual activity in the bosom of religion and philosophy. In the article dedicated to these current issues, information about the creation of existence in Islam and its philosophical essence is presented.*

Key words: *Islam, religion, doctrine, outlook, philosophy.*

The factors, criteria and their historical-philosophical essence, the epistemological basis of theological views, which influenced the emergence, development and reaching the highest level of ontological and theological views in Islamic teaching in the era of globalization and the clash of civilizations in the world it has become an urgent task to study the reasons for the harmony of humanism, intellectual activity in the bosom of religion and philosophy. The need for systematic, synthesis and comparative induction of social importance of ontological, epistemological and theological views of Islamic teachings in international scientific circles is growing.

The President of the Republic of Uzbekistan Sh.M. Mirziyoyev said at the 72nd session of the UN General Assembly, "We consider it the most important task to convey the true humanitarian nature of Islam to the entire world community. We cherish our sacred religion as the embodiment of our ancient values. We strongly condemn those who associate our sacred religion with violence and bloodshed, and we will never compromise with them. Islam calls us to be kind and peaceful, to preserve the original human qualities. I would like to note the invaluable contribution of many prominent figures of the Central Asian renaissance period to Islam and world civilization," he firmly concluded.

According to Islamic teachings, existence is the existence created by Allah. In this regard, the doctrines of unity of existence and unity of existence have been formed. Islamic thinkers developed the doctrine of existence in many ways. For example, according to Farabi, the first existence is the eternal God himself. According to Beruni, the existence that begins with Allah is such a generality that it lies at the basis of everything, so existence is the basis of everything.

In Islam, the creation of existence is explained through the doctrine of "Wahdat-ul-Wujud". Wahdatul-wujud (Arab. - physical unity) is a pantheistic doctrine that believes that there is only one eternal God. According to this doctrine, the physical world, the world of objects, is not real, reality is embodied only in God, and the material world is the light of God. The representatives of the idea of unity of existence (IbnArabi, Mansur Hallaj, etc.) believed that God creates all existence.

Philosophers have long debated and written special works about existence and its manifestations. The interesting ideas of Farabi, Beruni, Ibn Sina, Abul Barakat, Fakhriddin Razi, Alisher Navoi, Makhdumi A'zam and other scholars have been preserved from Eastern thinkers. Abu Nasr Farabi believed that "the only existence consists of 6 stages: 1. The first cause (cause-first) - God; 2nd reason - (reason- second) - existence of heavenly bodies; 3rd reason - active mind (al-aql al-faol); 4th reason - soul (an-nafs); Reason 5 - shape (as-surat); The 6th reason is substance (al-modda). The great thinker, the founder of Islamic philosophy, Abu Nasr Farabi (872-950) was the first to use the terms "existence", "existence is obligatory" (wajib ul-wujud) and "existence is possible" (created existence) and was later widely used in the philosophy of Wahdat ul-wujud. elevated the terms to the level of philosophical categories. Farabi's contribution to the formation of the philosophy of Wahdat ul-Wujud can be noted in the following two cases:

a) Farabi was a supporter of the "Vujud" (existence) philosophical school, and was also the founder of this school. After all, in his works, the differences between "Vajib" (necessity, necessity), "Possible" (created), as well as issues related to the obligation of existence (Existence) are revealed for the first time.

b) Farabi was the first to speak about the issue of "active and potential (powerful) Mind", as well as the division of human mind into practical (experimental) and theoretical mind. As a result, Abu Ali ibn Sina developed the theory of "emanation of minds from the First Mind".

According to the doctrine of "Wahdat-ul-Wujud" and "Wahdat-ul-Wujud exists" in all beings in the universe, from small particles to huge creatures, the beauty and glory of the one and only God is embodied. Wahdat, "Wahdat-ul-Wujud" or pantheism is popular. In the short words of the mystic scholar Reje Arnolds, lexically consists of substance (matter), but in the philosophy of mysticism, the purpose of this term is "kavnu amkon", that is, there is only one being in the entire universe, and that is the creator himself. represents that" .

Wahdat ul-wujud, which literally means physical existence in Arabic, is a common trend in the philosophical views of the peoples of Eastern countries, Central Asia, and India. Wahdat ul-Wujud means the unity of existence and having the consciousness of knowing that there is no existence other than Allah. According to the concept of unity of existence, everything is nothing but the various manifestations, appearances, imaginations and manifestations of God, who is an odd existence.

Ibn Arabi based the mystical experience characteristic of Sufis in the form of the philosophical system of "Unity and Oneness of Being" (wahdad al-wujud). According to this doctrine, the reason for the creation of the material world is to see its reflection in the things of the material world created by the Absolute, which is outside the universe, is independent (in its own will) and is called Zot, Haq, Ahad and lies in his drive (striving) for self-knowledge. This aspiration urges the infinite and abstract Absolute to manifest (tajalli) within the essences of the world (the world of essences between the Absolute and the material world - barzah) through self-limitation (taqayyud) and concretization (ta'ayyun). The process of manifestation of the Absolute does not take place on its own, but in harmony with the images of things (manifest fixed) or possibilities (imkonat) that have always existed in this Absolute. The Absolute, realized (realized, fulfilled) in the things and events of the material world, loses its independence (free will) to a certain extent, because the material world has become a necessary manifestation of its existence. The Absolute with its logical proportion (ma'lux) becomes a god (iloh). He has external and concrete names and qualities. As a result, he became an object of worship (prayer) and judgment. At the same time, it remains the only reality, and the material world is its "reflection" (shabah), an illusion, which loses its meaning when there is no relation to its source. The dialectic of the manifestation of absoluteness in the universe can be compared to the human imagination (thought, consciousness), trying to imagine itself in detail from the outside and projecting this imagination outside of itself.

The substance of existence is expressed in Islam as the concept of existence. In Islam, concepts such as wahdat ul-wujud, wahdat ul-majud and wahdat ul-majud were created in Islam.

In Islamic philosophy, ontology was created in the form of doctrines that reflect the essence of divine existence, the essence of God, and in Eastern pantheistic philosophy, it was created in the form of doctrines of unity of existence and existence of unity.

The concepts of obligatory existence and possible existence were analyzed by philosophers such as Al-Farabi, Ibn Sina, Omar Khayyam, and Ibn Rushd, while the doctrine of wahdat ul-wujud and wahdat ul-majud is used to explain the issues of existence in Sufism. The doctrine of "Wahdat ul-Wujud" - the unity of existence, which is a unique intellectual movement in Sufism, was formed based on the views of Sheikh Kabir Muhyiddin ibn Arabi (1165-1240). The study of the spiritual legacy of the great thinker Saifiddin Boharzi shows that he also has ideas about existence.

According to the theory of Wahdat ul-Wujud, the universe arose from the desire of the Supreme Being, Haqq, to manifest his beauty, power, and attributes. That is, the Supreme Truth created Being for self-knowledge. Existence is like a mirror, and the beauty of truth and knowledge

is reflected and polished in it. From this comes the idea of tajalli, which is an important part of this teaching. The Absolute Spirit is the soul of the universe, all change, laws, contradictions and agreements in the universe, the movement of matter, the interrelationship of bodies, balance and regulations, rules, growth and decay - in everything. The Almighty has a presence and a command. All things, from the smallest particle of existence to the universe, are under the control and management of the Absolute Spirit. On this basis, the whole universe exists with the participation of the one Spirit of the Absolute, and existence exists only in dependence on the Spirit of the Absolute. Therefore, the real and eternal being is Him Himself, and the material world is not eternal, it is only a fantasy of the mortal or Absolute Spirit.

The term "Wahdatul-Wujud" means "unity of existence". However, it should be understood not in the sense of "unification of existence" or "the cohesion of all things and things around one entity", but in the sense of "unity of existence (existence)". Only then this concept will not represent the pantheism of the Western philosophy, but the essence of the Islamic pantheistic doctrine of the East - wahdatul-wujud. Although the primitive forms of the idea of wahdatul-wujud were reflected in the views of the first scholars - Bayazid Bistami and Mansur Halloj, after almost four hundred years, a perfect and independent theory (or was recognized as 'limot).

In short, the philosophy of Vahdatul-Wujud is a complex and controversial doctrine. These philosophical-teachings are becoming more and more materialistic, giving the people of the 21st century, who are surrendering their free will to the box of the ego, drowning in the swamp of unconsciousness, lack of thinking, immorality, corruption, immorality and lack of spirituality, to think more broadly and deeply about the future of humanity. that the whole Being and the things that exist in it are actually a single Being, that all beings, existences, events, situations, laws, objects in the universe do not actually arise by themselves and cannot exist completely separately, rather they it radiates that there is a strong, strong, integral, level of connection between them that can never be separated by anything.

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Rezyume: *Jahonda globallashuv davri va sivilizatsiyalar to‘qnashuvi avj olgan davrda islomiy ta’limotdagi ontologik va teologik qarashlarning yuzaga kelishi, rivojlanishi va o‘zining yuksak darajasiga chiqishiga ta’sir ko‘rsatgan omillar, mezonlar va ularning tarixiy-falsafiy mohiyati, teologik qarashlarning epistemologik negizidagi insonvarvarlik, intellektual faoliyatning din va falsafa bag‘rida uyg‘unlashuvi sabalarini o‘rganish dolzarb vazifaga aylandi. Mazkur dolzarb masalalarga bag‘ishlangan maqolada Islom dinida borliqni vujudga kelishi va uning falsafiy mohiyati haqidagi ma’lumotlar bayon etilgan.*

Резюме: *Факторы, критерии и их историко-философская сущность, гносеологические основы богословских взглядов, повлиявшие на возникновение, развитие и достижение высшего уровня онтологических и теологических взглядов в исламском учении в эпоху глобализации и столкновения цивилизаций в мире. актуальной задачей стало изучение причин гармонии гуманизма, интеллектуальной деятельности в лоне религии и философии. В статье, посвященной этим актуальным вопросам, представлены сведения о сотворении бытия в исламе и его философской сути.*

Key words: *islom, din, ta’limot, dunyoqarash, falsafa.*

Ключевые слова: *ислам, религия, учение, мировоззрение, философия.*

**METHODS OF ENHANCING COMMUNICATIVE COMPETENCE IN TEACHING
FOREIGN LANGUAGES IN HIGHER EDUCATION INSTITUTIONS**

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Summary: *This article is devoted to the higher education, the development of communicative competence in teaching foreign languages stands as a fundamental pillar for fostering linguistic proficiency and cultural understanding among students. This article delves into the multifaceted approach required to effectively nurture communicative competence within this educational context. In today's interconnected world, proficiency in foreign languages is increasingly valued as a vital skill. Higher education institutions play a pivotal role in equipping students with the linguistic tools necessary to navigate global interactions and cultural exchanges.*

Key words: *competence, interaction, proficiency, approach, tool, enhance, context, integrate, community, authentic, exchange.*

INTRODUCTION.

In today's interconnected world, proficiency in foreign languages is increasingly valued as a vital skill. Higher education institutions play a pivotal role in equipping students with the linguistic tools necessary to navigate global interactions and cultural exchanges. However, achieving communicative competence goes beyond mere grammatical accuracy; it encompasses the ability to convey meaning effectively, understand cultural nuances, and engage in meaningful discourse, effectively, understand cultural nuances, and engage in meaningful discourse.

This approach recognizes that language acquisition is a complex process influenced by multiple factors, and thus requires a diverse range of instructional methods to address the diverse needs and learning styles of learners. In the context of developing communicative competence in teaching foreign languages, integrated methodology involves incorporating a variety of techniques such as immersive experiences, role-playing activities, interactive technology, authentic language use, and feedback mechanisms into the curriculum. [1]. In order to integrate these different methodologies, educators can create a dynamic and engaging learning environment that promotes active participation, language practice, and skill development. For example, a lesson on conversational skills in a foreign language class might begin with a brief introduction to relevant vocabulary and grammar structures. Students could then engage in a role-playing activity where they simulate real-life conversations in pairs or small groups, applying the newly learned language in context. [2] Throughout the lesson, instructors provide feedback on pronunciation, grammar usage, and communication strategies, guiding students towards improvement and fluency. By integrating methodologies such as immersive experiences, role-playing activities, interactive technology, and feedback mechanisms, educators can create a comprehensive and holistic language learning environment that fosters the development of communicative competence in higher education institutions. This approach not only enhances students' language proficiency but also promotes cultural understanding, critical thinking, and lifelong learning skills.

LITERATURE ANALYZES AND METHODOLOGY.

To improve communicative competence, educators must employ a diverse range of methodologies tailored to the needs and learning styles of their students. Immersive experiences, such as study abroad programs or language immersion courses, provide invaluable opportunities for students to interact with native speakers and immerse themselves in the target language's culture. Role-playing activities and simulations simulate real-life communication scenarios, allowing students to practice language use in context and develop their conversational skills. [3] Integrated methodology refers to the strategic combination of various teaching approaches, techniques, and resources to create a cohesive and effective language learning experience for students in higher education institutions. This approach recognizes that language acquisition is a complex process

influenced by multiple factors, and thus requires a diverse range of instructional methods to address the diverse needs and learning styles of learners.[4]. In the context of developing communicative competence in teaching foreign languages, integrated methodology involves incorporating a variety of techniques such as immersive experiences, role-playing activities, interactive technology, authentic language use, and feedback mechanisms into the curriculum. For example, a lesson on conversational skills in a foreign language class might begin with a brief introduction to relevant vocabulary and grammar structures. Students could then engage in a role-playing activity where they simulate real-life conversations in pairs or small groups, applying the newly learned language in context. approach not only enhances students' language proficiency but also promotes cultural understanding, critical thinking, and lifelong learning skills.[5].

Incorporating interactive technology, such as language learning apps, online forums, and virtual reality simulations, can enhance the learning experience and provide additional avenues for communication practice. Interactive technology plays a pivotal role in enhancing the teaching and learning of foreign languages in higher education institutions.[6].

Furthermore, interactive technology facilitates authentic language use by providing access to a wide range of multimedia resources, including videos, podcasts, news articles, and social media content in the target language. These authentic materials expose students to real-life language usage and cultural contexts, helping them develop communicative competence and cultural awareness.

Collaborative tools and platforms enable students to engage in collaborative learning activities, such as group projects, peer feedback, and online discussions, fostering peer interaction and collaboration. Teachers can also use interactive technology to track students' progress, assess their performance, and provide personalized support and interventions. Overall, interactive technology empowers educators to create innovative and effective language learning experiences that promote active engagement, meaningful interaction, and authentic language use in higher education institutions. By harnessing the power of digital tools and platforms, educators can cultivate communicative competence and equip students with the language skills and cultural awareness necessary for success in today's globalized world.[7]

Creating opportunities for authentic language use is essential for reinforcing communicative competence. Encouraging students to engage in real-life interactions, whether through language exchanges, internships, or community service projects, fosters confidence and fluency in the target language. [8] Additionally, integrating authentic materials such as newspapers, films, and literature into the curriculum exposes students to the richness and complexity of the language in its cultural context.

There are several ways educators can integrate authentic language use into their teaching:

Authentic Materials: Incorporating authentic materials such as newspapers, magazines, literature, films, music, and social media content exposes students to the diverse linguistic and cultural aspects of the target language. These materials provide rich linguistic input and cultural insights, enhancing students' language proficiency and cultural competence.

Real-life Scenarios: Creating opportunities for students to engage in real-life communication scenarios, such as role-plays, simulations, debates, and discussions, allows them to apply language skills in context. These activities encourage active participation, critical thinking, and problem-solving skills while promoting fluency and spontaneity in language use.

Authentic Tasks: Designing authentic tasks and projects that require students to use the target language to accomplish real-world goals or solve authentic problems fosters meaningful language learning experiences. Whether it is conducting interviews, giving presentations, writing reports, or participating in community service projects, these tasks promote language use in practical and purposeful contexts.

Language Exchange: Encouraging students to engage in language exchange partnerships with native speakers or other learners of the target language provides opportunities for authentic language practice and cultural exchange. [9] Language exchange programs enable students to communicate with speakers of the target language in a supportive and collaborative environment,

enhancing their speaking, listening, and interpersonal skills. [10] Authentic language use not only enhances students' language proficiency but also promotes cultural awareness, empathy, and appreciation for linguistic diversity.

DISCUSSION AND RESULTS.

The cultivation of communicative competence in teaching foreign languages in higher education institutions requires a comprehensive and integrated approach. By leveraging a combination of immersive experiences, interactive technology, authentic language use, and meaningful feedback mechanisms, educators can empower students to communicate effectively in the target language and navigate cross-cultural interactions with confidence and proficiency.

Achieving communicative competence in teaching foreign languages within higher education institutions necessitates a holistic and integrated approach. [11] This means incorporating a diverse range of methodologies, including immersive experiences, interactive technology, authentic language use, and effective feedback and assessment mechanisms.

This approach not only enhances language proficiency but also promotes critical thinking, cultural sensitivity, and lifelong learning skills. [12] Ultimately, it empowers students to communicate confidently and competently in the target language, equipping them with the linguistic and intercultural competencies needed to thrive in an increasingly globalized world.

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Rezyume: *Ushbu maqola oily ta'limga, chet tillarini o'qitishda kommunikativ kompetentsiyani rivojlantirish, talabalar o'rtasida lingvistik bilim va madaniy tushunishni rivojlantirishga bag'ishlangan. Shuningdek maqolada ta'lim doirasida kommunikativ kompetentsiyani samarali qo'llash uchun zarur bo'lgan ko'p qirrali yondashuv ko'rib chiqilgan. Oliy o'quv yurtlari talabalarni global aloqalar va madaniy almashinuvlarni boshqarish uchun zarur bo'lgan lingvistik vositalar bilan og'zaki nutq kompetensiyalari haqidagi ma'lumotlarga e'tibor qaratilgan.*

Резюме: *Данная статья посвящена высшему образованию, развитие коммуникативной компетенции в процессе преподавания иностранных языков является*

фундаментальной основой для повышения уровня владения языком и понимания культуры среди студентов. В этой статье рассматривается многогранный подход, необходимый для эффективного развития коммуникативной компетенции в рамках данного образовательного контекста. В современном взаимосвязанном мире владение иностранными языками все больше ценится как жизненно важный навык. Высшие учебные заведения играют ключевую роль в обеспечении студентов лингвистическими средствами, необходимыми для навигации по глобальным взаимодействиям и культурным обменам.

Kalit so‘zlar: kompetentsiya, o'zaro ta'sir, malaka, yondashuv, vosita, kuchaytirish, kontekst, integratsiya, jamoa, autentik, almashinuv

Ключевые слова: компетентность, взаимодействие, мастерство, подход, инструмент, улучшение, контекст, интеграция, сообщество, аутентичность, обмен.

EXPLORING PEDAGOGICAL MECHANISMS DRIVING INTERNATIONALIZATION OF HIGHER EDUCATION PROGRAMS: STRATEGIES, CONDITIONS, AND METHODS

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Summary: *The internationalization of higher education programs has emerged as a pivotal strategy for institutions worldwide seeking to prepare students for a globally interconnected world. This article delves into the pedagogical mechanisms underpinning the internationalization process, with a focus on elucidating strategies, conditions, and methods that drive its implementation. Drawing upon a comprehensive review of existing literature and empirical evidence, this study examines the multifaceted dimensions of pedagogy in facilitating the internationalization of higher education.*

Keywords: *Pedagogical mechanisms, Internationalization, Higher education programs, Strategies, Conditions, Methods, Cross-cultural learning, Global engagement, Intercultural competence.*

Introduction: In an increasingly interconnected global landscape, the internationalization of higher education programs has emerged as a strategic imperative for institutions worldwide. This phenomenon reflects the recognition that to prepare students for success in an interconnected world, higher education must transcend national borders and cultivate a global mindset among learners. Central to this endeavor are the pedagogical mechanisms that drive the internationalization process, encompassing a spectrum of strategies, conditions, and methods aimed at fostering cross-cultural understanding and competence.

The significance of internationalization within higher education cannot be overstated. In an era characterized by rapid technological advancements, economic globalization, and socio-political interdependence, the ability to navigate diverse cultural contexts and collaborate effectively across borders has become indispensable. Consequently, universities and colleges are increasingly embracing internationalization as a core component of their educational mission, seeking to equip students with the knowledge, skills, and perspectives necessary to thrive in a globalized world.

However, while the importance of internationalization is widely acknowledged, the mechanisms through which it is achieved remain complex and multifaceted. At the heart of this complexity lies pedagogy-the art and science of teaching and learning- which plays a central role in shaping the internationalization efforts of higher education institutions. Pedagogical approaches not only influence the content and delivery of educational programs but also shape the experiences and outcomes of students engaged in cross-cultural learning environments.

Literature Review:

The internationalization of higher education has become a prominent focus within the academic community, reflecting a growing recognition of the need to prepare students for global citizenship and intercultural competence. Central to this endeavor are the pedagogical mechanisms that drive internationalization efforts, encompassing a range of strategies, conditions, and methods aimed at fostering cross-cultural learning experiences. This literature review examines key scholarly contributions exploring the intersections of pedagogy and internationalization, providing insights into the strategies, conditions, and methods that shape the internationalization of higher education programs.

One of the foundational aspects of internationalization is the development of intercultural competence among students. By engaging in diverse learning experiences, students can enhance their ability to navigate complex cultural contexts and communicate effectively across borders (Deardorff, 2006). Deardorff emphasizes the importance of incorporating intercultural learning outcomes into educational curricula and implementing pedagogical strategies that promote cultural awareness and sensitivity.

Moreover, strategic frameworks play a crucial role in guiding the internationalization efforts of higher education institutions. Knight (2004) proposes a comprehensive model of internationalization, highlighting the importance of integrating international, intercultural, and global dimensions into institutional policies and practices. This holistic approach emphasizes the alignment of strategic goals with pedagogical strategies aimed at enhancing cross-cultural understanding and fostering global citizenship among students.

In addition to strategic frameworks, the conducive conditions for successful internationalization must also be considered. Marginson (2012) emphasizes the role of supportive institutional environments in facilitating internationalization initiatives, including adequate resources, faculty support, and administrative infrastructure. Furthermore, Marginson argues that institutional culture and leadership play a pivotal role in shaping the extent to which internationalization goals are achieved within higher education contexts.

Pedagogical methods represent another crucial aspect of internationalization, encompassing a diverse array of approaches aimed at promoting cross-cultural learning experiences. Altbach and Knight (2007) highlight the importance of incorporating experiential learning opportunities, such as study abroad programs and international student exchanges, into educational curricula. These immersive experiences allow students to engage directly with diverse cultures and perspectives, thereby deepening their understanding of global issues and fostering intercultural competence.

In summary, the literature reviewed underscores the multifaceted nature of pedagogical mechanisms driving the internationalization of higher education programs. By adopting strategic frameworks, creating supportive institutional environments, and implementing innovative pedagogical methods, institutions can enhance cross-cultural learning experiences and prepare students for success in an interconnected world.

Discussion and Research Findings:

The discussion of pedagogical mechanisms driving the internationalization of higher education programs reveals a nuanced understanding of the strategies, conditions, and methods that contribute to this complex process. By synthesizing key insights from the literature review, this section aims to elucidate the implications of pedagogical approaches for fostering cross-cultural learning experiences and promoting global engagement within higher education contexts.

Strategic frameworks play a pivotal role in guiding the internationalization efforts of higher education institutions. As highlighted by Knight (2004), the alignment of institutional policies and practices with international, intercultural, and global dimensions is essential for achieving comprehensive internationalization goals. By integrating strategic objectives with pedagogical strategies, institutions can ensure that internationalization initiatives are embedded within the fabric of educational curricula and aligned with broader institutional missions. However, it is important to recognize that the implementation of strategic frameworks requires sustained commitment and investment from institutional leadership to overcome potential barriers and challenges.

The conducive conditions for successful internationalization extend beyond strategic planning to encompass supportive institutional environments. Marginson (2012) emphasizes the importance of adequate resources, faculty support, and administrative infrastructure in facilitating internationalization initiatives. Furthermore, institutional culture and leadership play a critical role in shaping the extent to which internationalization goals are realized within higher education contexts. Therefore, fostering a culture of inclusivity, diversity, and global engagement is essential for creating an environment conducive to cross-cultural learning and intercultural competence development.

Pedagogical methods represent another key dimension of internationalization, offering diverse approaches to promoting cross-cultural understanding and fostering global citizenship among students. Experiential learning opportunities, such as study abroad programs and international student exchanges, provide students with immersive experiences that deepen their cultural awareness and sensitivity (Altbach & Knight, 2007). Additionally, the integration of technology-enabled learning platforms and virtual exchange programs can facilitate global

collaboration and communication, transcending geographical boundaries and enhancing cross-cultural learning experiences.

In conclusion, the discussion of pedagogical mechanisms driving the internationalization of higher education programs underscores the multifaceted nature of this process. By adopting strategic frameworks, creating supportive institutional environments, and implementing innovative pedagogical methods, institutions can enhance cross-cultural learning experiences and prepare students for success in an interconnected world. However, further research is needed to explore the effectiveness of different pedagogical approaches and their impact on student learning outcomes within diverse cultural contexts.

Conclusion: In conclusion, this article has provided a comprehensive exploration of the pedagogical mechanisms driving the internationalization of higher education programs, focusing on strategies, conditions, and methods. Through a synthesis of theoretical perspectives and empirical evidence, several key insights have emerged, shedding light on the complex dynamics shaping cross-cultural learning experiences within higher education contexts.

Firstly, strategic frameworks play a pivotal role in guiding internationalization efforts, emphasizing the importance of aligning institutional goals with international, intercultural, and global dimensions. Institutions that adopt a comprehensive approach to internationalization are better equipped to integrate pedagogical strategies effectively, resulting in enhanced cross-cultural learning experiences for students.

Moreover, the conducive conditions for successful internationalization are essential for facilitating institutional efforts to promote global engagement and intercultural competence among students. Supportive institutional environments characterized by adequate resources, faculty support, and administrative infrastructure are critical for creating enriching learning environments conducive to cross-cultural collaboration and understanding.

Pedagogical methods represent another key mechanism for driving internationalization efforts within higher education programs. Experiential learning opportunities, such as study abroad programs and international student exchanges, offer valuable opportunities for students to engage directly with diverse cultures and perspectives. Additionally, innovative pedagogical approaches, including technology-enabled learning platforms and virtual exchange programs, present new avenues for promoting global collaboration and communication among students.

Overall, the findings of this study underscore the multifaceted nature of pedagogical mechanisms driving the internationalization of higher education programs. By adopting strategic frameworks, creating supportive institutional environments, and implementing innovative pedagogical methods, institutions can enhance cross-cultural learning experiences and prepare students for success in an interconnected world. However, it is important to recognize that internationalization is an ongoing process that requires continued commitment and investment from institutional leadership to ensure its long-term sustainability and effectiveness.

In conclusion, this article contributes to the scholarly discourse on internationalization in higher education by offering insights into the pedagogical dimensions of this phenomenon. By highlighting the strategies, conditions, and methods that underpin effective internationalization efforts, this study provides valuable guidance for educational policymakers, institutional leaders, and practitioners seeking to advance the global engagement and intercultural learning outcomes of higher education programs.

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Rezyume: *Oliy ta'lim dasturlarini xalqarolashtirish talabalarni global miqyosda o'zaro bog'langan dunyoga tayyorlashga intilayotgan butun dunyo bo'ylab institutlar uchun asosiy strategiya sifatida paydo bo'ldi. Ushbu maqolada xalqarolashtirish jarayonining asosini tashkil etuvchi pedagogik mexanizmlari, uni amalga oshirishga turtki beruvchi strategiyalar, shartlar va usullarni yoritishga e'tibor qaratiladi. Mavjud adabiyotlar va empirik dalillarni har tomonlama ko'rib chiqishga asoslanib, ushbu tadqiqot oliy ta'limni xalqarolashtirishga yordam berishda pedagogikaning ko'p qirrali jihatlarini o'rganadi.*

Резюме: *Интернационализация программ высшего образования стала ключевой стратегией для учреждений во всем мире, стремящихся подготовить студентов к работе в глобально взаимосвязанном мире. В этой статье рассматриваются педагогические механизмы, лежащие в основе процесса интернационализации, с упором на разъяснение стратегий, условий и методов, которые способствуют его реализации. Опираясь на всесторонний обзор существующей литературы и эмпирических данных, это исследование рассматривает многогранные аспекты педагогики в содействии интернационализации высшего образования.*

Kalit so'zlar: *pedagogik mexanizmlar, xalqarolashuv, oliy ta'lim dasturlari, strategiyalar, shartlar, metodlar, madaniyatlararo ta'lim, global ishtirok, madaniyatlararo kompetentsiya.*

Ключевые слова: *педагогические механизмы, интернационализация, программы высшего образования, стратегии, условия, методы, межкультурное обучение, глобальное взаимодействие, межкультурная компетентность.*

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STRATEGIES FOR DEVELOPMENT OF EMOTIONAL-MOTORAL QUALITIES OF ATHLETES

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Summary: *This article focuses on the issue of developing the emotional and volitional qualities of athletes. Also, the specific characteristics of sports, the stages of psychological preparation of athletes for the competition, and the psychological mechanisms of the possibility of achieving certain results in sports activities are described.*

Key words: *Physical culture, sport, athlete, competition, psychological preparation, victory.*

In sports teams the importance of will formation in the development of emotional and volitional qualities of athletes is very great. In order to solve this issue in a way that leaves a strong impression, it is necessary to take into account the aspects of the development of voluntary psychological laws. Will is formed in the process of athletes overcoming difficulties. These voluntary qualities arise in the following types of activities of athletes: mastering the content of the sports training plan, performing various physical exercises, overcoming external and internal difficulties, and in various subjective attitudes manifested in this process:

1. Difficulty related to the plan of sports training (gymnastics, athletics, basketball, swimming, etc.).
2. Difficulties associated with the lack of gymnasiums and playgrounds in the organization of training.
3. Difficulties associated with the lack of sports equipment during training.
4. Dependence on age and individual characteristics and subjective attitude of athletes to the general conditions in the organization of training.
5. Subjective attitudes related to individual and age characteristics of athletes in performing gymnastics, athletics and active game exercises.
6. Subjective attitudes related to individual and age characteristics in the creation and direction of voluntary qualities in the performance of specific actions in athletes.

It is necessary to take into account the overcoming of internal difficulties in the education of willful qualities using mixed methods. Elimination of external and internal mental difficulties during sports training and exercises is determined depending on the nature of educational materials, standard requirements of the plan and individual characteristics of athletes. In many cases, young athletes (adolescents around 13-15 years old) have underdeveloped physical strength qualities, lack of self-confidence in performing one or another exercise, fear of injury, shyness, in general, training such as having a negative attitude leads to a decrease in their overall interest. Fun organized training and exercises form positive willpower qualities in athletes. Also, special physical exercises performed in each session have a strong effect on the growth of athletes' willpower. For example, in order to develop independent thinking in athletes, it is very important to come up with a group of muscle-building exercises with them, to choose and perform light and heavy exercises together, and to compare several exercises in the main part of the training.

In order to increase endurance in athletes, performing exercises with high skill, performing some exercises to the maximum, achieving specific results in a short time, achieving high results based on performing exercises with high technical and tactical skills in difficult conditions (jumping high by switching legs, (jumping from the opposite side, repeatedly performing jumping exercises by making the situation more difficult) is required. It is also very important to teach athletes to self-willed force based on the effort of special exercises in order to develop willpower in athletes.

The style of willpower can be divided into external and internal types:

- 1) external willpower depends on the external event and stimuli affecting the athlete's sensory organs;

2) internal willpower appears during training and competitions based on the directions available to the athlete himself.

We recommend the coach to use the following methods to develop willpower endurance in athletes during training and competitions:

- a) demand to correctly perform the exercises given at home;
- b) educating athletes in the spirit of self-confidence;
- d) evaluation of correctly performed exercises;
- e) forcing, competing, praising;
- d) formation of self-motivation skills in athletes;
- e) teaching to perform difficult exercises independently;
- f) self-influence, self-pleasure, self-command, etc.

The importance of special physical exercises in the all-round development of athletes during childhood and adolescence is very important. Qualities such as teamwork, hard work, discipline, and morality are cultivated in athletes in teams and sports groups. When a human child is born, he has the need to perform various actions. As Ibn Sina said, when a person moves, various toxic substances in his tissues leave the body with sweat.

The main goal of sports training is to support the healthy growth of the young generation based on the training of highly qualified athletes, sports specialists, and champions. It is necessary for the coaches to consciously feel that physical culture and sports are not the personal work of each athlete, but the demand of society. Our health is the most important factor not only for ourselves, but also for other people, and also for the development of the Motherland. According to Academician N.M. Amosov, it is necessary to assess the health of a healthy person not based on the absence of disease, but based on the volume of performing various quick movements and the type, quality, and number of daily movements. Limited range of motion is a sign of poor health.

Doing sports is one of the permanent and personal goals in the daily life of every young generation, and it is one of the most important factors for its growth, love and protection of the motherland.

Self-education of athletes in the form of community is carried out in the process of performing various exercises and community work together in the course of sports training, exercises and competitions. It should be taken into account that taking and fulfilling public obligations has an important place in self-education. If athletes are taught to evaluate their behavior correctly, the stability of public opinion will appear. As a result, the team of the sports team becomes an organized, strong force. In individual form, each athlete has a clear commitment to himself. In fulfilling this obligation, the individual characteristics of each athlete should be taken into account.

The following rules should be followed when organizing self-education:

- 1) the self-education plan should be clear and meaningful;
- 2) new obligations must be accepted after the old ones have been fulfilled;
- 3) independent work of athletes should be evaluated by the public;
- 4) it is necessary to show what means of education are used in self-education.

For example, it is advisable for teenage athletes to consistently follow the following methods of self-training:

- a) not to lose oneself even in the most difficult conditions;
- b) not to be offended by trivial things;
- d) not to allow lack of will, i.e. "not to lose oneself even in failure".

Self-education will give positive results only if the following stages are organized correctly:

At the first stage, taking into account the lack of harmonious development of moral, willful and physical qualities of athletes, what prevents them from constantly engaging in physical exercises, training athletes to eliminate these shortcomings; to cultivate in them the ideological aspects of self-education, to form the characteristics of self-defense, to accustom them to

independent work in order to further improve their physical strength qualities, to form the needs of active participation in sports competitions is required.

In stage II, the following methods can be used to organize the practical aspects of self-education of athletes:

- a) acceptance of written commitments by the athlete;
- b) for a certain period of time, to evaluate his behavior, to perform the tasks he has accepted on time, and to report on his moral, willful and physical qualities;
- d) written analysis of the athlete's obligations: formation of skills to understand the reasons for success and defeat in competitions;
- e) learn to draw conclusions using the correct feeling of the characteristics that the athlete lacks in self-evaluation.

In the III stage, the athlete should be accustomed to live with the need to develop independently in every way.

Proper management of a sports team or group depends on the organizational and pedagogical skills, knowledge and abilities of the coach. In particular, the confidence of the coach, the establishment of a correct and respectful relationship with the team of athletes allows to increase the interest of athletes in training. In properly managing a team of athletes, it is appropriate for a coach to pay special attention to the following: impartial assessment of each other's needs, self-confidence, proper competition in sports competitions, helping each other, physically weak athletes understanding and caring about them, such as raising the spirits of team athletes.

The level of mental activity of athletes often depends on the high quality of sports training and competitions. Athletes mobilize all their strength in order to show themselves during such an organized competition. Also, the method of competition helps to identify "leaders" for sports, and athletes to independently organize future sports competitions. To organize and hold sports competitions, coaches and active athletes are required to use strong willpower.

Experienced coaches should be able to understand the process of sports training very well and should feel the existing shortcomings of their students and eliminate them in time. In addition to this, the coach must have a wide range of action memory, be able to keep in his memory the images of various actions performed, observe what the athletes are doing during the training sessions, and quickly and correctly train them for a short period of time. it is required to start and come to a clear decision.

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Rezyume: Mazkur maqolada sportchilarning hissiy-irodaviy sifatlarini rivojlantirish masalasiga e'tibor qaratilgan. Shuningdek, sport turlarining o'ziga xos xususiyatlari, sportchilarni musobaqaga psixologik tayyorlash bosqichlari hamda sport faoliyatida ma'lum bir natijalarga erishish imkoniyatlarining psixologik mexanizmlari bayon etilgan.

Резюме: Данная статья посвящена вопросу развития эмоционально-волевых качеств спортсменов. Также описаны специфика спорта, этапы психологической подготовки спортсменов к соревнованиям, психологические механизмы возможности достижения определенных результатов в спортивной деятельности.

Kalit so'zlar: Jismoniy madaniyat, sport, sportchi, musoboqa, psixologik tayyorgarlik, g'alaba.

Ключевые слова: Физическая культура, спорт, спортсмен, соревнование, психологическая подготовка, победа.

CREATION OF METHODOLOGIES IN A VIRTUAL LEARNING ENVIRONMENT FOR INORGANIC CHEMISTRY LABORATORY LESSONS AND EVALUATION OF ITS EFFECTIVENESS

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Summary: *This article aims to organize and evaluate the effectiveness of inorganic chemistry laboratory classes in secondary schools using virtual educational technology methods. The research process was conducted for the 8th grade students of general education schools on the subject of "Qualitative reactions for halogen anions" laboratory lesson. ChemCollective, HyperChem, ChemOffice visual Chem3D programs and the ChemLab database were used to conduct chemistry laboratory classes and develop the methodology. According to the developed methodology, the efficiency of students' mastery of the subject after the use of virtual education technology. Up to 33%, for poor it decreased from 40.2% to 10.4%. Also, when virtual educational technologies are used in the course of the lesson, the students' satisfactory grades are from 22.4% to 45.6%, mastering good grades 23 From % to 77%, it was observed that the acquisition of excellent grades increased.*

The purpose of the study: *Development of a methodology for conducting inorganic chemistry laboratory classes based on interactive virtual educational technology and evaluating the effectiveness of the formation of students' psychocognitive characteristics based on it.*

Keywords: *Interactive educational technologies, virtual educational environment, intuitive graphic environment, asynchronous multimedia program, animated 3D platform.*

Access.

In recent years, the use of multimedia tools has significantly increased due to the introduction of modern pedagogical technologies into the educational process [1]. This learning method facilitates extensive complex and step-by-step processes and allows users to learn them in less time than traditional learning methods. In interactive multimedia technologies, compared to traditional technologies, information is expressed not in the form of text, but in the form of images, sounds and actions. This teaches students to be more active and attentive in training, because information is presented on the basis of appropriate responses to certain motor actions [2-4].

One of the interactive multimedia technologies is the creation of a virtual educational environment in the teaching of chemistry and its direct introduction to chemistry laboratory classes. In the process of organizing chemistry laboratory classes and conducting laboratory training, in many cases, the use of toxic, flammable and explosive reagents and complex equipment is required [5-6]. Reviewing it in a virtual state with the help of a computer before starting to perform laboratory work directly leads to saving reagents, ensuring safety, and increasing the efficiency of the educational process. Also, in the educational process, highly interactive and multimedia technologies can be used to organize practical classes of natural sciences such as chemistry, biology and physics, by modeling and designing the process of laboratory classes, it is possible to simulate real-life actions in an interesting and intuitive graphic environment. This allows students to acquire new knowledge and skills through practical learning. Virtual education creates a global learning community. With the disappearance of geographical boundaries, students can connect with professionals from all over the world, learn about different cultures and gain different perspectives. It not only promotes knowledge sharing but also global cooperation and understanding [7-10].

For a long time, teaching chemistry laboratory activities to students has been based on the use of textbooks and lectures. However, with the advent of 3D modeling technology, teachers now have the opportunity to teach science to their students using a modern, innovative new tool. 3D modeling in science education allows students to interact with scientific concepts in a more

interesting and immersive way [11-13]. At the same time, students will have the opportunity to better understand complex concepts and theories through 3D modeling of the process. This article describes the results of the research carried out in some general education schools on the topic "Methodology for improving the activities of the young chemists' circle in the virtual educational environment (in the case of general and secondary schools)"

II. Methods.

This study is aimed at increasing the effectiveness of the educational process using virtual educational technologies in chemistry laboratory classes of secondary schools, and it is planned to be implemented step by step in the 2024-2025 academic years. In the research process, ChemCollective VL, HyperChem, Chem3D programs in ChemOffice visual and ChemLab database were used for modeling and designing substance molecules and in developing the methodology of animated 3D laboratory lessons. The Likerd scale was used to evaluate the effectiveness of students' mastery of the subject.

III. Results and discussion:

3.1. Design stage.

The research process was carried out on the basis of the theme "Qualitative reactions for halogen anions" in the inorganic chemistry laboratory lesson for the 8th grade students of some general secondary schools in Samarkand. In the course of the lesson, the Chem3D program in the ChemOffice visual was used to create the structure of the substance molecule and to study the dynamics of its movement. Also, in anion detection reactions, the animated 3D laboratory activity ChemLab virtual laboratory platform was used (Fig. 1).

Chemistry Laboratory is an interactive visual 3D animation program that helps organize chemistry laboratory activities, 3D animation software allows users to create and manage three-dimensional virtual models and environments. When applied in the field of chemistry, such software can be used to visualize and simulate various chemical processes, molecular structures, reactions, and other related phenomena. allows for better contextualization of chemical processes by associating with.

In the development of the inorganic chemistry laboratory training methodology, the main materials were created using Adobe Flash CS3 Professional, and educational media virtual software in ".exe" or "SWF" format was used.

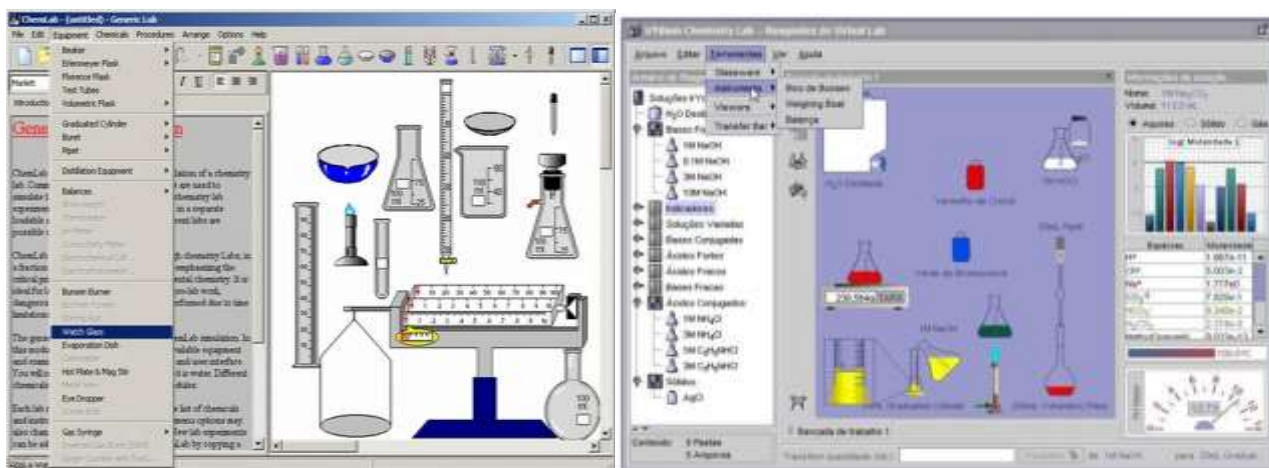
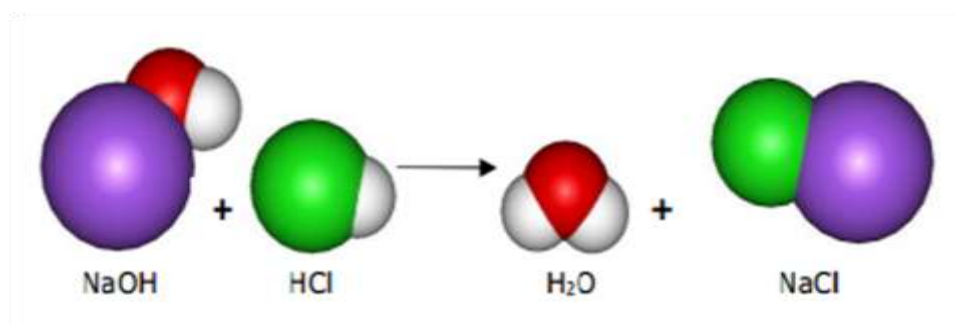


Figure 1. A view of the working window of the ChemLab program and the equipment panel

In the laboratory lesson, when determining Cl⁻, Br⁻ and J⁻ ions through the reaction of formation of chukma with the help of cations, students were first taught to create NaCl through the reaction of neutralization in the presence of NaOH alkali and HCl acid using the Chem3D program in ChemOffice visual.



A simulation of the formation of a precipitate by dissolving the formed NaCl and transferring Cl⁻ ions from the solution to the precipitate was visualized (Fig.

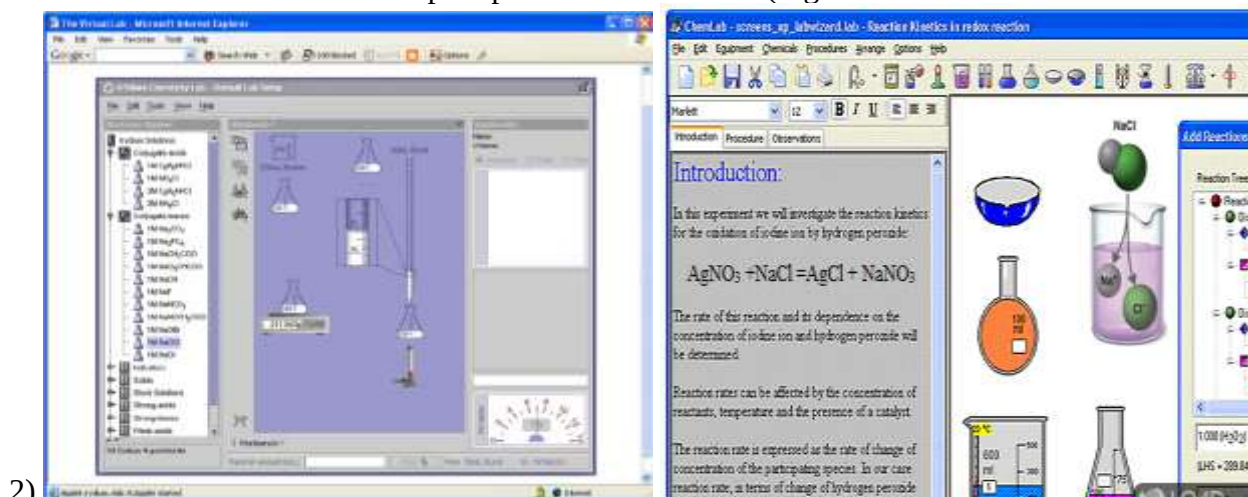


Figure 2. Visualization of reactions in ChemLab software

Criteria for evaluating students' knowledge

The 8th grade of 27 students used virtual learning technologies in the chemistry department. A Likerd scale was used to evaluate the learning indicators of students in a lesson with the support of virtual education elements and was calculated in percentages for each criterion (Table 1).

Table 1

Assessment of students' knowledge on the Likerd scale

Category	Mashtab
Very good	5
Good	4
Satisfactory	3
bad	2
Too bad	1

Quantitative evaluation of the research results in terms of percentages was carried out according to each criteria in the following order (Table 2).

Table 2

Evaluation according to descriptive criteria

Quantity	category
0-20%	Too bad
21%-35%	bad
36%-60%	Satisfactory
61%-80%	good
81%-100%	Very good

In the course of the lesson, the situation of the students was compared before the experiment and after the use of virtual learning elements in completing the given tasks (Fig. 3).

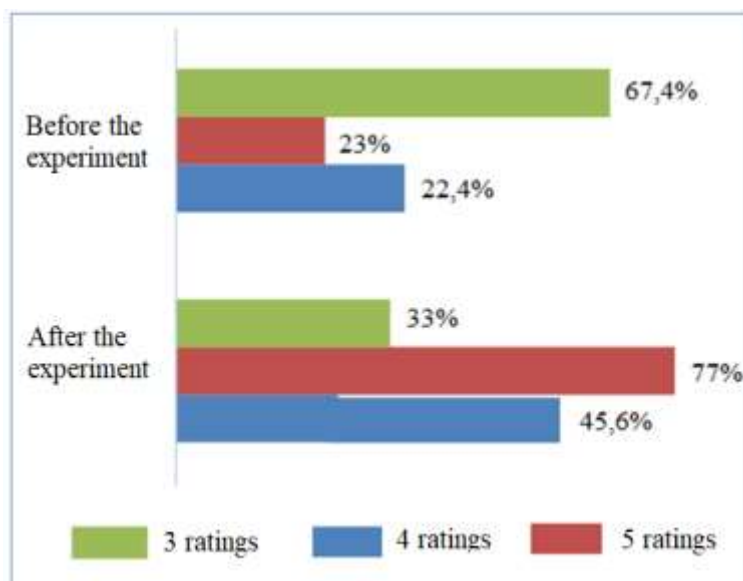


Figure 3. Indicators of students mastering the assigned tasks before and after the experiment

It can be seen from the figure that after the use of virtual learning technology, the students' mastery of the concepts of the subject: from 67.4% to 33% for very poor, 40 for poor, decreased from 2% to 10.4%. Also, when virtual educational technologies are used in the course of the lesson, students' satisfactory grades are from 22.4% to 45.6%, acquisition of good grades is from 23% to 77%, It was observed that the mastery of lo grades increased.

Conclusions.

Inorganic chemistry laboratory classes for 8th grade students of general education schools were organized on the basis of virtual learning technology. ChemCollective VL, HyperChem, Chem3D programs in ChemOffice visual and ChemLab database were used for the modeling and design of substance molecules in the course of the lesson, as well as for the development of the methodology of animated 3D laboratory lessons. After the use of virtual learning technology, students' mastery of subject concepts: from 67.4% to 33% for very poor, from 40.2% to 10.4 for poor %. In addition, when using virtual educational technologies in the course of the lesson, the students' satisfactory grades increased from 22.4% to 45.6%, the acquisition of good grades increased from 23% to 77%, and the acquisition of excellent grades increased. observed.

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Rezyume: Ushbu maqola umumta'lim maktablarida virtual ta'lim texnologiyasi usullaridan foydalangan holda noorganik kimyo laboratoriya mashg'ulotlarini tashkil etish va samaradorligini baholashga qaratilgan. Ilmiy-tadqiqot jarayoni umumta'lim maktablarining 8-sinf o'quvchilari uchun "Galogen anionlarning sifat reaksiyalari" laboratoriya mashg'uloti fanidan o'tkazildi. Kimyo laboratoriya mashg'ulotlarini o'tkazish va metodikani ishlab chiqish uchun ChemCollective, HyperChem, ChemOffice vizual Chem3D dasturlari va ChemLab ma'lumotlar bazasidan foydalanildi. Ishlab chiqilgan metodikaga ko'ra, virtual ta'lim texnologiyasidan foydalangandan so'ng o'quvchilarning fanni o'zlashtirish samaradorligi. 33% gacha, kam ta'minlanganlar uchun u 40,2% dan 10,4% gacha kamaydi. Shuningdek, dars jarayonida virtual ta'lim texnologiyalaridan foydalanilganda o'quvchilarning qoniqarli baholari 22,4 foizdan 45,6 foizgacha, yaxshi o'zlashtirgani 23 foizdan 77 foizgacha a'lo baholar o'zlashtirganligi kuzatildi.

Tadqiqot maqsadi: Interfaol virtual ta'lim texnologiyasi asosida noorganik kimyo laboratoriya mashg'ulotlarini o'tkazish metodikasini ishlab chiqish va uning asosida o'quvchilarning psixokognitiv xususiyatlarini shakllantirish samaradorligini baholash.

Резюме: Целью данной статьи является организация и оценка эффективности лабораторных занятий по неорганической химии в общеобразовательных школах с использованием методов виртуальных образовательных технологий. Процесс исследования проводился для учащихся 8 классов общеобразовательных школ по теме лабораторного занятия «Качественные реакции на анионы галогенов». Для проведения лабораторных занятий по химии и разработки методики использовались визуальные программы ChemCollective, HyperChem, ChemOffice Chem3D и база данных ChemLab. По разработанной методике оценивается эффективность освоения студентами предмета после использования технологии виртуального обучения. До 33%, у бедных она снизилась с 40,2% до 10,4%. Также при использовании в ходе урока виртуальных образовательных технологий удовлетворительные оценки учащихся составляют от 22,4% до 45,6%, освоение хороших оценок 23. С % до 77% отмечено увеличение получения отличных оценок.

Цель исследования: Разработка методики проведения лабораторных занятий по неорганической химии на основе интерактивной виртуальной образовательной технологии и оценка эффективности формирования на ее основе психокогнитивных характеристик студентов.

Kalit so'zlar: Interfaol ta'lim texnologiyalari, virtual ta'lim muhiti, intuitiv grafik muhit, asinxron multimedia dasturi, animatsion 3D platformasi.

Ключевые слова: Интерактивные образовательные технологии, виртуальная образовательная среда, интуитивно понятная графическая среда, асинхронная мультимедийная программа, анимационная 3D-платформа.

THEORETICAL FUNDAMENTALS OF PLANNING THE PHYSICAL FITNESS OF PLAYERS

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Summary: *The importance of properly planning and organizing activities is very important for an athlete to be able to cope with the loads of those involved in training at the level of physical training of professional players.*

Keywords: *young players, football training, planning, perspective plan, physical fitness, physical load.*

Research is being carried out by mature professionals in the world on the selection, and ampluasi orientation of athletes, aimed at qualification criteria and directions in the sport of football. Scientific research is carried out by most researchers in the sport of football to determine the indicators of the interaction between the athlete's genetics and physical performance, and, depending on the position of the game, the current state of the player. Despite the sufficient development of the content of the qualification of participants for sports, there remain many unresolved problems regarding the issues of sorting and directing children to sports in the admission to the initial preparatory stage in the sport of football.

The need arises to develop new test norms aimed at the objective assessment of the physical development, physical fitness, and movement abilities of young athletes, to improve the methodology for qualifying talented young players for the initial stage of training based on complex research using pedagogical, medical-biological and sociological methods. One of the necessary conditions in the effective management of many years of training of players is the correct and accurate planning and management of training loadings. They allow you to identify the main directions of sports training, periodize them, find solutions to existing tasks, and choose optimal tools and methods.

Planning is to anticipate and achieve the ultimate goal. Promising, current, and rapid planning is used in the practice of training young players.

There are several types of planning:

a) promising - to years of Series; b) current - to a year; v) fast - to a month, week, day.

The leading place for other types of planning is mainly allocated to promising planning.

Prospective planning. Prospective planning is carried out from the stage of specialization. The plan is designed for 2-3 years for young players (11-14 years) and 3-4 years for senior training groups. A promising plan is based on the goal of many years of preparation, specific tasks are developed that must be solved at the planned stage, the main direction and content of the training and training process are determined, optimal training and competition loads are established, and the implementation of control norms is envisaged. The plan also reflects the demands placed on the training of young players with a tendency to increase from year to year. The increase in the complexity of the tasks being solved is closely related to the increase in the volume and intensity of training loads.

Prospective training planning is the process of developing a plan for several years through the analysis of the results of data, advanced experience, and scientific research, which depends on the many years of training of players, and is a program for improving the skills of players within a certain period.

Promising training plans can be drawn up for both the team and the player taken separately. In the first case, a general promising plan is developed, in the second - an individual plan. The general plan reflects the established prospects for the entire team, in which only instructions are given that apply to all players of that team, regardless of the individual characteristics of the

players. In an Individual perspective plan, the guidelines outlined in the overall plan are concretized in terms of application to each player.

Individual plans can be drawn up for different periods, depending on the age, health status, and skill level of the player. Before preparing promising training plans, of course, a four-year competition calendar will be developed.

The promising plan should reflect the tendency to increase the requirements for the skill level of players and strengthen their health. In this regard, the promising plan should provide for tasks by year, the size and intensity of training tools, and changes in control standards. Taking into account the periodization of the largest football competitions (world and Asian Championships, Olympic Games), it is advisable to draw up a general promising plan for the training of players for four years.

General perspective plans should contain only basic information (without unnecessary details). General information will be available in current plans. When developing a promising plan, it is necessary to rely on the experience of the best coaches and players.

At the same time, it should also be based on scientific research in its construction. To develop a promising plan, it is important to analyze the training of players in the previous multi-year cycle since on its basis the main directions for the next years are determined.

When setting new tasks and determining control indicators, it is necessary to proceed with a complete analysis of previous training (in the last three to four years). It is very important to identify the weaknesses and strengths of the preparation of the players. Alternatively, it will be necessary to pay attention to the results of the control tests of the players' medical examinations at Ham, as well as their performances in competitions.

The analysis carried out in this way makes it possible to draw correct conclusions and determine the main tasks and main indicators of the promising plan of training.

The general promising plan of training should reflect the following sections:

1. A brief description of the team.
2. The purpose and main tasks of many years of training.
3. Stages of preparation and their duration.
4. The main (Central) Competitions of each stage.
5. The main directions of the training process by stages (main tasks and their size at different stages).
6. Distribution of training, competitions, and Recreation at each stage.
7. Sports-technical indicators by year.
8. Control standards that characterize various aspects of athlete training.
9. Changes in team composition.
10. Pedagogical and medical supervision.
11. Training areas, equipment, and inventory.

When drawing up a promising plan, the following rules should be followed:

1. The dynamics of sports-technical indicators should reflect the general law - their progressive growth over a four-year cycle.

2. As the skill of the players increases, the number of workouts also increases from year to year, and the increase in the number of workouts increases mainly at the expense of additional training (including individual).

3. The promising plan provides for a wavy variant of the volume and intensity of differentiated exercises for different teams of players. In this case, the increase in sports loads is planned as each period of the next annual cycle begins and ends with higher levels of sports loads than the corresponding period of the previous annual cycle.

With this, a promising increase in sports loads from year to year and their increase throughout the entire cycle of multi-year training in different teams is ensured. The necessary temporary downloads are provided within the framework of current and operational plans of training. The intensity coefficient is used as an objective indicator.

Advanced player training experience shows that the number of competitions in which players participate is also changing towards an increase.

During the transition period, a step-by-step transition is carried out from large-scale and intense sports training to less intense and voluminous loads. However, due to the gradual transition to the year-round competition system, active exercise does not stop. This allows you to avoid a sharp decrease in sports form.

In the first stage of the transition period, mainly complex training is continued before going to rest. Exercises designed primarily to develop agility, endurance, and strength, and agility occupy a minor role in training. Double matches and friendly matches will be continued. The duration of training, their intensity, as well as the difficulty of competitions gradually decrease.

During the transition period, training is quiet, and players independently engage in various physical activities based on the advice of a coach and a doctor.

By the end of the transition period, players are advised to activate independent fitness training to reduce the time to enter the sports uniform of the next annual training cycle.

The volume and intensity of sports loads in the annual training cycle of players are variable values and change unevenly. The curve of the change in the volume of sports loadings for players is observed based on data on the number of training sessions and their duration - the volume of exercises performed at maximum speed (running) and the number of competitions.

The analysis of this data makes it possible to draw up principled schemes for the distribution of sports loads in the annual training cycle of players. At the beginning of the annual cycle (preparatory period), the volume of loadings gradually increases (January - March), then it seems to stabilize a little (April - July), after which it only continues to decrease. This situation will continue until the transition period. The intensity of loads constantly increases from the beginning of training and continues to increase throughout almost the entire annual cycle, and only drops sharply during the closing phase of the competition period.

Training intensity reaches its peak approximately in the second half of the competition period (August-September). Taking into account the fatigue accumulated in the players as a result of later participation in many competitions, the intensity of training gradually decreases. It is very important to give periodic recreation to players at these time intervals.

As for the less qualified categories of players, the scheme for the distribution of the size and intensity of exercises in their current training plan may be different, since it depends on several circumstances (climatic conditions, calendar of competitions).

When drawing up a training plan and in the process of its implementation, it is necessary to build on the basic principles of managing sports training and related processes, information on the best experiences of training domestic and foreign players, conclusions from the analysis of the team's training in previous years.

When determining the level of sports loadings, competitions serve as referrals. It is known that competitions on the impact on the body of a player differ from training. Heavy-load training does not cause the exact reaction that occurs with participation in the competition. The weight loss of players occurs as follows: after training with an average load - of 1 kg, after training with a heavy load - of about 2 kg, and after the competition - a similar state of physiological shifts of 3 kg is also observed in the data on changes in pulse rate, blood pressure, respiratory rate, dynamometry, electrical sensitivity of the eyes and other indicators.

Summarizing the best experience of training players and information about the physiological shifts that occur in the body of players under the influence of training and competitions made it possible to conditionally divide all sports loads into six categories.

1. Races-highest load.

2. Training with a very large load. It usually lasts 3.35 hours and has a density of 90-100%. Pulse Data-120-220 beats/min.

3. Training with a large load. It usually lasts 2-3 hours and has a density of 90-95%. It mainly includes exercises performed with high intensity, including games and play exercises that last at least 30 minutes. 120-190 min. up to 1 seat with Pulse Data.

4. Training with moderate loading. It allows us to observe the clean execution of technical methods, as well as to study new tactical methods and make changes to existing basic methods of Bauchi density. The exercises are mainly performed with moderate intensity. Duration of the lesson-1.5-2 hours. Pulse Data-120-170 beats/min.

5. Training with a small load. It is usually played on the eve of the game. Includes exercises that do not require large neuromuscular movements, which are not associated with the risk of injury. Exercises are performed with moderate intensity. Duration of classes-45-60 minutes. Pulse Data-100-130 beats/min.

6. Training with standard downloads. It usually takes 1-1.5 hours. Pulse Data-120-150 beats/min.

Such laws of assessment of downloads are confirmed by the speed of recovery processes in the body of players after various sports downloads.

The longest course of the recovery process is bilateral and occurs especially after the game on the calendar. After a workout with a heavy load, recovery in most cases does not occur until the next day. And after a workout with an average load, almost all players recover the next morning.

But, of course, it is necessary to keep in mind the relativity of such concepts as standard, small, medium, large, and very large loading, since under the influence of systematic training and with an increase in physical fitness, the reaction of the player's body to certain specific loads also changes. Since the level of functional state of the athlete increases steadily under the influence of training, the volume of loads should also increase.

Within training cycles, the loadings are distributed in such a way that they can gradually increase and decrease, while in intergame cycles the player can be brought to each subsequent competition in its most optimal sports uniform.

At the same time, it is very important to organize the right turn of competitions, training, and recreation, as well as to carry out rehabilitation activities clearly and on time.

Rest is an integral part of training. Compliance with rest intervals of optimal duration between exercises, training, and competitions (although we will not talk about its content) is the first condition for a reasonably organized workout.

The rest intervals should not be too long (as well as too short). Rest should contribute to the successful passage of recovery processes in the body, while not eliminating traces of previously done work, that is, the results of training.

Weekly cycles can be shown as Optimal training cycles. Sports loadings in training cycles are distributed as follows: the first option - the first and second days (after rest) - medium loadings; the third and fourth days heavy loadings; the fifth day - medium loadings and the sixth day - small loadings; the second option - the first and second days - medium loadings, the third day - large loadings, the fourth day - medium loadings, the fifth day - heavy loadings, the sixth day - medium loadings.

Inter-game optimal cycles are those in which there are six-day and five-day breaks between them. Breaks in such a duration allow (a) the application of large sports loads in training; (b) full-scale improvement of sports skills; (C) the highest preparation for each subsequent game and arrival in a sports uniform; (g) ensuring longevity in sports.

In an inter-game cycle with a six-day break, sports downloads are distributed as follows:

the first option: the first day (after the competition) - rest; the second day - average download; the third day - a large download or game; the fourth day - a double play; the fifth day average download; the sixth day small download;

the second option: the first day - rest; the second day - large loading; the third day - medium loading; the fourth day - large loading; the fifth day - medium loading; the sixth day - small loading.

As can be seen from the above, two options for distributing loads are used in training and integrate cycles with six-day breaks:

the first option: is to conduct training against the background of relative semi-recovery;

the second option: is to conduct training against the background of relative recovery.

In the first case, the adaptation of the body to sports activities in extreme States is provided for the implementation of the principles of tattooed activity exercises in ham.

In the second case, the goal is to create the necessary conditions for the uniform distribution of the volume and intensity of exercises in heavy-load training.

In an intergame cycle with a five-day break: the first day is rest; the second day is average loading; the third day is large loading; the fourth day is average loading and the fifth day is small loading.

Inter-game cycles with a four-day break and a three-day break do not feature heavy load training and double plays. In this, it is possible to do training only with medium and low loads, since the days that remain until the game are not enough to recover. The training effect of such cycles will not be enough, and therefore we do not recommend them.

Frequent competitions with short breaks (4-1 days) between them cause fatigue, lead to a decrease in sports performance, slow down the growth of sports skills, and do not contribute to longevity in sports.

Thus, regular use of a shortened break is not recommended in inter-game cycles, especially when planning competitions. Due to necessity, their occasional use is permissible.

The use of longer breaks (7 or more days) leads to a decrease in the number of days off in training cycles as well as competitions in inter-game cycles, which does not correspond to the rules mentioned by us earlier on this issue.

Together with the work plans, a scheme is drawn up for their validity for the distribution of training on the level of sports loads, which serves as a guideline for determining the level of sports loads and applying competitions, training, and rest alternately.

In modern sports, there cannot be a universal approach to determining the prospects of those who practice the chosen sport. However, there is no doubt that by correctly choosing tools, methods, and training loads, morphological, physiological, and psychological capabilities can be formed by the requirements of the chosen sport.

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Rezyume: *Mashg'ulotda shug'ullanuvchilarni professional futbolchilarning jismoniy tayyorgarliklari darajasida yuklamalarni yenga oladigan atlet bo'lishi uchun mashg'ulotlarni to'g'ri rejalashtirish va tashkil qilishning ahamiyati juda muhimdir.*

Резюме: *важность правильного планирования и организации деятельности очень важна для того, чтобы спортсмен мог справляться с нагрузками лиц, участвующих в тренировках, на уровне физической подготовки профессиональных игроков.*

Kalit so'zlar: *Yosh futbolchilar, futbol mashg'ulotlari, rejalashtirish, istiqbolli reja, jismoniy tayyorgarlik, jismoniy yuklama.*

Ключевые слова: *юные игроки, футбольная подготовка, планирование, перспективный план, физическая подготовленность, физическая нагрузка.*

**PEDAGOGICAL AND PSYCHOLOGICAL CONTENT OF COMPETENT APPROACH
TO FINE ART EDUCATION**

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Summary: *In this article, special importance is given to the fact that in the assessment of the activity of specialists in the field of fine arts in the countries of the world, they still hold the commercial commissions. In general, in the study of visual and artistic works and their analysis from the point of view of experts, the basis of the compositional device of the work is a criterion.*

Key words: *art, fine art, realism, composition, form, content, spirituality, worldview.*

The main goal of modern education is to prepare a person who is fully developed for society and the state, who is socially adaptable to society and work, and who can work on himself. Therefore, the level of competence of pedagogues is important in education of a comprehensively developed personality. In the science of pedagogy, the concept of psychological-pedagogical competence means the pedagogue's achievement of the highest level of results in the educational process, high professional potential, as well as communication and positive qualities. The word "competence" is defined by having awareness, reputation, comprehensive understanding and experience in one's field.

The process of education and upbringing consists in preparing the growing young generation for life based on the social order that reflects the demands of society. In the process of education and upbringing, young people acquire the knowledge, manners, customs, culture and work skills collected by their ancestors, take their rightful place in society based on life experience, and the personality of the pedagogue is his professional skills are important. At the same time, the formation of qualities necessary for solving new issues and problems arising from the demands of the times in young people is a priority task of the field of pedagogical activity. For this, first of all, the pedagogue must have the skills to impart new knowledge, to be able to engage in creative activities in accordance with the changing working and life conditions. From this point of view, the first President of our republic, I.A. Karimov, said, "We are facing an urgent issue that cannot be underestimated, such as providing educators with modern knowledge, improving their knowledge and skills. In my opinion, the main problem in changing the education system is here. We demand that the teacher give modern knowledge to our students. But in order to give modern knowledge, first of all, the coach himself must have such knowledge. The person is defined as an important component of the national model of personnel training, the main subject and object of the personnel training system, the consumer of educational services and their implementer. This created the necessary foundations for the establishment of individual-oriented education in our republic. Visual arts teachers are considered one of the special competencies within the professional competencies, and the composite competence is one of the special competencies.

Composite competence is implemented in the educational process of composition science. In the composition classes, the tasks of developing students' imagination, creative thinking and imagination, artistic vision, taste and visual memory are carried out. At the same time, working on compositions serves to teach students to be able to analyze the compositional construction of works of art, and to organize compositions in the depiction. An artist or an art teacher with well-formed composite competence understands the creativity of the external world and can express it in images correctly and in accordance with composition laws. Composite competence is not formed without composite knowledge and skills, that is, without acquiring theoretical information about composition laws, rules, methods and tools, and without mastering the skills of using this

knowledge in practice Modern education, as in other fields, shows that in the teaching of fine arts, more demands are made than the task of forming only theoretical knowledge and skills. Today, a visual arts teacher is required to have a creative approach to the outside world and editorial activity, a non-standard approach to some problematic situations, and the ability to properly organize groups in drawing, construction and development.

There are different views on the study of the concepts of competence and competency, and there is no general opinion on the interpretation of these terms. For example, English psychologist J. Ravent gives the following definition of the term competence: "Competence is, first of all, a person's independent creative activity in the learning process and the general abilities and activity level based on the knowledge and experiences he acquires in the educational environment aimed at his successful socialization"

I.A. Zimnnya defined the term comretent as follows: "competency is an intellectual and personality based socio-professional description of a person, personal qualities formed on the basis of knowledge". O. L. Juk defined competencies as "a general description of a person's ability to successfully solve professional, social and personal tasks. Competence interpreted as a type of "personalized competence; a special ability aimed at applying knowledge, skills, experience and personal qualities in solving professional, social and personal tasks."

Pedagogical scientist A.V. Khutorskoy believes that "comprehensiveness is a combination of interrelated qualities of a person (knowledge, skills, qualifications, type of activity) that serves to successfully implement a certain type of activity." "Competency is the possession of competencies that enable the successful implementation of a certain type of activity"

Summarizing these views, competence is a combination of professional and personal knowledge, skills, experience and qualities that serve to successfully implement a certain activity is the practical application of the existing competence of the person.

A.K. Markova classified the professions and competencies as follows:

Special competence is the possession of necessary special knowledge, skills and experiences during professional activity and knowing how to use them during practical activity;

Social competence - includes the skills and experiences of being able to engage in social relations in professional activity and to conduct joint activities;

Personal competence is the ability of a specialist to develop himself during his professional activity, to plan his professional activity correctly, and to solve problems independently.

Individual competence is expressed in the presence of the ability to self-manage, the possibility of self-professional development, and the presence of professional motivation.

This classification shows that the activity of the fine art teacher of composition competence property belongs to this special competence group.

So, in general, we can define the composition competence ownership as follows: **composition competence** is the knowledge, skills, and abilities necessary to properly plan and organize the process of artistic and creative activity in the field of visual arts It is a combination of experiences and the ability to solve problems that arise in professional activity through this activity.

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Rezyume: Maqolada dunyo mamlakatlarida tasviriy san'at sohasi mutaxassislarining faoliyatini baholashda ham aynan kompozitsion kompetensiyalarni egallaganligiga alohida ahamiyat beriladi. Umuman, tasviriy san'at asarlarini o'rganishda va uni mutaxassislar nuqtai nazaridan tahlil etishda asarning kompozitsion qurilmasiga asosiy mezon hisoblanadi.

Резюме: В статье подробно рассмотрено понятие композиции в изобразительном искусстве, педагогические и психологические особенности формирования у студентов знаний о композиции. В процессе повышения грамотности юного художника от основ изобразительного искусства через цвет в композиции основное внимание уделяется тому, на что следует обращать внимание при определении цветоощущение студентов и важности формирования искр творчества на первых этапах и его дальнейшее развитие.

Kalit so'zlar: san'at, tasviriy san'at, realizm, kompozitsiya, shakl, mazmun, ma'naviyat, dunyoqarash.

Ключевые слова: искусство, изобразительное искусство, реализм, композиция, форма, содержание, духовность, мировоззрение.

**THE INFLUENCE OF THE NATIONAL POTTERY ART ON THE DEVELOPMENT OF
OUR ANCIENT CULTURE AND THE IMPORTANCE OF POTTERY IN THE
DEVELOPMENT FACTORS OF CRAFTSMANSHIP**

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Summary: *The article tells about the history of the creation of pottery, which is part of the ancient applied art of our country, and the way of life of our ancestors. The purpose and functions of pottery, its importance in people's lives, and the history of its creation are considered. Opinions are given about the properties of ceramic vessels and the usefulness of natural clay, considered a raw material, in the life of our ancestors.*

Key words: *applied art, pottery, archaeologist, large jug, nomadic tribes, raw materials, red clay, engobe, glaze, bowl shape.*

The art of pottery, which has seen many secret crafts of elegant and exquisite history, was found on the borders of the modern era, and is considered one of the oldest crafts in the history of mankind. In fact, the land of Uzbekistan has been home to various craftsmen and skilled craftsmen since time immemorial. In addition, the pottery sector of our country has been keeping its secrets for several centuries.

In ancient times, there were unique ceramics in the pottery of our country, and if we pay attention to the ceramics belonging to this culture, hand-made ceramics are more common. In the language of archaeologists, this refers to peoples who are nomadic or semi-nomadic. From the second half of the first millennium BC, urbanization processes are observed in the Tashkent oasis, and the settlement of nomadic and semi-nomadic peoples accelerates. As a result, urban planning begins to develop, and the state of Karkh is created. One of the unique features is that the inhabitants of the ancient state of Karkh were engaged in all types of crafts.

Handcrafted works of art have always been highly valued. If we study the ancient ceramics and look at their history, all the dishes are made of clay, very close to the temperature of the human body, it feels hot when we hold it, and it tastes delicious when we put something in it. Therefore, clay is close to our soul, heart and body. If we think about what the large jars were used for, for what purpose they were made large, why they were needed, usually everything did not appear for nothing. Someone makes, someone invents for some need, and these products serve people.

The main things that serve humanity are thought and invented. Let's think about the purpose and function of these large-sized clay pots. It is believed that they kept water in it. In fact, this is a wrong idea, because water melts ceramic dishes and damages them. Oil, various liquids and various fruit juices were stored in ceramic vessels that were glazed. If the interior of the container was not glazed, then they certainly stored grain products, wheat, corn and flour. Such use protects the quality of the product from harmful effects and helps to preserve it for a long time.

If we think about the unique ceramic items that keep the secrets of pottery, these dishes are carefully studied by the prohibitionists today. Let's study two of the oldest pottery. One is in the form of a cup, and the other is in the form of a three-legged bowl. There are bowl-shaped and cup-shaped dishes. These dishes are very light, and such thick dishes are twice as heavy. Jugs made in ancient times are considered very light and delicate despite their thickness.

At first, we think that these three-legged vessels, reminiscent of bowls, are the bowls used by our ancestors in the past, but according to experts, we understand that these vessels were used for a different purpose. These three-legged vessels are of religious significance. The origin of these items goes back to ancient times. It belongs to the ancient Sarmatian tribes who lived in the southern Ural regions in the past. In the first millennium BC, the Crimean tribes of western Kazakhstan and the Black Sea were considered a category of nomadic tribes. Over time, as a result of the immigration of peoples, some of the nomadic peoples settled in the Tashkent oasis on the

territory of Uzbekistan. Tripod vessels, i.e. three-legged earthenware, belong to these temples and were used by the priests to carry out a certain prayer, i.e. they kept fire, kindled fire, or burned something like incense. Such vessels are also identified in the temples of the Tashkent oasis, southern Kazakhstan, Fergana valley, Zarafshan, and Sughd regions. That is, we see that it is less common than temples, and we know that it was necessary for certain traditions. A three-legged Tripot earthenware pot called a firepot. That is, rituals are performed by burning incense or fire. Our ancient peoples are associated with the traditions of Zoroastrianism or fire-breathing, and later with the arrival and spread of Islam, the need for such dishes disappears. By itself, such vessels are not produced by potters.

This item, which has seen more than a thousand years of time and a series of centuries, has been preserved almost unchanged to this day. If we think about the raw material of this pottery. Clay raw materials are usually of two types, red clay and yellow clay. If you talk to experts, they say that red clay is a bit brittle, and yellow clay is harder than red clay. However, despite the fact that these historic pottery vessels are made of red clay, they are light and strong. We feel that some elements were added to the composition of the clay of the ancient masters. This mysteriousness of the raw material of dishes increases the interest of experts and spectators.

By the time of antiquity, in the early stages of our culture, the use of angob in the crafts of Central Asia was widely established. Ceramic vessels, mainly in the crafts of the Tashkent oasis and the Fergana valley, are highly developed. Angobli pottery was very durable and could be used in various conditions. Similarly three-legged earthenware vessels are also decorated with angobs. Basically, these items were placed in the graves of nomadic and semi-nomadic peoples. That is, during the burial, this person was buried with various ceramic dishes and items that he used in his life. Many graves were found in the Tashkent oasis and the middle reaches of the Syrdarya.

If we take a brief look at the history of pottery, Uzbekistan is the place that has preserved the richest heritage of pottery art. In fact, mankind has been engaged in pottery since the Neolithic period. Ceramic items are made by hand in different ways from special clay, dried and baked in a high-temperature fire. We have witnessed in archeological records that pottery was made in our country very long ago, the first pottery can be found from the Neolithic period, that is, 5-6 thousand years ago, pottery began to develop in our country. In the development of the next period, we can observe that the quality of pottery began to increase, especially when the first pottery was shaped by hand. Later, by the Bronze Age, the pottery wheel appeared, and the quality of pottery began to change dramatically. By the ancient period, another development in pottery occurs, that is, the decoration of objects with the help of angob is a turning point in the field of pottery. If we look at the history of pottery in our country, two types of ceramics are always found in Central Asia. We can see the first one made by hand and the second one made on the wheel. This situation is more common in the regions of the Tashkent oasis and the middle reaches of the Syrdarya, in particular, the ceramics found in the Tashkent oasis are ceramics of the Qovunchi culture.

According to experts, the benefit of clay is that things made of it can breathe. In the cave in the mountainous regions of Samarkand, there were large pottery vessels, in which the food products of the villagers were stored, this tradition continues even now. During such storage, the products did not lose their quality, composition, and naturalness, and provided the possibility of long-term storage. In this storehouse in the cave, the storage of food, oil, milk, grains, and beverages in large ceramic containers prevented quality deterioration. The cave provided natural coolness to these ceramic vessels, in modern terms, it served as a refrigerator.

The product stored in ceramic containers is stored in high quality. The reason is that the raw material of the ceramic is taken from the shallow part of the earth. Excess elements are not added, it is processed in the finished state, the stones, plant roots and similar excesses are removed. This naturalness helps to keep the condition of the product high-quality and for a long time. This process has been deeply and thoroughly thought out by our ancestors since ancient times, and until now, the soil's potential has been widely used.

By our time, collections of ancient pottery are collected by those interested, and their history, purpose, functions, and components are deeply studied by experts. Pottery takes the main place in the study of the stages of its history, because history leaves its traces in the findings. Archaeologists reveal information about the period of development of our culture and art based on concrete facts in their scientific work. We study the rich heritage of our past with the help of pottery art works and treasure our heritage. These historical ceramic products show the rich culture of our past and give us a sense of pride.

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Rezyume: Maqolada yurtimizning qadimgi amaliy san'atining bir qismi bo'lgan kulolchilik asarlarining yaralish tarixi va ajdodlarimiz yashash tarzi haqida so'z boradi. Kulolchilik buyumlarning maqsad va vazifalari, insonlar hayotidagi ahamiyati va yaralish tarixi haqida mulohaza yuritiladi. Sopol idishlarning xususiyatlari va xomashyo hisoblangan tabiiy loy ajdodlarimiz hayotidagi foydali jihatlari haqida fikrlar aytiladi.

Резюме: В статье рассказывается об истории создания гончарных изделий, являющихся частью древнего прикладного искусства нашей страны, и образе жизни наших предков. Рассмотрены назначение и функции гончарного дела, его значение в жизни людей, история создания. Приводятся мнения о свойствах керамических сосудов и полезности природной глины, считающейся сырьем, в жизни наших предков.

Kalit so'zlar: amaliy san'at, kulolchilik, arxeolog, katta hajmli ko'za, ko'chmanchi qabilalar, xomashyo, qizil loy, angob, sirlangan, kosa shakl.

Ключевые слова: прикладное искусство, гончарное дело, археолог, крупногабаритный кувшин, кочевые племена, сырье, красная глина, ангоб, глазурь, форма чаши.

THE ESSENCE OF ADVERBS IN JAPANESE AND RUSSIAN

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Summary: *The article discusses the general characteristics of adverbs in Japanese in comparison with Russian and the features of their definition depending on the use in the proposal. There were given excerpts from Japanese fiction as examples.*

Key words: *adverbs, yogen, taygen, definition of adverbs, the features of the use of adverbs.*

An adverb in the Japanese language is a class of lexically significant, syntactically independent, morphologically unchangeable words that have a generalized categorical-grammatical meaning of a static feature and characterize a feature expressed by a verb or adjective, or have a generalized categorical meaning of a specific verbal characteristic of the sentence as a whole, some of its components and, finally, the generalized categorical meaning of the exponent of the syntactic connection of sentences or their parts [1]. The adverb mainly defines yogen.

From the beginning of Japanese linguistics to the present day, significant words are divided into two large categories, most often called taigen and yogen. The essence of the division is very close to the Russian opposition between name and verb. It is noteworthy that in the classification of Professor Fujitani, the later named “taigen” is even called “na” - “name”, and in Togashi the later term “yogen” corresponds to “kotoba” - “word” (cf. the original meaning of “word” of the Latin “verbum” and Russian “verb”). The basis of taigen, like the category “name”, is a noun; Taigen also includes numeral and subject pronouns. “Yogen” is not only a verb, but also an adjective [2,645].

“To define yogen” means to define a verb, a predicative adjective, an adjectival verb, as well as formal yogen, and in relation to meaning, words denoting real attributive concepts, i.e. action, process, state, character, as well as those performing a formal predicative function.

Predicative adjectives (形容詞 keiyoshi) are significant words that are a type of yogen. The syntactic and partly semantic features of this category of Japanese adjectives - “keiyoshi” - bring them so close to the verb that the combination of these two parts of speech into one common category, called “yogen”, goes through all classifications of parts of speech that exist in Japanese linguistics. Professor Matsushita even considers them to be varieties of one part of speech. Their closeness is especially pronounced in the old language, where, in particular, the dictionary form of the adjective was only predicate and could not serve as a definition, i.e., for example, まずしい in Russian did not mean “бедный”, but “беден”. As the translation shows, the Russian adjective also has a predicative form, the closeness of which to the verb was noted by many Russian grammarians. However, the fundamental difference is that the Russian adjective is thought of in the attributive form “бедный”, which is considered as a dictionary and source form for the short form “беден” derived from it, whereas in the old Japanese language the source form was the predicative form, for example まずしい, from which derivatively formed the attributive form まずしき. The above explains the translation given by the translators of the term “keiyoshi” as “predicative adjective” [2,645].

An adjective verb (形容動詞 keiyoudoushi) is a part of speech that, as the name itself shows, combines the properties of an adjective and a verb [2,269].

Formal yogen are significant words in which there is no concept of a sign of things, but only a predicative ability [2,129].

The adverb is characterized by the ability to define yogen, and this is its main function. Based on the three factors of language - form, meaning and function, an adverb is a part of speech that cannot be thought of in isolation from meaning and function: the ability to define is the meaning of an adverb and at the same time its function. In other words, the duality of the nature of the word - as a part of speech and as a bearer of syntactic function - is merged in the adverb. This should be discussed in more detail, since from here the difference between an adverb and an adverbial definition in the form of a noun, predicative adjective and adjectival verb becomes clear.

彼は友達と歩く。《Он идет с **товарищем**》. (“He is walking with a friend”)

彼は遅く歩く。《Он идет **медленно**》. (“He walks slowly”)

彼は静かに歩く。《Он идет **тихо**》. (“He walks quietly”)

彼はそろそろ歩く。《Он идет **потихонечку**》[2,310]. (“He is walking slowly”)

Noun 友達 “friend”, predicative adjective 遅い “late; slow”, the adjective verb 静かに “quietly”, appearing in these sentences as an adverbial modifier, can also perform other functions. But the adverb そろそろ “slowly” has no other functions. This is what is meant in the statement that the meaning and function of adverbs are fused.

Let us give examples of adverbs in the function of definition for different parts of speech:

試験はついに終わる[5,108]。《Экзамены, наконец, **кончатся**》 (“The exam is finally over”).

成績はなはだよし[3,157]。《Результат **весьма** хорош》. (“The grades are great”).

海上すこぶる穏やかなり[7,67]。《Море **очень** спокойно》. (“The sea is very calm”).

落花まことに雪の如し[5,153]。《Опадающие **цветы** поистине подобны снегу》. (“Falling flowers are just like snow”).

Moreover, since an adverb is a word that denotes a kind of state and degree, it itself defines another adverb. But this possibility is available only for adverbs of degree, not state.

もうしばらく待って[4,134]。《Подожди **еще** немного》. (“Wait a while longer”).

In the given examples, the adverb defines one word - yogen or another adverb, but an adverb can also define a word phrase whose core is yogen, for example:

雨いまだやまず[6,63]。《Дождь **еще** не перестал》. (“It is still raining”).

この雨天によく来られました[3,39]。《Как **удачно** [вы] пришли в этот дождь》. (“How lucky you came in this rain”).

明日はたぶん暖かいでしょう[5,57]。《Завтра, **вероятно**, будет тепло》. (“It will probably be warm tomorrow”).

In these examples, the adverbs いまだ、よく、たぶん do not define the words やむ、来る、暖かい themselves, but the phrase-words やまず、来られました、暖かいでしょう. Phrases-words consist of two or three separate words: a verb and an auxiliary verb, a verb, an auxiliary verb and an auxiliary word, a predicative adjective and an auxiliary verb, etc.

In addition to the fact that the adverb defines word combinations, the core of which is yogen, it also has the following defining function.

明日はおそらく晴天なるべし[5,94]。《Завтра, **вероятно**, будет ясно (ясная погода)》. (“It will probably be sunny tomorrow”)

この小包はきっと本だ[3,69]。《Этот сверток – **несомненно**, книга》. (“This parcel undoubtedly must be a book”)

The adverbs おそらく “probably”, **きっと** “undoubtedly” define 晴天なるべし、本だ、 i.e. phrases are words that consist of a noun and a so-called auxiliary verb, but they do not include any real yogen. A real yogen is called a yogen, which combines both the concept of a sign of things and the predicative ability [2,129]. And yet such a phrase-word, where there is no real yogen, is determined by an adverb.

Some adverbs define taigen. This definition is twofold.

In one case, the adverb attaches の and becomes an adjective, for example:

かねての願い «давнишнее желание» (“long-held wish”); たまの訪問 «случайное посещение» (“random visit”); かなりのひとで «порядочная толпа» (“quite a few people”); 終の棲家 «наконец [полученное] жилище» (“finally [obtained] house”); とりどりの才 «различные таланты» (“multi-talented”); またの日 «еще [один] день» (“another day”) etc.[2,313].

In most cases, adverbs of condition have this ability, and occasionally other adverbs. It should also be noted that adverbs such as *ついに*、*たまに*, which are full adverbs with only the ending *に*, in this case are dropped *に* and added *の*.

Kango (words of Chinese origin) are used similarly, for example *意外の成功* “unexpected success”, *不意の来訪* “unexpected visit” [2,313] - in this case the definition is the root of the adjective verb with *の*.

Sometimes adverbs serve as an adjectival definition of taigen and do not attach any function word, for example:

わずか一日の長 «глава всего на один день» (“head just for one day”); *もう三日待つて* « подожди еще три дня» (“Wait three more days”); *たった一円金* «денег всего лишь одна иена» (“just one yen of money”); *やや東のほう* «немного к востоку» (“slightly to the east”); *すぐ隣へ行く* «пойти сейчас же рядом» (“go right next door”); *大変遠方から来る* «прийти очень издалека» (“come from very far away”); *もっと向こうへよれ* «подвинься больше туда» (“Go further”); *ちょうど正午である* «как раз полдень» (“it's just noon”); *最も南の国* «самая южная страна» (“southernmost country”); *ごく近頃の出来事* «совсем недавнее происшествие» (“very recent events”); *ずっと昔の話* «очень древняя история» (“a long time ago”) etc.[2,313].

As can be seen from the examples, only adverbs of degree have this ability, and the taigens that they define denote place, direction, time, quantity, etc., i.e. their real meaning is close to the designation of a state that allows variability and fluctuation.

Based on the works of Professor Kieda Masuichi, the most important features of the use of adverbs can be formulated as follows:

1) The main feature of use, inherent in all adverbs, is that they define yogens and conjugating phrases. The number of yogens also includes formal ones.

2) Depending on the types of adverbs, some

a) define other adverbs,

b) determine taigens.

3) An adverb cannot serve as a subject, predicate or independent member.

The failure of an adverb to serve as a subject and independent member requires no explanation, but sometimes an adverb appears to be a predicate, e.g.:

この帽子は私の頭にちょうどだ[2,314]. «Эта шляпа мне как раз по голове» (“This hat fits my head just right”).

寒さはもうしばらくです[2,314]. «Холод уже давно» (“It has been cold for a while”).

彼の思想は宗教的なり[2,314]. «Его идеи религиозны» (“His thoughts are religious”).

Such cases are looked at differently. Professor M. Kieda, for example, believes that these predicates should be considered as the final form of adjectival verbs (although some of them do not have all forms of conjugation). Since these are adjectival verbs, there is nothing strange in the fact that they, like yogens, are predicates. Adverbs themselves are devoid of predicativeness.

4) Adverbs are not combined with function verbs.

5) Except in special cases, adverbs are not combined with function words.

It has already been mentioned that, being a definition of taigen, adverbs attach the function word *の*. However, the ability to serve as a definition of taigen is not a common property of all adverbs; this is a special phenomenon. In addition, some adverbs have the endings *に* and *と*, for example:

ついに «в конце концов» (“finally”), *ことに* «в особенности» (“especially”), *たまに* «случайно, изредка» (“sometimes”), *おもむろに* «медленно» (“slowly”), *風と* «вдруг» (“all of a sudden”), *はたと* «вдруг» (“suddenly”), *いと* «очень» (“extremely”), *やっと* «наконец, еле-еле» (“at last, barely”).

に and と in these cases are endings, not function words. So, if you drop に and と, these words will cease to be not only adverbs, but also just words. Another thing is words like *たちまちに* «вдруг» (“suddenly”), *あながちに* «упорно» (“stubbornly”), *はるばると* «далеко» (“far”), *すらすらと* «гладко, без запинки» (“smoothly, without hesitation”).

These words remain adverbs even without に and と. In this case, に and と can be considered function words. Which adverb に is attached to and which と is attached to depends on each individual word; there is no general rule for this. However, it should be noted that in all the above cases *たちまちに*、*はるばると*, etc. should be considered as one word, and not as a combination of two, i.e. it should be assumed that, by joining adverbs, the function words に and と turned into endings of adverbs. After all, に and と are case function words; their function is to place the words preceding them in the position of adverbial definition. Therefore, a noun can only appear in this position if accompanied by に or と:

山に登る «подняться на гору» (“climb mountain”), *友に語る* «рассказать другу» (“tell a friend”);

山と積む «наложить с гору» (“pile up”), *友と語る* «говорить с товарищем» (“talk with friends”).

If に and と are dropped in these examples, the words preceding them no longer serve as adverbial modifiers. Therefore, *山* and *に*, *友* and *と*, etc. are two words. But since the words *たちまち* and *はるばる* remain adverbs when に and と are dropped, it is clear that they do not become adverbs as a result of the addition of に and と. That is why in this case these function words turn into endings of adverbs.

Based on the above, the most important features of the use of adverbs can be formulated as follows:

- 1) The main feature of use, inherent in all adverbs, is that they define yogens and conjugating phrases. The number of yogens also includes formal ones.
- 2) Depending on the types of adverbs, some
 - a) define other adverbs,
 - b) determine taigens.
- 3) An adverb cannot serve as a subject, predicate or independent member.

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Rezyume: Maqolada rus tiliga nisbatan yapon tilidagi qo'shimchalarning umumiy xususiyatlari va taklifda foydalanishga qarab ularni ta'riflash xususiyatlari ko'rib chiqiladi. Misol tariqasida yapon fantastikasidan parchalar keltirildi.

Резюме: В статье рассматриваются общие характеристики наречий японского языка в сравнении с русскими и особенности их определения в зависимости от употребления в предложении. В качестве примеров были приведены отрывки из японской художественной литературы.

Kalit soʻzlar: ergash gaplar, yogʻin, taygen, ergash gaplarning taʼrifi, qoʻshimchaning qoʻllanish xususiyatlari.

Ключевые слова: наречия, йоген, тайген, определение наречий, особенности употребления наречий.

**PRESENTATION, PRACTICE, PRODUCTION (PPP) PARADIGM IN TEACHING ENGLISH
IDIOMS**

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Summary: *In the article the author shares her experience of teaching with PPP which serves as an effective way of teaching school children and provides with sample of using this method.*

Key words: *Presentation, practice, production (PPP) paradigm, stage, skills, enhance.*

In this article I am going to describe Presentation, practice, production (PPP) paradigm which is a lesson structure and the main function of it includes arrangement of activities in lessons. '...it might well be wise to explore the fit of learner and teacher beliefs and take into account learner opinions of what enhances the learning process', a point supported by [1; 3; 6,7]. From my experience, certain aspects of English such as vocabulary, grammar and a variety of other sections are presented with application of this technique to students to make the lesson more comprehensible and effective. This method consists of three stages which provide an opportunity to learn, comprehend and use new vocabulary. In the first stage students are familiarized with new terms, new topics, for instance, pronunciation and spelling associated with other words. Hence, it can be subdivided into controlled and free practices. In pursuit of the goals such as checking students' comprehension and freely express their minds they are engaged in the following activities as:

- *Drill sentences or sounds, chorally or individually.*
- *Substitution drill in pairs*
- *Sentence matching activities*
- *Gap-fill exercises*
- *Pair work asking and answering questions*

From my own perspective, these activities will contribute to enriching vocabulary set along with improving memory in learning language.

However, the teacher should observe pupils and immediately correct their errors since accuracy is of vast importance in this stage.

Concerning the second stage, I can state that fluency and natural use of the language are welcomed. The teacher facilitates learners to practice new vocabulary in order to intensify their understanding of vocabulary and use. To motivate them freely express themselves, teachers encourage students to be involved in the following activities as:

- *Role-plays*
- *Communication tasks*
- *Collaborative tasks*
- *Discussion activities*

The production stage which is the last one supplies students with less controlled practice and an informal assessing of knowledge. The pupils are given an opportunity to associate new vocabulary or phrase with prior knowledge and experiences in this case.

To my way of thinking, a diversity of tasks are used in PPP, what is more, it requires effective planning. Pupils can easily be adapted to it since they are entertained by a diversity of funny activities at each step: music, drawing and mime can be applied on presentation stage. Here is the lesson plan:

Audience intermediate students	Time: 45 minutes	No. of pupils: 15
Topic: Everyday Idioms		
Objective: Pupils will be able to interpret and use idioms when they talk about their daily routines, habits, holiday activities.		

Materials: White board, markers (to calculate scores), reading worksheets, posters. Equipment: overhead projector, smart board,		
Timing	Procedure	Interaction
5 minutes	Lead in Presentation Step1: The teacher demonstrates a poster with some idioms on it ,which are frequently used on a daily basis. The pupils are asked to guess the meaning of them depicted on the poster.	Teacher- Pp Purpose: setting scene
20 minutes	Practice activity-1 Step2: The teacher asks pupils to watch and listen to the idioms in the video attentively. All of them are frequently used idioms. Then students are asked short questions for checking comprehension. Afterwards, follow a series of vocabulary and grammar exercises including matching activities , they make up sentences using idioms. The teacher encourages them to interpret their meanings, they discuss in groups.	Teacher- Pp Purpose : enhance target vocabulary while watching and listening
10 min	Production activity-2 Step3: Pupils are asked to act out one episode from the watched video which they perform using idioms they learnt in the video. The teacher facilitates them to organise the scene and appoints the roles considering the students' abilities and skills	Pupil-pupil Pair work and group work Purpose : to produce the content
10 minutes	Step4: The pupils are requested to make a mindmap to reflect all the material connected with idioms , using the categories of House, Study, Friends, Social activities.	Group Work Purpose to revise the new vocabulary, the new topic
5 min	Step4: The teacher gives feedback about today' lesson. Then he/ she assigns to make a project work for homework to students	

In order to make the idiom learning more effective it is advisable for teachers to plan the lesson properly and with a great care. Moreover a diversity of other activities can be applied for each stage since the PPP method in TEFL is a highly flexible approach to teaching.

Pupils can be motivated to learn idioms due to the fact that watching videos, listening to authentic speech can entertain and promote all the skills including increasing vocabulary resource. Additionally, pupils with various learning skills(visual, kinaesthetic (movement) and audio) can easily grasp idiomatic expressions which would be challenging to acquire them with application of traditional methods—memorizing does not work. It is also vital to ensure that students have understood the new word before encouraging them to practise it.

In spite of the fact that PPP is outdated and has been exposed to harsh criticism over the years, it can be assumed that PPP is frequently applied lesson structure in teaching English to foreign learners nowadays. Additionally, It's also still widely utilised to educate novice teachers and seen on initial teacher training courses like the CELTA and Cert TESOL. In addition, this method is compatible to most types of classes along with large size classrooms and flexible.

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Rezyume: Maqolada muallif maktab o'quvchilarini o'qitishning samarali usuli bo'lgan PPP bilan o'qitish tajribasi bilan o'rtoqlashadi va ushbu usuldan foydalanish namunasini taqdim etadi.

Резюме: В статье автор делится своим опытом преподавания с использованием PPP, который является эффективным способом обучения школьников, и приводит примеры использования этого метода.

Kalit so'zlar: Taqdimot, amaliyot, ishlab chiqarish (PPP) paradigmasi, bosqich, ko'nikmalar, oshirish

Ключевые слова: Презентация, практика, продуктивная (ППП) парадигма, этап, навыки, повышение квалификации.

FACTORS AND CRITERIA OF COMPETITIVENESS OF SUBJECTS OF THE MEDICAL SERVICES MARKET

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Summary: *The article presents factors and criteria for the competitiveness of subjects in the medical services market. The objective necessity and socio-economic significance of increasing the competitiveness of the medical services market in the regions, the main economic problems solved in the provision of medical services, the main criterion for the availability of medical services, increasing the availability of medical services, the social orientation of medical services and economic relations with medical organizations are presented.*

Keywords: *medical services market, medical organization, healthcare, health rehabilitation, medical activities, medical care.*

Today, the state of development of the medical services market is characterized by a sharp increase in competition in target local, regional, regional and foreign markets. Therefore, to achieve commercial success in any market, any organization must take into account external and internal environmental factors and effectively realize its competitive advantages.

Foreign and domestic scientists, such as Fatkhutdinov, studied and analyzed the factors of competitiveness of organizations.

Harvard School professor M. Porter divides the factors influencing the competitiveness of an industry or organization into such types as low levels of concentration, transition to the growth stage of new industries, recession and the period of globalization of the industry [1].

The process of analyzing the development of the medical services market in the Republic of Uzbekistan can be assessed as emerging and developing in many regions, and indicates the presence of high potential in the field of consumer demand, medical technological innovations and equipment at all levels. for further market development.

According to M. Porter, “despite the fact that new networks differ significantly in their structure, there are common structural factors that are characteristic of many networks at the stage of their formation. Most of them are associated with the lack of certain principles of competition or other rules of the game, or with the initially small size and novelty of the industry [2].

Determining the main factors influencing the competitiveness of new industries (in our case, this is the new state of the medical services market) allows us to consider the main strategic choice alternatives facing organizations. The main factors include the following groups:

- structural characteristics of the industry (strategic uncertainty; high initial costs; a significant proportion of companies created as a result of spin-offs; technological uncertainty; formation of an initial group of buyers; access to subsidies);

- initial barriers to movement (patented technologies, access to distribution and sales channels, use of resources, cost advantages due to competitive uncertainty, etc.);

- factors limiting industrial development (lack of infrastructure, consumer uncertainty, rising prices for raw materials, instability in the quality of services, consumer distrust, high costs, etc.).

Thus, organizations operating in an evolving or reforming healthcare market face constraints and challenges of varying complexity. Their reasons are economic factors and external development conditions associated with the need to stimulate customers to switch to their products or services.

According to Porter, “During a recession, the most important impact on competition is the process of declining demand and the description of other market segments.”

It includes, as demand factors, uncertainty, the speed and description of the decline, the composition of the remaining demand, the reasons for the decline in demand (technological substitution, demographic factors of changes in needs). Determining the likely cause of the decline

in demand is key to enabling businesses and organizations to accurately assess the likely level of future or pent-up demand and the profitability of the rest of the market segment.

Another group of factors, the influence of exit barriers, cannot be underestimated, since the higher the exit barriers, the more unfavorable the operating conditions for the firms remaining in the network.

Obstacles to going offline are:

- specialized and long-term assets (fixed and working capital);
- fixed exit costs (reduction in the actual cost of terminating activities, costs of regulating labor relations, etc.);
- strategic barriers to leaving the network (interdependence of different types of business, access to financial markets, vertical integration);
- information barriers;
- managerial or psychological barriers (image, reputational damage, disruption of business ties, etc.);
- obstacles related to government policy and its social consequences;
- mechanism for liquidation of assets.

Instability of competition is another factor in competition during the decline stage. Unstable competitive conditions can be exacerbated by the influence of suppliers and distribution channels.

Thus, the above groups of factors allow us to establish a number of analytical steps to determine the positions of medical organizations experiencing an economic downturn.

Factors of competitiveness of organizations are understood as processes of production and economic activity that cause changes in the volume of production of goods, costs of providing services (absolute or relative), events in the socio-economic life of society and subsequently lead to changes in the level of competitiveness of the organization.

According to the analysis conducted during our research, the most common factors based on the classification of organizational competitiveness factors are:

- production factors: cost and quality of goods (services), location of the enterprise, availability of qualified personnel, etc.;
- technological factors: the use of innovations and modern technologies in the production process, the introduction of new products, etc.;
- sales factors: fast delivery of goods to consumers, a wide network of wholesale distributors, market share, low cost of selling goods, etc.;
- organizational and managerial factors: access to financial markets, economic security of business activities, patenting, implementation of a general quality management system, effective logistics support.

It should be noted that it is necessary to distinguish between the concepts of “competitiveness factor” and “competitiveness criterion (indicator)”, since from different points of view the same description of a market entity can act both as a competitiveness factor and as a criterion. For example, an important factor of competitiveness is “the presence of a service quality management system,” where “service quality,” in turn, can be an indicator of the organization’s competitiveness.

Each factor of an organization's competitiveness may correspond to a certain set of criteria or indicators. For example, A. Tsarev, V. Kantarovich, V. Chernyshlar identify the following indicators [3]:

- won share of the target market (or its segment);
- relative market share (equal to the ratio of the market share of a certain enterprise to the market share of the most dangerous competitor);
- dynamics of market share;
- characteristics of the quality of products supplied to the market;
- price of goods or services;
- development of a sales network;

- the amount of money spent on advertising campaigns.

According to A.S. Golovachev, the success factors of an organization are reflected in the following indicators of its competitiveness: product quality; reputation (image) of the organization; production capabilities; technological level; dealer network (trading system); marketing and advertising; financial stability of the organization; relative cost situation; customer service [4].

Strategic indicators of an organization's competitiveness include: its market share; sales growth; increase in net profit; increase in return on equity; profitability of products sold; labor productivity – especially for labor-intensive industries; profitability of fixed assets (capital) (especially for capital-intensive industries); profitability of material costs (especially for material-intensive industries); return on working capital (for many other industries); profitability of production (all assets of the organization). Therefore, each criterion (indicator) of an organization's competitiveness must provide information about the level of satisfaction with goods (services), consumer needs and production efficiency.

According to M. Porter, the main factors of the competitiveness of medical organizations include demanding clients, quality of service and innovation. Effective competition essentially requires demanding customers who motivate health care providers to simultaneously improve quality and lower prices. And in healthcare, where clients are dispersed, their options are reduced. Innovation that encourages fierce competition is considered the key to successful reforms. While healthcare itself is a unique industry, in many ways it is no different from any other industry.

An analysis of the main theoretical provisions on the problem of determining criteria (indicators) and the composition of competitiveness factors is presented by the following author.

I.A. Togunov argues that “the search and study of certain criteria of competitiveness within the framework of the CSA is by far the most convenient and effective from the point of view of implementing management decisions on the organization of advanced (“reactive”) production of medical services [5].

“A detailed description of the characteristics of the state of medical organizations that determine the level of competitiveness based on the “Seven Functional System” is also proposed.

K.N.Arabchikov identifies 2 groups of factors that determine the level of competitiveness of non-state, private medical organizations providing services in the medical services market [6]:

Factors of the first group are formed at the level of the internal environment and should be assessed through relative indicators of the efficiency of resource use (indicators obtained from financial statements). Depending on the nature of the factors they describe, the author distinguishes two groups: indicators used in practice as characteristics of the efficiency of production and economic activity, and indicators of proportionality.

The second is formed at the operational-strategic level. It shapes the competitive environment of the medical services market and determines the conditions for ensuring the competitiveness of non-governmental medical organizations at the operational and strategic levels.

Important indicators of competitiveness at the operational level can be labor productivity, business activity, etc. In strategic terms, the competitiveness of non-governmental medical organizations is determined by investment attractiveness, and its criterion is the growth of market prices.

In our opinion, the most appropriate approach is the grouping of competitiveness factors of non-governmental medical organizations, proposed by K. N. Arabchikov [6]. Because, if we consider non-state medical organizations as an open system, they are influenced by indicators such as characteristics of the efficiency of production and economic activities, which are influenced by factors at the level of the internal environment, and indicators of the proportionality of the activities of medical institutions. Additionally, NGOs have a competitive healthcare market environment with interrelated variables that influence its performance.

The main factors of the competitiveness of medical service organizations include socio-demographic, economic policy and public policy in the field of healthcare. Including, in turn, this policy covers the improvement of programs for guaranteeing public medical services, the

development of compulsory and additional medical insurance, the introduction of mandatory accreditation of medical personnel, and the creation of a vertical system of supervision and control in the healthcare sector.

In our opinion, among the external factors influencing the level of competitiveness of medical service providers, the role of the criterion “state policy in the field of healthcare” is extremely significant and important; regardless of the form of ownership, the state can have both positive and negative influence on the activities of medical organizations through your policy.

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Rezyume: Maqolada tibbiy xizmatlar bozorida sub'ektlarning raqobatbardoshligi omillari va mezonlari keltirilgan. Hududlarda tibbiy xizmatlar bozori raqobatbardoshligini oshirishning ob'ektiv zarurati va ijtimoiy-iqtisodiy ahamiyati, tibbiy xizmatlar ko'rsatishda hal etilayotgan asosiy iqtisodiy muammolar, tibbiy xizmatlarning mavjudligining asosiy mezonlari, tibbiy xizmatlardan foydalanish imkoniyatlarini oshirish, tibbiy xizmatlarning ijtimoiy yo'nalishi va tibbiyot tashkilotlari bilan iqtisodiy aloqalari ko'rsatilgan.

Резюме: В статье представлены факторы и критерии конкурентоспособности субъектов рынка медицинских услуг. Представлены объективная необходимость и социально-экономическая значимость повышения конкурентоспособности рынка медицинских услуг в регионах, основные экономические задачи, решаемые при оказании медицинских услуг, основной критерий доступности медицинских услуг, повышение доступности медицинских услуг, социальная направленность медицинских услуг и экономические отношения с медицинскими организациями.

Kalit so'zlar: tibbiy xizmatlar bozori, tibbiy tashkilot, sog'liqni saqlash, sog'liqni tiklash, tibbiy faoliyat, tibbiy xizmatlar.

Ключевые слова: рынок медицинских услуг, медицинская организация, здравоохранение, реабилитация здоровья, медицинская деятельность, медицинское обслуживание.

**DIRECTIONS FOR THE DEVELOPMENT OF PROFESSIONAL COMPETENCE IN
TEACHING KARAKALPAK LITERATURE**

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Nukus branch of TUIT named after Mukhammad Al-Khwarizmi

Summary: *This article discusses the directions of development of professional competence of a teacher of Karakalpak literature, issues of improving the quality of the lesson based on the formation of professional competence among future teachers, the formation of skills for using integrative knowledge in the lesson process.*

Keywords: *education, upbringing, professional competence, knowledge, skills, scientific experience, integrative knowledge, history, geography, ethnography, linguistics, strategy, innovative approach, spiritual maturity, factor, personality*

Introduction.

At the moment, a number of works are being carried out in our republic to improve the quality of education and increase the scientific potential of personnel. In particular, the decree dated on October 8, 2019 PD No. -5847 "On approval of the concept of development of the higher education system of the Republic of Uzbekistan for 2030", the development strategy of the president of the Republic of Uzbekistan for 2022-2026, PD No. -2909 dated on April 20, 2017 "On measures to further improvement the higher education system", PD No. -3775 dated on June 5, 2018 "On additional measures to improve the quality of education in higher educational institutions and ensure their active participation in large-scale reforms carried out in the country", as well as the tasks set out in other legal and normative acts related to this section, are a clear example of the special emphasis on education in our country.

The radical reform of the educational system has a direct impact on the subjects of the curriculum and on the development of professional competencies of teachers, on their self-development, on the acquisition of skills of step-by-step application of pedagogical activity.

Literature review.

The conditional part of each person's skills in their profession is professional competence, and if that competence is shown by the elegant ability of a future specialist who is focused on the implementation of future professional activities, this difference indicates the degree of mastery of professional competence of a person. Therefore, an important role in the acquisition of professional competence is played by the personal interest of the future specialist, the level of professional training, intelligence, knowledge and ability.

Various studies on competence are reflected in the works of I. V. Grishina[1], N. A. Muslimov [5], O. A. Kozyreva [2], I. S. Claysina [3], M. A. Innazarov [8], where opinions are given about the need to pay special attention to the development of a competency approach, knowledge, skill and scientific experience in the acquisition of knowledge, the skill of practical application of acquired knowledge.

Research Methodology.

On the basis of the professional competence of each teacher, at the same time the teacher of Karakalpak literature, it is seen that he effectively uses theoretical knowledge, carries out a high level of professional scientific experience, intelligence and abilities.

In education, the application of the concept of competence is the result of scientific research by psychologists, and from a psychological point of view the term *competence* refers to how the teacher feels in unforeseen situations, how he gets into relationships, how he behaves in interactions with opponents, uses complete information in overcoming contradictions, determines directions of action in complex processes.

Analysis and results.

The professional competence of a teacher of Karakalpak literature is manifested in the acquisition of knowledge, skills and scientific experience necessary for the implementation of

professional activities and their high level of application in practice. This implies the acquisition of integrative knowledge and actions in each direction. For example, when we read about the life and work of Ajiniyaz Kosibai uli in the educational process, this topic contains a lot of information, and readers are not only informed about the poet's poetry, but also give accurate and complete information to students based on historical-geographical sources about the poet's period and land, information about the jewelry, decorating items of karakalpak women based on ethnographic sources, the study of linguistic differences of song lines based on language education. Therefore, competence requires the teacher to enrich his knowledge, learn new information, understand the necessary social requirements, look for new information, process them and use the teacher's own experience.

The professional competence of a teacher of Karakalpak literature can be seen in the study of complex processes, complex tasks, the use of information opposite each other, the acquisition of an action strategy in unforeseen situations. For example, the student asks the teacher the reasons why the Ajiniyaz poet traveled to the Kazakh fields. The teacher dealing with this question must have complete knowledge of the poet's life path and the history of the creation of his songs. This question may have arisen from the personal interest of the student, but will lead to the need to work on himself, arising from professional obligation in the teacher. Teachers with professional competence increasingly enrich their knowledge, learn new information, gain a deeper understanding of the requirements of the period, seek new knowledge, re-learn them and effectively apply them in their professional experience.

In the higher education system, increasing the professional competencies of educators is an important factor in improving the educational process. Therefore, it is important to create the theoretical and practical foundations of the process of increasing the professional competencies of an educator based on the effective use of the capabilities of modern educational technologies. E.F. Zeyer who studied professional competence in the scientific field, in his work shows that various views of competence, such as the study of the functional development of professional competence, the obtaining of achievements on the professional side, that integrates and their connection with professionally necessary qualities strengthens.

The main levels of professional competence of a teacher of Karakalpak literature include professional training and experience, self-awareness, self-confidence, correct perception of shortcomings manifested by others, and similar features that determine other professional achievements.

So, the competence of a teacher of Karakalpak literature is characterized by:

- be able to correctly apply knowledge in the learning process in various cases, taking into account all its features;
- readiness to make decisions depending on the situation in the learning process, as well as choosing the solution that is most appropriate for this situation;
- develop communication skills that allow building interaction with students with specific goals and in an appropriate way within the framework of activities;
- show the presence of spiritual values, worldview, educational cultural and moral qualities, a sense of striving for activity;
- in the learning process, there should be qualities of willing to master new stages of pedagogical activity by developing own creative abilities.

The category of researches that study the professional competence of teachers and its individual aspects can include studies conducted by A.K.Markova [4].

A teacher of Karakalpak literature should work on himself and develop his professional competence. Modern requirements and the labor market place high demand on professional knowledge, skills and scientific experience. At the same time, each teacher should develop personal qualities that allow learning and improving knowledge quickly and effectively, working in a team, having high flexibility and stress resistance, and creative potential.

It is necessary to create an opportunity to model learning outcomes based on the requirements of special fields of professional activity, to master learning outcomes reflecting competencies that meet modern requirements. The rapidly changing world demands from the new generation of youth not only professional knowledge in their chosen specialty, but also a high level of socio-psychological education of the individual.

Based on the given information, scientific improvement of the learning processes of future teachers who are studying at educational institutions is of great importance. In turn, in this process it is necessary to rely on innovative approaches, possess professional and personal qualities, and be able to manage oneself in various situations. The implementation of activities, taking into account educational relations at educational institutions, based on the existing legal and normative criteria for solving various issues and problems, reveals the professional competence of future teachers.

Conclusion.

Generally speaking, while training teachers of Karakalpak literature, it is necessary to take into account only the personal capabilities of the individual, comprehensively aimed at developing professional competencies defined by the requirements of the state. The development of students' professional skills in the process of studying at a higher educational institution provides primary training aimed at carrying out the professional activities of future specialists.

A teacher of Karakalpak literature will become a specialist with the following professional competence only if he has his own strategy of action:

- working on himself to enrich knowledge
- mastering new information related to subject
- deeply understanding the demands of time in teaching a subject
- finds new knowledge related to subject
- processes new knowledge related to subject and uses it effectively in his practice

As we have stated above, the implementation of discipline integration is an effective method of improving the professional competence of future teachers, which requires the interconnection of subjects and links between disciplines. Thus, the teacher of Karakalpak literature, during the passage of each subject, fully gets acquainted with the information related to the subject and transmits it to the younger generation, which provides opportunities for future teachers to apply knowledge, skills and scientific experience in studying the subject.

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Rezyume: Ushbu maqolada qoraqalpoq adabiyoti fani o'qituvchisining kasbiy kompetentsiyasini rivojlantirish yo'nalishlari, bo'lajak o'qituvchilarda kasbiy kompetentsiyani shakllantirish asosida dars sifatini oshirish, dars jarayonida integrativ bilimlardan foydalanish ko'nikmalarini hosil qilish masalalari ko'rib chiqiladi.

Резюме: В данной статье рассматриваются направления развития профессиональной компетентности учителя Каракалпакской литературы, вопросы повышения качества урока на основе формирования профессиональной компетентности у будущих учителей, формирования навыков использования интегративных знаний в процессе урока.

Kalit so'zlar: ta'lim, tarbiya, kasbiy kompetentsiya, bilim, ko'nikma, ilimiy tajriba, integrativ bilim, tarix, jo'g'rafiya, etnografiya, tilshunoslik, strategiya, innovatsion yondashuv, ma'naviy yetuklik, omil, shaxs

Ключевые слова: образование, воспитание, профессиональная компетентность, знания, навыки, научный опыт, интегративные знания, история, география, этнография, лингвистика, стратегия, инновационный подход, духовная зрелость, фактор, личность

STRATEGIC MANAGEMENT OF INNOVATION PROCESSES IS AN IMPORTANT FACTOR IN THE DEVELOPMENT OF AN INNOVATIVE ECONOMY

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Summary: *Effective management of innovation processes is also an important factor in the overall development of the national economy, updating the existing material and technical base of industrial enterprises, development of production facilities, development of new types of activities, production of scientific products, creation of an innovative environment in enterprises. In this article, we will focus on the term "innovation processes" and consider a number of priority directions for the implementation and management of innovation processes in our country, as well as the state expenditures allocated to the development of science and technology in countries with scientifically advanced high-tech sectors over the past 10 years.*

Key words: *innovation processes, modernization of production, material and technical base, innovation environment, innovation policy, global index*

Important priorities are the modernization of production in sectors of the economy, the implementation by the state of innovation policy in the further development of a business environment based on competition. Because the importance of strategic management of innovation processes in economic entities created on the basis of privatized and expropriated enterprises is increasing.

Recently, in the scientific research of researchers, experts and scientists involved in fundamental and applied research, the concepts of "innovation", "innovation", "innovation activity", "innovation environment", "innovation processes", "innovation potential", "national innovation." system", "terms such as "innovative product", "innovative production", "innovation sphere" began to receive more attention.

Since the phrase "innovation processes" is one of the objects of study in our scientific research, in the article we will focus on this phrase. In the scientific literature on innovation process management, the term "innovation process" is defined as a process that determines the transformation of ideas into a specific product, popularizing the use of new techniques and technologies and services, ensuring the transformation of scientific knowledge. knowledge into innovation [1].

Therefore, we can say that the strategy for managing innovation processes is, in general, a plan for managing the achievement of goals aimed at strengthening the economic situation of the country, producing competitive products, meeting consumer demand, and ensuring high-tech production. In particular, choosing a specific strategy for the development of innovative production means choosing the most suitable of the many possible paths and methods of innovative development. At the same time, the choice of strategy, in turn, consists in accelerating innovation activities, bringing industrial enterprises to a unified system of actions for competitive tolerance.

According to experts, over the past 10 years in developed countries there has been a significant increase in the production of scientific high-tech products and the export of these products in such areas as microelectronics, optical fiber, radio electronics, laser, nuclear and computer technologies.

From the data in Table 1 it is clear that the United States has great potential among countries with developed high-tech industries. Because it is estimated that the US spends 390 billion a year. Provides government funding for innovation and human capital of approximately US dollars.

In global economic competition, economic entities operating only in countries that have created favorable conditions for the development of science and technology receive a great advantage. In particular, in the United States of America, government expenditures allocated to institutions engaged in scientific research and development amounted to 2.8 percent of GDP [2]. Government spending on scientific research is increasing by 10 percent per year. Sources of

financing for this sector are private firms and organizations, venture capital funds, funds from the federal state and republican budgets.

In Japan, 3 percent of GDP is allocated to scientific research and experimental construction. 80 percent of the total expenditure allocated to research and development institutions is allocated to non-governmental organizations, and 20 percent is allocated to government expenditure. According to data, 13% of Japanese are engaged in fundamental innovation, 25% practical and 62% experimental-constructive.

Table 1

Countries with high science and high technology

№	The name of technological fields	At a high level
1	New materials technology	developed country
2	Microelectronic technologies	USA, Russia
3	Optical fiber and electronic technologies	Japan, China
4	Laser technologies	USA, China
5	Radioelectronic technologies	USA, Russia
6	Computer technologies	USA, Japan
7	Information and communication technologies	USA, Japan, India, China
8	Nuclear technologies	USA, Japan, China
9	Production technology of industrial equipment and tools	USA, Russia
10	Engine device development technology	Germany, China
11	Energy and energy storage technologies	USA, Germany
12	Biotechnology	USA
13	Nanotechnology	Japan, Israel
14	Pharmaceuticals	USA, Russia

In this regard, Uzbekistan also pays great attention to the level of human capital development. If you pay attention to the data, in 2012, 59.2 percent of total government spending was directed to the social sphere, of which more than 34 percent was spent on financing the education system. We can see the results of the efforts undertaken in our country to develop human capital in the information provided by international organizations.

According to the 2012 Global Innovation Index report prepared by Inssad International Business School, one of the top five business schools in the world in France, in collaboration with the World Intellectual Property Organization, Uzbekistan ranks 35th among 141 countries in human development indicators capital and level of development of the education system – 2nd place [3].

Research shows that by the beginning of the 21st century, investments in human capital are becoming the most effective way to allocate resources. World experience shows that the rapid socio-economic development of the country and its competitiveness in the foreign market are ensured by the presence of a developed national innovation system. Therefore, the formation and effective interaction of all elements of the national innovation system should be one of the main goals of state innovation policy.

Because achieving sustainable development of the state is associated with the development of a fairly clear strategy for innovation processes. It is based on a continuous and targeted plan of measures to improve the efficiency of social production activities, increase the level of satisfaction

of the needs of society and its members, search, prepare and implement innovations that make it possible to ensure the quality of living conditions. In essence, the innovative direction of development is the expansion of the scope of application of scientific achievements in all important areas of human activity and their inclusion in areas of use.

Personnel potential is one of the important factors in the strategic management of innovation processes. It is known that scientific and theoretical knowledge, innovative projects and ideas are commercialized in exchange for the effective organization and management of innovative processes; innovation moves from the form of a project and idea to the form of a specific product, technology or service. As a result, a chain of sequential events arises related to the sale of goods that are a product of innovation. Based on the research conducted, this chain of events was sorted as follows [6].

Through the analysis of theoretical data, the process of transition of innovation from the form of a project and idea into the form of a specific product, technology or service occurs, stages consisting of scientific and technical preparation, preparation for the production of innovative products. The form described the period of production of scientific and innovative products, as well as the stages a whole chain of sequential events of innovation processes.

Foreign countries with developed economies are already trying to develop innovative development strategies that open the way not only to increasing the efficiency of production and the economy, but also significantly increasing the level of realization of the needs and possibilities of human choice, and ensuring an improvement in the situation. living conditions.

At the present stage of development of the world economy in industrialized countries, a new period of formation of innovative processes is observed, that is, the process of transition to an economy based on the accumulation, distribution and use of knowledge. We can see this in how increasing competition affects industrial enterprises. This requires adaptation of production and management in industries to an ever-changing environment. As a result, scientific and practical solutions to problems related to the organization, formation and strategic management of innovative activities acquire special importance. Therefore, since increasing the competitiveness of products, producing innovative products, increasing the weight of exports, intensifying innovative processes, and implementing innovative projects are among the priorities of state innovation policy, specialists and economists are required to ensure the production of new products that include high technologies.

Each country develops its economy and industrial production on the basis of its scientific and intellectual potential, on the basis of new technologies, nanotechnologies, tools, machines, alternative energy sources and products of such innovative activities. In this regard, special attention is paid to innovation activities related to the introduction of new equipment and technologies, instruments and instruments into the industrial sphere [4].

The quantity of innovative products in the volume of production of existing industries and industries of our country is increasing, and the quality is growing and developing. The growth of innovative production in networks, in turn, ensures economic growth at a stable pace. It should be emphasized that although industries ensure stable growth, their share in the rate of economic growth is different, and their further increase, in turn, allows for an increase in gross growth.

The analysis shows that, despite the regular support and encouragement of innovative ideas and projects by our state, expenditures aimed at scientific and technological development in the reporting period of 2010 amounted to 0.2 percent of GDP. The share of innovative products in GNP was 2.9%. In our opinion, it is necessary to increase the volume of financial resources from the state for practical, fundamental and design construction and technological work.

In this case, the main attention will be paid to determining which factors have a strong influence on economic growth within industries and in which industries a transition to innovative production is necessary. At the same time, in our opinion, it is advisable to implement the following measures to regulate and manage innovation processes in our country:

- creation of a national system of organization and effective management of innovation activities at manufacturing enterprises;
- development of a system for assessing the level of development of economic and innovative activity of regions;
- improving mechanisms for assessing and managing risks in the innovative activities of industrial enterprises;
- development of policies to encourage and support intersectoral innovation activities;
- formation of a system of mutual integration between research institutes, design and construction organizations, higher educational institutions and production enterprises for the implementation of innovation policy;
- development of the national innovation system and development of infrastructures that support its effective management;
- creation of a financing system related to the commercialization of innovative projects.

Therefore, the development of innovation activity in our country, the introduction of new innovative technologies in production and business activities, the creation of a legal framework for innovation activity, strategic management of innovation processes, effective management of organizational and economic regulation of relations in this area determine the content and essence of the country's innovation policy.

In this regard, the effective use of modern advanced technologies and the modernization of the national economy through the introduction of scientific achievements into production in our republic are of great importance. In particular, the organization and strategic management of innovation processes, in turn, financial support for scientific research, development activities, new devices, new approaches, the creation and use of innovative projects, the creation of patents, certificates, know-how, which are a product of intellectual activity, and the development of strategic plans related to placement is especially relevant today.

As a result of the problem of developing innovative processes in our republic, increasing the innovative potential of industrial enterprises, effectively directing investments in human capital, the prospects for the formation of a national innovation system are becoming the main topic of scientific and practical discussions among experts and economists [5].

Based on the above opinions, in the strategic management of innovation processes in Uzbekistan, in our opinion, special attention should be paid to the following:

- rapid development of the process of applying innovations in the field of production, service and education;
- providing ample opportunities for the import of new technologies, information and communication devices, means of production and modern management methods from foreign countries;
- ensure the departure of young qualified specialists to advanced foreign countries for short-term training in order to establish the production of goods and services that meet international standards;
- it will be necessary to develop economic, financial, organizational, managerial and legal means of state support for the implementation of programs related to the development and implementation of the national innovation system.

Such situations determine the prospects for creating innovative industries in our country, modernizing the national economy, effectively using local raw materials, and increasing export opportunities.

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Rezyume: *Ushbu maqola innovacion jarayonlarni samarali boshqarish, iqtisodiyotni har tamonlama rivojlantirish, sanoat korxonalaridagi mavjud moddiy-texnik bazani yangilash, ishlab chiqarish obyektlarini rivojlantirish, yangi faoliyat turlarini o'zlashtirish, ilmiy hajmdor mahsulotlar ishlab chiqarish, korxonalarda innovacion muxitni yaratish da ahamiyatli omili ekanligini tahlil qilamiz. Ayniqsa "innovacion jarayonlar" iborasiga alohida to'xtalib, so'ngi 10 yil davomida ilmiy hajmdor yuqori texnologiya sohalari rivojlangan mamlakatlar, ularning fan-texnika rivojiga ajratgan davlat harajatlarini va mamlakatimizda innovacion jarayonlarni amalga oshirish va boshqarish uchun bir qancha ustuvor yo'nalishlarni ko'rib chiqamiz.*

Резюме: *В данной статье анализируется эффективное управление инновационными процессами, важным фактором является обновление существующей материально-технической базы промышленных предприятий, развитие производственной базы, освоение новых видов деятельности, производство научной продукции, создание инновационной среды на предприятиях, в общем развитии национальной экономики. Особо остановимся на термине «инновационные процессы» и рассмотрим ряд приоритетных направлений реализации и управления инновационными процессами в нашей стране, а также государственные расходы, направляемые на развитие науки и техники в странах с высоким уровнем научного развития-технологических секторов за последние 10 лет.*

Kalit so'zlar: *innovacion jarayonlar, ishlab chiqarishni modernizatsiyalash, moddiy-texnik baza, innovacion muxit, innovacion siyosat, global indeks.*

Ключевые слова: *процессные инновации, модернизация производства, материально-техническая база, инновационная среда, инновационная политика, глобальный индекс.*

**THE DIDACTIC VIEWS OF AJINIYAZ KOSIBAY ULI AND THE HARMONY OF
MODERN EDUCATIONAL PARADIGMS**

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Summary: *this article discusses the didactic views of Ajiniyaz Kosibay uli and types of modern educational paradigms. In this article the educated poet analyzed the period in which he worked, he paid special attention to the fair and humane treatment of all people in the society, and the widespread of enlightenment among the people. For this purpose, he emphasized the need to widely involve women in education in the country.*

Key words: *harmony, paradigm, enlightenment, scientific community, educational course, didactic view, society, spirituality.*

Paradigms differ according to the purpose of modern pedagogical sciences (educational, training), the main goal of education - the approach to culture, the tasks are solved within the educational process, the description of the interaction between the pedagogue and students [6, p. 67].

The word paradigm (Greek, paradigm) is interpreted in a broad sense as a theory with a unique structure [5] that defines the fundamental foundations of a field of life and thinking.

In particular, E.V. Berezhkova and V.V. Kraevskiy defined the concept of paradigm as follows: "Paradigm is not an object of science, it is a scientific activity as theoretical standards, methodological standards, valuable criteria. A paradigm is a theory (or a model of posing problems) accepted as a model for solving research tasks related to all scientific achievements, which is presented to the scientific community as a model for solving problems within a certain time frame [4, p. 23].

The following five paradigms of education are widespread in modern didactics: traditional-conservative (knowledge-oriented paradigm); phenomenological (humanistic paradigm); rationalist (behavioristic, behavioral); technocratic; esoteric.

In the knowledge-oriented paradigm, the main goal of education is: "Knowledge of any value is knowledge and more knowledge." Therefore, the role of the educational institution is manifested in the transmission and preservation of the more existing elements of the cultural heritage of human civilization - the necessary, diverse, important knowledge, skills and competences that allow individual development, as well as ideals and values, which preserve the same social order. . Therefore, the content of educational programs is based on the provision of functional literacy and socialization of a person, which is tested during the acquisition of basic knowledge, skills and competences.

The rationalist paradigm, in contrast to the traditional paradigm, focuses not on the content, but on effective ways for students to acquire different types of knowledge. The rationalist educational paradigm is based on the behaviorist concept of social engineering. The goal of the educational institution is to form an adaptive "behavior set" in students in accordance with social norms, requirements and results of national culture. Therefore, the term "behavior" means "all kinds of reactions, human characteristics - his thinking, feeling and action."

The focus of the humanitarian paradigm is on the learner as a subject of life, individual freedom and spirituality, who has the need for self-development. It is aimed at the development of the child's inner world, interpersonal communication, creativity, dialogue, and personal growth. Representatives of the humanitarian paradigm are not distinguished by a single vision. A diverse model of education is implemented within its framework. They are united in a single direction by a valuable attitude to childhood as an unequal period of a child's and a person's life, that is, the recognition that the main task of an educational institution is to develop a child (mentally, morally, physically, and aesthetically). Each educational system operating within the humanistic paradigm is

based on creative research and takes place in the pure content, methods and tools of education and upbringing. Humanistic paradigm requires freedom and creativity of both teacher and students.

The main goal of the scientific-technical, technocratic paradigm is the transmission and assimilation of "exact" scientific knowledge necessary for practical improvement. "Knowledge is power", so the value of a person is determined by his knowledge. A person evaluates himself not as himself, but only as the possessor of knowledge or behavior in a well-defined standard (average sample, standardized). In the conditions of the technocratic paradigm, the desired result of the educational process can be evaluated on the basis of "yes - no", "knows - does not know", "educated - uneducated", "acquired - not acquired". Here, there will be some kind of standard, ideal, which will be determined by checking the level of preparation, education, and upbringing.

Esoteric paradigm has existed since ancient times, and when translated literally from Greek, esoteric means "mysterious", "hidden". Its essence is the relationship to the eternal and unchanging Truth. According to the proponents of this paradigm, the truth cannot be simply known, it can be achieved through the purity of conscience. The highest goal of pedagogical activity is manifested in the use and development of the student's natural powers and abilities to acquire a high level of consciousness, to communicate with the Cosmos. Therefore, the important protective function of the teacher is to implement the moral, physical, and mental preparation of students and to develop their existing strengths.

The well-known poet-thinker of the Karakalpak people Ajiniyaz did not forget the importance of these two types of knowledge in the study of the natural world, bearing in mind the concepts of the types of knowledge mentioned in his worldview: "science of state" and "science of remaining". According to him, science is the result of people's understanding of the surrounding world, nature, life of the human community. Through science, a person knows all living and an inanimate thing in the world, «eighteen thousand worlds», develops and implements new concepts of human imagination about nature and society. Having this understanding, Ajiniyaz aims to deeply study the world around him, the secrets of the world, the living conditions of all living beings, and use them for the benefit of mankind. It emphasizes the need to open many schools and madrasas in the country to realize this goal. According to his understanding, after graduating from the Khiva madrasa, he established a school for primary education in his native village of Moynak. The poet said that if young people strive to be educated and intelligent from childhood, they will become mentally mature in the future, and their positive behavior and education will increase the prestige of the country.

In the primary school which he founded, Ajiniyaz used all his efforts and abilities to inculcate scientific and natural concepts from various subjects into the minds of young people, and "promoted science widely" [1]. According to the thinker, every teacher should teach his students what he has learned. For this purpose, he appeals to teachers, scholars, and mudarris with the slogan: "If you are a mullah, don't waste your knowledge" [1]. Also, every teacher paid special attention to issues such as the need to connect his lessons with practice, systematically teach young people knowledge, increase their interest in learning, and develop their intellectual potential.

Considering that the poet-teachers are holders of sacred professions who give knowledge to the people, give light and light to their inner spiritual world, he advocated the presence of mature teachers with mature knowledge in the country. Considering that the lack of schools and teachers that educate the youth is a very negative situation that leads to the darkness of the people, he expressed his concern that there should be enough madrasahs and teachers working in them in the country. This is evidenced by the lack of teachers to teach young people in the school he headed when the poet went to the Kazakh country for a certain period of time. The poet wrote about these situations in his poem "It seemed" [2].

In order to convey the importance of education, knowledge, and science in people's life, Ajiniyaz described in his poem "You are going" that seeking knowledge and being knowledgeable is one of the obligations of Allah, who created it, for every human being, and demanded that every servant who says "I am a servant of God" should study science. The poet was able to explain these

views more meaningfully in the poem "It seemed". In the poem "Must be": "Take my advice, you should not go out from mosque" [2], supporting that everyone should learn from the school and mosque and become literate. He raised the idea that it is necessary to strengthen the education of the people.

In his poem, which begins with "I have studied in Shergazhikhan", he says about the difficulties of his studies in Khorezm. In particular, young people who are separated from the difficulties of life, judging it as a wrong way not to strive to learn science and knowledge in any difficult situation, not to give up learning even in a difficult situation, young people who intend to study science "if it is right, will reach the goal with sincerity" [2] expressed his thoughts to encourage people to strive for knowledge.

In the didactic views of the poet, the issue of the harmony of artistic and professional education also occupies a leading place. He put forward the idea that knowledge enriches the craft, and the craft enriches the knowledge, and one replaces the other. For example, in the poem "Similar": "No one looks at me with kindness, craft is like a garden" [2], he says that knowledge and craft serve as a fruit garden for the development of society.

The educated poet analyzed the period in which he worked, he paid special attention to the fair and humane treatment of all people in the society, and the widespread of enlightenment among the people. For this purpose, he emphasized the need to widely involve women in education in our country. It is noteworthy that the poet has a different approach to this issue. In Khiva, the capital, where she was educated, girls were educated separately from boys, under the guidance of parents. Ajiniyaz treated such traditions on the basis of tradition and worldview from the point of view of the nomadic life of our people in the past. The poet shows that women's literacy and education is a very necessary issue, and in the poem "To Uzildik", he says that it is necessary for parents to send their daughters to school in order to raise them to be educated and moral, that knowledge is especially necessary for women to be well educated. He pointed out that education enhances their beauty. These views of the poet were to a certain extent the legal equality of women and men in society, their humane treatment, and the democratization of society.

The poet highly appreciated the importance of enlightenment work in the country's life. Seeing the Russian people and getting acquainted with their level of education, he explained that a person can join his country to the ranks of developed countries only through science, and that science and education are one of the factors that make the country prosperous.

It is known that Ajiniyaz, who had a special faith in the power of science, explained in his poem "Demishler" that science should serve to reveal the secrets of both worlds, to study the world in which people live and the eternal world, divinity. From these points Ajiniyaz wrote:

Knowing two worlds with science,
Sayings about a person's duty and debt [2].

Science is not only the real life in which people live, but also the secrets of nature and the other world, and that it is possible to discover the secrets in it, that science has the power to reveal these mysterious phenomena, that this is the goal of the stage of enlightenment, one of the four sects of Sufism, that is why knowledge of science and its He emphasized that using the results in life will be the main task for mankind.

Ajiniyaz believed that it is necessary to enlighten the people, to take measures to democratize the society, to fill it with humanitarian feelings. He believed that science leads to knowledge not only of real life, but also of infinite phenomena of nature, knowledge of the world and God.

Considering that science is a tool for people to know and learn about the world, the poet explained that the scientific achievements of scientists are one of the main factors of improving people's life. He emphasized that the legacy of scholars, sheikhs and scholars created by science for the success of the nation in the past is useful for mankind, and the results of science are a blessing for the nation, regardless of the passage of time. About this in the work "Demishler" mentioned above: "Knowledge of two sheikhs who left the country, Success and luck to the country" [2], the

development of knowledge that takes place in the country improves the well-being of society. He emphasized that it depends on the ability of the people to use the scientific heritage left by the scientists who lived in the past.

In his time, the enlightened person was also determined to implement education based on gender equality. In the school he founded, he paid special attention to the joint education of boys and girls, especially to the literacy and education of girls. In his poem "Al-Alif" dedicated to the alphabet, the poet aimed to increase girls' interest in reading. Therefore, in the lines written for each letter of the Arabic alphabet, the appeal to the lover is clearly noticeable. [39].

It is known that in the Muslim East it has been a tradition to divide and classify science into categories since ancient times [3]. Analyzing Ajiniyaz's thoughts on science, despite the fact that he did not have his own work on the classification of science, "Can be", "Now", "Demishler" and "Kash- Kash" explained that science is mainly divided into two parts, which consists of the science of "hal" which studies the familiar by knowing God and the science of "remain" which studies the real world. The poet warned that the world consists of six thousand human beings, six thousand plants and six thousand animals, and science should aim to study these eighteen thousand worlds, the whole world.

Thus, Ajiniyaz emphasized the need to look for ways to improve it, paying special attention to the methods of educating young people in the schools of his time. We see that science and its teaching methodology are closely related to each other, that the quality of students' knowledge depends on the teaching method, that it is necessary for students to learn not only to read books, but also to write letters at school, and that education requires demonstration.

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Rezyume: ushbu maqolada Ajiniyoz Qo'siboy ug'lining didaktik qarashlari va zamonaviy ta'lim paradigmalarining turlari muhokama qilinadi. Ushbu maqolada ziyoli shoirning o'zi ijod qilgan davr tahlili, jamiyatdagi barcha insonlarga adolatli, insonparvar munosabatda bo'lishiga, xalq orasida ma'rifatning keng tarqalishiga alohida e'tibor qaratganligi tasvirlangan. Shu maqsadda mamlakatimizda xotin-qizlarni ta'lim-tarbiyaga keng jalb etish zarurligini ta'kidladi.

Резюме: в данной статье рассматриваются дидактические взгляды Ажинияза и типы современных образовательных парадигм. В данной статье описан анализ эпохи, созданный самим поэтом-интеллигентом, который уделял особое внимание справедливому и гуманному обращению со всеми людьми в обществе, широкому распространению просвещения в народе. С этой целью он подчеркнул необходимость широкого вовлечения женщин в образование в нашей стране.

Kalit so'zlar: uyg'unlik, paradigma, ma'rifat, ilmiy jamoatchilik, tarbiya kursi, didaktik qarash, jamiyat, ma'naviyat.

Ключевые слова: гармония, парадигма, просвещение, научное сообщество, образовательный курс, дидактическое видение, общество, духовность.

HUMANITIES SCIENCES

**EMERGENCE OF THE STATE FOLK MUSIC ORCHESTRA NAMED AFTER THE
TEACHER, CONDUCTOR, COMPOSER DONI ZAKIROV**

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Summary: *In this article, we talk about the emergence and development of the Uzbek folk music orchestra, and mainly, you can see how the master, conductor, composer Doni Zakirov made a significant contribution to the working on the compositions and public (choir) forming. He tried not only to use folk songs in the formation of the orchestra, but also tried to discuss the history of that composition and how it formed.*

Key words: *folk music orchestra, chang, orchestra, girzhek, composition, score, composer, music, song, singer.*

In 1959, an ensemble of musicians was formed at the radio station of Uzbekistan, and the task of leading the ensemble was entrusted to master teacher Yunus Rajabii. The orchestra will be led by the famous conductor, composer Doni Zakirov. In 1960, the orchestra choir is consisted of forty-six (46) musicians. H.Nosirova and S.Yarashev, well-known conductors from the orchestra, and then K.Ismoilova, M.Dadaboyeva, B.Davidova, H.Yusupova and F.Abdurakhmonov from solo performers will join the choir. The orchestra achieved great achievements both individually and as joint performers. Playing of the orchestra in high spirit while soft, cheerful music in lyrical music - it gave an incomparable beauty to the musics of the individual performers. In particular, the timbres of girzhek, chang, dutar and flute voices help to improve the composition and performance skills, as well as from the content point of view by harmoniously combining with the timbre of individual performers and the timbre of soloists,. [2.44-45].

Uzbek radio broadcasters are eagerly waiting for the compositions of composers such as "Ma'rt jigitle (Brave guys)" by F. Toshmatov, "Ko'rmedim (Haven't seen)" by D. Zakirov, "Diyarimsan' (My land)" by K. Jabborov, "Toylarin'iz mu'ba'rek (Happy weddings)" by N. Hasanov, "Tappadim (Haven't found)" and "Duwtarim (My dutar)" by S. Kalonov. Professional specialist musicians, in particular rubabists K. Usmonov, I. Mallaev, S. Takhalov, T. Rajabov, A. Bobokhonov, as well as flute musician H. Juraev, chang musician A. Mutalov, from girzhek musicians T. Azimov and K. Komilov's joining to the choir increased the performance level of the orchestra.

In those years, it was possible to record the ensemble's works and concert programs on magnetic tape for the first time. After this process was honored by the specialists, it became a tradition of regular broadcasting the works on magnetic tapes with the help of radio waves. Later, it had the opportunity to be broadcast on television. The performance activity of the orchestra was not limited to radio and television performances, concerts, performance activities, and entertainment began to be enjoyed by the wider public.

In particular, the orchestra's concert programs were often performed in collective farms and urban factories. At such concerts, the listeners were more and more accustomed to the skills of the orchestra. During this period, composers A. Kozlovsky, I. Akbarov, H. Rahimov, A. Muhammedov, Sh. Ramazonov, R. Hamroev and others enriched the repertoire of the orchestra with their compositions in various genres. Despite the differences in the score, the performers performed their parts to the best of their abilities. The reason is that some compositions were well known to folk artists. In addition to this, the orchestra also performed Arabic, Afghan, Iranian and Azerbaijani folk music and songs. The basis of choir at that time were bright performers of the traditional performance school were T. Alimatov (sato), S. Kalonov (flute), F. Sodikov (chang), F. Toshmatov (girzhek), H. Ubaidullaev (double flute), M. Yusupov (dutar). These musicians were not only

engaged in orchestra activity, but also trained talented students of music educational place and conservatory for professional conducting. At that time, one of the main tasks of the radio orchestra was to develop national performance traditions in a new way. For that reason, the Uzbek folk songs that made up the relevant part of the concert programs were harmonized not in the way of ensemble performance, but in a form suitable for orchestra performance. Also, this orchestra, which aspired to national traditionalism in its composition, repertoire and performance, was different from the orchestra that was doing business near the Philharmonic. Their goal and mission was different from each other. For example, the orchestra named after Tokhtasin Jalilov performed in open arenas and in large concert halls, while the radio orchestra performed in recording studios by recording works on magnetic tapes. For that reason, in the radio orchestra, the place of more delicate and soft-sounding songs was important. In addition, main part of the orchestra's repertoire consists of folk music and songs reworked by composers, and the rest consists of songs of Uzbek composers and compositions specially created for the orchestra. At the same time, the choir tried its creative skills in the performance of the reworked music of the Azerbaijani, Kazakh, Karakalpak, Tajik and Russian peoples, which were related nations. In the performance of music samples of Uzbek and Eastern peoples, the performance skills of the "master-disciple" school were very necessary for orchestra musicians. Doni Zakirov, a senior scientist of Uzbek folk music and compositions, paid special attention to the compatibility of the main music and voice, and tried to exaggerate the characteristic decorations and colors of the composition, which determined the quality of the work, regardless of which sample was suitable for the orchestra. For that reason, Doni Zakirov's contribution to the first-time development of the method of creativity is considered infinite. [7.189-192].

There is no doubt that he was one of the first to adapt folk songs and classical music samples to the orchestra, and gradually began to create special compositions for the choir.

Creative achievements were also in line with this. In particular, the composition "Jabayi Chorgoh", reworked by D. Zakirov in 1962, revealed new aspects of the orchestra's performance. In creating this score, D. Zakirov tried to explain the individual performance of each tone and to show the possibilities of performance in the combination of different tones. Importantly, the unison performance of various musical ensembles is characteristic factor to the traditional performance of Uzbek national songs, that is, the predominance of the music from the beginning to the end of the work, has preserved its power.

If a single piece of music is performed by a choir of pieces, an ensemble is replaced by a polyphonic orchestra. All of these were implemented so that composers could perform multi-toned music deeply and intelligently, without losing the national uniqueness of the work. Despite the simple composition of the score, some problems related to the performance position of the orchestra had already been appeared.

The musicians trained in the basis of the unison form of performance brought out the difficulties of performing various parties and voices. This situation, especially when it is demanded the musicians to listen to each other during the performance, or to pay special attention to individual performance parts, which were given an important place in the composition, was noticeable.

For that reason, during the rehearsals, D. Zakirov gave more effort that each performer should work individually on their shortcomings, that the orchestra choirs should to stabilize the balance in the performance, and try to fully illuminate the artistic content of the composition. In other words, it was aimed to achieve the same clear and quiet tone of the full and individual music choirs of the orchestra. Under the influence of such requirements, the orchestra choir, whose performance level has matured, was able to successfully perform the work "Jabayi Chorgoh" in particular. D. Zakirov was able to demonstrate the performance skills and possibilities of the orchestra and each choir through fast speed, as well as the variety and rich timbres of Uzbek folk music, in the reworked music "Jazoir" for the orchestra. [5.146-148].

That's probably why these works are regularly performed in concert programs without losing their value till this day.

D. Zakirov while working in the orchestra, not only taught the musicians performance skills, but also tried to improve their musical education. In particular, in order to introduce them to the Uzbek, Russian and European music culture, including the models of composition creativity, and the activity of famous performers, he organized lectures on various topics for a couple of hours a week, apart from the orchestra training. Such lectures aroused great interest among the choir musicians.

Each composition created by D. Zakirov for the orchestra is played in its own sounds. One of the works written by the composer especially for the choir at that time was created in the basis of Uyghur folk songs music, and this work reflected the peculiarities of the four-part collection. Therefore, each part has its own music theme, size and characteristic images.

For example, the first part (Andante) of the soft sounds presented in four time measure plays the music-theme in a narrating style, the theme of the second part (Andantino) is lively, i.e. in the style of dance, and the third (Allegretto) is cheerful and fast-playing, i.e. in the style of dance, and the last part, the fourth part (Allegro), is concluded with the theme that radiates strong speed.

In this composition, D. Zakirov effectively used off-beat method of musical instruments characteristic of Uyghur folklore. In the second song, he appropriately used the pentatonic scale characteristic of Uyghur folk music. Each song in group (collection) has its own characteristics and leaves a great impression on listeners. In its place, skillful execution of this composition served to improve the performance level of the orchestra musicians. "Doni Zakirov used in his compositions the methods used in Russian and Western European symphonic music in accordance with national traditions."

During rehearsals, D. Zakirov overcame technical difficulties together with the musicians, using the possibilities of the orchestra effectively, and he found sounds that were characteristic for the composition.

Saifi Jalil's khashkar rubab and "Suite" written for orchestra also imposes a number of artistic duties on orchestra musicians. Below is an example of the structure of the opening note from this composition: The parts of a suite-type collection work are based on the stress difference between each other. However, in this composition, Saifi Jalil stress intervals are changed in the following order according to the national artistic traditions: Andante-Allegretto-Allegro. This leads to a dynamic and stressful acceleration in closing part in its place. In addition, the dynamic condition of the Suite at the level of each section and collection is also determined according to the gradual integration of the music. Because of this, the progress of dynamic condition becomes more and more intense during the transition from part to part, and density appears in the score. The dynamics are connected with the stress in place. If the stress is really fast, the sound is so strong, and the texture is so complex. [7.201-203].

The score differs from the individual characteristics of each musical part. The use of delicate dynamic signs makes it possible to clearly show the musical theme. Individual performances of the Kashkar rubab are well sounded together with dutar bass, dutar contrabass, girzhek, girzhek bass and girzhek contrabass.

Looking at the development of the musical material, the composer used the method of repeating the music by the second choir which performed by one musical choir. The main difficulty for the performers is changes in tempo (stress), tonality, size, dynamics, and boom.

The gradual increase in dynamics demonstrates the breadth of the orchestra's range of possibilities and the infinity of sound power.

The compositions analyzed above were among the most prominent examples of the orchestra's performance during the period of its formation. They are clearly revealed in the excess of performance skills of the choir. These works were performed only on television and radio waves, or among the public, that is, in collective farms, factories, plants, and other places, and were promoted in a proper manner. Thus, from the day of formation of the orchestra until the end of the 1960s, the orchestra mastered the skills of performing polyphonic music and learned the musical

"language" characteristic of real orchestra performance. In other words, the choir had the potential to perform compositions of various genres as well as reworked Uzbek folk music.

Over the years, the composition of the orchestra has expanded and strengthened due to professionally trained musicians. The joint of talented musicians helped the orchestra to grow in performing skill. The role of the conductor, who radiated the content of the performed work with the help of a mysterious stick, and led the audience artistically, was also determined. Each musician, who was an orchestra performer, learned the skills of performing a standard piece not in his own form, but in the company of other musicians, listening to each other with the help of a conductor.

As a result, a multi-toned and colorful timbre orchestra was created that contained the national music. The orchestra has had a lot of experiences during the past era. All of these were aimed at strengthening the composition of the choir, improving performance skills, expanding and enriching the repertoire.

In short, the composers tried to write beautiful and meaningful special compositions, while the orchestra tried to fully understand and convey the content of the compositions being performed.

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Rezyume: *Bu maqolada o'zbek xalq sozlari orkestrining yaratilish tarixi va rivojlanish bosqichlari haqida ma'lumot berilgan bo'lib, asosan ustoz, dirijyor, kompozitor Doni Zakirovning asarlari bilan ishlash va orkestr jamoasini tuzishda qilgan mexnatlarini ko'rish mumkin. Orkestr yaratishda faqat xalq musiqalaridangina emas balki asar tarixini, paydo bolishini chuqur tahlil qilganini ko'rishimiz mumkin.*

Резюме: *в этой статье мы рассказываем о возникновении и развитии узбекского оркестра народной музыки, и, главным образом, вы можете увидеть, как мастер, дирижер, композитор Дони Закиров внес значительный вклад в работу над композициями и формирование публики (хора). Он попытался не только использовать народные песни при создании оркестра, но и попытался рассказать об истории этой композиции и о том, как она формировалась.*

Kalit so'zlar: *Xalq sozlari orketsri, chang, orkestr, girjak, asar, partitura, kompozitor, musiqa, ashula, sozanda.*

Ключевые слова: *оркестр народной музыки, чанг, оркестр, гиржесек, композиция, партитура, композитор, музыка, песня, певец.*

TEACHING ENGLISH THROUGH CLIL APPROACH

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Summary: *This article is devoted to activities for content- and language-integrated learning that are excellent for use in English classrooms. Students' communication abilities are enhanced by the discovery and development of different skills through CLIL.*

Key words: *CLIL, CLT, hard CLIL, soft CLIL methods, implementation*

Since CLIL is an approach customized to the needs of the student, it has a broad meaning. One example would be teaching science to a group of learners for whom English is not their first language. It is crucial to remember that a teacher is only imparting new material when they concentrate on subject and language integrated learning. CLIL is a method of introducing new subjects and a new language to students simultaneously; it is not a means of simplifying curriculum or going over things that they already know. A learner demonstrates success in CLIL when they are able to acquire new language skills and gain a thorough comprehension of the subject matter. Originally derived from Communicative Language Teaching (CLT), this pedagogical approach has primarily been employed by language instructors. David Marsh is frequently given credit for the idea. CLIL combines the teaching of content with the study of a foreign language, usually English, though it can also involve teaching any language that is not the students' native tongue. [7]

When we think of content, we typically associate it with academic subjects like science, geography, or history. However, content can also refer to any other type of content, including less academic and, some would argue, more enjoyable subjects like fashion, cooking, photography, or film.

CLIL describes circumstances in which subjects, or portions of subjects, are taught in a foreign language with the dual goals of concurrently learning a foreign language and acquiring content.

There are two kinds of CLIL: the so-called hard CLIL and soft CLIL methods. Hard CLIL means that the subject or subject curriculum is taught in a foreign language. Soft CLIL, which is frequently used in young learner classes, focuses predominantly on teaching vocabulary and terms in a foreign language to pupils. This allows them to get familiar with a second language through minimal exposure while still receiving the majority of their instruction in their mother tongue. Lower proficiency levels, such beginning and elementary, are suitable for Soft CLIL. Hard CLIL denotes a course where all instruction is provided in a foreign language, and students must already be quite independent in their second language and be at an intermediate or higher competency level. Learners should have some significant experience studying the second language and be confident in it before enrolling in a course where the only language spoken is it.

Harrop also pointed out the problem with a shortage of qualified teachers who have expertise in both the language and the subjects. Curriculum development is another issue [4; 57]. However there are some difficulties to teach through CLIL method.

I have once searched that elementary and secondary schools could earn two for one by implementing CLIL. Put otherwise, one person represents both a language teacher and an academic subject teacher—two for the price of one. As with anything, there may be issues when a teacher of academic subjects transitions into the language classroom and vice versa for a teacher of languages. What is actually required—though difficult to come by—is for every CLIL course to have two teachers: a language teacher with experience teaching non-native speakers of foreign languages and an academic subject matter expert.

One of the main difficulties I will have when teaching an academic subject as a language instructor is my lack of background experience in teaching a particular academic subject.

Furthermore, as many language instructors have received training just in teaching foreign languages and may not hold a higher level specialized degree in an academic subject, establishing this expertise may not be a realistic goal.

Lavrysh, Saienko, and Kyrychok (2021) conducted a study to examine the impact of technology on the authenticity of CLIL courses. The study showed that the implementation of technology is not only helped students to improve their language skills but also enhance their content knowledge. Furthermore, technologies also contribute positively to the four pillars of the CLIL learning model: content, cognition, communication, and culture [6; 113]. CLIL can have great applications in many fields.

Teachers who are interested in (or required to) implement CLIL in their classrooms must be proficient in creating and implementing lessons that teach the four language skills—reading, writing, speaking, and listening to non-native speakers—in an efficient and helpful manner for their students. CLIL is based on academic or other subject-matter content.

In CLIL, the language used for instruction is listened to and spoken only in the classroom. Teachers in a CLIL context are not, typically, native speakers of the foreign language or language teachers; they are experts in content subjects from academic and scientific disciplines who use the foreign language to teach. CLIL programmes have been traditionally implemented once learners have acquired literacy skills in their first language (L1) and are able to transfer these skills to the acquisition of a new language. In an educational environment like CLIL, where there is continuous language input, naturalistic language learning takes place. By implementing the CLIL method, it helps students to improve their oral comprehension skills. Indeed, students have to use English to explain ideas, give instructions for activities, and communicate with peers [2; 108]. Successful implementation of CLIL requires collaboration among educators, administrators, and policymakers.

Key considerations include:

Teacher Training: Educators need specialized training to effectively integrate language and content instruction. Professional development programs can equip teachers with the necessary strategies and resources for CLIL implementation.

Curriculum Design: CLIL curricula should be carefully designed to align subject content with language learning objectives. Integration of language and content should be seamless, with ample opportunities for language practice and skill development.

Assessment and Evaluation: Assessment practices should reflect the dual objectives of CLIL, evaluating both subject knowledge and language proficiency. Formative and summative assessments should provide meaningful feedback to students and inform instructional practices.

Resource Allocation: Adequate resources, including instructional materials and technology, are essential for successful CLIL implementation. Schools and educational institutions should allocate sufficient resources to support CLIL programs and initiatives. Regarding the language component, Ball et al. [1] proposed seven guidelines for language practice in CLIL:

- “Mediate” language between the learner and new knowledge
- Develop subject language awareness
- Plan with language in mind
- Carry out a curriculum language audit
- Make general academic language explicit
- Create initial talk time
- Sequence activities from “private” through to “public”

In order to "build bridges" between the learners and the new topic knowledge, teachers play a crucial role as "language mediators" [1]. It appears that the goal of the CLIL technique is to create connections between language and content, learners and new topic knowledge, language teachers and subject teachers, etc.

"More and more parents in communities around the world want their children to reach high levels of bilingual proficiency and they are looking for innovative educational approaches," as

noted by Genesee and Hamayan. "They want their children to acquire minimal proficiency in an additional language (often English), but to reach high levels of bilingual proficiency" [3]. Its goal is to combine language practice with targeted content delivery, promoting the acquisition of foreign languages and intercultural competency.

The CLIL technique makes use of a variety of teaching strategies, all of which Hattie [5] claims can have a significant impact on learning. Hattie's top 10 teaching strategies include the following:

1. Direct Instruction
2. Note Taking & Other Study Skills
3. Spaced Practice
4. Feedback
5. Teaching Metacognitive Skills
6. Teaching Problem Solving Skills
7. Reciprocal Teaching
8. Mastery Learning
9. Concept Mapping
10. Worked Examples.

Content and Language Integrated Learning (CLIL) represents a transformative approach to education, fostering language proficiency, content understanding, and cultural awareness simultaneously. By intertwining language and content instruction, CLIL prepares students for success in a globalized world, equipping them with the skills and competencies necessary for academic and professional pursuits. Through collaborative efforts and strategic planning, educators can harness the potential of CLIL to enhance education and promote linguistic and cultural diversity on a global scale.

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Rezyume: Ushbu maqola ingliz tili sinflarida foydalanish uchun juda mos bo'lgan tarkib va tilni integratsiyalashgan o'rganish bo'yicha mashg'ulotlarga bag'ishlangan. Talabalarning muloqot qobiliyatlari CLIL orqali turli ko'nikmalarni kashf etish va rivojlantirish orqali yaxshilanadi.

Резюме: Эта статья посвящена занятиям по содержательно- и языковому интегрированному обучению, которые отлично подходят для использования на уроках английского языка. Коммуникативные способности учащихся улучшаются за счет открытия и развития различных навыков с помощью CLIL.

Ключевые слова: CLIL, CLT, жесткий CLIL, мягкие методы CLIL, реализация

Kalit so'zlar: CLIL, CLT, qattiq CLIL, yumshoq CLIL usullari, amalga oshirish

**ISSUES IN DEVELOPING NON-FILOLOGICAL STUDENTS' LEXICAL COMPETENCE
THROUGH COLLABORATIVE LEARNING IN ENGLISH LANGUAGE TEACHING**

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Summary: *The article presents scientific research work aimed at enhancing the lexical competence of higher education students in English language. It provides mechanisms based on a strategy for teaching English as a foreign language, tailored to integrate and develop students' lexical competence, along with principles adapted to the educational system for teaching English as a foreign language.*

Key words: *lexical competence, collaboration, communication, lexical units, semantic analysis, linguistic expressions.*

Scientific-theoretical research aimed at developing students' lexical competence is being conducted at Oxford University (UK), Monterey Institute (USA), Yale University (USA), Massachusetts Institute of Technology (USA), Sogang University (South Korea), and the University of Eastern Finland (Finland). In accordance with the Universal Declaration of the United Nations, within the framework of the Common European Framework of Reference for Languages (CEFR), international standards have been established to raise students' speaking proficiency and further enhance their lexical competence.

In the "Strategy for Actions" on further Development of Uzbekistan, priority tasks have been identified, including "deepening the study of other important and highly demanded subjects such as foreign languages in an intensified manner" [1], "cultivating a highly educated and intellectually developed generation, creating a pool of competent educational and pedagogical personnel in higher education institutions," and "enhancing the quality and effectiveness of the activities of higher education institutions through the adoption and implementation of international educational standards and evaluation of educational quality."

"Compensation" (from Latin "compensatio" - filling a place) refers to the process of filling in or restoring impaired or undeveloped functions of the organism [2].

Lexical competence, as a source of development and typological classification, has been elucidated. The term "competence" was introduced into practice by Noam Chomsky in the early 20th century under the guise of "language competence," with the following definition:

Lexical competence is a part of linguistic competence and encompasses:

Understanding the lexical composition of a language (idiomatic expressions, individual words);

Identifying the meaning of a word within the general linguistic context of language units (synonymy, antonymy, similarity, etc.);

Ability to use a dictionary when working with texts;

Formulating utterances considering the designated communicative task. Lexical competence is closely related to the development of phonetic and grammatical competences. Moreover, the increasing demands on vocabulary highlight the importance of developing semantic competence. The ability to correctly interpret various words with similar or related meanings demonstrates semantic proficiency [3].

In foreign educational and research institutions, particularly in terms of pedagogical guidance in language competence development, theoretical aspects have been investigated by researchers such as N.Chomsky, M.Daniels, P.Bogards, A.Hunt, B.Laufer, D.Marconi, P.Nation, J.Hulstj, L.Selivan, and S.Webb. Works by scholars like I.A.Gruzinskaya, A.A.Lyubarskaya, P.Nation, M.West on selecting lexical minimums, receptive and productive use of lexicon, lexical processing stages, and lexical exercises and applications have been widely recognized [4].

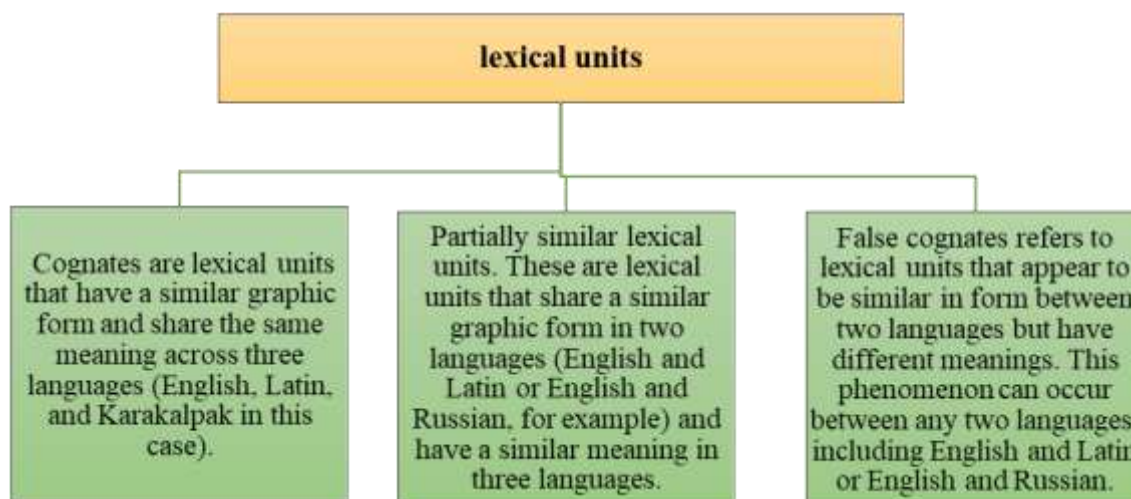
Researcher A.N.Shamov defines lexical competence as follows:

- Motivational component;
- Component contributing to knowledge acquisition;
- Practical component describing behavior and attitudes [5].

Researcher E.V.Yataeva has identified the following components of lexical competence:

- Operational-activity component;
- Motivational component;
- Monitoring-evaluation component;
- Value-motivational component [6].

Understanding English vocabulary, transferring lexical units to new situations for the learner, and demonstrating activity, initiative, and independence in evaluating the results of language learning activities illustrate effectiveness in teaching English [7]. Methodologies for teaching English emphasize the convenience and complexity of assimilation for students and highlight the necessity of developing a comprehensive dictionary typology. In this research, we focus on the convenience and complexity of assimilation, categorizing all lexical units into three groups.(photo 1).



Based on the classifications mentioned above, it is advisable to provide teaching materials that support the practical aspects of organizing lexical material. This includes determining which parts and groups of the material should be introduced in teaching and recommending teaching methods and tools (such as lists, tables, and charts) to support the learning process.

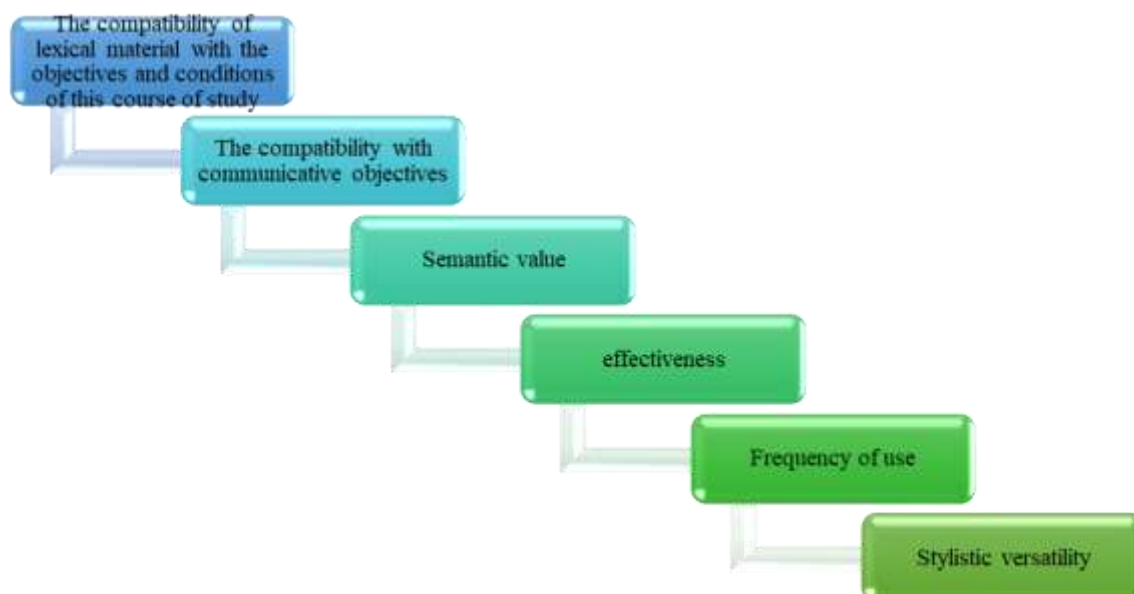
Researchers A.V.Ilyushina and L.M.Tsareva suggest that instead of providing students with lists of lexical units, which are not effective, a more professional approach to teaching foreign languages should be adopted. This involves facilitating students' acquisition of language through methods that enable them to personalize the dictionary, appreciate the complexity of scientific terminology, and understand professional requirements. They suggest the following explanations: verbal presentation (translation, definition through native language; description and definition in the foreign language; contextualization through context), semantic analysis (identifying the meaning of constituent elements), and visual aids (drawings, maps, diagrams, multimedia presentations) [8].

Researcher M. Mukhtarov highlights the difficulties students face in learning vocabulary:

The first difficulty is understanding word meanings, which involves recognizing the shape and meaning of words, as well as dealing with synonym and antonym issues. The next challenge lies in managing the meanings of English words and phrases.

Another difficulty is using the dictionary incorrectly, which encompasses two aspects: unfamiliarity with commonly used words or expressions and the constrained use of words in a specific context. Students struggle to provide synonyms or antonyms for words.

When selecting lexical material, it is essential to consider the following factors.(photo2)

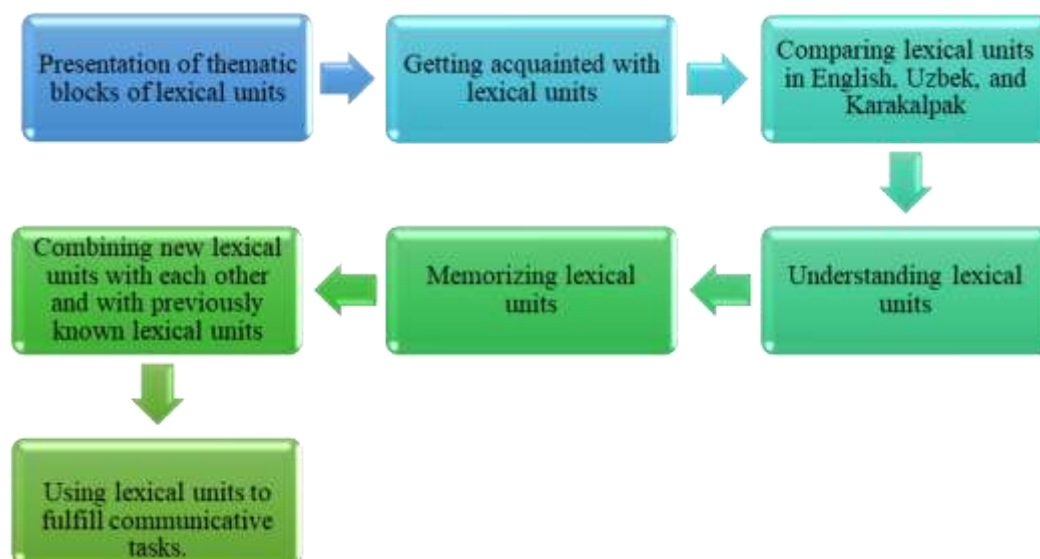


In addition, the length of the vocabulary affects the conditions of the learning environment: the duration of the course, the number of hours per week, teaching methods, the quality and nature of exercises. For the lexical minimum, materials with a maximum power of use and the necessity for more exercises are required. Furthermore, any language minimum should be a systematic occurrence that enables communication.

Moreover, for higher education students, it is necessary to compile a corpus of lexical units in a foreign language, which presents the criteria for selecting and mastering lexical units and serves as a basis for their assimilation. The number of methodological studies dedicated to selecting lexical units and determining selection criteria is substantial. Establishing criteria for selecting lexical units and compiling a corpus of lexical units in a foreign language are essential for achieving the lexical minimum.

Numerous academic and practical studies have been devoted to selecting and determining selection criteria for teaching English. Authors such as I.V.Rahmanov, I.M.Berman, V.A.Buxbinder, B.A.Lapidus, A.A.Mirolubov, and others have been engaged in detailed development of criteria for selecting lexical units for establishing lexical minimums.

M.Mukhtarov highlights several methodological factors related to understanding the meaning of a new lexical unit: the uniqueness of the word, its entry into active or passive vocabulary, the stage of education and student knowledge, how words are given (by hearing or reading), and the context of encountering new words (in class, at home, in books, or in dictionaries). Learning a new lexical unit is primarily accomplished through two methods: without translation or with translation. However, nowadays, teaching through definitions, illustrations, or context is considered more memorable [10]. Dell Hymes emphasizes that lexical competence encompasses not only the ability to convey and interpret, but also the ability to use linguistic expressions, including those influenced by oral interaction conventions within the linguistic community, in appropriate and effective ways. When we talk about lexical competence, we understand it as the ability to use words, expressions, or ready-made phrases that are suitable for communicative tasks automatically and from long-term memory. Taking into account the classifications of the stages of forming lexical competence known in the methodology of teaching foreign languages, as well as considering the distinctive features and stylistic classification of the selected dictionary, we can allocate the following stages in teaching a foreign language dictionary in higher education in the first or second year of study.(photo 3).



The main task of the thematic presentation stage of lexical units is to acquaint students with lexical units that need to be mastered. We came to the idea of grouping the dictionary according to thematic features, that is, organizing the dictionary into thematic blocks and introducing thematic blocks based on thematic content for selecting the dictionary accordingly. For this purpose, it is recommended to offer an average of 40-50 lexical units for each topic. The essential condition of this stage is to create clear, vivid, and engaging images.

Based on the above, if we were to summarize the considerations for developing students' English lexical competence in the context of integration, it is essential to pay attention to the following:

Aligning the theoretical foundations, concepts, and principles of lexical competence with the educational system's objectives.

Designing curriculum to address the development of students' English lexical competence and address the challenges in higher education.

Implementing practical measures to develop students' English lexical competence through integration.

Recognizing the necessity of linguistic and methodological work in addressing today's demands in enhancing students' English lexical competence through integration in higher education.

Utilizing materials designed to enhance students' English lexical competence through integration and ensuring the student's involvement in the process.

Conducting sociological surveys to assess students' level of English lexical competence and establishing language learning support systems.

Adapting pedagogical mechanisms for teaching foreign languages to meet the requirements of CEFR (Common European Framework of Reference for Languages) standards in enhancing students' English lexical competence through integration.

Planning for the development of teaching materials in the next stage, focusing on English for specific purposes, teaching English as a foreign language, and strategy-based instruction, involving specialists in the field.

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10. Muxtorov M. Oliy ta'lim muassasalari talabalarining B2 darajada leksik kompetentsiyasini rivojlantirish metodikasi. Pedagogika fanlari bo'yicha falsafa doktori (PhD) dissertatsiyasi avtoreferati. Toshkent, 2023, 13-p

Rezyume: Maqolada oliy ta'lim talabalarining ingliz tilidan leksik kompetentsiyasini rivojlantirishga doir ilmiy tadqiqot ishlari, talabalarining leksik kompetentsiyasini rivojlantirishga qaratilgan mexanizmlar berilgan.

Резюме: В статье представлена научно-исследовательская работа по развитию лексической компетенции студентов высших учебных заведений в области английского языка, механизмы, направленные на развитие лексической компетенции студентов.

Kalit so'zlar: leksik kompetentsiya, hamkorlik, aloqa, leksik birliklar, semantik tahlil, lingvistik iboralar.

Ключевые слова: лексическая компетенция, сотрудничество, коммуникация, лексические единицы, семантический анализ, языковые выражения.

METHODS OF USING BLOOM'S TAXONOMY TECHNOLOGY IN DEVELOPING STUDENTS' COGNITIVE ABILITIES

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Summary: *The article discusses methods of using Bloom's Taxonomy technology in the development of students' cognitive abilities in history lessons and draws appropriate conclusions.*

Key words: *cognitive abilities, Bloom's taxonomy, hierarchy, 6 levels of thinking*

In recent years, basic changes have been observed in the field of education. School education has become a type of education that requires special attention in our country. If the main goal of education during the first years of the school period was to provide quality education, Today in addition that, increasing the effectiveness of the educational process are included in the agenda.

The President of the Republic of Uzbekistan, Sh.M.Mirziyoyev, at the congratulatory ceremony of the 29th anniversary of the Independence of the Republic of Uzbekistan, noted that a new renaissance - the Third Renaissance has been entered in Uzbekistan, and he addressed to The Oliy Majlis and the people of Uzbekistan, that attention should be paid to the support of education, which is the biggest investment of New Uzbekistan. Because he emphasized that all successful goals are achieved through education and nurture.[1] therefore, these expressed opinions and tasks impose a great responsibility on school teachers.

Today, the interest and attention to the use of interactive methods, innovative, pedagogical and information technologies in the educational process is growing day by day. Because until today, traditional education only allowed students to acquire ready-made knowledge, now it teaches learners to search for their own knowledge, learn on their own, analyze, and even to draw their own conclusions by using modern technologies. In such a situation, the teacher acts only as a manager and observer, and the learner becomes the central form of the educational process.

Methodist scientists from Uzbekistan expressed their thoughts about the pedagogical technologies that enable the effects ways of teaching from the theory into practice and that as a result of the cooperation of teachers and students in this process, students have a wide range of opportunities for self-education. « If Every educational technology used in the educational process to achieve a guaranteed result according to its purpose is able to form cooperation between the teacher and the student, if both achieve positive results, in the educational process students can think freely, be creative, search, analyze, draw their own conclusions, evaluate themselves, their group and the vice versa, and if the teacher creates an opportunity of such services for students, this is the main part of the educational process from our point of view[2.161].

Cognitive abilities are a set of intellectual abilities that relate to our brain, information about the world, in particular, our past experience - what we perceive with our feelings, thoughts and views [3.343].

Although the word "Mind" refers to the act or process of acquiring knowledge, cognitive functions can also be attained with the help of previously acquired knowledge. There are some examples for cognitive abilities of humankind including: short and long term memory, communication process and the problem solving skills.

The study of the human mind is called cognitive science. It is an interdisciplinary department that focuses on the study of the human mind and its processes. It is based on disciplines of some subjects such as philosophy, psychology, anthropology, neuroscience, and even artificial intelligence and computer science. Cognitive science tries to explain how we learn and understand things, how we discuss and perceive situations, how we design things, how we solve problems and many other things. And for these, Cognitive scientists carry out various experiments and use brain scans and computational models.

Cognitive skills are considered as the basis of human life and play a crucial role for development. This concept has a complex variety of qualities, such as rationality, doubt (skepticism), proper analysis and fact-checking. Accordingly, critical thinking includes self-management, self-discipline, self-control, and self-reflection. Critical thinking requires interpersonal and problem-solving skills.

How can students' cognitive abilities be developed in history lessons? In this article, we will look at ways to use Bloom's taxonomy technology in developing students' cognitive abilities.

The technique of Bloom's taxonomy is designed to visualize the development of cognitive abilities within the framework of the model by calculating a hierarchical model of six different levels of expressive abilities [4.138]. Because the tasks and questions used by the teacher to develop cognitive abilities in students and to monitor them should be able to determine the level of development of the mind and consciousness of students. Bloom's taxonomy - it helps to observe the mental activity of students in any form.

Bloom's taxonomy is a classification of educating goals in the cognitive (creative) section, presented in 1956 by B. Bloom in the book "Taxonomy of educational goals: educational direction".

Bloom's taxonomy is now widely used as a planning tool in science.

Bloom's taxonomy includes categories of cognitive (creative) synchronicity: knowledge (remember), understanding, apply, analyze, synthesis (evaluation), evaluation (create). Thinking abilities are arranged in a hierarchy from simplicity to complexity. This technology can be used in history classes in the following ways:

Example: History. 6th grade. Topic: § 2. Stages of development of the ancient people
[5]

Level 1 – knowledge (remembering). At this level students Who? What? When? they find answers to questions, learn words and phrases, express and try to show.

1. What are the names of the ancient people in history?
2. In which area did scientists learn to find the oldest human bone remains?
3. About how old are the ancient people?
4. What do scientists call the ancient people?
5. When did the Great Ice Age begin?
6. Why did people have to live together in ancient times?

Level 2 - Understanding. At this stage, students look for answers to questions such as what examples do they give, what is the main idea, can you explain or not and try to express the topic in their own words.

1. What trials did the Great Ice Age put humanity through?
2. During the Great Ice Age, what did people do to overcome their difficulties?
3. Which people survived the Great Ice Age?

Level 3 - Apply. At this level, students will be able to answer questions such as what would be the result, if..., how can be used, can be used and they will have ability to use their knowledge.

1. Do you think the actions people took to save themselves were right?
2. Do you think they should have prepared in advance to save themselves?

Level 4 - Analyze. Students at this level can categorize what is related..., what is different..., search for answers to questions about what evidence they have, and compare, investigate, experiment, discuss, categorize a mine is formed.

The Great Ice Age

In ancient times, people realized that they were weak in front of the growing cold, so they sought refuge from the heat and went to faraway places. An old man who has been coughing for a long time begins to lag behind. He was sick and walking with difficulty. People often hesitated to stop because it could have resulted in many deaths. The old man is left behind, but the others continue on their way without waiting for him. He feels loneliness, suffers and complains. Then other people passing by the same road see a sick old man who is freezing. But they don't help him

either. The snowstorm did not stop and increased more and more. More difficult tests were waiting for the people. It was a continuous, ruthless past. During the Ice Age, strong people survived.

Read this episode once, then answer the following questions:

- 1) What would you do if you were those people?
- 2) Why didn't the group members help that person?

Level 5 – Synthesis (evaluate). Learners at this level look for answers to questions such as how to come to a different ending... They can express their thoughts and express new points of view.

1. Study the lives of ancient people, develop a list of problems that you will face in your relationship with your students.

2. Try to understand the ancient people.

3. Write a short essay about the stages of development of ancient people.

Level 6 - Evaluation. Students at this level seek answers to questions such as "Do you agree with..., what can be recommended..., what are the strengths and weaknesses..., what is the basis for agreeing..." and students express their opinions on the text, defend their independent opinion, and develop the skills of argumentation.

1. How do you evaluate the lives of ancient people?

2. What kind of person do they seem to you?

3. Have you ever thought about the challenges that await them?

In conclusion, the technology of Bloom's taxonomy described below leads students to develop their knowledge using a hierarchy, from simple to complex, and teaches them to have their own ideas and solutions in any difficult situation and to transfer them to others. Helps them to have historical knowledge as well as life experience.

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Rezyume: Maqolada tarix darslarida o'quvchilarning kognitivlik qobiliyatlarini rivojlantirishda Blum taksonomiyasi texnologiyasidan foydalanish usullari ko'rib o'tilgan va tegishli xulosalar chiqarilgan.

Резюме: В статье рассматриваются методы использования технологии таксономии Блума в развитии познавательных способностей учащихся на уроках истории и делаются соответствующие выводы.

Kalit so'zlar: kognitivlik qobiliyat, Blum taksonomiyasi, ierarxiya, fikrlashning 6 darajasi.

Ключевые слова: когнитивные способности, таксономия Блума, иерархия, 6 уровней мышления.

NUMERATIVE UNITS IN PROVERBS

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Summary: *It is well known that in the oral tradition, literature, ethnography and worldview of the peoples of the world, the number system has a special significance. For this reason, their meanings in the text of the work have been specially studied in the field of folklore and literature. The article examines the proverbs of English and Karakalpak language and its functional-semantic features of the numbers encountered in the text of folk proverbs.*

Key words: *Paremiology, proverbs, number, one, two, three, seven, folklore, fairytales*

Culturally specified numbers or numeratives have great significance in our life. People from ancient times believed in their magic power and created concepts connected with them. If we can reveal the factors, which influenced on formation of definite number concept, we would reveal national, historical essence of nation. This would help us to understand cultural specific features and peculiarities in the world perception of each culture.

Numbers are used for a specific purpose in almost all types and genres of folklore. Numbers are especially important in folk proverbs, which express great meaning through their short form. This applies not only to Karakalpak, but also to other folk sayings.

Proverbs are often studied as a unit of paremiology. Paremiology (from Greek “proverb”) and can be dated back as far as Aristotle. Paremiography —is the collection of proverbs. Proverbs are used in conversation by adults more than children, partially because adults have learned more proverbs than children. Also, using proverbs well is a skill that is developed over years. Proverbs, because they are indirect, allow a speaker to disagree or give advice in a way that may be less offensive. Studying actual proverb use in conversation, however, is difficult since the researcher must wait for proverbs to happen.

A proverb is a simple and concrete saying popularly known and repeated, which expresses a truth, based on common sense or the practical experience of humanity. They are often metaphorical. A proverb that describes a basic rule of conduct may also be known as a maxim. Proverbs are often studied as a unit of paremiology. A prominent proverb scholar in the United States is Wolfgang Mieder. He has written or edited over 50 books on the subject, edits the journal, has written innumerable articles on proverbs, and is very widely cited by other proverb scholars. Mieder defines the term as follows: A proverb is a short, generally known sentence of the folk which contains wisdom, truth, morals, and traditional views in a metaphorical, fixed and memorable form and which is handed down from generation to generation, [4.30].

Scientists from different part of the world A.V. Vasilyev, D.O. Shepping, I.I. Chistyakov studied “magic numbers” and explained their scientific meanings. Yu.M. Lotman, A.Ya. Sirkin, V.N. Chlenov did research on numbers.

The concept of number belongs to one of the basic concepts in the human conceptualization of the surrounding world, being relevant to any culture and society. A. Wierzbicka lists quantifiers among other universal conceptual primitives. From her point of view, these primitive quantifiers are expressed in English by the words one, two, many, and all and have equivalents in all languages. Like other primitives, they form a common conceptual basis underlying all human languages, cognition and culture, [6.35].

We can see the numbers and its functions, lexical and grammatical meanings in the works of Uzbek and Karakalpak researchers A. Bekbergenov, (Qaraqalpaq tilinde sanliqlar), M. Djoraev (O'zbek xalq ertaklarida sehrli raqamlar), K. Xolmurodov (Yetti iqlmdagi yettilar).

The value of words is clearly expressed in proverbs. Because it is impossible to replace the words in proverbs with another, to add any words. They appear in the form of the national language.

This genre exists in the oral works of all peoples of the world, and it is considered common according to the size, shape, and purpose of its creation.

Proverbs are used by speakers for a variety of purposes. Sometimes they are used as a way of saying something gently, in a veiled way. Other times, they are used to carry more weight in a discussion; a weak person is able to enlist the tradition of the ancestors to support his position, or even to argue a legal case. Proverbs can also be used to simply make a conversation/discussion more lively. In many parts of the world, the use of proverbs is a mark of being a good orator.

The study of proverbs has application in a number of fields. Clearly, those who study folklore literature and are interested in them, but scholars from a variety of fields have found ways to profitably incorporate the study proverbs. For example, they have been used to study abstract reasoning of children, acculturation of immigrants, intelligence, the differing mental processes in mental illness, cultural themes, etc. Proverbs have also been incorporated into the strategies of social workers, teachers, preachers, and even politicians.

In English language, for example, there are many proverbs that use numbers. In English proverbs, as in Karakalpak paremiology, numbers sometimes mean mathematical quantities, while in others they refer to ideas based on certain historical events, natural phenomena, and mythological notions of the people.

In both languages numbers are widely used in proverbs. There are some examples. Number one depicts a single, individual thing or person. It is also a sign of emanation and the human species. **“One fool makes a hundred”, “One flower makes no garland”, “One story is good till another’s told”, “One man no man/One body is nobody”, [5.65].**

Number two indicates duality and partnership. For instance, **“Kill two birds with one stone”, “Two wrongs don’t make a right”, “Two heads are better than one”.**

Most people believe in the adage that “all good things come in threes.” When three know it, all know it”. A secret between more than two is no secret. **“Two is company, three is none”.** Both the English and Karakalpak phrases have the same meanings. The number three represents many or all instead of only three. “Two is company, three is none”. In fairy tales and in folk tales number three has magic meaning,[1.4].

One of the most common number in Karakalpak folklore is “seven”. For example, **“Seven measures, one cut”, “A fool may ask more questions in an hour, than a wise man can answer in seven years”.** It can be seen that numbers are essentially used in the sense of mathematical quantities. Also seven means perfection and it is used to show something perfect in fairy tales, proverbs and folk tales.

Number seven is regarded to be holy in most cultures. One more example for number seven is that in fairy tale Snow White is one of the most well-known fairy tales, and therefore one of the most well-documented. As far as the numerology motif extends, Snow White provides many opportunities to analyze the occurrences of the numbers three and seven. For example, she finds seven dwarfs’ house and it means it is perfect place to be safe and happy,[1.8].

Proverb is a genre of folklore; It is a short and concise, figurative, grammatical and logical full and wise meaning. It has a specific, stable rhythmic form that is widely used in speech, and it was created on the basis of people's centuries-old life experiences. Life observations of our ancestors in proverbs. attitude to society, history embodied. Over the centuries, it has been refined among the people, and has become a concise and simple poetic form.

The number is considered an interesting topic to help researchers to overcome their illiteracy in the early stages of learning culture of different countries. Numbers, like other genres of folklore, are actively involved in folk proverbs, and they are used in two ways: real quantity and symbolic meaning. Both the Karakalpak and English languages are rich in number phrases, expressions. In Karakalpak proverbs, for example, the numbers three, seven, four, nine, one hundred, and thousand are used more symbolically, and the numbers one and two are used more realistically.

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Rezyume: Maqolada raqamlarning maqollar tarkibida ishlatilishi va ularning ma'nolari ko'rip chiqiladi. Ingliz va Qoraqalpoq maqollari o'rganiladi va yana folklordan namunalar olingan.

Резюме: В статье рассматривается употребление чисел в пословицах и их значения. Изучаются английские и каракалпакские пословицы, а также берутся образцы из фольклора.

Kalit so'zlar: Paremiologiya, maqollar, raqam, bir, ikki, uch, yetti, folklore, ertaklar.

Ключевые слова: Паремология, пословицы, число один, два, три, семь, фольклор, сказки.

**TRANSFORMING STUDENTS' KNOWLEDGE OF ENGINEERING GRAPHICS INTO
SKILLS AND COMPETENCIES**

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Summary: *Skills and competences form methods of activity based on the acquired knowledge of learners. The difference is that the activities of learners are of different nature. From a professional point of view, qualification is the level of professional training of an employee, the presence of knowledge, skills and abilities necessary to perform a certain job. It is an indicator of the qualification of an employee and is determined by the presence of a category or diploma.*

Key words: *knowledge, skills and abilities, spatial perception, drawing reading, system formation.*

In the modern period of development of science, technology and technology, the need for highly qualified and mature personnel is increasing, which, in turn, places a responsible task not only on teachers of schools, vocational colleges, but also on professors and teachers of higher educational institutions. We should not forget that specialists who have graduated from universities are smart, knowledgeable and perfect people in everything; they are cadres who act with a sense of responsibility in various situations. This requires improving the quality of knowledge provided to students.

K.D. According to Ushinsky, "The intensification of educational activity consists in the development of independent, free, student-specific creative activity. It should always be remembered that without teaching a student this or that knowledge, it is to develop the ability to acquire knowledge independently, without the help of a teacher. Even after the teacher leaves the student, this qualification is a priority, and he should be able to learn not only from books, but also from the reality around him, life events and his inner world. A person who learns to learn such a useful lesson from everywhere will study for the rest of his life." When forming a stable need for learning among students, we relied on the psychological basis of this work - aspirations that are absorbed into it and become a personal feeling. Interest in learning is considered by scientists as a positive, emotional, desirable process of acquiring knowledge, skills and abilities. Interest in learning is a special type of interest in education. G.I. Shchukina defines interest in learning as a person's complex attitude to things and events in the environment, in which he strives for comprehensive, deep knowledge and research of their main characteristics. The desire for knowledge depends on desire and is determined primarily by human needs. Interest in acquiring knowledge is associated with the essence of acquiring knowledge, with the eternal, endless approach of thinking to the subject.

Due to the fact that the spatial imagination of students studying elementary geometric or projection drawing of the Department of Engineering Graphics is not sufficiently developed, it is difficult for them to restore it in space by looking at the drawing, i.e. they lack the skills and abilities. Teaching students to read drawings, especially providing new knowledge about the subject, is one of the main objectives of the subject of drawing. Therefore, turning the knowledge given to them into skills and qualifications is one of the urgent tasks. We can see this by reading a drawing of one part. There are different, sometimes completely contradictory, opinions about what is meant by "reading a drawing." Most people, when reading a detailed drawing, focus on making different parts, so when they read the drawings, they understand how to do it. Others limit the concept to the areas of creating spatial images of an object or part.

Research shows that the definition of reading a drawing can be associated with two rules: firstly, it is necessary to consider the process of creating a spatial image of its shape and size, looking at images of an object or detail; determination of all information necessary to prepare and control an object or part. Secondly, learning to read drawings involves developing in students the

ability to give a clear verbal description of the object or detail depicted in the drawing. Naturally, it is not yet possible to determine from students the information necessary to prepare and control the depicted object or detail, as well as an accurate verbal description. To do this, it is necessary to form students' readiness to read a picture, that is, to develop their knowledge. At this point, let's comment on skills and qualifications.

A skill is the result of the process of performing conscious activity (movement) quickly, economically, correctly, with little physical and mental effort. It is based on human knowledge. At the initial stages of formation, such actions are performed with serious attention; at a later stage, control of attention decreases and, as a result, becomes an automatic action. Skills are maintained at the required level through regular practice (repetition). That is why its importance in education is incomparable. Failure to repeat within a certain period of time will result in a decrease in skill level. It is restored through extensive exercise and training. A skill is a person's ability to perform a specific action or activity based on previous experience. A skill consists of such mental and physical actions, methods and directions by which a developed goal is achieved or a certain activity is carried out. Sometimes skills create competence in a person and help him work competently; some, on the contrary, negatively affect the quality of a person's competence and change it. This is called the interaction of skills and abilities. Any skill can be a skill, but not every skill can be a skill. Skills become skills only when they become automated. For example, various student actions have become a habit because the process of writing forms is automated. Therefore, the student can write letters beautifully and correctly. This movement is a learned skill of the student. Through lots of repetition, students' movements associated with writing letter forms become automatic.

A skill is an action that is necessarily performed in an automated, learned manner. A skill is an automated form of performing and controlling human actions. A person's skills are characterized by the fact that his actions are easy, quick, as if he were performing them independently. As a result, skilled and unskilled workers perform the same amount of work for different durations and different quality. A person's skills are specific to all areas of his activity. The qualifications obtained in the field of activity not only facilitate a person's work in this field, but also have a positive effect on the speed and efficiency of movement in other fields of activity. Qualifications in different areas do not appear in a person immediately, over a short period of time. A person is required to repeat a particular area systematically in order to become competent. In addition, qualifications are formed on the basis of theoretical and practical general educational and professional knowledge and a set of skills necessary to perform a certain work activity. Skillful mindful writing is not an automatic part of the action. A skill is formed as a result of repeated repetition of the same action under the same conditions. The more thorough the skill, the faster and more correctly a person will complete the job. Skills and competencies have similarities and differences. What is common is that skills and competencies are methods of activity based on the acquired knowledge of students. The difference is that the students' activities are of a different nature. From a professional point of view, qualification is the level of professional training of an employee, the presence of knowledge, skills and abilities necessary to perform a certain job. It is an indicator of the employee's qualifications and is determined by the presence of a category or diploma.

To transform a student's engineering graphics knowledge into skills and competencies, activities that can be used in the Drawing Reading process may include:

- determine a clear image of an object or part from a given drawing;
- comparison of this drawing with its clear image;
- make a model according to this drawing;
- draw its drawings based on a given model;
- comparison of a drawing of one type of object or part with conventional signs with drawings of two or more other types;
- based on disparate elements of a part, create a single integral part;
- make a drawing of a part of an object or part that needs to be removed;

- various forms of reading working drawings using parts and other tools necessary for their processing (for example, selecting one of the parts of the same shape and different sizes, corresponding to the drawing), etc.

- Naturally, increasing the number of the above exercises will improve the quality of education. But the forms of its use are different and can be from short-term tasks during the lesson to longer tasks throughout the lesson. You may notice that some students try at first glance to imagine the shape of an object or part shown in the picture and determine its dimensions. It is clear that the knowledge acquired by such students has already turned into skills and competencies. Other students often start drilling the dimensions of some second-level materials, without imagining a clear image of the object or part. These students' skills or competencies are not yet sufficiently developed. Some students, on the contrary, begin to break through one image without comparing it with another. After this "plan reading," students not only lack or lack skills and competencies. The teacher's task is to form in students a certain order of mental activity when reading a picture, that is, a system for reading a picture. Naturally, this education is based on skills and competence.

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Rezyume: Ko'nikma va malakalar ta'lim oluvchilarning olgan bilimlari asosida faoliyat usullarini tashkil etadi. Farqi shundaki, ta'lim oluvchilarning faoliyati har xil xarakterda boladi. Kasbiy nuqtai nazardan, malaka - bu xodimning kasbiy tayyorgarligi darajasi, undagi ma'lum ishni bajarish uchun zarur bo'lgan bilim, ko'nikma va malakalarning mavjudligi. Bu xodimning malakasini belgilovchi ko'rsatkichi bo'lib, toifa yoki diplom mavjudligi bilan belgilanadi.

Резюме: Умения и навыки составляют способы деятельности обучающихся на основе полученных знаний. Разница в том, что деятельность обучающихся носит разный характер. Квалификация с профессиональной точки зрения-это уровень профессиональной подготовки работника, наличие у него знаний, умений и навыков, необходимых для выполнения определенной работы. Он является определяющим показателем квалификации работника и определяется наличием категории или диплома.

Kalit so'zlar: bilimlar, ko'nikma va malakalar, fazoviy tasavvur, chizmalarni o'qish tizimini shakllantirish.

Ключевые слова: знания, умения и навыки, пространственное воображение, чтение чертежа, формирование системы.

PROBLEMS OF TAKING DRAWING EDUCATION TO A NEW LEVEL

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Summary: *Learning to draw has a positive effect on the formation of students' creative abilities, increasing the level of visual training, and mastering other subjects related to their course.*

Key words: *Pedagogical gaming technologies, pursuit of goals, technological educational and mental development, activation of learning, armament with technology.*

Today, the problem of forming a free personality requires the organization of educational work in educational institutions on the basis of modern innovative technologies. It is known that this process will not be easy, but it is necessary to transform the ongoing education being introduced into a strictly scientifically based pedagogical system.

In order to reveal the essence of this issue, the student conducts, in a certain sense, research. Based on the research, the student acquires certain types of knowledge related to the task at hand. These sources of knowledge teach students to be able to positively solve a given problem, to be able to think independently and critically, and also to be able to develop and defend their point of view, and consolidate what they have acquired. knowledge.

The use of various pedagogical game technologies is important for taking drawing to the next level. In the coming decades, pedagogical gaming technologies will be sufficiently introduced into practice. Worthy of scientific research are V. A. Krivova, L. T. Matrosova, T. M. Sorokina, S. I. Tyunnikova, in which the emphasis is on the development of creative thinking of students and the activation of independent learning through gaming technologies.

In recent years, the game form of education has become the most promising and successful innovation. Gaming technologies play an important role in developing students' goal-setting, speed and productivity of thinking, stability, speed of memory, improvement and confidence in their strengths and will.

In order for the educational process to be fruitful and effective, it is necessary that students have a certain level of cognitive activity. In turn, the development of spatial imagination in students, which is one of the main components of cognitive activity, should be both the goal and the means of teaching drawing.

In higher school, in the process of learning to draw and draw geometry, it is important to develop both forms of imagination - "memory" and "imaginary" images. First of all, it is necessary to determine the level of development of the student's spatial imagination. This can be achieved by taking tests that require students to work hard on their spatial awareness.

To transition to a new education system based on reforms in the field of education, the art teacher set himself new tasks and problems. Such urgent problems are the problems of increasing the knowledge of the drawing teacher, his technological and methodological training. Pedagogical and technological preparation of students - intellectual development, intensification of learning, equipping with technology, searching for new teaching methods, finding ways to interest them in this subject - is one of the priority tasks of teachers of this subject.

The modern stage of development, developing day by day, requires each teacher to conduct lessons in accordance with the worldview and needs of modern youth. All research carried out in this way is aimed at finding ways to explore cutting-edge pedagogical ideas and experiences and apply them to the teaching and learning process.

New pedagogical technologies require drawing teachers to know their profession and strive for innovation. To master pedagogical technologies, an art teacher must have high professional knowledge and skills. In addition, learning to draw has a positive effect on the formation of

students' creative abilities, the level of visual preparation, and mastery of other subjects related to their course.

According to the Swiss psychologist Lan Piaget (1876-1980), the childhood "transitional period" is characterized by the development of abstract thinking about objects and existence in general. The complexity of thinking affects all aspects of a child's life and his emotions. According to the American psychologist Stanley Hall (1884-1923), this period is a period of aggravation of the child's internal and external conflicts, in which individuality is manifested. Another American psychologist Erik Erikson (1902-1981) said: "The child has a "business sense" that allows him to achieve his goal. At this age, the basis of his attitude towards work is formed," he says.

The task of educating the younger generation as independent-minded people is set in the national personnel training program. The solution to this issue largely depends on the use of interactive teaching methods. First of all, let's clarify the concept of "interactive". The word "Interactive" comes from the English word "Interact". "Inter" means "mutual", "ast" means "to work". The essence of an interactive teacher is to make the learning process such that all students are involved in the learning process and have the opportunity to think freely, analyze and think logically. The use of gaming technologies and interactive methods is based on the activation and activation of students.

According to research by scientists, play is one of the main activities along with work and study.

The student should feel special satisfaction and joy from the knowledge, professional qualities and skills acquired in the process of drawing. Drawing has great potential in developing students' spatial imagination. Without spatial imagination and its development, it is impossible to master the main topics of the drawing program.

Research conducted in this area shows that a student's academic success is negatively affected by several factors: lack of knowledge acquired before entering university and lack of independent thinking skills; lack of a perfect, conscious justification for the purpose of choosing a profession, a complex process of getting used to the higher education system, lack of time for creative thinking and independent work due to an excessive number of hours of study, insufficient creation of educational literature and new pedagogical and information technologies that meet the requirements of the present time, dissatisfaction with pedagogical skill of teachers and others.

As mentioned above, if a lesson is taught using game technology and interactive teaching methods when teaching drawing, students will gain knowledge and skills in the subject, their ability to think independently will increase, and they will not only prepare for the next lesson. , but also try to show their talents in the scientific field.

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Rezyume: *Chizmachilik fanini o'qitish o'quvchilarning ijodiy qobiliyatlarini shakllanishiga, grafik tayyorgarlik darajasini ortirishga va bu ularning kursi bilan o'zaro aloqador bolgan boshqa fanlarni o'zlashtirishga ijobiy ta'sir qiladi.*

Резюме: *обучение рисованию положительно влияет на формирование творческих способностей учащихся, повышение уровня графической подготовки и овладение другими предметами, которые взаимодействуют с их курсом.*

Kalit so'zlar: *Pedagogik o'yin texnologiyalari, maqsadga intilish, texnologik jihatdan tayyorlash -aqliy rivojlanish , o'qitishni faollashtirish, texnologiya bilan qurollantirish.*

Ключевые слова: *педагогические игровые технологии, целеустремленность, технологическая подготовка-умственное развитие, активизация обучения, вооружение технологией*

GENRE AND LITERARY PECULIARITIES OF EPICS IN MODERN KARAKALPAK LITERATURE

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Summary: *This article describes the peculiarities of the development of epics during the period of independence, that is, the epics embody the national traditions, linguistic peculiarities, and psychology of Karakalpaks. At the same time, the genre and artistic, ideological-thematic, plot-compositional peculiarities and educational significance of the epics in the modern Karakalpak literature are also discussed.*

Key words: *education and upbringing, epic, jiraw, bakshi, poet, customs and traditions, literature*

Without a doubt, the future of Uzbekistan is connected to the quality of education, which is rich in all aspects, with strong intellectuals. For this reason, education of a person who loves his homeland, nation, is rich in new ideas, and thinks freely is one of the priority programs of our country's policy in the field of education. "The history of the world gives a lot of information that every new development (civilization), Renaissance starts from a book and libraries." [1-42]

President Sh.M. Mirziyoyev stated that improving the quality of education is the only correct way of development of New Uzbekistan. Development of the education sector is a task at the level of state policy. Because forming the young generation as the builders of tomorrow, the caretakers of the future, the successors of the educated generation is one of the most important tasks set before this system. Since independence, the Republic of Uzbekistan has put the policy of reforming the society on the agenda. As in all sectors, the policy of reforming the education sector and its sequential implementation have begun.

The word "*dástan*" (*epic*) entered the Karakalpak language from the Persian language through the neighboring nations. In the Karakalpak language, the word "*dástan*" was introduced in early times, while the word "*dásta*" is often used in works that are performed orally, while the word "*story*" is used in written works. When we look at the process of creation of epics, it is interesting to note that at the beginning, poets created some episodes of the bravery of a single hero or part of epic poems, and then filled and enriched it with new episodes according to the demand of the listeners. Thus, great epic works appeared.

Epics are large-scale epic works in the oral works of Turkic nations. [2-189] Traditions, social life, religious concepts, knowledge about the world, language differences that are characteristic of each nation, people or ethnic groups are clearly visible in folklore creations.

Central Asian nations have different ethnic characteristics. From an early age, the oral literature of each nation was shaped according to national customs, worldviews, and language differences. For example, epics "Qoblan", "Alpamis", "Edige" are almost found in the majority of Turkic nations. When we look at and compare the national versions of these epics, we can see that the heritage of each nation is rich in its spirit, psychology, traditions, and customs. The epics are not the sum of one century, they are told from the beginning of the entire history of the nation, from family to family, from father to child, and the traditions that are inherited. The creation and development of epics is related to the life and life paths of each nation.

We know that epics are the largest genre in the folklore of Karakalpak. Karakalpak epics occupy the main place in 20 volumes of Karakalpak folklore and 100 volumes of Karakalpak folklore published in recent years.. [3-138]

Through reading literature, we can get to know about the past and present of the people, history and ethnography, national customs and traditions. So it can be said that "Fine literature is the property of the nation" and "mirror of the nation". If we take a look at the literature of any nation, it is described the national character of every nation. Nations of the world, like Karakalpaks,

the folk creations, which full of wisdom, are considered to be spiritual heritage from father to child, from family to family. From the content of epics, we can find elements that correspond to the truth of fairy tales, poems, myths, bravery of heroes, people's dreams, and historical events. The epics in the Karakalpak folklore are divided into several periods connecting with the historical truth.

Most ancient period. Epics often describe magical events. This includes the epic "Sháryar".

Pecheneg-kipchak period XI-XII centuries the epic "Qoblan"

"Edige" and "Er Shora" epics of the Altın Orda period of the XIII-XV centuries

Kungrad-Baysun period XV-XVIII centuries, "Máspatsha", "Alpamıs" epics

"Er Ziywar" the epic of the Bukhara-Bulıngur period of the 16th-17th centuries

Khorezm era epics "Góruǵlı", "Gárip ashıq", "Sayatkhan-Hamra".

These are related to the history of literature.[4-160-165]

The content of Karakalpak epics is divided into three parts depending on the direction of the idea.

1. Heroic epics:

«Alpamıs», «Khoblan», «Qırq qız», «Kurbanbek», «Góruǵlı», «Er Ziywar», «Máspatsha», «Yusup Akhmet»,

2. Epics about love:

«Gárip-ashıq», «Sayatkhan Hamra», «Ashıq Nájep», «Hurliha Hamra», «Tahir Zuxra», «Layli-Májnún», «Yusup-Zulaykha»,

3. Epics that describe social life:

«Sháryar», «Shiyrin-Sheker», «Kanshayım», «Muńlıq-Zarlıq»,

4. Historical epics:

«Edige», «Er Shora», «Dáwletyarbek»

Although these are similar to each other in terms of form, they differ from each other in terms of story structure and plot content. Heroic epics describe the invasion of peaceful nation by external enemies and the struggle of the heroes against them. But, lyro-epic epics describe marriage and life issues. Social and marital epics are given about the internal conflicts of life. In historical epics, historical people and events related to history are often described.

It can be found extensive information about this in the works of N. Dáwkaraev's "Qaraqalpaq ádebiyatınıń awızeki ádebiyatı" ("Oral literature of Karakalpak"), K. Ayımbetov's "Xalıq danalığı" ("Folk wisdom"), "Qaraqalpaq folklorı" ("Karakalpak folklore"), I. Sagitov's "Qaraqalpaq qaharmanlıq eposı" ("Karakalpak heroic epic"), Q. Maqsetov's "Qaraqalpaq xalıq dástanı Qırq qız" ("Karakalpak folk epic "Qırq qız"), "Qaraqalpaq qaharmanlıq dástanlarınıń poetikası" ("Poetics of Karakalpak heroic epics") by K. Maksetov.

Epics in written literature can be found in poetry. In this case, poetry acts as a link between events. Lyricism is strong in epics in written literature. Basically, the lyrical basis occupies a large place in modern epics. Epics in folklore and epics in written literature differ in the ways in which the writer describes and evaluates the world in his own way, and describes his thoughts and dreams. In addition, epics of the poet's inner experiences, dreams, and thoughts are being created. There are epics "Khanalaslar" by S. Nurumbetov and "Bahadır" by A. Dabilov.

There are peculiarities in the development of epics during the period of independence. T. Sársenbayev, Á. Otepbergenov, N. Tóreshova, M. Jumanazarova, G. Dáwletova, G. Nurlepesova have a great role in this. Despite the fact that T. Sársenbayev's "Qız", ("Girl") G. Nurlepesova's "Qumar ana" ("Mother Kumar"), M. Jumanazarova's "Súyinbiyke" ("Suyunbiyke"), G. Dáwletova's "Alp ana" ("Mother Alp") are the first experiments in epic poetry, they indicate that they are constantly searching in this direction. At the same time, Raya Ernasheva was the first in Uzbekistan to write the epic "Khamsa".

It is worth noting the similarities and peculiarities of the epic creations of A. Otepbergenov and N. Tóreshova. For example, A. Otepbergenov's epic "Allańdı umıtpa" ("Don't forget your God") consists of 608 chapters written with ten-line poetic verses. The novelty of the poet writing the epic in this form in our lyric-epic poetry was the basis for the poet's research in the field of

content and form. In addition, we can see that he took a sample from the traditions of Eastern poetry.

In this case, the qualities of the biographical state, the various qualities of the poet's image generalized with the image of the lyrical hero are connected with each other and serve to reveal the image of the author. Plots with certain concepts of religious, mythological and fantastic types have rarely been used in our national literature until present day. But this thing is widely expressed in this work. It is used in N. Toreshova's epic "Yalg'anshi" ("A lying world") in the form of a dream. Another important thing to say about these epic works of A.Otepbergenov and N.Toreshova is that among our people, such kind of words as "Minaw bir narseniń dástanı", ("this is the epic of something"), "dástan qılıp aytıp beriw", ("tell it as an epic"), "sol waqıyalardıń dástanın ayt" ("tell the epic of these events") are widespread. These words mean that a certain event, animate or inanimate thing, is sometimes magnified and sometimes expanded.[5-15]

In conclusion, we can see the diversity of the epic genre in Karakalpak poetry during the years of independence. In general, the ideological-thematic, plot-compositional peculiarities of the epic genre of this period became the basis for the discovery of literary images and ideas that were not like before.

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Rezyume: Bu maqolada Mustaqillik davridagi dostonlarning rivojlanishidagi o'ziga xosliklar ya'niy dostonlarda qoraqalpoq xalqining milliy urf-odat dasturlarin, til o'ziga xosliklarin,psixologiyasin o'zida mujassam etganligi haqida bayon etilgan. Shuning bilan birga hozirgi qoraqalpoq adabiyotidagi dostonlarning janrlilik va badiiy, g'oyaviy-tematik, syujetli-kompazitsion o'ziga xosliklari va tarbiyaviy ahamiyati haqida ham so'z yurutiladi.

Резюме: В данной статье описаны особенности развития эпоса в период независимости, то есть эпосы воплощают национальные традиции, языковые особенности и психологию каракалпакского народа. При этом обсуждаются также жанрово-художественные, идейно-тематические, сюжетно-композиционные особенности и воспитательное значение эпоса в современной каракалпакской литературе.

Kalit so'zlar: ta'lim va tarbiya, doston, qissa, jirov, shoir, urf-odat, badiiy adabiyot.

Ключевые слова: образование, воспитание, эпос, рассказ, жиров, поэт, традиция, программа, художественная литература.

SEMANTICS OF WORDS DENOTING COLOR IN TOPONYMS OF TAKHTAKUPIR DISTRICT

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Summary: *The article studies the semantics of words meaning color as part of the toponyms of the Takhtakupir district. The emergence of the land-water names indicated the relationship of words denoting color, differences in the name of a geographical object by people. The ways of interpreting the words white, black, blue, yellow, red, motley, which appear in the toponyms of the Takhtakupir district as topographic components, are discussed. The direct and also other meanings of words used in the meaning of color in toponymy are revealed.*

Key words: *Turkic languages, Karakalpak language, onomastics, toponym, coloronym, oronym, hydronym, oikonym.*

In the field of onomastics, toponyms are linguistic units that exist together with an ethnic group for many centuries. These are memories that have survived such phenomena as the development and change of society, and live as a treasure of each era. In addition, "land-water" names are considered an indicator of our national linguistic wealth, our culture and customs, and our understanding of the world.

Because the origin and history of land-water names is, firstly, an indicator of our national linguistic wealth, and secondly, it is closely related to our culture, customs, way of life, and our knowledge of the world. Thirdly, it is a natural object that provides physical and geographical information related to the socio-economic development of the people.

For many centuries, people have tried to uncover the secrets of the nature around them. People have known the secrets of every place, mountain or stone since ancient times. Geographical environment pointed to the social life of the population and the surrounding world.

Land-water names represent historical and cultural heritage, reflecting the mentality, lifestyle, traditions and knowledge of the geographical environment of the people created in this region. Each people knew well the geographical environment, the topography of the earth, the world of plants and described it in their own language.

In linguistics, there are a number of works devoted to the study of the environment, the size of an object, color terms, its lexical, grammatical, ethnolinguistic, and cognitive description. These are monographs by A.N. Kononov, G. Konkashbaev, O.T. Molchanova, as well as A. Kaydar, Z.T. Akhtamberdieva and B. Omirbekova "Representation of colors in language", F.R. Akhmetzhanova and K.T. Kairbaeva "Stable combinations associated with color." N. Aitova and U. Serikbaeva studied words meaning color in the Kazakh language from an ethnolinguistic point of view, and Sh.K. Zharkynbekova conducted a comparative study of words meaning color in the Kazakh and Russian languages.

Each geographical name has its own history and reasons for its name. As part of geographical names, words expressing color are used to determine the compatibility of concepts with various natural conditions, geographical features, orientation and location. In the composition of geographical names, words expressing color, in most cases define west and east, north and south, as well as the relationship of one geographical object to another object (far-near, high-low position). Every nation has been living in the bosom of nature for centuries and paid attention to various secrets of the surrounding. Due to adaptation to the natural environment, the condition of the land, climate differences, water sources, vegetation and pastures, etc. signs appear in land-water names. The differences of each people can be seen as a result of the color symbols that are used to describe the appearance of the land in terms of color. There are certain reasons why the names of land and water are formed in the context of words that mean color.

Kazakh onomist B. Tileuberdiev said that the words expressing color not only express the type and color of a geographical object, but also have other meanings. E. Koyshibayev was the first to talk about this topic in the toponomics of the Kazakh language.

It doesn't matter in which language, including the Turkic languages, the words for the colors *white*, *black*, etc. are often found as part of toponyms. Their meanings are mentioned from different sides in the works of such scholars as A. N. Kononov, E. Koishibaev, G.F. Sattarov and others. There are a number of works on the study of color words in general linguistics, as well as in Turkic languages. For example, in works of M. Ganihodjaeva in Uzbek linguistics, Zh. Kalimova in Kazakh language, K. Samatov in Kyrgyz language, R. Zakirova in Tatar language, Z. Faizullina in Bashkir language, A. Maizina in the Altai-Mongolian language, S. Sadykova in the Kumyk language, E. Savvina in Yakut language, A. Bekbergenov and R. Sankibaeva in the Karakalpak language conducted special studies in this area.

Most of the toponyms of the Takhtakupir district describe the natural and geographical features of this region. Over time, the terrain in this area may change. As a result, hills, cliffs or fields may disappear or appear here. However, names indicating the original natural state of the object are retained. Some toponyms appeared in connection with the geomorphological features of the place.

Geographical objects in our environment have all sorts of natural features. These signs distinguish an object from other objects, perform a nominative function and create a local toponym. This type of toponyms includes names that appeared as a result of the natural and geographical differences of the object. The geomorphological features of the place played an important role in the naming of the object by people. Also, a number of factors played a significant role in the naming of the object, such as the event associated with the object, the profession of people, the number of objects and similarity with any object. It is not surprising that the number of words expressing color in onomastic terms - toponyms, ethnonyms is increasing. There were certain reasons for them. According to scientists, "in ancient times, Turkic communities created in Altai and Western Siberia called the north, south, east and west by the names of colors. Black represented the north, red represented the south, blue represented the east, white represented the west, and yellow represented the center. It became a custom for people belonging to certain communities to settle in tribes, and over time, the names of the tribes became ethnonyms. [13; 145-146]. Toponyms characterizing such an object occupy a certain place in the toponymy of Takhtakupir district. The natural and geographical features of the region are the leading motive in naming the people's homes.

In the geographical terminology of Turkic languages, the words "*white*" and "*black*" can have additional meanings different from their original meaning. In Z. Pardaev's doctoral dissertation on Uzbek linguistics it is written that words expressing color, in addition to specific senses, are also used to express occasional senses. [9;110].

A.N. Kononov showed the following meanings of the word "*white*" in Turkic languages:

1) white; 2) pure, true, fair, faithful; 3) white-gray (horse color); 4) egg and eye whites; 5) conspicuous white color; 6) dairy products. [6; 170]. The color meaning of the word "*white*" is described by contrasting it with the word "*black*", and this meaning is more often used when creating place names.

There are a lot of land-water names with "Ak" (white) components in the toponymy of Takhtakupir district. For example, *Akbulak* (the name of the spring), *Aksuwzhap*, *Akbaslykol*, *Akzhai*, *Akkol*, *Akkum*, *Akshiganak*, *Akdarya* (the name of the channel) and others.

Akbulak – the name of the spring. The water in this spring was white.

Akkol – the name of the lake. Due to the fact that the lake was salty, it looked white from a distance.

Akkol village is the name of a village located in the Takhtakupir district. Previously, there was Lake Akkol, which served as the basis for the name of the village. [11;92]

Akkesek – name of the rural area. The white lump is said to be associated with a crushed area.

Aksuwzhap – name of the river. There are different points of view in the analysis of the name *Aksuw*. There are assumptions that the “white” component in the composition has a verbal character, and not color, that is, as part of this toponym, it means “stream”, “current water”, (8) by origin of the toponym *Aksuwzhap*, there is another assumption as “white bubble” flow of water. We can conclude that the word “white” here is formed not from the verb “leak”, but from the “white” lexeme, denoting color.

The toponym *Akkum* is widespread in the Kegeyli and Shymbay districts of our republic [2,21]. Scientists have expressed their opinion about the semantic meaning of this toponym. For example, Kh. Khasanov notes that *Akkum* means “sand landslide, moving sand” [12,28]. S. Atanyazov said that the meaning of the oronym *Akgum* in Turkmenistan is “moving sand with a clean surface.” [3,29].

The word “*Ak*” (white) in the name “*Akkum*” means “the world of plants is surrounded by sand”.

In the toponyms of the Takhtakupir district there are names created with the word black. A.N. Kononov explains with many examples that the word “*Kara*” (black) means big, huge, mighty, strong, pure, open, dry land, earth, darkness, back. According to him, the word black used in the names of the heroes “*Korkyt ata zhyrlary*” was synonymous with the words brave and strong. [6; 83-89]. There are not many of them. The word black has the meaning of “clear” and “earth” when talking about place names, especially hydronymic names. Turkic peoples used the word “black” to refer to water coming from underground or ravines. For example, the toponym *Karakol* is found. The word black in this toponym is given in its literal meaning. S. Koraev believed that the toponym *Karakol* arose due to the color of the object [7,195]. The toponym *Karakol* is also common in the Khodjeyli and Shymbay districts. [6].

The village of *Karaagash* is the name of a village in the Takhtakupir district. The black board installed during the expedition was made of wood. [11;108]

Karazhyngyl is the name of the land. There were a lot of bushes here.

Karakoz is the name of the ravine.

Karanyyn takyr is the name of a pasture.

Karaoi is the name of a village point. E.A. Kazanskaya writes about the toponym *Karaoi*: “*Karaoi* is a hilly plateau located on the site of mountains destroyed in ancient times. If there are no clearly defined hills, the surface of this mountain plateau can be called flat. There are many small gorges in the middle” [5;39].

Karazor is the name of the land.

Karateren is the name of the lake. Neither sunlight nor human feet have reached the bottom of the so-called Lake *Karateren*, so what is at the bottom of the lake remains a mystery.

In the Takhtakupir district there is also an increase in the number of names for land and water, which are formed from words such as *blue, yellow, red and motley*.

The word “*Kyzyl*” (red) is a toponym that arose from a very interesting phenomenon, which is especially noticeable in the toponyms of our early ancestors who settled in the Takhtakupir district. In the eastern part of the district there is the *Kyzylkum* desert, which is also called *Kyzyl*. People drove their livestock to *Kyzylkum* for pastures and wintering grounds. If we pay attention to the origin of the name, we will see that the sun rising from the east painted the desert red.

Kyzylnur is the name of the country.

Kyzylzbek is the name of the channel.

Kyzyltakir is a land name.

Words associated with color represent a special sign of geographical objects that occupy a special place in people's lives and indicate directions in the place where they live.

Toponyms created in the context of the “*Sary*” (yellow) component are found in all districts of our republic [10]. The following names can be added to toponyms created in the context of the word “*Sary*” (yellow):

Saryaltyn village is a metaphorical place name. Rice was grown here, and it was alternately referred to as "yellow gold". The name of the village comes from there.

Sarykol is the name of the lake. In Kalender Abdimuratov's work "Why is it called that?" "The reason for the name on the one hand is close to red sand. The associated name of the lake is *Sarykol*, and it is explained that it was probably named for the color of the sand. [1;49].

Sary omyt is a place name.

Sarybas tobe is the name of the hill. The color of this hill was yellow.

Sarykon is the name of the land.

Sarykoldin sayi is the name of the creek.

The word "*Ala*" (motley) is included in the toponyms of the district and expresses the flavor of this geographical object. In the toponymy of the Takhtakupir district, which we talked about, we combined the word "*Ala*" into only 2 terms: *Alakoy* and *Alakoysoigan*.

The adjective word motley does not have its own designation, since the word motley combines several colors: black motley, yellow motley, red motley, etc. The toponyms *Alakoy* and *Alakoysoigan* contain zoonyms, since these animals differed from other animals in color.

Alakoy is the name of the land.

Alakoysoigan is the name of a land, crane.

Azerbaijani scientist R. Yuzbashev writes: "Ag" in the Azerbaijani language means "East" and "Gara" means "West". [14;140].

The lexeme "*Kok*" (blue) was used by the ancient Turks to describe aspects of the world. It meant the east: blue Turks, blue horde, etc. Information about this can be found in the works of academician V. Bartoldt. Names associated with this color have been preserved as part of some geographical objects located in the east. Also in the ancient era, there was a method of dividing soldiers associated with military strategy into certain groups based on their color. The qualitative adjective blue color, as seen in old Turkic scriptures, is generally considered the favorite color of the Turkic people (concepts of blue God, blue Turk, blue wolf).

For nomads, the word blue is the most sacred truth, because: blue-sky, blue- spring, blue-summer, time to feed livestock. If the cattle were fed, then the nomads were fed. [4;166]

In most Turkic languages, cases of calling green color blue, grass and plants – blue, have become more frequent. These colors indicate that they later became different.

In the case of toponyms of Takhtakupir district, there are also toponyms derived from the word "*kok*" (blue). There are not many of them. For example, *Kokozek*, *Koksuwat*, *Koktobe* etc. In the composition of these terms, the word "*kok*" (blue) is given in its literal meaning.

Collector *Koksuw* is a hydronym. Most of the time the water in this reservoir was blue.

Koktobe is the name of a place. In the Takhtakupir district there are the terms *Kok tobe-1*, *Kok tobe-2*. The top of the hill is covered in blue.

Koktobekak is the name of water collected in lowland near *Koktobe*. The term *kak* is a natural water object, that is, water collected from rainwater in barren, hard places, which was mostly used by domestic animals and farm animals. [8;40].

In addition, the toponymy of the Takhtakupir district includes other words that express color. For example, *Bozjap*, *Bozozek*.

Thus, the concepts of "land-water" are national wealth, cultural heritage, and a special phenomenon that demonstrates thinking and an inextricable connection with the environment. Today, there are still many undiscovered aspects of this phenomenon that are being explored from different sides.

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Rezyume: Maqolada Taxtako'pir hududi toponimlari tarkibiga kiruvchi rang ma'nosini bildiruvchi so'zlarning semantikasi o'rganiladi. Yer-suv nomining kelib chiqishi rangni bildiruvchi so'zlar va odamlar tomonidan geografik ob'ekt nomidagi farqlar o'rtasidagi munosabatni ko'rsatadi. Taxtako'pir tumani toponimlarida topografik komponent sifatida uchraydigan oq, qora, ko'k, sariq, qizil, rang-barang so'zlarni izohlash yo'llari haqida so'z boradi. Toponimikada rang ma'nosida qo'llangan so'zlarning bevosita va boshqa ma'nolari ham ochib berilgan.

Резюме: В статье изучается семантика слов, означающих цвет, в составе топонимов Тахтакупырского района. В возникновении названий земля-вода указывается на соотношение слов, обозначающих цвет, различия в наименовании географического объекта народом. Обсуждаются способы интерпретации слов белый, черный, синий, желтый, красный, пестрый, которые фигурируют в топонимах Тахтакупырского района в качестве топокомпонентов. Раскрываются прямые, а также другие значения слов, употребляемых в значении цвета в топонимике.

Kalit so'zlar: turkiy tillar, qoraqalpoq tili, onomastika, toponim, koloronim, oronim, gidronim, oikonim.

Ключевые слова: тюркские языки, каракалпакский язык, ономастика, топоним, колороним, ороним, гидроним, ойконим.

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TEACHING SPEAKING SKILL THROUGH DIALOGUES FOR A2 LEVEL LEARNERS

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Summary: *This article highlights the importance and benefits of using dialogues for teaching speaking skill and mentions several strategies of teaching speaking skill through dialogues for A2 level learners.*

Key words: *Dialogues, intonation, pronunciation, conversation*

While most learners at the A2 level can carry on a basic conversation, they may have difficulty with vocabulary, fluency, and grammatical accuracy. Concentrating on speaking abilities enables learners to gain self-assurance in their ability to communicate, comprehend common language, and engage in productive conversation in regular settings. Dialogues provide realistic and structured scenarios that support these learning objectives. One of the most crucial skills for learners to acquire is speaking, since it allows them to express their thoughts and ideas. Many language learners assume that once they have studied English for a while, they would be able to communicate with people from other countries. However, after studying the language for six years or longer, there are a number of students who find it difficult to express their thoughts or speak in English. Gaining proficiency in speaking is a challenging part of learning English. It might not be disregarded as other linguistic abilities advance. Students who are proficient in speaking are critical because they enable them to communicate and express the opinions or thoughts of others. We can converse with people from various countries by using the English language. It's not as simple as we assume to speak. Many pupils find it challenging to talk in English. The learners' low spoken English competency is caused by three causes. First, when speaking in the target language, learners frequently feel uncomfortable and discouraged. In addition, students practice their English very little, and the class size is excessive. For a number of reasons, dialogues are recommended as a way to teach speaking to A2 level learners in order to get around those limitations. First of all, dialogues are authentic communication in which language is meaningfully contextualized; secondly, dialogues have a social context. In addition, dialogues serve a variety of purposes in language classrooms.

Dialogues provide speaking and listening exercises, great opportunity for practice with pronunciation and grammar, the ability to expand vocabulary, the ability to illustrate cultural facets, application, and memorability. According to Dobson, dialogue is a short conversation between two people, presented as a language model[3.41]. Furthermore, dialogue can improve the students' speaking skill, in the terms of; Improving the students' accuracy, fluency, vocabulary. Dialogue also can improve the classroom atmosphere, students' involvement, self-confidence, students' ability in solving problem and improving the students' motivation and interest [2.1]. Dialogue is two communication, it means we just not have to express something but we should have to understand what another people. Haryati said, dialogue helps learners practice in speech, pronunciation, intonation, stress and also improves vocabulary[4.75]. So the researcher assumes a dialogue can make learners more confident to perform in front of the class since it will be prepared in pairs, not alone. Moreover, dialogue can be prepared before pupils perform it in front of the class. Pupils can prepare and practice the vocabulary, the way to pronounce, intonation and the grammar. Haryati adds that dialogues helps learners practice in speech, pronunciation, intonation, stress and also improves vocabulary. Dialogues bring people naturally sit down together and talk about important issues[5.90]. Dialogue is not a problem solving process directly. It is instead a process that builds bridges of understanding between individual that helps to reduce misunderstanding. What takes place during a dialogue exercise can lead to improved speaking abilities. As an

illustration, people get ready, talk to each other, listen, and learn about each other's beliefs. Having students participate in class discussions might help them become better speakers.

Cready refers to the effective teaching dialogue as follows:

1. Having between three and ten exchanges
2. Restricting a student's ability to produce a single utterance to a length that they can manage after hearing it twice. For beginners, this could be as low as five syllables each utterance.
3. Subsequently demonstrates new vocabulary or grammar from the lectures, but rigorously limits the quantity of new things offered
4. Representing a conversation that could naturally occur between English native speakers
5. Taking into account the learners' age, interests, and substance and style[1.61]

Additionally, Richards and Rogers mentioned “ Dialogue is as one of the examples of social interaction activities compatible with a communicative approach which fluency and acceptable language is the primary goal”[6.35]. This method's primary goal is to get learners ready for language use in everyday situations by having them practice in a classroom situation. Dialogue is a strategy that can be used to practice transactional-interactional discourse, where message and interaction are crucial. It requires students to share information and participate heavily in conversation[7.29]. Using this approach, the teacher helps the learners pronounce words and phrases associated with a particular topic that is covered in class. Students then try employing the terms and phrases in a dialogue between two speakers.

In order to practice speaking skill more effectively through dialogue several strategies are recommended in the following:

1. Selecting relevant topics: Choose dialogues centered around everyday themes such as introductions, ordering food, making appointments, or asking for directions—situations learners are likely to encounter
2. Providing visual aids: Supplement dialogues with visuals like pictures, gestures, or role-play scenarios to enhance understanding and engagement
3. Pre-teaching vocabulary: Introduce key vocabulary before the dialogue to familiarize learners with essential words and phrases
4. Modeling and repetition: Demonstrate the dialogue first, emphasizing pronunciation and intonation. Encourage learners to repeat after you and practice in pairs
5. Role-Playing: Assign roles to learners and have them practice the dialogue in pairs or groups, encouraging creativity and active participation
6. Focusing on fluency: Initially, prioritize fluency over accuracy, allowing learners to communicate effectively without worrying too much about making mistakes
7. Feedback and correction: Provide constructive feedback on pronunciation, grammar, and vocabulary usage, emphasizing improvement rather than criticism
8. Gradual complexity: Progress to more complex dialogues as learners gain confidence and proficiency, challenging them to apply learned language skills in new contexts.

Conclusion. Teaching speaking skills through dialogues is an effective method for A2 level learners to develop their communicative abilities in a structured and supportive environment. By incorporating dialogues into language lessons, educators can enhance students' speaking proficiency, confidence, and overall language acquisition. Encouraging regular practice and providing meaningful feedback are key to successfully leveraging dialogues for language learning at the A2 level.

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Rezyume: Ushbu maqolada nutq mahoratini o'rgatishda dialoglardan foydalanishning ahamiyati va afzalliklarini ta'kidlab o'tiladi va A2 darajasidagi o'quvchilar uchun dialoglar orqali nutq mahoratini o'rgatishning bir qancha strategiyalarini eslatib o'tadi.

Резюме: В этой статье подчеркивается важность и преимущества использования диалогов для обучения навыкам говорения и упоминаются несколько стратегий обучения навыкам говорения посредством диалогов для учащихся уровня A2.

Kalit so'zlar: Dialoglar, intonatsiya, talaffuz, suhbat

Ключевые слова: Диалоги, интонация, произношение, беседа

THE PHENOMENON OF IMPROVISATION BY THINKING

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Summary: *The article examines in detail the factors of creative thinking on the example of Karakalpak literature. Also, when studying the subject of "Creative and critical thinking", the opinions of psychological scientists were taken into account.*

Key words: *intellectuality, intelligence, creativity, poet-improviser, phenomenon, oratory, didactics.*

The difference between a creative person and others is his intellectual ability. The experiences accumulated over the years of giving a different opinion to others and influencing the audience in this way are becoming more and more abundant. One of such talented people in Karakalpak literature is Tilevbergen Zhumamuratov, folk singer of Uzbekistan and Karakalpakstan. His career began with me working as a reporter in the newspaper "Aral balikshishi". In addition to reporting the truth without hiding one's opinion, the fact that one is more active as a journalist has a positive effect on one's becoming an opinion leader. It is quickly noticed that an individual can approach any problem that comes his way. In other words, he is a mature intellectual.

Intellect (lat. Intellectus - understanding, mind) is the mind, the thinking ability of a person, it means "to understand, to understand". It is calculated by means of the composition of the paid capacity. Intellect finds a solution to a problem in the intellectual process based on individual creativity.[7]

This slope is called improvisation. The method of improvisation is an artistic and literary phenomenon that exists in all types of art (art literature, music, theater, painting, choreography). This artistic and literary phenomenon can have the qualities of unpreparedness, immediate responsibility, impetuosity, the birth of natural talent at the same time, and wit.[1-40-42]

Improvisation phenomenon is also evaluated by Russian scientists as "phenomenon", "literary tradition", "improvisational activity", "element". According to Russian scholar V.B. Khramov, "The phenomenon of improvisation completely covers our lives, but improvisation is especially evident in business and art",[6-10], while E.V. Frolova said that "Improvisation is an improvisational activity"., that's why it is natural and born from itself" [4-154], he evaluates improvisation in the art of oratory. And M. S. Rezanseva's opinion that "Improvisation is a very interesting and naturally interesting, extremely important, least learned improvisational element"[3-106] is considered to be a complicit factor in the science of Russian cultural studies, related to the science of literature.

Improvisation has a different name among folk performers. Aedels, rhapsodes, Western European jugglers and spilmans, Russian skomoroks and singers, Ukrainian kobzars and Caucasian folk singers, Kyrgyz and Kazakh poets-singers, Uzbeks and Tajiks are popular in modern Greece.

A. Muusayev, T. Zhumamuratov, I. Yusupov are also among the artists with improvisational talent in the work of 20th-century Karakalpak artists. If we pay attention to the improvisational style of T. Zhumamuratov, who was the object of our study, improvisation is intensified in the forms of didactic, humorous, descriptive, devotional, speech. His "Shayryk sharti". "Moinakh". In additions to "Kostarar", "Zhaihun Darya", "Shymbay", "Kyrgyz man", "Kazakh friend", "Gabiyyt", "Sabit Mukhanov", "Aggar Askar", "Gafur Ghulam" in an improvisational folk tradition, rude in the form of dedication.

In the "Kostarlar" collection, two types of poems are combined: "Manat eter tiyindi, bazar qilar uyindi, awirliqta qoldasqan, armasizsan joldastan... [2-178]

«Arlamaydi arindi, Buldiredi barindi, Bar narsendi jasirar, Bereketin qashirar [2- 179]

The first stanza begins with "If it's good, you'll join" and the second stanza begins with "If it's bad, you'll join." Such a person aimed to educate the human race by setting topics. This

impromptu addition to Shayir's exaggeration is full of didactic thoughts, and he shares his marital experiences with me. Shayir's improvisation skills are there, he tells stories in folklore style. This method is quickly accepted and desired by the people.

"White reeds towering along the shore of the lake,
Red otau, blue patch with white,
Sometimes motor, sometimes rudder flying,
Walking handsome young man and girl.

- Where?

- in Qazaqdarya, Qara teren, Muynaq» [2-69]

Although the composition "Moinakhta" is a lyrical form, it contains a deep philosophy of marriage. Verbal was able to show his improvisation skills by skillfully using the genre of oral folklore. It contains rich information about land and water terms, sea fish and sea animals. In science, this is called normal reasoning. [5-177]

It is a good idea to be able to think about the habit. Nor does a conventional thinker hesitate in the service of humanity and in future experiences. He uses ways, methods and methods that are not used by anyone else, that are not natural for others. It only works from the future. All the innovations in the world are made possible by such people. Although T. Zhumamurtov's poem "Moinakhta" was written in 1957, it renews itself in a new way no matter what era it is read in, because the unusual method created by resin seems to renew the work as well.

The subject "Creative and critical thinking" is taught in the teaching orientation of journalism. There, in learning the skill of intellectual thinking, we not only learn the methods developed abroad, but also use our folklore and new researches in the skill orientation of poets and writers. It is important to form a critical opinion in order to improve creativity. In this direction, the philosophical and didactic thoughts and views of the poet T. Zhumamuratov's works can influence the expansion of the world of artistic thought and the refinement of the ideas concentrated in the mind.

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Rezyume: Maqolada qoraqaloq adabiyoti misolida ijodiy fikrlash omillari atroflicha ko'rib chiqiladi. Shuningdek, "Ijodiy va tanqidiy fikrlash" fanini o'rganishda psixologlarning fikrlari inobatga olindi.

Резюме: В статье подробно изучены факторы, креативного мышления на примере каракалпакской литературы. Также, при изучении предмета «Креативное и критическое мышления» учитывались мнения ученых-психологов.

Kalit so'zlari: ziyolilik, intellekt, ijodkorlik, improvizatsiya qiluvchi shoir, hodisa, notiqlik, didaktika.

Ключевые слова: интеллектуальность, интелект, креативность, поэт-импровизатор, феномен, ораторство, дидактика.

PRESUPPOSITION IN ARTISTIC TEXT

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Summary: *The article addresses contemporary linguistic issues, with a specific focus on the phenomenon of presupposition and its integration into Uzbek linguistics as a nascent field. The examination extends to the utilization of lexical units associated with presupposition within the realm of pragmatics in literary works.*

Key words: *pragmatics, presupposition, metaphor, phonopragmatic implicature, metaphorical implicature, implicit, explicit, synonymous sequence, paralinguistic.*

Metaphors have been extensively examined in the context of Uzbek linguistics, as they represent a form of connotative shift. However, the clarification of their aspects related to the text has not yet been fully addressed. This is because the occurrence of metaphor in a text can be explained from various perspectives. Texts employing metaphors demonstrate that not only the conceptualization but also the expression of a specific situation can be grounded in metaphor. Based on this characteristic, metaphors can be categorized into those manifested as words, phrases, sentences, and entire texts. Professor D.S. Hudayberganova, who delved into this matter distinctly, introduced the terms "speech metaphors" and "text metaphors"⁴ to the scientific discourse, providing a justified foundation for their exploration.

1. Linguistic and non-linguistic features of word-form metaphors have been thoroughly investigated in our linguistics.⁵ However, their psycholinguistic and cognitive aspects are still awaiting exploration. Cognitive word-metaphors are primarily understood through the semantics of words denoting actions and symbols, implicitly conveying the concept of the object and event being compared. For instance, phrases in Uzbek like 'Gapi uzilib qoldi' (his words were cut), 'Gapi cho'zilib ketdi' (his words expanded), and 'Gapni ulab yubordi' (he connected it with his words) exemplify the figurative use of verbs, suggesting that, in their semantics, the author's words are likened to entities like a thread or a rope. Such words and metaphors are prevalent in our language. For instance, emotion is portrayed as an adversary, emotion is akin to a written expression. In our language, emotions and feelings are metaphorically likened to the waves of the sea, a river, or an ocean. Consider this example:

U birda **yoprilib** kelgan bu **tuyg'uni** zo'rg'a **yengib**, saraybonga "darvozoni qoq", deb imo qildi ("Ulug' xazina"). (He struggled to overcome this sudden surge of emotion and gestured to the palace security to "knock on the gate" ("The Great Treasure")).

Bilamis yuragining bir chetida hamon iliq **hislar miltirab turardi**. Yuragidagi isyonkor **tuyg'ular** asta-sekin **so'nib**, hayolini allaqanday ma'yus o'ylar band etdi. (Bilamis still harbored warm feelings flickering in one corner of his heart. It seemed as if the rebellious emotions in his heart gradually waned, giving way to gloomy thoughts occupying his imagination).

The manifestations of implicature in the Uzbek language are scientifically studied in a monographic context. In this regard, Professors N. Mahmudov, A. Nurmanov, Sh. Safarov, and M. Hakimova have contributed their perspectives.

⁴ Худайбергенова Д.С. Ўзбек тилидаги бадий матнларнинг антропоцентрик талқини. ф.ф.док. афтореферат – Тошкент, 1985. – Б. 124. / Khudaiberganova. Anthropocentric Rendering of Literary Texts in the Uzbek Language. Ph.D. dissertation abstract.

⁵ Миртожиев М. Ўзбек тили семасиологияси. – Тошкент: Мумтоз сўз, 2010. – Б. 98. / Mirtojiev, M. Semiology of the Uzbek Language.

The implicature in the Uzbek literary language is pragmatically examined and divided into several types:⁶ phonopragmatic, stylistic pragmatic, metaphorical, individual, expressive, monologic, etc.

1. Phonopragmatic implicature is associated with the tone of the speaker's pronunciation. In this context, the speaker utters elements of the propositional act in the text with a specific, empirically determined tone. The speaker endeavors to convey the meaning of 'I am like that' to the listener, placing special emphasis on the pronunciation of the text. In the phonopragmatic perspective of implicature, the overall content of the text takes a secondary role. For instance, Marg'ilonga shom vaqtida kirgan edim, ko'zlagan joyimni topolmay adashdim (I entered Margilon town at dusk and lost my way).

- Qani bo'lmasa, juring biznikiga, mehmon, - ayt kuchining so'z ohangidan o'rtoqlik bo'yi kelib Otabekning dimog'iga urdi. (A.Q) (- Then let me take you to our guesthouse," came the speaker's words, imbued with a sense of friendship that struck Otabek profoundly (Abdulla Qodiriy)). In this text, it is evident that the speaker's message conveys the heartfelt invitation to their home, characterized by the metaphorical scent of friendship⁷.

Within certain manifestations of phonopragmatic implicature, the pronunciation of a proposition through the emphatic manner of speech in some forms of conative expressions results in the conveyance of a distinctive tone, expressing sincerity in that specific context.

2. In the metaphorical implicature, a speaker indicates information structures by presenting a proposition based on the resemblance of the recipient to specific objects or subjects.

For example, A. Qahhor compares Saida to a bird called a titmouse: - Kolxo'zni opichlab katta qilgansiz! Kolxo'zning dardi qayerda, qitig'i qayerda ekanini yaxshi bilasiz! "Bo'ston"ga o'xshagan kolxo'zlardan o'ntasini bitta sinchalog'ingiz bilan ko'tarasiz! ... Sinchalak degan qushni bilasizmi, oyog'i ipday... Shu qush "osmon tushib ketsa ushlab qolaman" deb oyog'ini ko'tarib yotar ekan! (A.Q) (You've managed the collective farm! You know well the pains and tickles of the collective farm! With one little finger, you could raise ten collective farms like 'Boston'! ... Do you know the bird called a titmouse, whose leg is like a thread? This bird lies with its leg raised, saying, 'If the sky falls, I will hold it!' (A.Q.))

In the same scenario, within the novel 'Bazar' by H. Dostmuhammad, the author draws parallels between the bazar and a 'dragon' and 'crocodile'. The actions, life, and events depicted in the bazar resemble those of a dragon in a fairy tale. It is depicted as a dragon breathing fire and a 'crocodile' that engulfs everything in one gulp. The expression of such metaphorical meaning in the text is intricately tied to the speaker's inner goal and the writer's descriptive method, enhancing the impact of the writer's ideas. Consequently, it influences the listener's emotions and prompts a response. The propositional act within the metaphorical meaning formations consists of content resembling the described elements.

3. Personalized Implicature is specific only to the speech of certain individuals and serves to unveil their character. In such instances, the implicature employed by the speaker as a contextual reference is comprehensible to both the speaker and the listener but remains unknown to other participants in the conversation. For instance, - Birpas jimlikdan keyin Qalandarov gulzorning narigi tomonidagi idoraga qarab: - Eshon, hoy! deb chaqirdi. (A.Q.). (- After a brief silence, Kalandarov glanced at the office on the opposite side of the flower garden and exclaimed, 'Eshon, hey!' (A.Q.)). The act of calling and shouting in this manner carries a concealed individual meaning. Writers utilize such personal terms exclusively to illuminate the character and conduct of the depicted individual.

⁶ Ҳакимов М. Ўзбек тилида матннинг прагматик талқини. Филол.фан.док.дисс. автореферати. – Тошкент., 2001. – Б. 34. / Hakimov M. Pragmatic interpretation of the text in Uzbek.

⁷ Ҳакимов М. Ўзбек прагмалингвистикаси асослари. – Тошкент: Академнашр, 2013. – Б 100. / Hakimov M. Basics of Uzbek pragmalinguistics.

For instance, in the story 'Interrogation' by Kh. Dostmuhammad, which we are examining, Bazar witnessed the 'UFO.' Everyone was aware of it and questioned him. Only the chief accountant of the factory, Davletov, expressed his curiosity in this manner: - Ukkag'ar, anaular kelyaptimi? – Qizitaloqlar qanaqa gaplashadi? Odamga o'xshaganmi, o'zi, ularing? (Hey Ukkagar, are they coming? How do those bitch girls talk? Are they human-like?)

Bozor kulimsiradi? – Davletov kulimsiramadi. Aksincha, ... "Hoy, shayton!" deb Bozorga ishshaydi-da: "Mayli, boravur, bor" deb ko'chaga chiqarib ketdi. Davletov iljaymadi, tirjaymadi, balki ishshaydi – ayanchli ishshaydi va noilojlikdan, bola oldida nochor ko'rinishni o'ziga ep bilmaganidangina, "Mayli, boravur, bor" deya oldi. (Bazar smiled, but Davletov did not reciprocate. On the contrary, he addressed Bazar, saying 'Hey, Satan!' while revealing his white teeth. He then added, 'Okay, go, go,' and exited onto the street. Davletov didn't show any sign of flinching or smiling; instead, he grinned—miserably so. He did this solely because he couldn't bear to appear helpless in front of the boy, managing to say, 'Okay, go ahead, go.'")

In this dialogue, Davletov's distinctive behavior—his lack of inquiry into the story that captivates everyone, his failure to acknowledge Bazar as a child, his rudeness, and his unique individuality—are skillfully unveiled by the writer. As a result, the personalized implicature is applicable solely to the speech of certain individuals. Writers employ such specialized expressions to illuminate the character of their subjects.

Implicature and presupposition. Presupposition and implicature should be distinguished. The relationship between the speaker and the listener becomes intricate due to the inclusion of components of hidden meaning, in addition to propositions and presuppositions. One of these components of meaning is the representation of implicature, which conveys a concealed statement through the text.

The description of implicature in the text has two features: first, in most cases, implicature lacks an explicit verbal statement. In such situations, determining the presence of implicature in the text is achieved through logical analysis of propositions.

He tried to portray Saida as a stranger to these people: 'You didn't eat the food... You don't like their food... you don't like it!' (A. Qahhor)

In this text, the implicature 'you belong to a completely different category; that's why you don't like the collective farmer's food' is formed. During such instances, the crux of the analysis is linked to the speech situation. Participants in the conversation comprehend the essence of the implicature or what is being referred to through judgments made with the aid of the speech situation and logical analysis.

In general, implicature, unlike presupposition, serves to covertly express the inner goals of speakers. Implicature is not always present in every text. Presupposition, on the other hand, can be determined through logical analysis of the semantic structure of any text. A presupposition does not hold the status of reported information, and it cannot be equated with the hidden content of an expression. Presupposition cannot be considered as one of the forms of hidden expression.

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Rezyume: The significance of presupposition-forming tools is underlined, particularly in the context of literary endeavors where their characteristics are more distinctly delineated.

Резюме: прагматика, пресуппозиция, метафора, фонопрагматическая импликатура, метафорическая импликатура, имплицитный, эксплицитный, синонимическая последовательность, паралингвистический..

Kalit so‘zlar: pragmatika, presuppozitsiya, metafora, fonopragmatik implikatura, metaforik implikatura, yashirin, aniq, sinonimik ketma-ketlik, paralingvistik..

Ключевые слова: Словарь, лексикография, общественные отношения, новые слова, современная лексика, язык и культура, наука и техника.

FOLKLORISMS IN MODERN KARAKALPAK POETRY

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Summary: *The article is devoted to the expression of ideas in modern Karakalpak poetry inherent in human abilities, as well as its continuous development from literary traditions. The article discusses the issues of productive development of folklorisms with new colors, as well as transformation, interpretation and stylization of works of oral literature.*

Key words: *Modern Karakalpak poetry. The influence of folklore motifs. Interpretation of folklore works, development of folklorisms.*

In the world, the acceleration of the process of interscientific integration, the growth of global problems, and the aggravation of the information exchange system have an impact on the lyrics of expressing human emotions. The reason is that reforms in social relations are reflected in the artistic consciousness of every nation. This situation means that in today's poetry it is important to radiate the highest ideas inherent in universal human values and develop them without departing from the literary heritage that has existed since ancient times.

The change of eras and the modernization of society have brought many scientific aspects, such as changes in form and content to world literature, including fiction. At the same time, the literary heritage in each era was transformed and took its place in the literary process. Therefore, nomadic plots and motifs in folklore, epics, folk tales and traditions of folk poetry are transformed into modern poetry and prose, stylized and characterized as folklorisms [1.34].

In the literature of the Turkic peoples, we see that folklore traditions were used productively in any era. The traditions of folk poetry are the most reliable and unique literary and aesthetic signs of each era, illuminating the enthusiasm and problems of their time, elevating the spirit of the people, enriching their moral state. This means, firstly, the need for cooperation in solving global problems of humanity, and secondly, it shows the national, unique characteristics and differences in the literature of each nation.

The masterful use of techniques of folklore plot, motif and images are phenomena that have existed since ancient times. Based on these folklore stories, "Khamisa" was written by the famous to the Turkic people poet A. Navoi. There were also fairy tales and legends of folk oral literature, as well as poetic works by I.V. Goethe "King of the Forest", G.A. Burger "Lenore", A.S. Pushkin's "Demons", "The Fisherman and the Goldfish", "Tsar Saltan and his son Prince Guidon and the Princess Swan" and "The Tale of the Dead Princess and the Seven Knights". Ready-made plots are widely used in dastans, poems, ballads, which were published in the world in the 19th-20th centuries and occupy an important place in the artistic, aesthetic, philosophical and humanistic direction when presenting the eternal problems of humanity.

The problem of the relationship between poetry and folklore in the literature of related peoples in scientific-theoretical, comparative-typological, historical aspects is discussed in detail in the works of famous scientists such as V.G. Agrba "Abkhaz poetry and oral folk art", S. Khaibullaev "Folk origins of Avar poetry", Sh. Dzhikaev "Folklore and Ossetian Soviet poetry", P.S. Vykhodtsev "Russian Soviet poetry and folk art", U. Dalgat "Literature and folklore."

Even during its heyday, fiction received spiritual nourishment from folklore; its development is analyzed in detail in the works of such scientists as M. Azadovsky, S. Askarov, N. M. Mallaev, F. B. Aliev, T. T. Davydova, D. Medrish.

If we turn to the literature of the Turkic peoples, the use of folklore traditions, motifs, artistic plots and folk images is well used in the poems of B. Kerbabaev "Aylar" in Turkmen literature, "Love" by A. Osmanova in Kyrgyz literature and "The Immortal Rich Man" by M. Karim in Bashkir literature.

Also often used in Uzbek poetry by Mirtemir, Zulfiya, Askhad Mukhtar, Erkin Vakhidov, Aman Matzhan; in Kazakh poetry “Aisha biibi”, “The village that passed into the sky” by E. Raushanov, “The Blue Duck” by N. Aitov, “The Grave of Korkyt” by Iran-Gayib and others. G. Muminov: “In modern Uzbek poetry, many works are written based on the motives and plots of folk epics and dastans. Examples of this are “Dear Mother”, “Loyalty and matricility” by T. Tula, “Tar Hair”, “Yearling” by T. Sulaiman. A number of poems widely use folklore style. The plot of the poems “Conversation with my Grandfather” by R. Babazhan, “Conversation with Spirits” by S. Zunnunov and others included legends and allusions. “The Tale of Myrzashol” by R. Babazhan, “The Movement of Spirits” by E. Vakhidov, “About an unknown angel from heaven, five wise men and a sad old woman” by A. Aripov were written in the context of legends and fairy tales” [2.56] - he writes.

Academician M.K. Nurmukhamedov in his work “Pushkin’s fairy tales and folklore of the peoples of Central Asia” especially notes that in Berdak’s work “The Stupid King” of Karakalpak literature has, to a certain extent, examples of folklore and is highly artistic. Also, the writer A. Pirnazarov deeply analyzes the frequency of fairy-tale nomadic plots in the works of Utesh and Omar in Karakalpak literature [3.78].

Examples of synthesized folklorisms can be found in the poetry of such writers as Ayapbergen Muusaev, Abbaz Dabylov, Sadyk Nurymbetov, Tileubergen Zhumamuratov, Rambergen Khojambergenov, Minaj Matsapaev in Karakalpak poetry of the Soviet era; in Kazakh poetry - Zhambyl Zhabaev, Nurpeis Baiganin, Isa Bayzakov, Kenen Azerbaev; in Uzbek poetry - Ergash Zhuman Bulbil uly, Fazyl Yuldash uly, Muhammedkul Jamurat uly, Polkan Shair, Islam Shair Nazar uly. “Synthesized folklorisms arise as a result of the fact that the plot of myths, legends and folk tales is adapted from written literature and absorbed into the plot created by the writer” [4. 37].

However, most of the folk poets mentioned above remained at the level of representatives of oral literature, it prevails ready performance of oral or folk art over the level of representatives of written literature. Z. Abdolov, academician of Kazakh literature, explains various aspects of the development of literature in each era: “One of the main laws of life is non-stop development, this law is characteristic of art, including the art of speech. The literature of each people in different historical periods is in different conditions and forms” [5.297].

Karakalpak literary criticism contains articles and large-scale scientific works that comprehensively study the versatility of the poetry of Khalila Dauletnazarov. K. Turdybaev notes: “...the poet’s ability to be the first to see the successes of national self-sacrifice, to write down on white paper the feelings of satisfaction that he receives from them, is of great importance for the upbringing of our youth” [6.117].

In the articles of the hero of Uzbekistan, poet I. Yusupov, O. Satbaev, A. Dosymbetova and others, the writing skills of Bazarbay Seytaev and its place in poetry are well studied.

Although no special research works have been written on the works of Orazbai Satbaev, a number of articles and scientific papers have studied the idea-theme, style of the poet’s poem, and the connection of the study with scientific and theoretical problems of literary criticism. Among the studies related to the work of Orazbai Satbaev, a special place is occupied by the work of the famous scientist, candidate of philological sciences K. Turdybaev. The scientist talks about the trends in the development of Karakalpak poetry in the period of independence and classifies ideological-thematic, artistic and genre-stylistic studies related to the national-ideological demands of new social changes. Among them, we specifically focus on the objects of our research in the poetry of poets Kh. Dauletnazarov, O. Satbaev. Their celebration of the themes of heroism and greatness, propaganda of didactic ideas, expression of love and loyalty to him in the lyrics of the period of independence is analyzed. Also, at the end of the 20th - beginning of the 21st century, when it comes to Karakalpak poetry of the period of independence, the emotions of the lyrical hero in the poetry of O. Satbaev, the socio-

philosophical thoughts of the poet, and his observations about the journalistic spirit are described.

Our attention was drawn to the fact that the poetry of the poet O. Satbaev was studied from a theoretical perspective, considered from different angles in scientific articles by Zh. Yessenov, T. Abulov, E. Allasugurov. While T. Kabulov is mastering the artistic techniques of the poet's poetry, Zh. Yessenov pays attention to the aesthetic art of the poet's compositions.

These studies show that Karakalpak literature during the period of independence was enriched with valuable scientific observations. In these works, the songs of the poets are important because they are analyzed from the point of view of certain scientific and theoretical issues. However, the colorful poetic sides of the poetry of Kh. Dauletnazarov, O. Satbaev, B. Seytaev in the depth of their aesthetic ideas show the need for a broader consideration of the volumes of research taken into account, the manifestations of the traditions of folk poetry, their new transformation in a new era. One of the features of the poets' work is the problem of the traditions of folk poetry and folklorism.

We would like to note that Khalila Dauletnazarov, Bazarbay Seytaev, Orazbay Satbaev have their own place in the stylization of folklorisms in contemporary Karakalpak poetry.

One of the main features of the poets' poetry is its unique style, which expands the realistic features of modern Karakalpak lyrics. When putting forward big national problems, they use long-existing folklore works, but do not use these works directly, they stylize them with their own skill, give a new type of character, new content and can skillfully connect them with the problems of today.

Based on the folklore works of the poets of our object, in poems that stylized legends, stories and proverbs, a glorification of a new era with a new pathos appeared. Looking again at the pages of history, bold opinions, democracy, and populist ideas have become stronger. This can be seen in the works of Kh. Dauletnazarov "Fear for the Motherland", "Let the people be a guide!", "Sad story about the sea full of pain", "Children must be born for the nation" and others; B. Seytaev "Karakalpakpan", "Motherland", "To the Native Land", "Sea Waves", "Call of Conscience"; O. Satbaev "Explosion", "Even the trees are sad!", "Song of Ice on the Mountain", "Whirlwind".

Poets began to present legends associated with the names of places and waters, the contents of which were familiar to the people from Karakalpak oral literature, a literary heritage collected from the rich life experience of our people, again adding artistry and coloring. By reviving folklore samples of a philosophical and didactic nature, while relying on the corresponding content and ideas, but from a different perspective, it gives artistic coloring to poetic feelings and turns them into philosophical lyrics. The ideological significance of folklore works is connected with the spirit of today's times and gives rise to philosophical ideas. However, in many cases the decision is left to the reader; this is where the individuality and style of the poets begins to emerge.

The poems "Nazlymkhan Sulu", "Tumaris", "Ultan slave", "Gulparshin", "Glory to you sages", "Air head" by Kh. Dauletnazarov, written on the basis of materials from oral folk works, are based on the ideas and content of legends and traditions. However, the poet does not repeat the content of folklore works in the same form; he gives each of them the breath of a new era, connects them with today's life, and describes them in a comparative form.

Life, many broken and built roofs
Someone comes and someone leaves.
A poet appears, a hero is born,
So Gulparshin has come of age [7.112].

Also, the same fates of sons born with the name Jadiger, who were in the womb and mourned their father in the dastan "Alpamys Batyr" and in the poet's poem "To Jadigers" today's Jadigers are described as follows:

...Life, give it a share, let it bloom,
Let happiness flow from your pocket,

We have lost a friend, and you have lost a father,
My dear Jadigers!

He calls the people to courage, speaking about Nazlymkhan Sulu, born from the nobility of Turkic origin, who is a symbol of mysterious beauty and fidelity, who has gone through separation, and Tumaris, who came from the Massagetae.

In the poem "Ultan slave" Alpamys the batyr is desperate, being in the horde, and Baishubar is tense in the cage, narrating that the days of Ultan slaves, who interpreted the death of the batyr, that the times of playing the trumpet and playing bells are over, and warns today's "Ultan slaves" intoxicated in this way. The reason is that there are quite a few Ultans in society who, when power falls into their hands, they do not distinguish between right and left, they put their ten fingers in their mouths and cannot distinguish between near and far. By treating the national heritage in this way, it proves its eternal immortality and increases its value. Bazarbay Seytaev's poems also contain many references to the dastan "Alpamys Batyr". For example:

Racing on the open highway
They can commit crimes.
Among ninety horses Baybushar,
They struck under their hooves. [8.17].

Folk legend, poem by O. Satbaev "Guldirsin" has a unique color. We see that the poet turned to the historical-ethnographic form of folklorism. In the poem "Guldirsin" the peculiarity of O. Satbaev, i.e. his method of transforming reality into artistic reality is by referring to legends, mythological images, examples of classical literature, and on this basis the poet's ability to express weighty ideas, general humanistic and philosophical thoughts is clearly visible" [6.45]. A feeling of fear of the early offensive of "Beskonak" was formed in the people. We know that the reasons for this are related to people's living conditions. The final folk tragedy is performed with great drama and skill of the story, in which the king of Gulistan named his daughter Guldirsin, with the thought "let the people not cry, let them laugh" who was born on the same day with the offensive of "Beskonak". In the final culmination, the direct connection between fidelity and betrayal is revealed, the essence of treason, betrayal is revealed, as well as how dangerous evil is for society and for the individual and humanity. By using folk art, social ideas are proposed and thus directed towards new research.

Due to independence, the spiritual wealth and literary heritage left by our ancestors has increased, and thanks to their renewal, the possibilities for revealing the artistic principles of the national traditions of our people have increased.

If oral literature is distinguished by the richness of the people's language, then one of the main features is its penchant for humor and light jokes. The Karakalpak people differ from other peoples in their naivety and playfulness. Not only on happy days, but also on bad days, they enrich their surroundings with humor and lift each other's spirits. This high spirit of folk oral literature, humor rich in gentle jokes, as well as sharp satire were interpreted at a high level by poets of the independence period.

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Rezyume: Maqolada zamonaviy qoraqalpoq she'riyatida inson qobiliyatiga xos bo'lgan g'oyalar ifodasi, uning adabiy an'analardan uzluksiz rivojlanishiga bag'ishlangan. Maqolada folklorizmning yangi ranglar bilan samarali rivojlanishi, shuningdek, og'zaki adabiyot asarlarini o'zgartirish, talqin qilish va stilizatsiya qilish masalalari muhokama qilinadi.

Резюме: Статья посвящена выражению идей в современной каракалпакской поэзии, свойственные человеческим способностям, а также ее неотрывное развитие от литературных традиций. В статье рассматриваются вопросы продуктивного развития фольклоризмов с новыми окрасками, а также трансформации, интерпретации и стилизации произведений устной литературы.

Kalit so'zlar: Hozirgi qoraqalpoq she'riyati. Folklor motivlarining ta'siri. Xalq og'zaki ijodi asarlarini talqin qilish, folklorizmni rivojlantirish.

Ключевые слова: Современная каракалпакская поэзия. Влияние фольклорных мотивов. Интерпретация фольклорных произведений, развитие фольклоризмов.

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INTERRELATIONSHIP AND PECULIARITIES OF DISCURSIVE COMPETENCE AND COMMUNICATIVE COMPETENCE

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Summary: *this article is dedicated to considering the role and content of discursive competence in order to teach a foreign language. In it, the author examines the main models of communicative competence of a foreign language, scientific analyzes of discursive competence are presented, and the conceptual content of the terms "discursive competence" and "speech competence" related to communicative competence is deeply researched based on relative scientific approaches.*

Key words: *issue, discursive competence, communicative competence, deter, productive types, various forms, speak, expressing, writing, integral, foreign language, functional styles, involves division, dialogue.*

This article examines the issue of discursive competence as a component of communicative competence. It is determined that the leading role in the communicative act is played by productive types of speech activity - various forms of speaking and expressing thoughts in writing. It is established that discursive competence is an integral component of communicative competence. The issues of studying discursive competence were dealt with by such scientists as Ponomarenko L.N. [1], Popova E.S. [2], Strelnikova N.V. [4], Sysoev P.V. [5]. The purpose of the study is to systematize the concepts of discursive competence as a component of communicative competence.

According to the Federal State Educational Standard, teaching a foreign language at school has the goal of developing and improving foreign language communicative competence [4, p. 91]. Today, communication in a foreign language is of particular importance due to the growth in the volume and speed of information exchange and trends in assessing the level of proficiency in a foreign language. In this regard, in order to ensure sociocultural mobility, communication in a foreign language should occupy an important place in the educational process. Discursive competence is an integral component of communicative competence. It represents the ability to construct and understand logical, consistent and holistic statements in various functional styles, the ability to choose linguistic means depending on the type of statement.

Let us dwell in more detail on speech activity. Speaking involves division into dialogue (polylogue as a special type of dialogue) and monologue. Dialogue is a product of interaction between participants based on a common speech situation; it has structural, formal and lexicogrammatical differences from a monologue. Dialogical speech is a more complex process than a monologue, because information is received and created and transmitted at the same time; often these processes overlap each other, for example, the interlocutor begins to speak when his partner has not yet finished. The dialogue is characterized by standard phrases, incomplete sentences, elliptical forms, cliches, linguistic formulas, elliptical phrases. In a monologue, complete sentences are used, in compliance with the norms of the language, without relying on extra-linguistic means (gestures, facial expressions) [5].

Having analyzed the general provisions of the concept of "communicative competence", we can come to the conclusion that understanding the patterns and processes of speech activity opens the way for the successful formation of communicative competence. The leading role in the communicative act is played by productive types of speech activity - various forms of speaking and expressing thoughts in writing. The model of modern language education is built on the ability to communicate effectively, which requires a revision of the forms, content and means of the

educational process, the use of a variety of pedagogical technologies and approaches in foreign language teaching.

The ability to organize language material into a coherent and interconnected text (discourse) is the main skill of discursive competence. Discourse is speech behavior that has extralinguistic parameters (communicative goals of communication participants, knowledge of communication conditions, time and interlocutor) and linguistic characteristics inherent in the text [1].

In addition, discourse competence is the ability to use appropriate strategies in constructing and interpreting texts. It refers to the choice of sequence and arrangement of words, structures and utterances to achieve a unified oral message. It is here that top-down communicative intentions and sociocultural knowledge intersect with lexical and grammatical resources to express messages and attitudes, and produce coherent texts.

Discursive competence consists of:

- ◆ genre competence - the ability to interpret and create texts of different genres in communicative situations;
- ◆ textual competence - the ability to create and interpret texts based on knowledge of which texts are relevant in various contexts;
- ◆ social competence - the ability to use language with participation in social interaction [2].

Discourse competence implies knowledge of more complex factors that go beyond the text, and is based not only on knowledge of the language. This means the quality of language use, skills and abilities in speech activity, correct writing and speaking in a foreign language, and sequence of statements.

The formation of discursive competence is facilitated by the implementation of a number of learning tasks:

- ensure systematic, logical and orderly formation of speech skills;
- to create motivation to communicate in a foreign language during the learning process.

Discursive competence based on the definition of E.V. Schumann is the student's ability to understand and create logical and coherent speech statements, presented orally or in writing. Accordingly, the discursive side of communicative competence means the quality of the use of language skills in speech activity, the correctness and correctness of speaking and writing in a foreign language, the consistency and information richness of statements, which also means an understanding of a foreign culture.

The study allows us to draw the following conclusions:

1. The key skill of discursive competence is the ability to organize linguistic material into a coherent and interconnected text.
2. Discursive competence is one of the main components of communicative competence. This means the ability to construct logical, consistent and holistic statements in various functional styles, to choose linguistic means for different types of statements.

In the framework of our research, the main interest is the development of students' discursive competence in the third stage of education. In this regard, we will dwell on concepts such as "discursive competence" and "discourse" in detail. In linguistic and pedagogical studies, these terms have different interpretations. Let's look at some definitions. M. Kanale understands discursive competence as "the ability to combine grammatical forms and meanings to achieve unity of oral and written text" [6]. The developer of the pan-European model of communicative competence of a foreign language understands discursive competence as "the ability to use appropriate strategies in communicating and interpreting texts." Text is defined as "any piece of spoken or written text of any size, characterized by a unit" [7]. A. Davis, A. Brown, C. Elder and others understand discursive competence as "a component of foreign language communicative competence responsible for the coherence and coherence of the text" [16]. H. Brown interprets discursive competence as "the ability to connect sentences and create a meaningful sentence" [17]. The Russian term "speech competence", which is often synonymous with the English term

"discursive competence", is interpreted as follows: "including linguistic competence, which is known to be carried out in four main types of speech activity: listening, speaking, reading and writing" [1].

In the dictionary of methodological terms, E.G.Azimov and A.N.Shchukin define speech competence as "the ability to have the methods of forming and forming thoughts through language and the ability to use such methods in the process of perceiving and creating speech." Included in communicative competence. It is necessary to talk about the quantitative and qualitative composition of speech competence. It can be bigger or smaller. However, speech competence, like linguistic competence, is not an end in itself, but an intermediate link on the way to communicative competence. They are necessary and sufficiently assimilated to solve the problems of interaction in the process of communication in accordance with the norms of the studied language, the use and cultural traditions of this language" [18]. Researcher V.V. Safonova understands the following by "speech competence": "on the one hand, knowledge of the general and specific rules of speech behavior in the studied areas of everyday and socially significant communication, and on the other hand, the ability to apply these rules in an orderly manner acquisition, creation and modification of speech in a foreign language and communicatively correct interpretation of the content of real speech in a foreign language. The level of speech perception and production culture depends on the level of development of a person's speech competence.

In the process of teaching foreign languages, there is a correlation between speaking competence in the mother tongue and speaking competence in a foreign language. The development of intercultural speech competence, which is necessary for using language as a means of communication in a foreign-language multicultural environment, is impossible without the parallel formation and development of the corresponding socio-cultural competence." organization, coherence, coherence, rhetorical efficiency and the ability to create a coherent speech while maintaining logic.

The analysis of the given definitions of the terms "discursive competence" and "speech competence" shows that their conceptual content is the same. Discursive or speaking competence is a person's ability to produce a coherent oral or written statement, characterized by coherence and consistency, as well as to adequately interpret a statement in a foreign language when reading or listening. Discursive or speech competence is inextricably linked with all other sub-competencies (grammatical and socio-cultural) of communicative competence in a foreign language and is formed in students along with other components. Some discursive skills can be universal and can be transferred from the mother tongue to a foreign language (in the absence of sociocultural conflicts and sociocultural gaps).

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Rezyume: ushbu maqolada chet tilini o'rgatish maqsadida diskursiv kompetentsiyaning o'rni va mazmunini ko'rib chiqishga bag'ishlangan. Unda muallif chet tilining kommunikativ kompetentsiyasining asosiy modellarini ko'rib chiqadi, diskursiv kompetentsiyaga ilmiy tahlillar keltirilgan va kommunikativ kompetentsiya bilan bog'liq bo'lgan "diskursiv kompetensiya" va "nutq kompetensiyasi" atamalarining kontseptual mazmunini nisbiy ilmiy yo'ndashuvlar asosida chuqur tadqiq qilingan.

Резюме: данная статья посвящена рассмотрению роли и содержания дискурсивной компетентности в обучении иностранному языку. В ней автор рассматривает основные модели коммуникативной компетенции иностранного языка, представлен научный анализ дискурсивной компетентности, а также глубоко исследуется концептуальное содержание терминов «дискурсивная компетентность» и «речевая компетентность», связанных с коммуникативной компетентностью. относительные научные подходы.

Kalit so'zlar: masala, diskursiv kompetentsiya, kommunikativ kompetentsiya, to'xtatuvchi, mahsuldor turlar, turli shakllar, gapirish, ifodalash, yozish, integral, chet tili, funksional uslublar, bo'linish, dialogni o'z ichiga oladi.

Ключевые слова: проблема, дискурсивная компетентность, коммуникативная компетентность, сдерживание, продуктивные типы, различные формы, говорение, изложение, письмо, целостность, иностранный язык, функциональные стили, предполагает разделение, диалог.

UDK 745/749

ISSUES OF DEVELOPING THE ARTISTIC AESTHETIC COMPETENCE OF STUDENTS ON THE BASIS OF NATIONAL PATTERNS OF KARAKALPAK

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Summary: *The article provides information about the history of education of students in the spirit of respect for our national values, national patterns, national clothes, and the development of folk handicrafts. At the same time, the article mentions that the craft of folk decoration is distinguished by its real beauty and artistic national traditions.*

Key words: *National patterns, national clothes, folk handicraft, jewellery, decoration, compensation, aesthetic.*

A number of separate activities are being carried out to educate young people in the spirit of respect for our national values, to raise a mentally mature and physically healthy generation, and to protect their rights. The decree of the President of the Republic of Uzbekistan "On approving the concept of further development of national culture in the Republic of Uzbekistan" has determined the peculiarities of the Karakalpak people's culture for many centuries.

Along with national or ethnic and historical factors, socio-economic and natural conditions of the environment where the people lived are also important in the formation of the uniqueness of the people's culture. At the same time, close ties with neighbor nations play a special role, and this, in turn, affects the formation of common features of the Karakalpak people's artistic craft with the artistic culture of other nations. As a result, a very colorful, unique folk handicraft was formed, which has a deep meaning and includes the artistic and cultural world along with the processes from its prominent components.

Karakalpak pattern is a complex system distinguished by its long history and, at the same time, many functions. Historical-ethnological research of the art of drawing is of great importance in studying the ethnic history of the people, historical-cultural relations with other peoples, in restoring and preserving the national artistic traditions in the present time.

The traditional use of Karakalpak handicrafts is considered to be a remarkable phenomenon in the material and spiritual culture of the people. The signs of antiquity are clearly visible in the example of preservation of the main examples of ancient handicrafts. Basically, the folk craft begins with the simple decoration of the national products, which have been used by the people since ancient times, carved with oblique, curved, wavy lines and round crescents. Nowadays, it has reached a highly hamveloped type of artistic craft until hamcorating the natural phenomena that surround us with wood, bone, ceramics, colored metals and cloth. Judging by historical records and archeological sources, the folk craft in Karakalpakstan was formed two and a half thousand years ago, leaving its own inhamliblible mark in each era, covering the creativity of several tribes and becoming a great cultural heritage.

Decoration and folk handicrafts hamveloped in close connection with the formation of people's labor process, daily life and all kinds of life needs. The earliest examples of handicrafts date back to the Stone Age. The handicraft of folk decoration is distinguished by its true beauty and national artistic traditions. The things that have become tradition since ancient times are the methods and ways of developing patterns, paintings which have been passed down from generation to generation.

In ancient times, when there was no writing and drawing, people used to write their thoughts on stone, bone, and wood. Today's words "bone carving" and "wood carving" are concepts formed from ancient times. From this we can see that the Karakalpak people's art of decorating with

patterns also began at this time. Later, felting, weaving, embroidery and other crafts began to appear.

In ancient times, hieroglyphs carved on wood, stone, and bone were then painted on felt, gray cloth, and similar things. From this we can see that the signs of decoration appeared under the influence of customs and living conditions.

Handicrafts of the people exist in every nation, and they differ from each other by the material, shape, structure, color, and decoration used in the preparation of the products. For thousands of years, the artistic traditions that have been used by the masters of the people are mostly related to the environment, nature, and activities of each people.

If we look at the distant history of the people of Karakalpak for several centuries, we can see the handicrafts, flowers, and ornaments. The works of art created by them, despite the passage of a long time, have not faded or disappeared, and have reached the present day.

Karakalpak clothing itself has many unique features. For example, the clothes of Karakalpak women are widely known due to the fact that the embroidery on them is rich in matching colors. The artistic and aesthetic experience of our people formed over the centuries, the world of various images, beautiful with patterns, is depicted in the cross section. For this reason, there is an urgent need to restore and develop the art of cutting folk traditions.

Our country has a great potential for creating modern clothing designs while preserving its national color. It is considered a topical issue in the creation of stage costumes that preserve national diversity. However, the republican tastes that have been transferred to the idea of national clothes are a sign of the lack of experience in the design of modern clothes, even if we take into account the national changes in the idea of designing clothes. Due to insufficient knowledge of tailors about national clothes and folk patterns, they limit themselves to imitation of national clothing traditions and do not pay attention to harmony of colors and patterns. This, in turn, is dedicated to revealing the peculiarities of the artistic structure of Karakalpak national clothing as the main source for creativity, the content of decoration styles and patterns, and at the same time, it shows the possibility of using ethnic elements and motifs in the design of modern clothes shows the need to create publications.

Restoring the national costume, developing it into a modern stage costume, using national colors in the design of the national costumes that are prepared today is an important issue.

One of the most common types of woven silk fabrics is thick silk, a type of silk fabric with green-blue patterns or stripes.

Turme - thick, dark red, without a pattern, striped cloth. Mahamli - soft red color with broad yellow stripes. Turme and mahamli were brought from Khiva, and silk-type fabrics were brought from Bukhara and Fergana.

There was also a type of fabric called torka. This is the name of the Karakalpak women's fabrics woven with white silk yarn, sparkling in different colors. Turme is used for "bas oraw"(headscarf) and "belbew"(belt), while shayi fabrics are used for women's dresses. Silk fabrics are not used for making men's clothes. Men used silk fabrics only as a belt during holidays and wedding ceremonies.

Women's summer clothes do not consist of many terms, they are only a few clothes, usually they consist of one or two dresses. Shirts sewn from red borlat shatrash (shátlenki), pashshayi, boz cloth for young people. The cut is an old cut, the hem is widened, the collar is lightly embroidered, in some cases, a round collar is worn with a hook, which is called a nogai collar. A shirt made of shatlenki fabric was called "shatrash koilek". The sleeves were always long, there were no short-sleeved shirts. Little girls wear short sleeves, and in some places they call it "kashmishke" or "sholaq".

Karakalpak women's clothes, compared to men's clothes, are colorful, with a lot of patterns and decorations, they are very comfortable and beautiful. Women's traditional clothes are in harmony with a person, regardless of their work level, character, lifestyle, profession. The composite complex of software clothing includes utility, beauty and spiritual protection.

The collars of young girls' shirts are wide, and the collars of women's shirts are turned up. A tie or button is worn near the neck to fasten the collar. Native buttons had different appearances: round, lapel, made of coins, engraved and embossed. The button is attached to the collar of the collar, and on the opposite side, a thin band of silk threads is made, and a flat, round metal ornament of various shapes is attached to it. The tie wraps around the button and ensures that the tie at the end does not come undone. The shirt is tied from the waist with a belt made of a long fabric curled in the form of a jeep.

Women's festive clothes are a special phenomenon of art, which depict the ancient characteristics and spirit of the people. Especially, one of the ancient clothes, the cotton dress (also called the ring dress, embroidered dress) with juicy patterns on the front, is an example of amazing beauty and true artistic maturity. The jacket is made of hand-woven blue fabric. The size is wide, straight cut, the sleeve is cut without seams. The two sides are cut into small pieces. It is cut in the middle on the side of the chest for a wide and straight collar. The sleeves are wide and long. The front of the dress is fully embroidered with colored silk threads. Geometrical patterns are located along oblique lines and consist of rhombuses with horns located at vertical angles. There are earring patterns on the back. The general term for blue shirt patterns is called sawit pattern.

Therefore, studying Karakalpak national patterns is considered an integral part of students' spiritual education and serves to develop their artistic aesthetic competence and morals. The national craft of the people plays an important role in educating the future generation as an educated, hard-working person who is rich in interest in artistic craft.

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Rezyume: Maqolada o'quvchilarni milliy qadriyatlarimizga hurmat bilan qarash ruhida tarbiyalash, qaroqalpoq milliy naqshlari, milliy kiyimlari, xalq qo'l hunarining rivojlanish tarixi haqida ma'lumotlar keltirilgan. Shu bilan birga maqolada xalq amaliy bezak qo'l hunari o'zining haqiqiy gozalligi va badiiy milliy urf odat dasturlari bilan ajralib turishi haqida so'z borgan.

Резюме: В статье содержатся сведения о воспитании учащихся в духе уважения к нашим национальным ценностям, национальным образцам каракалпаков, национальной одежде, истории развития народных промыслов. В то же время в статье говорится о том, что народные декоративные промыслы отличаются настоящей красотой и художественной программой национальных традиций.

Kalit so'zlar: Milliy naqshlar, milliy kiyimlar, xalq qo'l hunari, taqinchoq, bezak, kompetentsiya, estetika

Ключевые слова: Национальные узоры, национальная одежда, народные промыслы, украшения, украшения, компетентность, эстетика.

**MULTI-AGENT TECHNOLOGIES IN THE FORMATION OF PROFESSIONAL
COMPETENCE OF STUDENTS OF HIGHER EDUCATIONAL INSTITUTIONS**

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Summary: *The article discusses the use of multi-agent technologies in the process of teaching computer science to students of higher educational institutions. Importance, effectiveness and place in student learning through multi-agent means.*

Kew words: *multiagents, technology, competence, training, education, technology, Internet.*

Today, the world is undergoing major changes in the field of education and training, and technologies such as information communication, artificial intelligence, neural networks, multi-agent systems and technologies are being widely introduced into this process. In the context of informatization of education, with the help of multi-agent technologies, it is possible to organize the educational activities of students in higher educational institutions for the development of their professional competencies. The development of innovative methods, visual didactic teaching tools, forms of education, improvement of educational models and the development of a competitive personnel system is one of the urgent pedagogical tasks today.

In modern education, there are always many participants in the educational process.

One of these types of participants is the participants who receive education – students, applicants, course participants, etc.

Another type is the participants who provide this education: offline and online educational institutions, courses of different formats and sizes, as well as individual teachers and teachers.

All these participants are autonomous and independent in making decisions within the framework of legislation and by-laws. Their decisions are influenced by many factors of the economic and social environment, but they make decisions on their own. Each participant has certain goals that they strive for. Participants interact with each other in such a way that the entire educational process from the point of view of one participant is a sequence of interactions with other participants.

To model systems with a large number of participants, multi-agent technologies (MAT) are used, where the entire simulated environment is saturated with agents whose main properties are: semi-autonomy, sensitivity, activity, sociality[1].

Multi-agent systems are artificial intelligence systems in which, instead of a single intellectual center, many agents interacting with each other are used to solve a complex global task or problem. Management systems based on multi-agent technologies have a network structure rather than a hierarchical one.

Agent systems, which are the basis of multi-agent technologies, are computer programs that allow the student to obtain the necessary information by analyzing the user's requests and skills. (the agent system asks the user questions to clarify the request). In addition, agent-based systems collect information in the knowledge base, providing the user with the necessary data corresponding to the queries.

In a multi-agent system (MAC), agents interact with each other and with the environment. MAT has proven itself well in solving a variety of problems in various industries, where systems consist of many elements with sufficient independence.

Moreover, most of them are small organizations or individual realtors, completely independent, quite mobile in adapting to changing conditions. The multi-agent approach is also used in decision-making systems in the management of social systems, transport, telecommunications market, etc. [2].

The first multi-agent methods appeared in the early 90s and at that time attempts began to apply MA models to different sides of the educational process. Different approaches have been used and are being used to create these MA models. One of the first approaches was to use agents as components of an intelligent system in addition to LMS/LCMS figure 1.

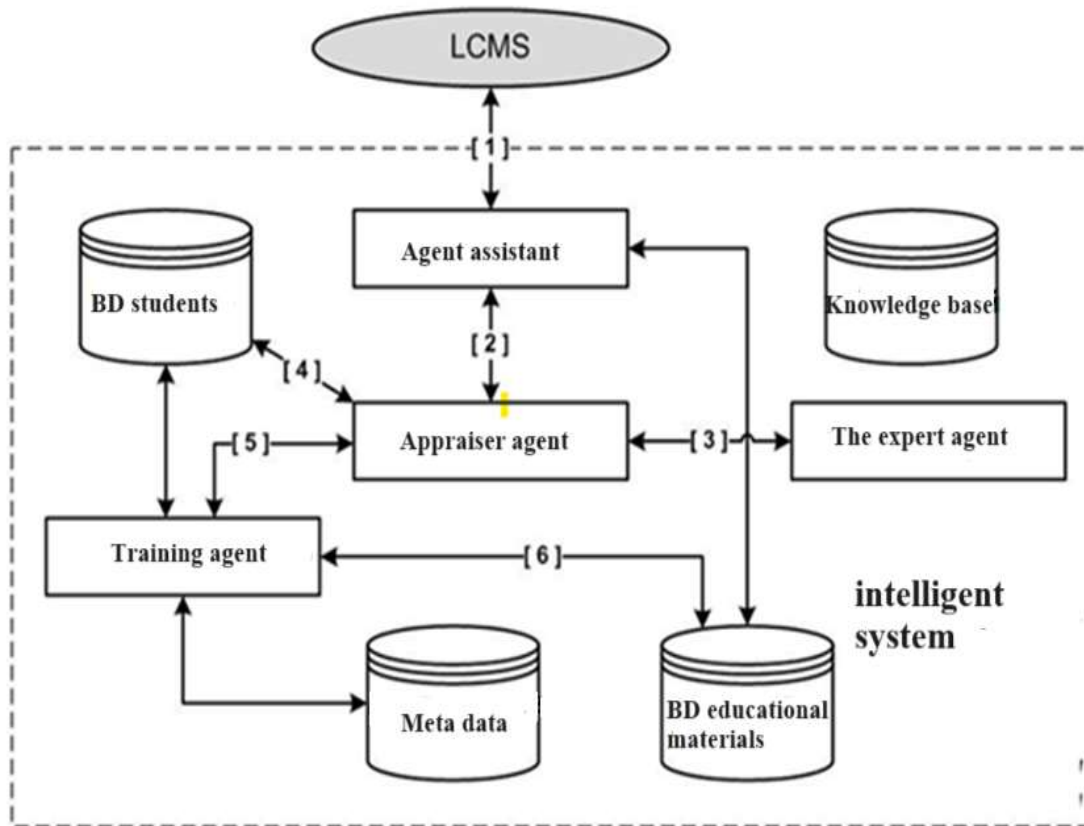


Fig.1. MA model of the intellectual system of the educational process

In one of these models, it is proposed to present the architecture of the system as a set of the following types of agents:

- an assistant agent, whose task is to interact with the student, help him in the learning process, tips and instructions on learning;
- evaluation agent, whose task is to assess the student's progress level and update his profile data;
- a pedagogical agent that automatically generates and rebuilds course content;
- an expert agent responsible for solving tasks within the course.

In such a MAC, the assistant agent receives information, such as the task solution, from the student (1) through the course content management system (LCMS) and transmits it to the evaluation agent (2). The evaluation agent, with the involvement of an expert agent (3), evaluates the completed task and updates the student's profile (4), while notifying the student the agent (5), who, in turn, if necessary, rebuilds the curriculum for the student. Three features of MAC are important in this approach:

- firstly, it works as an additional intelligent management mechanism for LCMS,
- secondly, an agent is a separate relatively autonomous part of the system that performs a certain set of functions,
- thirdly, the set – the number and type – of agents in such a system is fixed.

Such an application of multi-agent technologies is popular both for modeling and designing individual LMS and LCMS, and for solving problems of distributed artificial intelligence, where the training system is built from intelligent reflex agents, which are complete autonomous systems. Attention is drawn to the fact that agents are modeled not by participants in the learning process, but

by elements of an additional intellectual system. This approach is referred to as "bottom-up modeling"[3].

In later practices of using MA models, participants in the learning process itself began to be modeled. In such models, there were three main types of agent: a student agent, a training agent (agent of a learning resource) and one or more types of intermediate auxiliary agents that interact with the first two types of agents and interact with databases and knowledge bases. As an example, models based on ontologies using Semantic web technologies can be cited.

These models and technologies began to develop at a time when, on the basis of large foreign universities, the task arose of combining all educational and methodological materials into a single space with the possibility of machine processing. In many countries, educational systems have been created that combine geographically dispersed learning resources of various educational service providers, ranging from schools to universities and advanced training centers. But the existing client-server technology, which was actively used to build CMS/LMS, did not provide the processing of educational materials from dispersed information training resources. Then the results of the Semantic Web project, based on a multi-agent ontological approach, began to be used to create distributed distance learning systems[4].

The widespread use of multi-agent systems makes it possible to use them for teaching the course "Information Technologies in Education". The use of such training systems is based on the knowledge, skills and abilities acquired by studying information communications tools offered on the Internet.

Software in the form of separate applications posted on the Internet is not considered as an application for practicing skills, but is used to solve specific educational goals and objectives, for example, implementing a student project, completing assignments on various topics, this type of software use can be characterized as "pedagogically neutral" due to the fact that the issue of the educational environment remains completely open.

Attempts to consider the Internet as an innovative social and pedagogical environment are relatively rare or are associated with distance learning and education. In our opinion, educational software applications are a learning environment in those cases where they, in fact, convey content (educational applications in the broad sense of the word). In this aspect, applications are no longer pedagogically neutral and are always based (explicitly or implicitly) on one of the theories of learning (cognition).

The pedagogical task of learning in a communication information environment differs from the traditional one in terms of shifting emphasis towards managing independent learning of the material. Consequently, modern teaching is determined by the degree of "direct non-participation of the teacher in the learning process" - distancing, on the one hand, and the student's constructivist view of knowledge, on the other hand. The learning environment is an "open learning architecture" with moving goals, content, methods and organizational forms, consisting of communication, information and physical space.

Thus, the main directions of development of modern pedagogy were, firstly, the modernization of traditional teaching within the framework of the reproductive approach. Secondly, the implementation of an innovative approach to the integrated use of information technology tools, the main goal of which is to develop the student's skills in creative and practical creation.

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Rezyume: Maqolada oliy o'quv yurtlari talabalariga informatika fanini o'qitish jarayonida multi-agent texnologiyalardan foydalanish masalalari muhokama qilinadi. Bu talabalarni multi agent orqali o'qitishning ahamiyati va samaradorligi ko'rsatadi.

Резюме: В статье рассматриваются вопросы применения мультиагентных технологий в процессе преподаваний информатики студентам высших учебных заведений. Важность, эффективность и место в обучении студентов посредством мультиагентных средств.

Kalit so'zlar: multiagentlar, texnologiyalar, kompetentsiya, o'qitish, ta'lim, texnika, internet.

Ключевые слова: мультиагенты, технологий, компетенция, обучение, образование, техника, интернет.

FORMING STUDENTS' DIGITAL LITERACY THROUGH COLLABORATIVE LEARNING

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Summary: *This article presents the findings of a study on how to increase students' digital literacy through cooperative learning and useful techniques for their personal growth. Learning how to foster student collaboration in the classroom, how to build infrastructure for enhancing literacy, and how to cultivate a spiritual approach are the three main goals of the research.*

Key words: *Collaborative, literacy, innovative approach, concept, individual teaching, identification, academic assignment.*

Introduction

In our country, the development of research and education has been greatly aided by the October 29, 2020, President of the Republic of Uzbekistan's Decree N-6097, "On approval of the concept of development of science until 2030." "Increasing the quality of personnel training, increasing the level of coverage with higher education, training highly qualified, creative and systematic thinking personnel, able to make independent decisions based on international standards, demonstrating their intellectual abilities and forming them as morally competent individuals creating the necessary conditions for, ensuring global competitiveness" are the strategic tasks of higher education development in the frame of the nation's sustainable development.[1]

Students' perspective, logical thinking, accuracy, integrity, inquiry, initiative, and inventiveness are all positive outcomes of the new, creative method. In order to create a 21st-century student profile that includes both scientific and natural literacy, the primary objective of implementing the innovative approach is the development of life skills. Under this scenario, teaching students how to use the knowledge they have learned in the real world is just as important as imparting knowledge to them. Primitive schooling is the most crucial time for a child's cognitive development, imaginative growth, and establishment of a solid knowledge base.

The goal of enhancing teaching methods is outlined in the public education system's development until 2030. As a result, it makes sense for elementary school teachers to concentrate on imparting advanced international experiences and abilities based on contemporary methods in order to help pupils build their natural and scientific literacy. The foundation for the nation's economy to become one of the developed nations of the globe is laid by the use of cutting-edge pedagogical techniques in the continuous education system for pupils. In order to do this, in accordance with current demands, science must be approached as a basic, theoretical, and experimental science in order to help students develop natural-scientific literacy. Additionally, effective science teaching strategies, philosophical and methodological viewpoints, educational materials, and instructional techniques must be developed. More weight is placed on pupils' capacity for critical thought and free expression of opinion as they develop their natural-scientific literacy. Modern school textbooks that are currently being used offer a creative method. This approach encompasses fundamental skills and aims to educate students comprehensively.

The purpose of the study:

The primary objective of the study program is to pinpoint practical and efficient cooperative learning strategies that enhance students' literacy and foster a spiritual mindset. For students to support one another, take part in the group process of developing their experiences and knowledge, and improve their assimilation, analysis, and involvement in the teaching process, these strategies are essential.

The main directions of the study:

1. Study of practical indicators: An essential component of the research is the study of practical indicators among educators and learners. These indicators give students precise guidance on how to grow as individuals and improve their literacy.

2. Digital communication tools and e-learning resources: The study examines the ways in which students use these and other technical opportunities to develop their digital literacy, as well as how well they do so.

3. Student development: Researchers offer more details about how students develop intellectually, socially, and psychologically while they are being taught. It shows what abilities pupils have contributed to their growth and the directions they plan to go in.

4. Activity Monitoring: The study illustrates the significance of keeping an eye on students' activities as they develop their digital literacy. It offers advice to educators on how to track students' progress and what instruments and techniques to employ as indicators.[3]

Results and problems:

Along with the research findings, it is demonstrated that significant and successful approaches to fostering students' digital literacy can be created through collaborative education. In addition, the data from this study can be used to identify key paths for maximizing the use of cutting-edge technology in the classroom, fostering greater student participation, and fostering their personal growth. To find out how collaborative learning may be improved, new approaches should be taken into consideration along with potential issues and the need for further research.

Main part

It is accepted that collaborative teaching is a component of contemporary teaching strategies. This teaching approach is predicated on the idea that students from diverse academic disciplines may support, learn from, and grow from one another.

Increasing "student interactivity" is a foundational element of collaborative learning. Students collaborate in groups, confer with one another, and have the chance to gain knowledge from one another's ideas, experiences, and thoughts. Teaching in which a portion of the curriculum is implemented cooperatively by teachers, students, or groups is known as collaborative or team teaching. During activities, events, and lectures, teachers and students collaborate as part of this teaching methodology. [5]

To live in the modern world and use digital technology and the Internet safely and effectively, one must possess a set of knowledge, skills, and abilities known as digital literacy. the capacity to establish and manage dynamic online personas and vast, intricate social networks. The ability to solve problems in a digital world efficiently is known as digital literacy, and it is characterized by a core set of knowledge, abilities, and attitudes.

Components of digital literacy:

- Information literacy - knowledge about the characteristics of information and its various sources;
- Skills of finding and comparing relevant information, reacting to the benefits and harms of information;
- Computer literacy-knowledge of the computer device and its functions skills in using a computer and similar devices;
- Attitudes about the role of the computer in everyday practice;
- Media literacy;
- Information about content and sources of mass media;
- News search and fact checking skills;
- Relation to the reliability of information delivered through the mass media;
- Communication literacy.

Collaborative teaching also has the following important principles:

1. Cooperation and cooperation: Students' and teachers' mutual cooperation grows stronger. Learning how to master it, as well as seeking guidance and mutual support, are beneficial.

2. Educational activities: Teaching group collaboration is another aspect of collaborative learning. It aids in overcoming obstacles to active engagement in communal life, advice-giving and receiving, teamwork in thought and deed, and collective thinking.

3. Individual teaching: Using this approach, teachers provide pupils with a significant deal of development possibilities. Pupils who lack group work skills or knowledge talk about their experiences with others instead of sharing what they have learned from other group members.

4. Technology employ: It's critical to employ technology in collaborative learning. Teachers and students converse with one another in mass processes via email, forums, video conferencing, and other technology.

5. Social impact: Collaborative learning facilitates students' social integration. Through learning processes, they participate in the social world and form relationships with it.[2]

The causes and relationships between events and processes that occur in both animate and inanimate nature, as well as the stages of natural development, which include the evolution of living things, the natural scientific foundations of contemporary methods and technologies, and nature and society, are all covered in the natural sciences curriculum. aids in learning about the connections between and effects of various topics, the scientific rationale for the wise use of natural resources, and the significance of leading a healthy lifestyle. The student's internal drive and enthusiasm for studying the natural sciences are crucial to his comprehension of the condition of the social and natural environments, his awareness of human and environmental issues, and his capacity to make choices that will lead to their resolution.

The foundation of collaborative teaching technologies is cooperation, and they vary from traditional pedagogy in the following ways: In conventional education, the student is viewed as the object and the teacher as the subject of the instructional process. By helping students discover their own reasons for learning and putting the humanization of the educational process into practice, collaborative teaching guarantees the attainment of excellent results. Through collaborative teaching, the following outcomes are possible:

- Enhances students' learning process;
- gives them a set of cognitive information that they can share and assimilate; - makes them want to learn the material;
- gives them more opportunities to form their own opinions and knowledge; - makes bilateral information exchange more efficient;
- gives them the knowledge they need to be self-sufficient;
- encourages positive interactions between people from different backgrounds and socioeconomic classes.

Using collaborative education, the following procedures can be used to develop students' digital literacy:

- ✓ Identifications: Students are evaluated according to their knowledge, skills and abilities.
- ✓ Primary Assessment and Plan: Students are assessed based on their areas of expertise.
- ✓ System design: The electronic components are supplied through collaborative learning using a system designed to manage the learning process (e.g. Google Classroom or Microsoft Teams).
- ✓ Resources: Preparation of textbooks, articles, video tutorials, interactive activities, etc. for students
- ✓ Interactive textbooks: A number of textbooks are prepared to make the learning process interactive and interesting
- ✓ Assessment and Monitoring: Students are continuously assessed and results are monitored.[6]

The foundation of collaborative teaching technologies is enhancing the

educational process and focusing it on the individual needs of the students. These tools help to improve the caliber and productivity of work by fostering a creative atmosphere that fosters the development of a creative personality.

Sharing ideas, conversing, analyzing, debating, negotiating, carrying out practical activities, seeing something, creating something, solving difficulties, and so on are some of the primary processes of collaborative learning.

Several organizational forms are utilized when setting up collaborative teaching classes, including teacher-class, teacher-small group, teacher-large group, teacher-student, student-student (work in pairs), small group, and group-class.

Collaborative teaching is an interactive process wherein the teacher plans efficient group, individual, and whole class cooperation in the learning process. It also represents interactive processes in the execution of student cooperation that is mutually beneficial which is a well-known expression. In small groups, students collaborate on academic assignments and support both themselves and their peers. These procedures will serve as the foundation for students' development of digital literacy through collaborative learning.

The following are some ways to use the phrase "enhancing literacy":

- ◆ Technologies and Programs: Use of new technologies, programming languages, databases in digital literacy.

- ◆ School and university classes: Lessons and textbooks in schools and higher education institutions in the formation of literacy.

- ◆ Teacher and student meetings: Development of communication and educational circles between teachers and students in the process of collaborative teaching.

- ◆ To form students' digital literacy based on collaborative teaching, you can implement the following steps:

- ◆ Use of online platforms: Developing digital literacy through the usage of online platforms is crucial for both educators and learners. Through exercises, websites, applications, and online resources, it aids students in developing their skills and competences.

- ◆ Organization of database: Organization of database for teachers and students is important in good management of teaching process. This database is used to assist students in problem solving and application.

- ◆ Individual approach and feedback: Each student determines his personal goals and directions of development. Teaching improves reading comprehension, literacy, and acquisition through personalized attention and detailed feedback to students.

- ◆ Use of Technology: Technology use is crucial for advancing digital literacy. It is helpful to plan interactive conversations with pupils and carry out interactive assignments using virtual manuals, online assessments, and electronic libraries.

- ◆ Monitoring indicators among students: Digital indicators must be used to track pupils' progress and draw them in to acquire new information and abilities. Students will study more effectively and success will be increased as a result.

- ◆ Personal communication with students: Teachers provide an opportunity to organize personal communication with students, seek their opinions, find answers to their questions, and evaluate their acquired knowledge. It helps to increase the motivation of students.

- ◆ Application in practice: The most important part of building digital literacy is application in practice. It is important to teach students how to apply what they have learned and what situations to test it.[3]

- ◆ These actions are crucial for ensuring students' digital literacy growth, and students' digital literacy can be developed by putting them into practice

Team teaching (R. Slavin).

Students are divided into two teams of equal number in team teaching. Both teams perform the same task. The team members collaborate to finish the instructional assignments while paying attention that every student must acquire the knowledge, skills, and talents that the subject matter

demands. R. Slavin contends that simply telling students to work together on assignments is insufficient. Genuine collaboration among students is essential, as is celebrating each student's accomplishments, offering genuine support to one another, and fostering a welcoming social and psychological atmosphere. With this method, students' prior performance is compared-rather than their peers-to ascertain the quality of their information acquisition. Students won't feel accountable and want to learn more until they realize that the outcome of the lesson will benefit the team. This is when they will begin to master knowledge, skills, and abilities. [6]

Collaborative teaching in small groups.

Small groups of four pupils are formed using this strategy. After outlining the subject, the instructor arranges the pupils' individual work. Each student completes a portion of the four parts of educational assignments, which are divided into sections. After hearing what each small group has to say, the teacher uses exam questions to assess the students' knowledge. For the purpose of using collaborative teaching technologies effectively, specific pedagogical, psychological, and methodological bases have been developed. These bases include organizational and pedagogical bases, curriculum, program, lesson topic, STT requirements, and their appropriate level of mastery based on the quantity of new knowledge required.

Conclusion

In summary, this study's collaborative teaching strategies are intended to help students become more digitally literate. The examination of practical indicators between students and teachers, information sharing via digital communication platforms, the use of electronic learning resources, and the application of other pedagogical technology constitute research, an essential component of collaborative learning. Highlights

Developing a management system for mastery tasks and collaborative behaviors, attitudes, and communication is another objective of cooperative learning activities. As a result of cooperative learning, students come up with new ideas, goals pertaining to the core of the activity they are learning, and a desire to control their place in the partnership. The system of cooperative actions between the teacher and the learner is known as the collaborative teaching technique. Such behavior starts with the teacher assisting the student; the student's activity progressively rises and becomes an intellectual and practical movement that he fully controls; and the teacher-student relationship is represented by a partnership posture.

The results of the research show the significance of digital literacy development for students' social, psychological, and scientific growth. Students' individual and collective approaches are developed through the process of collaborative education, which also involves other critical skills such as data analysis and activity monitoring. New teaching approaches and strengthened digital literacy formation procedures will be facilitated by research.

The results of the research show the potential benefits of collaborative learning for enhancing students' digital literacy and can be helpful to educators, instructors, and educational institutions.

The results of the research show that collaborative learning is crucial for the growth of students' digital literacy as well as for educators and educational institutions.

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Rezyume: Mazkur maqolada, kollaborativ o‘qitish asosida talabalarning raqamli savodxonligini shakllantirish mavzusiga bag‘ishlangan tadqiqotning natijalari va talabalarning o‘zlarini rivojlantirishiga yo‘naltirilgan samarali usullar haqida munozara qilinadi. Tadqiqot, talabalar o‘rtasida hamkorlikda olib boriladigan kollaborativ o‘qitishni qanday rivojlantirish, savodxonlikni mustahkamlash uchun qanday qulayliklar yaratish va ma‘naviy yondashuvni qanday rivojlantirishni o‘rganishga yo‘naltirilgan.

Резюме: В данной статье рассматриваются результаты исследований по теме формирования цифровой грамотности учащихся на основе коллаборативного обучения и эффективных методов, направленных на саморазвитие учащихся. Исследование направлено на то, чтобы узнать, как развивать коллаборативного обучение среди студентов, как создавать условия для повышения грамотности и как развивать духовный подход.

Kalit so‘zlar: Kollaborativ, savodxonlik, innovasion yondashuv, konsepsiya, individual o‘qitish, identifikatsiya, akademik topshiriq.

Ключевые слова: Коллаборатив, грамотность, инновационный подход, концепция, индивидуальное обучение, идентификация, академическое задание.

THE IMPORTANCE OF SPEECH TECHNIQUES IN IMPROVING THE SPEECH CULTURE AND ORATORY SPEAKING SKILLS OF PRIMARY SCHOOL TEACHERS

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Summary: *This article talks about the importance of speech techniques based on the development of speech and public speaking skills of primary school teachers.*

Key words: *Speech culture, speaker, monologue, dialogue.*

The role of oratory skills in the formation of a new worldview in young people is now considered important in a dynamically developing period. The reason is that we need to comprehensively notice that every teacher who brings up children in the spirit of a new perspective on the new world is a requirement of today and tomorrow to be correct and literate writing, to speak skillfully, to be aware of the secrets of speech culture and oratory skills.

It will not be answer that today we will learn the lessons of eloquence ourselves, trying to know not from history, because the skills of eloquence were also in our ancestors. But in that time it did not refer to people who were adept at words as orators, but «sheshen», «dilwar», «jiraw-baqsı» and others gave us character terms. They were held in high esteem during the time when the population gathered together, out of the favor of the people who had gathered with their eloquence skills and solving their problems in some places. For the most part, the inhabitants were insightful, not to mention the skilled word-keepers. And in the current era, the shortcomings of the speech of many judicial leaders, the fantasies in the speech of master teachers, the rudeness in television shows, and even in the speech of some journalists-are causing great harm to our morale.

What do we need to do to overcome these shortcomings?

First of all, it is necessary to talk from the school period, to learn and teach its grammar deeply, to include in the classroom textbooks step by step the secrets of the original oratory skills of our thoughts and fantasies.

Speech culture -is the acquisition of the norms of language, rhythm, emphasis, use of a sentence, knowledge of the laws of sentence composition. Language in speech is a means of exchange of ideas, a window of the teacher's heart, a full - fledged indicator of the teacher's method of teaching, pedagogical skills.

The logic of speech is the fact that speech is logical, initially involved in the vocabulary of the teacher, the ability to think, the skill of explanation[1;170].

Improving the culture of oratory and speech in the course of the lesson of elementary school teachers is one of the pressing issues today. Working on the correctness of speech improving the speech culture of primary school pupils is one of the main directions in the teacher's reading-methodological activity.

Every person who chooses the primary school teaching profession has a great responsibility. As an organizer of reading activities, in order for him to adequately perform his activities, it is necessary initially to have a mature knowledge of the meaning and content of the implementation of a pedagogical culture of speech and communicative activities.

A. A. Lobanov believes that professional-pedagogical communication, not limited to «teacher-pupil» relations, is visible in a mutual professional pedagogical unit with other subjects involved in the direction of education, namely the teacher's own colleagues, the team of pupils and their parents, the staff of the office, representatives of the public, and covers the entire pedagogical competence[4;192].

This concept has a broader essence in comparison with the concept of «teacher communication», which is used in pedagogical literature. Pedagogical conversation is an activity that is carried out in order to optimize the effectiveness of reading activities, to create the right

psychological environment for the teacher in the process of teaching with pupils in the course of a lesson or extracurricular education with one pupil and among the team of pupils.

Mastering pedagogical techniques in the process of professional training will help the teacher from the very beginning of his professional orientation-to avoid many mistakes, to achieve high educational results for pupils.

The teacher's mastery of a skilled speech culture is the result of ensuring that the reading material is thoroughly mastered by the pupils. Children pay special attention to the teacher's speech. Some kind of letter, the misspelling of the voice causes laughter or a misinterpretation of the meaning of the wrong statement. When there is talk in one tone, it quickly exhausts the listener. From the loud voice of the teacher at the time of the individual conversation, the pupil feels like he is being deceived or pressured. It evokes feelings of distrust of the teacher. Some experts say that the voice of a person and his timbre are innate peculiarities. However, current experimental physiology confirms the possibility of changing the sound quality. Today, many classes on the formation of speech techniques are developed by specialists with a complex. They primarily focus on developing their breathing, sound generation, and experiences while speaking based on their experience in theater pedagogy, giving teachers the opportunity to seek out more on themselves, to learn oratory skills in a single round, and to enhance their experiences.

The pupil keeps in memory the speaking characteristics of his teacher, his appeal to students, the methods of accurately and fully answering questions during his rise and development. It is necessary that the teacher's speech fulfills the task of providing education to pupils. Therefore, it is assigned professional and pedagogical tasks, not general cultural ones. Teachers are the person in charge of sociability before society for the content and quality of their words. Therefore, in the educational process, the word teacher means the necessary content fragment of pedagogical skill.

Teacher's speech refers to the oral and written speech of the teacher, as we have already said. Written speech and oral speech is the teacher's word that is formed at the time of speaking, which means from the necessary reasons that affect the minds, desires and motives emotions of students. It corrects and corrects its mistakes if necessary on the basis of oral speech of teachers.

The speech of a teacher with technical speaking experience will ensure the following:

- Self-interest and thinking among the teacher and his pupil;
- Full acceptance, understanding and strengthening of knowledge in the educational process;
- Ability in students' activities to positively influence their consciousness and forgiveness in order to form the instinct of giftedness in them;
- Purposeful Organization of reading and practical activities of pupils;

The concept of «pedagogical speech technique» is inextricably linked with the concept of communicative behavior of teachers. By the teacher's communicative behavior, it refers not only to the process of speaking and explaining it, but to the creation of an emotionality-psychological environment for the conversation of the teacher and the student, the organization of speech and the culture of speech of the corresponding teacher, affecting the relationship and way of work between them.

Oral speech of teachers in pedagogical activity takes the form of a monologue and a dialogue. Common forms of monologue speech are narrative, school lecture, discussion, etc. Types of dialogue talk are in question and answer style.

In order to carry out pedagogical competence effective, the communicativeness necessary for the formation of the speaking skills, that is, the speech of the teacher meets the specified requirements, meets the qualities, and the speech must correspond to a number of norms: in particular, to modern standards, to the norms of the artistic and literary language.

Communicative qualities such as correctness, accuracy, suitability, lexical wealth, ugliness and cleanliness of pedagogical speech culture determine the culture of teacher's speech.

The purposeful pedagogical speech technique performs several functions with its logic, reliability, observability.

The first function of the teacher's speech culture is to ensure that the learned knowledge is given in full. There is a direct connection between the communicative specificity of teacher speech and the perception and memory of knowledge by pupils. Speech culture can provide this or make it difficult.

It is necessary that the teacher's speech culture affects the mind of the pupil, not only giving information, but also developing their thinking activity.

The second function of the teacher's speech culture is to ensure that the process of the pupil's reading activity is carried out on the basis of the teacher's speech, the effective acquisition of the knowledge learned in the lesson.

Pupils carry out a number of operatives in the process of hearing the teacher's speech: clarifies the information being given in a visual form (through imagination), expresses its attitude by comparing it with the knowledge in itself, remembers, monitors speech, logic, progress of thoughts.

The height of the tone of the voice, the emotionality of the voice, speaking figuratively attract readers. The effective nature of the reading - awareness process is also influenced by the method of communicative behavior chosen by students in the lesson. Some teachers often use words that express dissatisfaction, such as «stop talking», «sit quietly», «raise your head», «stop writing», «close the book», or divide the reader's answer on the topic, «you do not know anything as usual», «how would you understand this topic», leaving words that are not characteristic of pedagogical tactics. This condition leads to a sharp violation of the relationship between the teacher and the student, a decrease in the activity of students in the lesson.

The third function of the teacher's speech culture is to properly ensure the relationship between the teacher and the pupils[3;90].

The teacher's speech technique also performs the role of managing the attitude of the teacher and pupils. Everything is important in this place: how the teacher addresses pupils, greets, how he puts requirements, what kind of warning, how to state his desire, the pleasantness of speech, facial mimicry, views also affect pupils. These are also important in extracurricular conversation. The teacher's method of individual conversation (based on intimidation, upbringing is based on influence) is also involved in his psychological character traits[2;85].

The characteristics of the teacher's speech technique initially mean that the pupil is focused and focused on intense and non-interrupted work activity. It is possible to call the teacher's speech in the educational process, the educator's monologue. It concentrates the most unequal aspects of his pedagogical skills. The reputation of the teacher, the functioning of the nervous system at a single tempo, the productivity of work activities and the achievement of positive results, are associated with the extent to which the speech technique is developed.

The main features of the teacher's oral speech are that its content is perceived by pupils through two methods: sound and visual. Visual movements increase the impressiveness of the teacher's speech, it also provides pupils with unbroken information about the teacher's mood. Therefore, it is necessary for a young teacher to form in a conversation the skill of being able to control his appearance.

Another feature of teacher's oral culture is its improvisational (without any preparation) character. An experienced teacher, regardless of the text or synopsis, is not specially prepared at home explains and gives the subject a good maturity with his verbal skills. In the opposite case, the teacher is stuttering while listening to him and making words and statements, sometimes seeing speech flaws. Sometimes such a situation occurs, that is, the teacher seems to share the truth about his personality as an orator, his thoughts with pupils for the first time. In order not to fall into such situations, it is necessary that young educators always improve their knowledge in search of themselves.

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Rezyume: Mazkur maqolada boshlang'ich sinf o'qituvchilarning nutqi va notiqlik mahoratini rivojlantirishga asoslangan nutq texnikasining ahamiyati haqida so'z etiladi.

Резюме: В данной статье говорится о значении речевых приемов, основанных на развитии речевых и ораторских навыков учителей начальных классов.

Kalit so'zlar: Nutq madaniyati, notiq, monolog, dialog.

Ключевые слова: Речевая культура, оратор, монолог, диалог.

UDK:82-2

**GENRE FEATURES AND FIGURATIVE SYSTEM OF Q. MATMURATOV'S
DRAMA "TWO LIVES IN ONE HOUSE"**

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Summary: *In the article, the idea-theme, genre features, problematics, system of images of dramatic works that appeared in the Karakalpak dramaturgy of the 70s and 80s of the 20th centuries. It was studied based on the drama "Two lives in one house" by Q. Matmuratov, and the corresponding endings were worked out. So, in the works of this period, the main idea was evidenced by examples when moral problems, such as a person, his place in society, his relationship to family, parents, customs, took the main place.*

Key words: *image, genre, drama, composition, character*

In the 70s and 80s of the 20th century, the idea-thematics of the works created in the Karakalpak dramaturgy were somewhat reduced compared to the previous eras, genre and form researches intensified, new literary phenomena appeared (researches in the genre of translation, exchange of various conventions, cultural practices, friendship between nations increase), with the emergence of a new artistic master, the wind of freedom began to multiply due to the radiation of new realist heroes, and this era was different and more powerful than the previous eras.

Karakalpak dramaturgy in the 1970s-1980s was studied several times in the research papers of B. Tursunov[1], I. Uteuliev[2]. In them, the ideas and themes of the plays written and staged in 1970-1975, the image of the new age, and the differences in the creation of the image of a person of a different nationality were seen. In particular, the staging of "Maman biy" by S. Xojaniyazov, "Be Happy, my children" (1975), "Resurrected Birth" by T. Jumamuratov (1970), "Who is the Criminal?" by P. Tilegenov. (1973), "The life of person", "Mothers" (1975) written together with A. Ismailov, "Conscience" (1974), "Mirbek" by I. Yusupov (1971), "Abu Raikhan Beruniy" by T. Seitjanov (1973), "Arpa ishinda bir biyday" (1970), K. Rakhmanov's "The bride", "The invitation is to another world" (1975), "Hesitant spring", "Wounded Hearts", "Nine Tonkildak one Shinkildek", "Lakky's in the hospital", "One of a thousand", "The poison of one's own people", "Two lives in one house" by Q. Matmuratov, "Get" by O. Abdirakhmanov, etc. learned on the example of plays. Apart from the description of the main idea-thematic images of these plays, their genre difference, composition, difference from the plays of the previous period, their achievements and shortcomings, the tendency to radiate the truth of the time have not been fully disclosed. However, the achievement is more than that, the similarity of idea-thematic imagery is illustrated by comparison with the works of Russian, Kazakh, and Uzbek literature. This quality is one of the novelties that have not increased in recent times in our literature, especially in our drama [2.14-15].

Therefore, in scientific articles and scientific minutes, Q. Matmuratov's drama "Two lives in one house" has not become an object of full research from a scientific point of view. In this regard, the researcher P. Nurjanova's article entitled "Conflict and the image of the hero in Q. Matmuratov's drama "Two lives in one house"" [3.114-115] was published in *Amiwdarya* magazine. The idea, problems, images, and conflict issues of the drama "Two lives in one house" are considered in the article. The characters and actions of two brides, Ulbolsin and Gulzar, were contrasted and the conflict between them was well revealed. However, since the genre differences, composition, and system of images of the drama have not been widely analyzed, we will try these methods in this work.

Q. Matmuratov's drama "Two lives in one house" is a marriage drama that reflects the image and character of a modern man. Therefore, this drama of the author was published in 1981 in the book called "Jaslar parwazi". And in 1980, under the direction of N. Ansatbaev and A. Sharipov, in

1991, under the direction of A. Sharipov, it was presented to the audience at the Academic Music Theater named after Berdak.

In the first picture's exposition section, Tilewbay arrives at the old man's house of happiness and finds that his current youth upbringing is getting bad again the words of his young bride Ulbosin, with dialogue from his brother-in-law Palzada, who is surprised at his actions. From the beginning of this picture, the character of Ulbosin is opening.

In the second picture, the character of the simple villager Hamire, Palzada, Tilewbaylar is white and blue, who has seen many hardships in his life, knows the difference between good and bad, but respects everyone equally. And the stories are enriched by the revelation of the two-faced (Zernegul), the character of the image of the greedy (Sawle) and sensual dreamer, who does not consider anyone but himself. In this picture, the events reach their climax, and the characters of the characters are revealed through their dialogues and actions. Therefore, in this drama, the villager (Tilewbay, Palzada, Hamre), who is white, charming, and has a simple character, is contrasted with the arrogant, demoralized person, and even his daughter, who takes her on a journey and makes her happy, as well as the city (Sawle), intriguing characters (Zernegul). It can be seen that society revealed an important problem due to contrast.

In the third picture, the character of the daughter-in-law Ulbosin is revealed. Her husband, Bakhytzhn, is left in the middle of his beloved Ulbosin, who claims that his mother, who gave birth to him, will fill his life with joy. He deeply thinks that once you hold the reins of the world, you can continue your journey. After listening to his mother's words, Ulbosin got excited, soiled the table where he was sitting, pushed his mother-in-law off Palzada's chest, and left. But from the second door came the news about the marriage of the second son Jiyeibay. This strong author leads the plot towards the solution regarding the law that joy and sorrow are equal in human life.

In the fourth picture, the events escalate and reach their climax. Bakhyt, who has closed his eyes to all the actions and words of his elder brother, chases away his dreams after seeing the tears of his old sister with tears flowing from her blind eyes, and the tears of his mother, who gave birth to him and surrounded him with difficulties, and said that she has achieved her dreams, and now she can see the fun in her actions and words.

Now Bakhyt's patience is full. The events in the play reach their climax. In this place, the moral conflict of social importance is the contrast between the child of an educated, educated, well-educated peasant (Ulbosin), and the other one, although he is middle educated, is lazy, and in the future, he is considered to be a mother like his mother (Gulzar). Opposition in the psychology of people of two different upbringings, characters, understandings in one house.

In the fifth picture, the events are planned. The happy marriage of Jiyeibay and Gulzar, the nickname of Gulzar, who was called a "crooked bird" due to the actions of his neighbor Zernegul, Ulbosin's childbearing in his house's Hamire, the old woman, and Palzada, in order not to shed tears on the newborn baby, in order to be humane. forgive him and ask Bakhyt to forgive him too I am finished with the words of advice of nursing mothers. Summary of the plot: Hamre old woman's song "Bakhitjan, my candle with one wish! I chased with one of my two wings left from my single hoof. Don't let the baby cry! Don't let the baby grow old in the world because of the father's love. In the name of my mother's motherhood, I am asking you not to cry, not to let the baby's tears fall in the world!

Let not only babies cry in this world!!!" [4.63] - words of advice are washed away.

Here, it remains unclear whether Bakhyt went to pick up the child or not. This is left to the taste of viewers and readers. Only the author understands that the idea of "Two worlds in one house" exists in our society, that we pay attention to the education of our youth, that the actions of people like Ulbosin are responsible for their actions, and that the future generation should learn from this. The main problem of the work is to show that nowadays young people do not respect their parents and family, they go to foreign countries without obeying our customs, divorces are increasing for various reasons without understanding the toxicity of family.

In short, the images in the painting were able to reveal well the situations connected with the violation of the norms of etiquette in the 70s. The problem raised in this drama is considered one of the most important problems not only in those times, but also today.

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Rezyume: Maqolada 20-asrning 70-80-yillari qoraqalpoq dramaturgiyasida paydo bo'lgan dramatik asarlarning g'oya-mavzusi, janr xususiyatlari, muammolari, obrazlar tizimi, Q.Matmuratovning "Bir xonadonda ikki hayot" dramasi asosida o'rganilib, tegishli yakunlari ishlab chiqildi. Demak, bu davr asarlarida inson, uning jamiyatdagi o'rni, oilaga, ota-onaga, urf-odatlarga bo'lgan munosabati kabi axloqiy muammolar asosiy o'rinni egallaganligi misollar bilan asosiy isbotlangan.

Резюме: В статье рассматриваются идея-тема, жанровые особенности, проблематика, система образов драматических произведений, появившихся в каракалпакской драматургии 70-80-х годов XX века. Он был исследован на основе драмы К. Матмуратова «Две жизни в одном доме» и проработаны соответствующие концовки. Так, в произведениях этого периода основная идея подтверждалась примерами, когда главное место занимали нравственные проблемы, такие как человек, его место в обществе, его отношение к семье, родителям, обычаям.

Kalit so'zlar: obraz, janr, drama, kompozitsiya, xarakter

Ключевые слова: образ, жанр, драматургия, композиция, персонаж.

ARTIFICIAL INTELLIGENCE IN EDUCATION

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Summary: *This work is to identify the help of artificial intelligence to increase the efficiency of and to manage the global education. The components of AI include intellectual education, innovative virtual learning, analyzing data and identifying the learning-style, providing feedback for teachers and students is also made by AI.*

Key words: *artificial intelligence, innovations, education, teaching, computer, the quality of education.*

The invention of microcomputers in 1970's after which the discovery of personal computers, according to Flamm, provided even more power to counting and gave a way for global electronic counting [1]. Before the modern technology was invented, teachers and students would teach and learn mechanically by using natural human power. Development of personal computers allowed individuals and other businesses to use them in different fields of life [2]. These steps led to the broad use of computers in various areas of economy and society.

Recent achievements of modern technology like remaking, counting and broadening other opportunities, including, Internet, World Wide Web and applications which are designed to do exact activities increased the number different computers in educating.

According to a research done in the middle of the last century, evolving computers and special counting technologies in various fields of education, especially, teaching and developing education with the help of a computer (CAI/L) made the use of computers in a classroom more accessible [3].

Wider and wider use of counting and communication technologies over time led to the invention of artificial intelligence. According to Coppin, artificial intelligence is a machine that can adapt to new environments, solve problems, answer questions, plan how a tool works and has the ability to do things that require a certain level of human intelligence [4.c.4].

In another example Whitby says that artificial intelligence is about trials to learn clever manners and actions of animals and machines and to make computers and specific tools out of them [5. c.1]. Based on these explanations, artificial intelligence is the peak of inventions and innovations in information and communication technologies that can provide computers, computer technologies and machines with human capabilities. Artificial intelligence not only creates new technologies for education but also is used widely in teaching and learning.

AI is leveling up and new ways of using it in education are being explored.

The usage of AI in education has vivid effects, particularly, increased productivity, global education, personal education, even better composition as well as managing education in an effective and clever way [6].

It is possible to create artificial intelligence, computers set in robots and additional tools to boost learning of students from the very beginning of education-kindergartens. So, according to Timms, robots are used to teach children, teachers are to correct spelling and pronunciation mistakes to adapt in student's demands [7]. This way, online education is transforming from just downloading materials from websites, learning and doing tasks to using smart and adaptive web technologies. According to Chassignol, artificial intelligence in education is connected with managing, teaching and learning [8].

AI was officially connected with computers. Even though a computer itself can be the basis for the enhancement of AI, there is a tendency to use computers and software as AI. Computers, sensors and other new pieces of technology set make it easier to locate AI into other objects like machines, buildings and robots.

By the way, Chassignol identifies and explains the AI in an interactive way. They consider AI as a field and a point of view. They point out AI in education as a field of information that is specialized in replying to questions related to human intelligence in a traditional way, especially, learning, solving problems as well as adapting.

Chassignol points out AI as a tool for programming computers with human capabilities and using them, particularly, ability to solve problems based on human intelligence as well as to identify visual patterns and pronunciation, to make decisions, to translate from one language into another. Other scientists and researches also pointed out comparable elements and abilities of AI using the above mentioned methods. Sharma explains AI as a machine that can copy/follow human behavior [9]. Such researches were also done by Wartman which consider AI as computers and machines replaying human behavior and actions [10].

In general, artificial intelligence, based on these definitions and descriptions, refers to the development of machines with a certain level of intelligence, providing the ability to perform human-like functions such as cognitive functions, learning, decision-making and adaptation to the environment. In this regard, AI has certain characteristics and principles that are fundamental. Intelligence, or the ability of a machine to operate in a wide range of functions and capacities that require some degree of intelligence from a human, is a key feature of AI, according to this definition and discussion of AI. In recent years, AI and machine learning have been widely considered to enhance computing capabilities in mobile devices and create applications such as face unlocking, speech recognition, natural language translation, and virtual reality. At the same time, machine learning consumes a lot of computing power to perform complex tasks and exercises. To solve this problem, several platforms have been proposed to perform efficient calculations: in 2016, Qualcomm introduced the Snapdragon Neural Processing Engine, which uses a GPU processor to accelerate the execution of neural networks. HiSilicon introduced the HiSi HiAI platform for running neural networks; The Android Neural Networks API is designed to quickly run machine learning models on mobile devices [11]. Learning with AI includes intelligent learning, innovative virtual learning, data analysis and prediction. As educational demands increase, intelligent educational systems play an increasingly important role [12]. Intelligent learning systems provide personalized learning and feedback for both teachers and students.

AI systems include machine learning-based analysis, recommendation, understanding, and knowledge acquisition techniques [13]. Machine learning, learning analytics, and data mining are technologies closely related to education. Currently, there are two emerging communities in education based on learning analytics and intelligent data analysis. The two teams have similar goals and methods and use different disciplines such as machine learning, data mining, statistical psychometrics, and data modeling

The field of learning analytics focuses on the study of content management systems and large-scale test scores. Intelligent data analytics emerged from the community of intelligent learning systems that require little or no knowledge.

At the heart of machine learning is knowledge discovery, the process of analyzing and creating meaningful patterns and structured knowledge from a set of data called "training data." For example, machine learning can help create recommendations for students when choosing subjects and universities. It uses data on students' grades, aspirations and preferences to compare them with the best schools. Technology also helps teachers understand how concepts are learned [14]. In this way, teachers can collect student data and adjust effective teaching methods to help students learn the lesson material better. In particular, the use of pattern recognition and machine learning to assess students' knowledge makes it possible to grade assignments and exams faster and more reliably than humans.

It can be noted that deep learning, a branch of machine learning, is gaining more and more attention. These include inductive logic programming, clustering, reinforcement learning, and Bayes's networks. From a technical perspective, deep learning aims to obtain increasingly meaningful insights based on successive layers of learning.

Learning analytics focus on information about learner characteristics and knowledge objects derived from learner models and knowledge domain models. The concept of Learning Analytics applies new machine learning technologies to non-technical fields such as education.

The goal is to tailor teaching methods to the needs and abilities of individual students, such as providing interventions or feedback and instructional content to at-risk students [15].

It uses technologies related to machine learning, data visualization, science learning, and semantics. For example, AI-powered competency-based learning that generates critical student data can effectively discover student data and predict key competencies that students are likely to develop, enabling institutions to be proactive. In addition to skill-based learning, learning analytics also takes advantage of the versatile capabilities of AI.

The difficulty with learning analytics tasks is that it must be applicable to specific educational settings, but also general enough to be used across courses and institutions. Learning analytics is being increasingly used to support student, faculty, administrator, and institutional learning and to integrate best practices. Learning Data analytics focuses on creating structured and automated responses to students; AI-based learning data analysis aims to develop internal association rules and offer knowledge objects to learners based on their individual needs. For example, demographic and student performance data can be analyzed based on a small number of written assignments [16]. Various machine-based learning techniques can be used for this and can also be used to predict future grades of students. In addition, data mining can be a powerful tool for improving teaching and learning understanding the learning environment and students better.

In other words, data mining can predict models used to extract hidden knowledge, allowing educators to make adjustments to improve curriculum design in an educational system. An important addition is that data-driven AI provides personalized learning techniques based on the level of knowledge.

By analyzing data intellectually AI can sharpen its own intellect(e.g. using machine learning) and its results are more reliable.

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Rezyume: Ushbu ishning maqsadi global ta'lim samaradorligi va boshqaruvini yaxshilash uchun sun'iy intellektning imkoniyatlarini aniqlashdir. AI komponentlariga aqlli ta'lim, innovatsion virtual o'rganish, ma'lumotlarni tahlil qilish va o'rganish uslubini aniqlash, shuningdek, o'qituvchilar va talabalarga fikr-mulohazalarni taqdim etish kiradi.

Резюме: Целью данной работы является определение возможностей искусственного интеллекта для повышения эффективности и управления глобальным образованием. Компоненты ИИ включают интеллектуальное образование, инновационное виртуальное обучение, анализ данных и определение стиля обучения, а также предоставление обратной связи учителям и ученикам.

Kalit so'zlar: sun'iy intellekt, innovatsiyalar, ta'lim, o'qitish, kompyuter, ta'lim sifati.

Ключевые слова: искусственный интеллект, инновации, образование, преподавание, компьютер, качество образования.

TYPES OF GEOGRAPHICAL TERMS IN TOPONYM DUE TO THEIR ORIGIN

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Summary: *This article discusses the types of toponyms found in the Karakalpak epic, based on their origin. By exploring the role of geographical terms in the creation of toponyms, which play a key role in the study of the names of a particular place, it is possible to determine the specific features of this toponym and the roots of the origin of the toponym.*

Key words: *karakalpak dastans, geographical terms, Altai layer, Turkic layer and other layers.*

Toponymic data are of great interest to researchers from both scientific and practical perspectives. This is because toponymic research, especially determining the origin of land-water names, provides valuable information about the history, culture, ethnic origin, and language of the people living in that region. Land-water names (toponyms) are the result of a long historical period, in which the development of the language and its changes are reflected. In addition, land-water terms are considered important source for history, ethnography, archeology, geography, and other sciences.

The toponymy which is considered the science of the origin, development and current status of land-water terms has been the focus of scientists since ancient times. When we look up the land and water terms in Karakalpak folk epics, the role of geographical terms in their creation is particularly noticeable. According to the origin of geographical terms, it can be divided into Altai, Turkic, assumed and hybrid (mixed) layers (classification).

Altai classification of geographical terms. In the toponymy of Turkic languages, the word "hand" appears as a geographical term and means "river channel, creek". In Karakalpak epics, the toponymy *Qoltıq qol* is used. For example: Áne, qatınlarıñ aldında Aqıap degen jap bar edi. Ayağı Qoltıq qol degenge barıp quyar edi («Alpamıs», Q. j.). (Look, in front of the women there was a stream named Akıap. The leg used to flow into *Koltyk kol*).

The geographical term *dala* (field) is widely used in the toponymy of Turkic languages and means "plain, field, space". This word is found in the form of *dala* and in some languages in the form of *tala*. In the language of Karakalpak epics, the form *dala* is found, and it came in the toponyms of *Bardazı dala*, *Betbaq dala*, *Iyt ólgen dala*, *Qozǵanaq dala*, *Shartaslı dala*.

Qır (ridge) is one of the geographical terms that are used productively in many Turkic languages. This word in the old Turkic language means "top, edge of the mountain", but it has different meanings in modern Turkic languages. In the language of Karakalpak epics, we noticed that it came in the composition of only one toponym - *Qırqıya dár bent*.

Qıya in this example is a geographical term, and in Turkic languages it is found in the phonetic forms *kaya* and *qoya*. This word means "rock, stone", that is, it is used in making oronym.

The geographical term "tóbe (hill)" is used in various phonetic forms in Turkic languages. And it means "the peak and the bottom of the mountain". We can see that Turkic toponyms have been productively created based on this term. In the epics of Karakalpak, toponyms that came with the geographical term hill form majority. In the language of Karakalpak folk epics, the term *tóbe* or *tóbeshik* often appears as an element of oronymous terms: *Aq tóbe*, *Bes tóbe*, *Bosaǵalı tóbe*, *Dınar tóbe*, *Gül tóbe*, *Jántóbe*, *Kóktóbe*, *Másláháttóbe*, *May tóbe*, *Nayzahal tóbe*, *Nishana tóbe*, *Ora tóbe*, *Qara tóbe*, *Qayraqlı tóbe*, *Qos tóbe*, *Shubar tóbe*, *Toytóbe*, *Ura tóbe*, *Xan tóbe*; *Aq tóbeshik*.

The word "qudıq (well)" is one of the geographical terms used to create toponyms and means "hollow, deeply dug place, well". In Karakalpak epics, the toponyms that came with this word form a minority. For example, *Qızılqudıq bándirgi*, *Tas qudıq*.

The word "bulaq (spring, source, rill)" is met in the Turkic language in the phonetic forms "bulag" and "bulak". The term *source* is common in Turkic and Mongolian languages. In most Turkic languages, it means the place of water coming out from under the ground or the mountain. Examples: *Aqbulaq, Arpa bulaq, Boz bulaq, Bozbulaq, Kók bulaq, Larzan bulaq, Qırıq bulaq, Shımdıǵan bulaq, Tasbulaq*.

One of the elements that help heroes in epics is *springs*. In the composition of epics, springs are seen as special elements that give strength to themselves and their horses when the heroes set out on a journey, when they are tired of traveling through the desert or too much walking on the way. Here, especially, mythological images are major. In Karakalpak epics, the springs are healing, or divine. Examples of such spring names are *Abıhayat, Abızámzem, Abıpálek, Qırıq bulaq, Larzan bulaq, Qáwsar suw*.

The word *suw (water)* is productively used in the formation of Turkic geographical terms. This word has been used in toponyms to form the names of various hydronymic objects. The word "water" in the modern Karakalpak language is found in the form of "sub" in ancient Turkic toponyms. The first forms of this word are suß~suy. This word comes in different meanings in Turkic languages. E.V. Sevortyan gives the following meanings: 1) "suw (water)" in all Turkic languages; 2) "Dárya (river)" Turkic, Azerbaijan, Kyrgyz, Karakalpak, Nogai, Bashkir, Uyghur, Altai, Khakas., Chuvash, Tuvan, Tatar; 3) "ishimlik, suyıqlıq (drink, liquid)" Chuvash, Yakut, also DLT; 4) "sok" Turkic, Turkish, Azerbaijan, Kumik, Uzbek, Tofa, Chuvash, Yakut; 5) "jas" Turk. dial.; 6) "to give water to metal, watering" Kyrgyz; 7) "decoction, extract" Turkic [1, 348-350], 8. "essence" Gagauz; 9) "shiny" Osman, Chagatai and in other languages. Examples: *Atıńnıń moynına, patsham, tumar taq, Aqsuwan degen suwıń, bilseńiz bulaq («Alpamıs», E. j.)*; (On the neck of your horse, my king, hang a talisman, your water called Aksuı, if you know it is a spring); *Dárbent joldan ótedi, Aqsuwan degen jerlerge, Garri barıp jetedi. («Alpamıs», A. j.)*; (Crosses the long road, old man reaches the places called *Aksuwan*); *Aqsuwan degen bulaqtıń boyına bardı. Usı Aqsuwan burınnan mákan jayım edi, bes-altı kún jatıp dem alıp keteyik dedi. («Izzet qız», B. j.)*; (He went to the spring called Aksu. Said that this Aksu was his place and to rest for five or six days); *Jeti tawdan asadı, Góyistan menen Arǵında, Sarısuwan menen Qarǵında, Asqar tawdan asıp ótti, Otız altı kún tolǵanda («Máspatsha. Q. j.)*; (He passes seven mountain, from Goyistan to Argynda, from *Sarysu* to Kargında, and passed Askar tau, when it was thirty-sixth days); *Haw anaw Aqsuwanıtıń boyında, Aqshashme bulaq dep aytadı onı... («Edige», J. j.)*. (Oh, near Aksuwan, they call it Akshashme spring...).

The word "jılǵa (stream)" is used as a geographical term and means "core, small river, stream, valley". In the language of the Karakalpak epics, we noticed that this term is used only in the composition of one toponym: *Qarajılǵa say*. For example: *Aqsham kóship, kúndiz jatıp, neshshe kúnler jol júrip, yarım aqsham bolǵanda qalanıń aldında Qarajılǵa degen sayǵa ákelip úylerin tige berdi («Edige», Er. j.)*. (Moving at night, sleeping in noon, walked for several days, and when it was night, made their house near the *Karajılǵa* stream in front of the city).

The word "Say (creek)" is a geographical term used to create both hydronymic and oronymic terms in Turkic languages. Thus, it is possible to see that this word has different meanings in Turkic languages. For example, «jumırı tas, tas úyindisi, qayır» ("jamuri stone, a pile of stones, sharpener"); «arna, say, ańǵar» ("channel, stream, valley"); «dárya, kishi dárya» (river, small river); «vulkannan kelip shıqqan taslı jer, shólistanlı tegislik» ("rocky land from the volcano, desert plain"). In the language of Karakalpak epics, it can be seen that this geographical term appears in the composition of several toponyms. For example, *Aqsay, Qarajılǵa say, Qarasay, Qulanlı say, Sársebiz say, Úshsay*.

The word "balıq (fish)" is one of the words that cause curiosity. In the pre-Islamic era, the Turkic people named their fortresses and cities by this word. Among the Turkic peoples, the Uyghurs used to call their cities by names with fish components. The well-known Turkologist V. Bartold wrote that the word "fish" was included in Turkic words, like a homonym in the meaning of "fish" in the modern Karakalpak language [2, 494]. Historian S.P. Tolstov considers the etymology

of these homonymous words to be the same: he wrote that *bal//bar* means "murky water, swampy water" [3, 74]. In the middle of the BC 1st millennium, the Turkic peoples were engaged in fishing and occupied the lakes that were suitable for them and formed. For example, *Segbir tartıp on segiz kún, Dağdırıp shólden araptı, Badaqshan menen Balıqtıñ, Sháhárine darıptı* («*Qaraman*», *Q. j.*); (after suffering eighteen days, he passed through the desert, from Badakshan to the city of Balik, came to Shaharyn); *Puqarası bizler Balıq, Balqannıñ, Talqan etken maydannıñ keñ dalasın* («*Amanbay batır*», *Q. j.*); (We are citizen of Balyk, the Balkans, and the battlefield that was destroyed); *Badaqshan menen Balıqtan, Sarı pul menen shubırğan* («*Meñliqal*», *Qur. j.*). From Badakshan to Balyk, went with Sary pul).

The word "ózek (core)" is used as a geographical term and means "river, small stream, channel, branch, ditch, basin". In the language of Karakalpak epics, there are several toponyms associated with this term. The word *core* is met in various phonetic variants in most Turkic languages. According to N.A. Baskakov, the word *core* was created by adding the diminutive affix -*ek* to the old Uyghur word *ugus* [4, 66]. In the language of folk tales, there are not many land-water terms formed with the geographical term *core*: Kindik ózek, Kók ózek, Kókli ózek, Maylı ózek, Qanlı ózek.

The *sea* is a large body of water connected by land at one end [5, 308]. The geographical term "*sea*" is met in various phonetic forms in Turkic languages: *teñiz/teniz/dengiz/tengiz* etc. According to its meaning, it means a large, voluminous water object, a sea or a lake. It can be seen that in the language of the Karakalpak epics, hydronyms based on this term are not so many, and also it means the names of unreal objects. This geographical term is used in the structure of toponyms such as Aral teñiz, Ashtarxan teñiz, Qara teñiz, Shar teñiz, Shın teñiz (Aral Sea, Ashtarkhan Sea, Kara Sea, Shar Sea, Shin Sea).

In Turkic languages, the word "*adı*" means "hilly land, hills, small hills, the foot of a mountain divided into small ravines, a place in front of a mountain". Examples from Karakalpak epics: *Adır tawdıñ shetinde, Qızıl qumnıñ betinde, Bir kelata xalıq edi, Duwa tiygen el edi* («*Alpamis*», *Es. j.*); (On the edge of Mountain Adır, on the surface of the Kizil kum, There was a strange people, It was a cursed land); - *Edil menen Jayıqtan, Bóktergili adırdan, Bógenekli shıñgilden, Nuranıñ qara quminan, Noğaydıñ tolı jurtınan, Kiyatırman men shıǵıp* («*Edige*», *Er. j.*) (From Volga and Ural, from Buktergili hill, from Bogenekli cliff, from the black sand of Nura, from the full village of Nogai, I came out from there).

As a geographical term, the word "*alatau*" means "mountain of various colors, mountain covered with eternal snow". Examples: *Jeti kúnler awlap tappay Bozuǵlan, Keldi deydi Alataw degen jerlerge*. («*Bozuǵlan*», *Qay. j.*); (Bozuglan without hunting for seven days, came to places called Alatau); *Ane, Yusup-Axmet neshshe kúnler jol júrip ústi qarlı Alatawǵa keldi* ("Yusup-Axmet", *A. T*) (And Yusup-Ahmet traveled for several days and came to the snow-covered Alatau...); *Alatawdıñ jaǵası, Sol jaylardı jaylaǵan, Piskemis degen qalada, Eliniñ atı Badaqshan* ("Ilimxan", *Qur. j*) (The shore of Alatau, in the city called Piskemis, which occupied those places, name of land is Badakshan); *Keldi deydi Máspatsha, Alataw degen jerlerge* ("Máspatsha" *Q.j.*) (He said that Maspash came, to the places).

The geographical term "*aral*" means "island, foresty island in the steppe, grove, grove by the lake". Geographical terms formed with this term are used in Karakalpakstan, Kyrgyzstan, Kazakhstan and Yakutia. In the Karakalpak sagas, it is met in the following lines in Karakalpak epics: *Xorezm menen Aral boyın, Júrer edi aynalıp* («*Qırıq qız*», *Q. j.*); (Khorezm and along the Aral, he walked around); *Qara teñiz, aq teñiz, Sarı teñiz, kók teñiz, Aral, Kaspiy kóp teñiz, Jawınnan payda boladı* («*Gúlnáhár*», *Bab. j.*); (Black Sea, White Sea, Sari Sea, Blue Sea, Aral, Caspian Sea and Many Seas, Formed by Rain); *Adaq degen sháhári, Ámiw boyı Aralda*. («*Gúlistan*», *Q. j.*); (The city of Adak is located on the shore of Amu, Aral); *Tuwǵan jerim Aral teñiz boyında, Ulsızǵa ul bolmaq maqset-muradı*m («*Amanbay batır*», *Q. j.*); (My birthplace is along the Aral sea, my goal is to become a son of the person who has no son); *Aral teñiz jaǵasına*,

Xalıqtıń ádil ortasına, Sáhár waqtı kelip jetti, Búyrek degen qalasına («Aydos biy», Q. j.). (to the shore of the Aral sea, to the middle of fair people, arrived in the morning, to the city called Bûrek).

The geographical term "*shól* (desert)" in all Turkic languages does not mean the desert, the steppe. In addition, this word also means river and stone [6, 444-445]. In Karakalpak epics, the following land-water terms are mentioned: *Armiyan shóli*, *Bozbulaq shól*, *Kenimex shól*, *Qızır shóli*, *Qawas shóli*, *Qorǵan shól*. (*Armian Desert*, *Bozbulak Desert*, *Kenimekh Desert*, *Kyzыр Desert*, *Kavas Desert*, *Korgan Desert*). Examples, *Mindim Shubar beline*, *Shıqtım Qızır shóline* («*Alpamıs*», A. j.); (Got on the back of Shubar, went to Kyzыр desert); *Eki birdey shın ashıq, Qorǵan degen shóllerde, Tartısıp oynap baradı* («*Máspatsha*», Q. j.). (Two equal lovers, in the desert called Korgan, were going arguing).

Turkic classification. The geographical term "*shól* (lake)" is used in many Turkic languages in various phonetic variants, and in all of them it has the same meaning, meaning a water object. This term is productively used in creating hydronymic object terms. Also, in the language of Karakalpak epics, we can often meet the toponyms formed with this term. *Lake* is a geographical term that is used productively in the Karakalpak language and toponymy of Karakalpak. Based on this term, the names of many water bodies, as well as microtoponyms, have been formed. The term "*lake*" means a body of water which around is closed. Examples: *Adıraq kól*, *Aýdanlı kóli*, *Áýdek kóli* / *Háwdek kóli*, *Aynakól*, *Babır kól*, *Baysın kól*, *Etekli kól*, *Laǵalaq kól*, *Mıyan kól*, *Mıyten kól*, *Qanlıkól*, *Qara kól*, *Qorıq kól*, *Quba kól*, *Sasıqkól*, *Sayat kól*, *Shabır kól*, *Shaǵır kól*, *Shiyshe kól*, *Shortan kól*, *Tapsań kóli*, *Togıstan kóli*, *Xoja kól*.

A *taw/daǵ* (mountain) is a height higher than the surrounding land, there is a high stony place [5, 287]. The word *tau* is found in phonetic variants in most Turkic languages. The word *tau* is one of the most productive geographical terms used in the creation of Turkic toponyms. This term is used in various phonetic variants in Turkic languages. This is the geographical term that is the most exaggerated in the language of Karakalpak epics. In the language of epics, the forms *taw/ taǵ/ daǵ* of this term are used. In Karakalpak folk tales, land-water terms are found in phonetic variants *taw/daǵ*: *Adır taw*, *Ala taw*, *Alan taw*, *Alburıs taw*, *Aq taw*, *Aqsha taw*, *Asqar taw*, *Áyliye taw*, *Babay taw*, *Badalǵı taw*, *Balaman taw*, *Balqan taw*, *Bándirge taw*, *Barqıya taw*, *Buwdır taw*, *Dálshin taw*, *Genjirli taw*, *Ǵıjduwan taw*, *Góhibulır taw*, *Góhiqap taw*, *Gúlapın taw*, *Háser taw*, *Jádde taw*, *Janqur taw*, *Kóken taw*, *Kókshe taw*, *Párlitaw*, *Peshe taw*, *Porlı taw*, *Qap tawı*, *Qarataw*, *Qaraspan taw*, *Qarsaqlı taw*, *Qıran taw*, *Qıya taw*, *Qıyamıs taw*, *Qorasan taw*, *Quba taw*, *Qubayıs taw*, *Sarsań taw*, *Shaǵır taw*, *Shınzan taw*, *Shúkiralı taw*, *Taqır taw*, *Tarnalı taw*, *Tók taw*, *Túye taw*, *Ulıqpan taw*, *Urqıya taw*, *Xazar taw*, *Yarqut taw*, *Zárendik taw*; *Áser daǵ/Háser daǵ*, *Atash daǵ*, *Ordazı daǵ*, *Quba daǵ*, *Zarandıp daǵ*.

We can meet the toponyms come with the geographical term *tas/tash* (stone) in the language of epics. Along with the meaning of solid matter, the word *tas* also means "cliff stone, rocky stone" when it comes in the composition of the toponyms. For example, *Eliniń shetinde, jaw jantaspas betinde, Qaratas degen tawında, taptırmastay qarsı jawǵa, barıp qonıs basadı Temirlan degen atawǵa* («*Qurbanbek batır*», Q. j.); (on the outskirts of his country, where the enemy is not on the side, on the mountain called Karatas, against the insurmountable enemy, he went and settled in a place called Temirlan); *Qaratas degen daǵında, Taǵay xanniń jurtında, Tayar turǵan qarsı jawǵa, Izlegenı jánjel-ǵawǵa* («*Qurbanbek batır*», Q. j.). (On the mountain called Karatas, in the country of Tagai Khan, to the enemy who was ready, looked for argue-problem).

The word "*awıl* (village)" is productively used in the creation of many oikonyms in the Karakalpakstan region. Analyzing the etymology of the word *village*, M. Kurbanov comes to the following conclusions: "In our opinion, this term may be related to the verb *av* (*av*) which means "to collect" in the old Turkic language." This term is used in the language of Karakalpak folk epics, mostly, there are many cases where it is used in the name of a well-known person lived in that region. And, in a special way, it occurs very rarely in the composition of toponyms: *Qırıq ruw awıl* (village of forty clans).

Elat (town, countryside) - the term is used in connection with a place built in the city type, not far from the city, densely populated. In the majority of scientific literature, there are opinions that the oikonymic term "*Elat*" was created by adding the affix *-at* to the root of "*el*". In the language of folk epics, the names of land and water come with this term form a minority in terms of number: *Bagabat elati*, *Qaraqipshaq elati*, *Sardaqli elat*, *Xorezm elati*, *Sayram elati*.

The word *el*, also the word *elat* is met in the composition of toponyms [6, 458]. In the language of the ancient Turkic writings, the word *el* means "community, people", and in the dictionary of Mahmud Kashgari, it is mentioned that it means "state" [7, 168-169]. For example, *Buringi otken zamanda, Ol zamanni qadiminde, Xorezm elatinda, Kat degen qalada* («*HajiGerey*», *Qur. j.*) (once upon a time, in ancient time, in the state of Khorezm, in the city called Kat) – in these lines it means "state, khanate", while in the lines "*Bul qalanin atin Bagdat deydiler, Ishinen tabilar ol Sayram elat* («*Salimjan*», *Qur. j.*) (this city is called Bagdat, Sayram town is found there) – it is used as a place where people live.

The term *jurt* means a village, rural place, land. Oikonyms create land-water terms by coming together. Examples: *Ariyin jurti, Barlas jurti, Irat jurti, Pareñ jurti*.

The other lingual or hybrid classification. In our opinion, the word "*shahar*" corresponds to the meaning of the word "city". Sh. Rahmatullaev writes that the word "*shahar*" has the form "shahr" in Persian languages, and in the Uzbek language the sound "a" was inserted between the *hr* [8, 263]. From the semantic point of view, this word means "a large administrative and cultural center with developed trade and industry". It can be seen in the language of Karakalpak folk epics in the following examples: *Adaq shahar, Antakiya shahar, Azaw shahar, Balhun shahar, Baqshaberden shahar, Bostan shahar, Buxar shahar, Dahshi shahar, Dumshiq shahar, Emran shahar, Gubbat shahar, Gulapin shahar, Hattar shahar, Hirat shahar, Israpil shahar, Israpiya shahar, Ispahan shahar, Julian shahar, Mallet shahar, Miymun shahar, Mushkinrabit shahar, Qazan shahar, Qizil alma shahar, Quddus shahar, Rat shahar, Shahrisar shahar, Shunzan shahar, Zamharshah shahar, Zulmat shahar*.

The word *qala* also came from Iranian languages, and it was known in Iran and the Caucasus, as well as in Turkic languages, with the meaning of "fortified fortress". In Khorezm, it also means a place surrounded by a wall, a fortress. Examples from folk epics [9, 93]: *Aqjirim qala, Burkitmanigt qala, Buyrek qalasi, Emenqiyal qala, Enbekshil qala, Erik qala, Gulustun qala, Hayyanqala, Jamanqala, Jan qala, Katenler qalasi, Mushkil qala, Ordaza qala, Piskemis qala, Qipshaq qala, Qiriz qiz qala, Qiyal qala, Qorgansha qala, Qubirli qala, Sardaqli qala, Sarvan qala, Sasqala, Shahrinan qala, Sham qala, Shardaqli qala, Tasqala, Temirlan qala, Xazaras qala, YUnan qala*.

The word *darya* is derived from the Persian word *derya* - sea. In many Turkic languages it is used in the sense of river. Examples from the language of the epics: *Abilaysan dar'ya, Ajemdar'ya, Amiwdar'ya, Aq dar'ya, Arazdar'ya, Bulingir dar'ya, Buwnaqli dar'ya, Dawkesken dar'ya, Gurgan dar'ya, Girdap dar'ya, Janadar'ya, Jayhun dar'ya, Narin dar'ya, Nil dar'yasi, Qarmaq dar'ya, Qipshaqdar'ya, Shirshiq dar'ya, Sirdar'ya, Talliqdar'ya, Tun dar'ya, Xandar'ya*.

The term "*bag* (garden)" is often used productively in creating agronomic terms. The word garden is used in Turkic, Slavic and other many languages. This term in Tajik means "grape tree, field with many fruitful trees" [8, 50]. In the language of epics, we can see that there are a lot of land-water names, especially agronyms formed with this term: *Aynali Jahan bag, Bagi eram, Bagi-murad, Bagi-sapa, Eram bagi, Erenler bagi, Gulbag, Nurbahar bag, Ordaza bag, Qasan bagi, Shaman bag, Shamenli bag, Shazat bagi*.

In the language of epics, the terms of land and water, which are explained by the geographical term *shashme*, are also met. The word *shashme* is formed by addition of the affix *-a* to the Tajik word *chashm*, which means "hole" in Persian, and means water that boils naturally from underground [8, 253]. In the language of epics, it is used in the following land-water terms: *Aqshashme, Araz shashme, Sabzadara shashme*.

The term *shan* appears only in the toponyms *Badakhshan* and *Tian-Shan*. There is no clear information on the origin of the toponym *Badakhshan* in toponymy. V.A.Nikonov's opinion can be cited in the as widespread understanding of the origin of the *Badakhshan* toponym. The scientist said that the term *Badakhshan* means "Yakut mountains", is related to the Iranian word "badash - yakut". If the second component is *shan*, he writes that it means mountain [10, 38].

In Turkic peoples, *Tian-Shan* Mountains are called *Táńritau*, which means *Aspan* (Sky) Mountain. "*Tian-Shan* – means *tian* - heaven, *shan* - mountain. Basically, its name is *Xantáńri*, *Táńritaw* in the Turkic language, and the Chinese began to call it *Tian-Shan* according to their language [11, 10].

In toponymic research, one of the important tasks is to determine the role of geographical terms which is considered as the main element in the creation of land-water terms, which are related to certain physical-geographical objects and in determining their meaning.

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Rezyume: *Ushbu maqolada qoraqalpoq dostonlarida uchraydigan joy nomlarining kelib chiqishi bo'yicha turlari o'rganilgan. Ma'lum bir joy nomlarini o'rganishda kalit vazifasini bajaruvchi geografik terminlarning toponimlarni yasashdagi vazifasini tadqiq qilish orqali, shu toponimning o'ziga xos belgilarini, toponimning kelib chiqish ildizlarini aniqlashga imkoniyat paydo qiladi.*

Резюме: *В данной статье рассматриваются типы топонимов, встречающиеся в каракалпакском эпосе, исходя из их происхождения. Исследуя роль географических терминов в создании топонимов, играющих ключевую роль при изучении названий определенного места, можно определить специфические особенности этого топонима и корни происхождения топонима.*

Kalit so'zlar: *qoraqalpoq dostonlari, geografik terminlar, oltoy qatlami, turkiy qatlam va boshqa qatlam.*

Ключевые слова: *каракалпакские дастаны, географические термины, алтайский слой, тюркский слой и другие слои.*

**THE EFFECTIVENESS OF USING DIGITAL TECHNOLOGIES IN THE USE OF
INTERACTIVE METHODS IN TEACHING ENGLISH TO STUDENTS**

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Summary: *This article provides for teaching effective ways of speaking in English using digital technology and the assistance of psychological concepts and choosing effective methods to achieve the lesson's goal*

Key words: *Pedagogy, psychology, sphere, competent, inspiration, motivation, digital, technology*

During the informational revolution, scientific views and new creative ideas are becoming more and more deeply embedded in science, it is the only initiative of teachers to bring this information to the students in the classroom in a modern way.

Instead of learning in modern society, it is expected that the student not only has some knowledge about the world, but also thinks that he can defend his position, and successfully master the language. It is no secret that learning process is complex and it is difficult to be able to receive all materials which are given by teacher, especially in higher educational spheres. The teacher presents the one-hour lesson in the form of a presentation and discusses it together, reinforcing the lesson and linking it with other additions, revealing its relevance. The learning process uses interesting interactive methods, not fixed methods. The teacher presents the lesson as an interactive presentation based on the one-hour programming lesson template.

At the same time, in the learning process, the student is required to actively participate in the lesson, rather than the full transmission of information on one side. The student not only receives new information, but also learns during the lesson, participates in the discussion or questions-answers, is able to actively apply it to the tasks of the lesson, which shows the effectiveness of the lesson.[1]

Every competent teacher is not satisfied with a simple explanation of his subject, but can interest students with real examples and, perhaps, practical application, to show its high value, and to that end, it primarily uses interactive methods. Interactive methods play a key role in attracting more students to the lesson. If digital technology could be used as a tool in the process, this would be an occasion for the student to increase his interest, and of course, the task would be accomplished perfectly. In the following years, one of the most important technologies of the lesson became training in partnership (cooperative training), students performing tasks in small groups.[2.166]

If activities are focused on individual students as it is called traditional method, it will only lead to the achievement of some students in the classroom, if we can allow each student to share their role by working in groups, if we can assign them a task, every student takes on that part of the task that he could accomplish within his capabilities. Working in groups rather than individually, this method allows each student to take a personal position in their task, and the results reflect the confidence of all students in the group. Because of getting great results on every student, and gets interested not only teachers, but also students, interacting actively and free we prefer the way of teaching in mini groups rather than traditional working with them. We want to approach this critical practice not only pedagogically, but also psychologically on the example when a group is given some difficult task, the result shows that it is gradually activated and everyone will contribute.

There is a high probability of rapid fatigue and boredom in individual intellectual enthusiasm. Because the brain, an invaluable organ in the human body for mental movement, is considered one of the most complex processes, when it is the tissue of the mind that computes and forces the command given to it to work faster. In short, if the brain is able to move, adequately deal with boredom, then harmony is formed in the person, if he obeys the command of tissue leading to

development, and does not use it, as he says, demands that he remain motionless. In this comfort that the brain's ability to absorb the abandonment team in a person leads to the opposite result. In this way, people can remove the brain tissue from the brain's command process and make it work, making the person feel obligated, i.e., the team a person can give, into an active position, which then leads to rapid brain activity out of the comfort zone. I mean, if we leave the brain to its own devices without using it, it will only choose relaxed comfort, and that's what people consider passive. The genius will come out of it only if the consciousness is able to control not the human mind, but the human mind, making him bored in his sleep, which is beneficial for him and to enjoy the work without choosing a comfort zone in any practice. Not only does "I have no inspiration now", which we hear from many people in practice, we can see how the mind calls a person not to use it.

Some students also have a process that means obviously they are wasting their time playing various computer games, getting into sub-optimal games with their friends, instead of learning and trying to think, to solve the problem, to think and to want to come up with a solution. This result becomes not learning the lesson little by little and not understanding the previous lesson.

With these thoughts we can see how great can be the state of relaxation in a person, when he does not act against his emotional state, seeing this condition from the psychological point of view, the person does not naturally put himself in a superior position, Endorses the opinions of others, thinks of others more than himself, serves the interests or demands of others more actively than his own interests, and wants to assert himself. If a person always extends a helping hand to someone, pleases, supports in someone's difficulties, then thanks to such a gentle nature, he will be proud of himself and will be in a good mood. But there's a problem here, when he solves his friend's problem, he forgets, by helping him, he forces himself to the point where he can't afford to, which means hanging himself on another seeker is a big problem. It can work for months, in most cases, if the same problem requires research of information, it can postpone it and extend it for a long time. This process in psychology can be called «self-esteem», that is, you can activate your own brain, and it is very good, but 90% of the result can be achieved only by serving another person. So, the ideal discussion-filled work will be completed in a partnership of two minds. What is the outcome? If these actions were for the sake of each individual, the development of information, the development of results and the sequencing of follow-up actions would be left behind.

It showed that if a person works in cooperation, the sense of inability to deny each other will be high, and if we can use it in the processes of high development of teaching studying, we will achieve the perfect result. It means that a person's decision will be passively for their own progress, but when a friend asks for help in this case, becomes an active helper and becomes a seeker, if in psychology it is perceived negatively, then in the field of pedagogy it can give a positive result. This underestimation leads to progress, because in the field of methodology we observe in the classroom work in small groups and processes of collaboration.

If students in a class are given individual assignments, there are active and passive students, and the teacher can easily notice the following process' condition. This can be a useful process for an active learner, because according to all the practical experience he has gained he acts effectively, a person will want to promote their motivational activities, but also for passive learners in the process they can only copy, understand or not understand, they can act, but it is clear that they have little motivation or no desire to look. At the same time we should not forget the question of individual time work, that is, individual approach can give little results, but time is limited and the task is to develop and complete the lesson, having a certain understanding of the tasks. All of the mentioned conditions are required from the experienced teacher.

Cooperative learning, that is, group learning, has long been applied in pedagogy. The idea of group learning dates back to the 1920s, but group learning technology was not used until the 1970s in the UK, Canada, West Germany, and other countries. The main goal of co-education is co-education, not just joint assignments.

The way of teaching active follows successful organize the lesson

The ability to adapt in a small group

- sharing
- take over some part of the group activity task
- promoting ideas and projects
- risk and find innovative solutions
- accept errors and incorrect results
- articulate your thoughts clearly and reliably
- to be able to predict their actions beforehand
- increases the ability to distribute time evenly

The teaching methods are used in such a way that the task is accomplished perfectly. For achieving the desired goal one of the most common methods is the method of work in «small groups». The good thing about this method is that when working with passive students, students who tell themselves «no or then», or the students with low self-esteem can now actively manifest themselves when working in a team. Because he poses to his team a task that he does not want for himself, and cannot say «no » to his teammates, as we have shown above on psychological examples.

We will see in practice how the method of working in small groups gives results in learning English. As a result of the experiment with the help of the program of preparation of presentation «PowToon» 3 groups are to create a slide, writing irregular English verbs, and simultaneously present a slide.[4] The purpose of using this program is that if the program is modern and interesting, the availability of ready-made backgrounds, as opposed to eye-catching species, and the abundance of animated pages will save time and make the task more interesting. The pedagogical aspect is that students who do not know or makes mistakes when using tenses in a conversation, can help to memorize from this task, makes it interesting.

In this exercise, the group members prepare the team slides, memorize them, consider the possibilities of a new team, programming beforehand will take on the student who works well with the computer (can also play it on the phone) as well as the demonstration will be marked by musical accompaniment, students are prepared together with team members. Correct reading of words (in the process of presentation) or phonetic rules are checked and taught by one student. As a result of the lessons in the presentation the irregular verbs are sung in a certain rhythm to the music. Proper memorization of these verbs leads to avoid mistakes while the conversation using tenses correctly according to the usage and pronunciation of verbs.

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Rezyume: Ushbu maqolada darsni o'tish jarayonida psixologik tushunchalardan yordamida raqamli texnologiyalardan foydalangan holda ingliz tilida muloqot qilishning samarali usullari va dars maqsadiga erishish uchun samarali usullarni tanlash ko'rib chiqiladi.

Резюме: В данной статье рассматривается в процессе преподавании урока эффективные способы общения на английском языке с использованием цифровых технологий при помощи психологических концепций и выбора эффективных методов для достижения цели урока

Kalit so'zlar: Pedagogika, psixologiya, soha, malakali, ilhom, motivatsiya, raqamli texnologiya

Ключевые слова: Педагогика, психология, сфера, умелый, вдохновение, мотивация, цифровая технология

**GRAMMATICAL ANALYSIS OF ENGLISH AND KARAKALPAK TOPONYMICAL
UNITS IN LINGUISTICS**

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Summary: *The article discusses the grammatical analysis of English and Karakalpak toponymical units in linguistics. The significance and dynamics of changes in phraseological units accompanied with toponymical elements in understanding phonemic composition, semantics, morphology, lexicology and historical-cultural impacts on both languages are also studied. Also this article aims to identify structural and functional classification of toponymical units Karakalpak and English languages.*

Key words: *toponymical units, linguistic characteristics, linguistics, semantics, phonemic composition*

THE BEAUTY OF THE NAME SEEMED PART AND PARCEL OF THE BEAUTY OF THE LAND...

R.L. Stevenson

Toponymy is the scientific study of place names (toponyms), their meaning, structure, origin, use and typology. The word "toponymy" is derived from the Greek words *tópos* (τόπος) ("place") and *ónoma* (ὄνομα) ("name").

Toponym is a name of a locality, region, or some other part of Earth's surface, including natural features and artificial ones. Its purpose - all-round studying of place names. [2.89].

"It is impossible to imagine the life of modern society without geographical names," writes a well-known specialist in the field of toponymy E. M. Murzaev. – They are everywhere and always accompany our thinking from early childhood. Everything on earth has its own address, and this address begins with the place of birth of a person. His native village, the street where he lives, the city, the country – everything has its own names" [9.216].

When grammatically investigating any linguistic component used in a particular language, we see that it, along with the quality that applies the meaning, also has structural features. It is applicable to examine the morphological structure of a linguistic unit, determine its productive or unproductive use, restore some old grammatical forms, identify cases of linguistic changes, describe the sources of the introduction of linguistic units into the language, identify modern and outdated ways of word formation.

The long-interest attracted by toponyms can be applied not only by their exceptional functions, mysterious origin of most of them, distinctions of their grammatical features from the other word class, i.e. appellatives, but, also by the fact that they are rich in information needed to solve ethno genetic problems. Place-names as well as other manifestations of the people's spiritual culture, i.e. folklore, rites, beliefs etc. reflect peculiar national features, history and mentality. Each toponym consists of different information – historical, geographical, linguistically.

State language of Great Britain is English, but place names of this country are partially English. Influence on formation of English place names was rendered by historical conquests. Therefore, among toponyms of Great Britain it is possible to mark out such elements as Celtic, Latin, Scandinavian, Norman.

The analysis of phraseological units with toponym components in English reveals the language's rich cultural and historical heritage, as well as its ability to convey complex ideas through concise and expressive language. Studying these expressions can provide valuable insights into the dynamics of language usage and the ways in which cultural references are embedded in linguistic discourse

Birmingham. Birmingham Science City – "City of Science". Birmingham received this nickname together with five other cities in the UK (Bristol, York, Manchester, Newcastle upon

Tyne, Nottingham) for supporting scientific research, innovative developments and their implementation in the production process. Brum – "Bram". Abbreviated from Brummagem "Brammajem", this nickname is associated with the local manner of pronouncing this name. City of Thousand Trades – "City of a thousand crafts". Birmingham used to be famous for its industry.

Bradford. Bradistan – the suffix - stan indicates a significant Asian stratum of the population of this city, which mainly includes Pakistanis. Woolopolis – in the 19th century Bradford was one of the centers of production of woolen fabrics.

In Turkic languages, including the Karakalpak language, toponyms are formed in various ways, the productivity of which is described in linguistic works. In Karakalpak language toponyms play a cardinal role important with distinctive features not only in cultural side but in a grammatical side too. The grammatical features of toponyms are demonstrated in various uses of the article with these groups of words. Proper names, by their nature, are already individualized and, as a rule, do not need articles, so the grammar has to devise apparent rules for proper names: for example, articles can be placed before toponyms in cases where they are used as common nouns. There are other grammatical features of proper names, for example, the absence of a plural in these nouns.

The phonemic composition of common nouns is clearer and stricter than the composition of proper names. Common nouns can differ from each other by only one phoneme, such as English. cat and bat, gel and gem; in Karakalpak shel and bel, bas and qas. If the phonemic composition of common nouns were not so solid, the implementation of the connection between common nouns and concepts would be difficult: a strictly defined concept must have a strictly defined sound meaning, and a strict phonemic composition has, in turn, the right to strict spelling regulation.

The situation is totally different with proper names: not having such a close connection with the concept, assigned to individual subjects and objects, they can vary phonetically, accentologically, morphologically, and even lexically in a wide range.

One of the urgent tasks of onomastics is the study of the linguistic features of proper names, which are formed, on the one hand, considering the systemic capabilities of a given language, and on the other, taking into account the needs and capabilities of a given toponymic system.

According to many local and foreign linguists, the main function of toponyms in a language is the nominative function. Proper names help to distinguish and identify persons, objects, places, without resorting to their qualitative characteristics. This is the essential exception between this type of vocabulary and appellatives, which mean not a single object, but all objects of a given kind. Also, many toponymical units have in the minds of native speakers a certain associative halo, which is assigned to them on the basis of background, encyclopedic knowledge about the object.

Book by O.Payzullaev is one of the essential resource which informs about deeper information regarding the history of the reasons of naming toponym of Shanishpaykopir, Argunjap, Artemjap, Axambet, Bazarawil, Jaqsimuratawil, Juraawil, Qalimbetawil, Qa taghanawil, Qurtimbet, Qiysiqqat, Qilqaliawil and e.t.c [10.40].

There was told about the development of Shimbay city indicating close connection with the history of historical places like Kuyiqqala, Bag'datqala, Axunbaba, Sasiqbiy, Erejeptentek in the article of Karakalpakstan's cities and district. [7. 28].

The author indicated about the formation of the big city due to blacksmiths, charioteers, stickmen, jewelers, builders and other professionals, the toponyms of Arbashi awil, Kokshiwil, Kumbizshi awil were created according to those people's occupations. It was decided to compare the found of toponyms-nicknames on the basis of classification by origin and structural and grammatical classification.

The analysis of phraseological units with toponym components in Karakalpak reveals the language's rich cultural heritage, historical significance, and expressive power. Studying these expressions can provide valuable insights into the unique linguistic characteristics of the Karakalpak language and its cultural context.

In conclusion there is no consensus among linguists on what is considered a proper name, how a proper name differs from a common noun, whether a proper name has a meaning, and many other issues related to proper names. The grammar linguistic characteristics of English and Karakalpak toponymical units reveal both similarities and differences. Both languages use toponymical components to imply cultural specificity, historical importance and descriptive power. Investigating these linguistic features sets an accurate understanding of the unique cultural and historical backgrounds of English and Karakalpak, advancing the language and communication in both contexts.

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Rezyume: Maqolada tilshunoslikdagi ingliz va qoraqalpoq toponimik birliklarining grammatik tahlili ko'rib chiqiladi. Shuningdek, fonemik tarkibni, semantikani, morfologiyani, leksikologiyani va ikkala tilga tarixiy va madaniy ta'sirni tushunish uchun toponimik elementlar bilan birga frazeologik birliklarning o'zgarishi ma'nosi va dinamikasi o'rganiladi. Shuningdek, ushbu maqolaning maqsadi qoraqalpoq va ingliz tillarining toponimik birliklarining tarkibiy-funksional tasnifini aniqlashdan iborat.

Резюме: В статье рассматривается грамматический анализ английских и каракалпакских топонимических единиц в лингвистике. Также изучается значение и динамика изменений фразеологических единиц, сопровождаемых топонимическими элементами, для понимания фонематического состава, семантики, морфологии, лексикологии и историко-культурного воздействия на оба языка. Также целью данной статьи является выявление структурно-функциональной классификации топонимических единиц каракалпакского и английского языков.

Kalit so'zlar: toponimik birliklar, lingvistik xususiyatlar, tilshunoslik, semantika, fonemik kompozitsiya

Ключевые слова: топонимические единицы, лингвистические характеристики, лингвистика, семантика, фонематический состав

**ISSUES OF DEVELOPING THE WORK OF THE CONSTITUTIONAL CONTROL
COMMITTEE OF THE REPUBLIC OF KARAKALPAKSTAN.**

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Summary: *The article analyses the developmental issues of works of the Constitutional Control Committee of the Republic of Karakalpakstan.*

Key words: *Constitutional control, constitutional court, constitutional control committee, supremacy of the constitution and law.*

Today, on the initiative of the leader of our country and on the basis of the development strategy of the new Uzbekistan, constitutional reforms are being implemented, the place and role of the Constitution of the Republic of Uzbekistan, based on this the main idea of which is "man-society-state" is working depended on "New Uzbekistan - a social state", as well as the fact that the principle of "for the dignity of man" prevails more than ever in state policy, places a huge responsibility on state organizations and officials, that is, constitutional control organizations.

"The priority of the Constitution and regulations of the Republic of Uzbekistan is unconditionally recognized in the Republic of Uzbekistan," is cited in the Article 15 of the New Constitution of the Republic of Uzbekistan.

It is also cited as *"The Constitution of the Republic of Uzbekistan has high legal force, is directly followed and defines a single original legal basis throughout the whole area of the country".⁸*

The supremacy of the Constitution and law means that their norms and rules are higher than any other legal documents. They should contain all the other legal documents as orders, decrees, judgments, recommendations, instructions and plans. In the event of a dispute or disagreement between the Constitution and other legal documents, the supremacy of the Constitution and the laws is guaranteed.

The Constitution and laws with the supremacy of the Constitution and the law and other legal documents will be enforced in case of contradictions and disagreements between the Constitution and legal norms.

Ensuring the supremacy of the law is one of the main tasks of the democratic legal state. The law prevails only in a society that follows the law. Of course, in order to achieve the supremacy of the law, the institutions of civil society in the state and citizens must actively participate in the affairs of society and the state. They should be able to convey their ideas and proposals to the state authorities. If this is not the case, then there will be no word about the supremacy of the law.

When talking about the priority of the Constitution and laws, first of all, ensuring the primacy of the Constitution takes an important place. The constitution is considered the basis of the legal system of the state. Therefore, not a single law or legal document being adopted in our country can be against it. The Constitution, as the main law, takes precedence in the system of normative-legal documents in the state, and has the status of "sovereignty". Its norms have a higher legal force than the provisions of other laws. All other laws and other normative legal documents are issued on the basis of the Constitution, in accordance with it and for its implementation. This culture is considered to be the invariable rule of every country hoping a bright future.

In order to protect the norms of the Constitution, the Constitutional Court of the Republic of Uzbekistan, and also the Constitutional Control Committee in the Republic of Karakalpakstan have been established.

⁸Constitution of the Republic of Uzbekistan (new edition). Adopted by national vote in the referendum of the Republic of Uzbekistan held on April 30, 2023.// <https://lex.uz/docs/6445145>

The Constitutional Court of the Republic of Uzbekistan is a stably functioning body of judicial power, which examines cases on the constitutionality of legislative and executive authority documents. In the Republic of Karakalpakstan, this authority is exercised by the Constitutional Control Committee. Constitutional control agencies are judicial authorities that ensure the priority of law and the Constitution in our country.

The Constitutional Control Committee is a state organization that monitors the compliance of legislative acts of the legislative and executive authorities of the Republic of Karakalpakstan with the Constitution of the Republic of Karakalpakstan. Supervising the Constitution of the Republic of Karakalpakstan, impartiality, collegiality, implementation and legal equality of committee members are the main principles of the work of the Constitutional Control Committee.

Today, as a result of judicial reforms being carried out on the basis of the principle of "New Uzbekistan - a new court", a number of reforms have been implemented in the field of increasing the efficiency of the work of the Constitutional Court of the Republic of Uzbekistan and further improving its legal foundations. In particular, the head of our state defined as a necessary task "Increasing the role and position of constitutional control organizations in ensuring the international standards of human rights and freedoms, and in the effective use of the institution of constitutional objection of physical and legal entities in daily life."⁹

On June 12, 2021, the new version of the Law "On the Constitutional Control Committee of the Republic of Karakalpakstan"¹⁰ was adopted at the eighteenth session of the Supreme Council of the Republic of Karakalpakstan. The main purpose of this law is to further improve the legislation on the regulation of legal relations on the harmonization of the laws of the Republic of Karakalpakstan, acts of the higher state authorities and administrative agencies with the Constitution of the Republic of Karakalpakstan.

A number of innovations aimed at improving the work of the committee were introduced with this Law. That is, clarifications were made on the general rules for the implementation of constitutional control, the status of committee members, committee delegations, the main rules for considering issues, the organization of the work of the committee and issues related to its service. In addition, new norms have been introduced to regulate the issues related to working together with the state authorities.

Information about the document of the constitutional control committee is given in full, that is, the solution of the constitutional control committee is called the decision of the content of the considered issue about the compliance of the normative-legal act with the Constitution of the Republic of Karakalpakstan, and in other circumstances, the decision of the constitutional control committee is determined that the solution can have a different form.

The second paragraph of the 16th article of the Constitution of the Republic of Karakalpakstan is aimed at ensuring the supremacy of the Constitution and the law, which states that "No law or normative legal act can contradict the norms and principles of the Constitution."¹¹ In accordance with this constitutional norm, the acts of state authorities empowered to adopt normative legal acts are controlled by the Constitutional Control Committee of the Republic of Karakalpakstan. That is, the Constitutional Control Committee is the only state organization that monitors the compliance of legislative acts of the legislative and executive state agencies of the Republic of Karakalpakstan with the Constitution of the Republic of Karakalpakstan.

In accordance with Article 32 of the Law of the Republic of Karakalpakstan "On the Constitutional Control Committee of the Republic of Karakalpakstan" (in the new edition), law projects proposed for the consideration of the Supreme Council of the Republic of Karakalpakstan, as well as the laws in action and other acts, decisions of the Presidium of the Supreme Council,

⁹ <https://president.uz/uz/lists/view/474>

¹⁰ Law of the Republic of Karakalpakstan "On the Constitutional Control Committee of the Republic of Karakalpakstan" (in the new edition), June 12, 2021, No. 130/XVIII

¹¹ Constitution of the Republic of Karakalpakstan, Nukus, "KARAKALPAKSTAN", 2021, P. 8.

decisions of the head of the Supreme Council, conclusions of the Constitutional Control Committee on compliance of decisions of the Council of Ministers of the Republic of Karakalpakstan to the Constitution of the Republic of Karakalpakstan are respectively sent to the Supreme Council of the Republic of Karakalpakstan, its Presidium, the Head of the Supreme Council and the Council of Ministers.

Such decisions of the constitutional control committee do not stop the operation of laws.¹²

At the same time, the decision of the Constitutional Control Committee on the contradiction of the law projects of the Republic of Karakalpakstan and the current legislative acts to the Constitution of the Republic of Karakalpakstan is initially considered by the committees of the Supreme Council of the Republic of Karakalpakstan, and the decision is made about inclusion in the project of the agenda of the session to consider the decision. And the decision of the Constitutional Control Committee on one or another issue can be canceled by the decision of the Supreme Council adopted by the vote of two thirds of all the deputies of the Supreme Council of the Republic of Karakalpakstan. In this case, the Constitutional Control Committee cannot work impartially.

It should be separately noted here that some of our local scientists have expressed the opinion that a Constitutional Court should be established instead of the Constitutional Control Committee of the Republic of Karakalpakstan.

S. Nietullaev expressed the opinion in his academic works that, "A Constitutional Court should be also established in Karakalpakstan, and it is necessary to make it impossible to appeal against its decision. Only then would it be possible to build a democratic legal state in the republic. But for now, the constitutional control committee in Karakalpakstan does not have the opportunity to fully implement such an important task, because it cannot work independently. In the future, taking into account these issues, the legislative body of the republic should establish a Constitutional Court instead of the Constitutional Control Committee."¹³

At the same time, according to G. Berdimuratova, foreign experience shows that constitutional courts have been established in most countries with state structures itself. For example, now in 14 republics of the Russian Federation (Ingushetia, Bashkortostan, Buryatia, Dagestan, Kabardino-Balkaria, Karelia, Komi, Mari El, Tuva, Udmurtia, Tatarstan, Sakha, South Ossetia-Alania and Chechnya), in 3 regions (Sverdlovsk, Kaliningrad and Chelyabinsk) and in the city of St. Petersburg constitutional courts have been established and are working.

At the same time, subjects of the Russian Federation are independent in choosing the model of organization of constitutional (statute) courts: composition, order and form of organization, system and requirements for candidates for judges. For this, it takes into account the principles of the legal state, traditions, the level of workers, financial and material opportunities, the level of political and legal culture, as well as any other factors and conditions. It is believed that it is appropriate to establish the Constitutional Court of the Republic of Karakalpakstan in order to ensure the effective implementation of the Constitution of the Republic of Karakalpakstan, to increase the level of legislation, to strengthen the guarantee of the independence of the judiciary, and to improve the results of protecting the rights and freedoms of citizens.¹⁴

In fact, a Constitutional Court should be established in the Republic of Karakalpakstan. Due to the lack of a Constitutional Court in Karakalpakstan, cases on the constitutionality of legislative and executive acts, republican laws and other acts adopted by the Supreme Council, its head, decisions of authorities and local government organizations, and also any other legal issues compliance with the Constitution of the Republic cannot be determined by the court.

¹² Law of the Republic of Karakalpakstan "On the Constitutional Control Committee of the Republic of Karakalpakstan" (in the new edition), June 12, 2021, No. 130/XVIII

¹³ S. D. Nietullaev "The new Constitution of Karakalpakstan and reforms in its state organization / Nukus: << Karakalpakstan>>", 1993, P. 147

¹⁴ G.M.Berdimuratova "Constitutional-legal foundations of the reform of judicial power in the Republic of Karakalpakstan": Doctor of Philosophy (PhD) dissertation on legal sciences. Abstract - Nukus.: KarSU, 2021. - P.20.

At the same time, the decisions of state authorities are not always fair. If the citizen's rights and freedoms are violated at such a time, there is a need to appeal the decisions to the court. At the same time, as we know through world experience, Constitutional Courts are established to ensure strict adherence to the Constitution and laws. The Constitutional Court belongs to the judicial sphere of the state authority, and its representation includes the evaluation of the conformity of legal norms with the Constitution. The difference between the Constitutional Court and all other courts is that it has the right to annul laws or other legal acts that are inconsistent with the Constitution.

In conclusion, the step-by-step improvement of the processes of implementation of constitutional control will serve to ensure the supremacy of law and constitutional legislation, as defined in the development strategy of New Uzbekistan for 2022-2026, and ensure that human dignity is assigned as the main criterion of this process.

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Rezyume: *Ushbu maqolada Qoraqalpog'iston Respublikasi konstitutsiyaviy nazorat qumitasi faoliyatini takomillashtirish masalalari tahlil qilingan.*

Резюме: *В статье проанализированы проблемы совершенствования деятельности Комитета Конституционного надзора Республики Каракалпакстан.*

Kalit so'zlar: *Konstitutsiyaviy nazorat, konstitutsiyaviy sud, konstitutsiyaviy nazorat qumitasi, konstitutsiya va qonun ustuvorligi.*

Ключевые слова: *конституционный надзор, Конституционный суд, комитет конституционного надзора, верховенство конституции и закона.*

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ACTUAL PROBLEMS OF THE THEORY OF CIVIL LAW

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Summary: *The article is devoted to actual problems of the theory of the civil rights of Russia. The authors examine issues related to the lack of sufficiently developed the general theory of civil law that, in their opinion, expressed by the weakness of the theoretical and methodological framework of contemporary jurisprudence.*

Keywords: *theoretical and methodological framework, dogma of law, the general theory of civil law, civil law system, the legal nature of the legal definitions.*

I. INTRODUCTION

The current state of the science of civil law seems contradictory. On the one hand, there are grounds to recognize the level of its development as high, as evidenced primarily by the development of fundamentally new civil legislation that ensured the transition to private-law principles of regulatory regulation of property and personal non-property relations, recognition of the principles and norms of international law as an integral part of the Russian civil legal system. On the other hand, it should be noted that the main efforts of representatives of domestic civil law are still directed at the development of problems lying in the field of the so—called dogma of law.

For most of the researchers, a certain imperative that dominates them is the desire to solve individual, particular practical problems, the attitude to finding and highlighting solutions to specific, casuistic situations or revealing the meaning and content of the norms of the current positive civil law [6].

It is not surprising that references to legislation as the main or only argument for the validity of a scientific position have become familiar to many civilists who have forgotten that the task of legal science is not only to comment on the content of laws, but also the theoretical and methodological justification for their improvement. Being passionate about the problems of the dogma of civil law, civilists often touch on its fundamental theoretical and methodological problems in passing, and allow the incorrect use of the conceptual apparatus developed by legal science [7]. There is even an opinion on the inadmissibility of introducing allegedly alien legal constructions of the general theory of law into civil law [8].

The authors of the book "Civil Law of modern Russia", despite their marked fascination with the theory of civil law, nevertheless managed to avoid the absolutization of a theoretical and methodological orientation [9], which is not always typical for research of this kind. In particular, in the scientific publication, the issues under consideration are closely linked to the current problems of civil law regulation of property and personal non-property relations, amendments to civil legislation are proposed, most of which look reasonable and useful.

A significant place is given to subjective civil law. This decision is quite justified, since subjective law and its holders constitute the necessary logical assumption of any civil law, without which the latter would be unthinkable [10]. The validity and the need to consistently disclose the social role of subjective civil law in ensuring the freedom and independence of participants in civil turnover, as well as regulatory and legal means for determining its boundaries and protection do not require excessive argumentation.

The need to use civil law definitions for the legal mediation of public relations arises only at the stage of complication of social relations, when predominantly casual legal regulation ceases to meet the objective needs of a no-nonsense, abstract civil law.

In modern state legal systems, civil law definitions are used as the initial legal forms of modeling positive and negative social phenomena (processes, needs), as well as the formulation of the relevant rights and obligations of participants in civil turnover. There is a dependence of the

reflection in civil law definitions of the nature of the content of civil personality on the level of democracy of the political and ideological system and the development of civil science.

As specific legal means of civil law regulation, civil law definitions are characterized by the following features:

precede the formulation and normative consolidation of civil rights and obligations;

They have a higher level of abstraction, generalization of essential features of the phenomena of social and legal reality;

They have their own structure and differ from the legal norms;

They perform informational, ideological-orientation, system-forming, regulatory, protective, axiological functions.

These and other properties of civil law definitions are revealed in the context of existing forms of their normative consolidation and structural and functional links with other legal means of civil law regulation (principles, norms, acts of civil law implementation, etc.).

The detailed classification of civil law definitions is based on the following parameters: the depth and breadth of reflection of socio-legal reality (complex and derivative), the features of the object of reflection of socio-legal reality (proper legal and special), forms of objectification (scientific, normative, interpretative).

Among the shortcomings of the legislative consolidation of civil law definitions, in particular, it is necessary to highlight the lack of definition of the concepts of most principles, goals and objectives of civil legislation, objects of civil rights, self-defense, civil liability; the absence in a number of definitions of the concepts of illegal acts of the specifics of the subject of civil law regulation and the tautology of some of them.

If we talk about the mechanism of interaction between the principles and norms of civil law in modern Russia, we should proceed from the fact that the principles of civil law are the basic principles (ideas) stipulated by the objective needs of the development of economic relations and enshrined in legislation, determining the essence and content of civil law regulation, and the norms are based on legal principles and enshrined in legislation generally binding rules of conduct expressed in specific permissions, obligations and prohibitions.

II. LITERATURE REVIEW

The point of view of the classics of Russian science about the lack of a sufficiently developed general theory of civil law (V.I. Sinaisky [1], I.A. Pokrovsky [2], G.F. Shershenevich [3], Y.S. Gambarov [4], etc.) remains relevant. The "weakness" of its own theoretical and methodological base is typical for most branch of legal sciences. Despite the fact, as D.A. rightly notes. Kerimov said that without creating its own theoretical and methodological base, no science can develop, modern legal science pays least attention to this important area, without which it condemns itself to infertility, stomping on the spot within the boundaries of long-known provisions.

III. RESEARCH METHODOLOGY

The genesis of this mechanism lies in the actual civil relations that arise regarding the production, movement, exchange and consumption of material goods, are of a natural-legal, equivalent nature and are based on the ideas of equality of their participants, freedom of contract, non-interference in private affairs. At the initial stage of the functioning of the state legal system, due to the casual and class (class) nature, the written norms of civil law do not adequately consolidate the principles of natural law economic relations between people. With the transition to abstract legal regulation and democratization of the state legal system, the natural law principles of civil law are becoming more and more adequately legislated and acquire significant importance in civil law regulation.

The social aspect of the mechanism of interaction of principles and norms of civil law can be characterized as the influence of socio-economic, political-ideological, organizational and technical factors on the process of their mutual functioning. The low level of socio-economic

development, the significant polarization of political and ideological attitudes, the strong influence of opportunistic, corporate and criminal interests, weak organizational work to promote advanced ideas of forming market relations have a negative impact on the regulatory support and implementation of the principles of civil law.

IV. ANALYSIS AND RESULTS

The structural and functional features of the mechanism of interaction of principles and norms of civil law are determined by the following three main levels of the system of legal principles, which serve as the basis for the organization of the regulatory system of civil law regulation:

- a list of the basic principles of civil law that determine the structure and content of the entire regulatory framework of civil law regulation;

- a set of requirements arising from the basic principles of civil law and determining the content of the relevant civil law institutions;

- the structural connection of general legal and civil law principles that provide an industry interpretation of the requirements of general legal principles to the norms of civil law.

Legal principles perform the following functions in the mechanism of their interaction with the norms of civil law:

- norm—forming - ensures the formation of the concept of the normative basis of civil law regulation; the adequacy of reflection in the norms of civil law of the objective needs of the development of economic relations; unity and internal consistency of the norms of civil law; identification and overcoming of contradictions in the system of norms of civil law;

- regulatory — helps to overcome gaps in the system of norms of civil law; the direct emergence of the rights and obligations of participants in contractual relations; the correct interpretation of norms in the process of civil law regulation; assessment of the legality and validity of the application of norms of civil law;

- informational — determines the development of prescriptive information contained in the norms of civil law; subjects receive concentrated information about the essence and features of civil law regulation.

The functional role of legal norms in the mechanism of their interaction with the principles of civil law is determined by the permissive and dispositive orientation of civil law regulation. Permissive norms of civil law, by consolidating the list of subjective rights of individuals and legal entities, determine the legally possible scope of their implementation of legal principles. Dispositive norms provide subjects with the freedom of discretion necessary for the implementation of legal principles in the process of exercising their civil rights. Binding, prohibiting, imperative norms ensure the unhindered exercise of subjective civil rights by subjects.

The shortcomings of the legislative consolidation of the principles and norms of civil law reduce their effectiveness. Decree of the President of the Russian Federation No. 1108 dated July 18, 2008 "On Improving the Civil Code of the Russian Federation" provided for the development of a Concept for the development of civil legislation. The development of the Concept is due to a number of objective reasons. Since the early 1990s, when civil legislation began to be created, important economic and social transformations have taken place in the country, which have not been properly reflected in legislation. In particular, there is a need to introduce two fundamental changes of a systemic nature into the Civil Code.

Corporate relations should be included in the range of relations regulated by civil law and defining its subject matter. In addition, it is necessary to create in the Civil Code a complex of interrelated institutions of property law, based on the right of ownership and united by a comprehensive system of general rules of property law. Unlike most developed Western countries, Russian legislation has not created a system of stable property rights to land and other natural resources.

A new concept should appear in the legislation — "public joint stock company". A public joint-stock company is a joint-stock company whose shares and securities convertible into its shares are publicly placed (by open subscription) and publicly traded under the conditions established by securities laws.

Among the features of the functioning of public joint-stock companies are increased requirements for the minimum amount of authorized capital, the establishment of the obligation to publicly disclose information provided for by the law on business companies and securities laws, maintaining the register of shareholders of a public joint-stock company and the functions of the accounting commission by an independent organization with the appropriate license. Non—profit organizations are supposed to be named "non-profit corporate organizations" and "non-profit unitary organizations", the first of which are supposed to include consumer cooperatives, public organizations of citizens, associations and unions (with detailed regulation of their status), the second - foundations, institutions and religious organizations.

As part of the disclosure of the topic of subjective civil law and the economic security of private entrepreneurs, the place and role of subjective civil law in the system of legal support for the economic security of private entrepreneurs are analyzed. At the same time, the economic security of private entrepreneurs is considered as a state of security for their interests, expressed in the possibility of systematically obtaining benefits from their activities in conditions of economic freedom based on the principles of a market economy, and its legal support is considered as a system of permissive, protective and protective legal measures established by law and implemented by state, public organizations and citizens means that create a favorable environment for economic activity in market conditions.

As the basis for the legal provision of economic security for private entrepreneurs, subjective law is characterized as a legal means that:

- embodies the permissive and dispositive nature of civil law regulation, creating favorable conditions for freedom of discretion and initiative by business entities;

- transforms the basic principles of civil law regulation of market relations into a set of powers necessary for the implementation of entrepreneurial activity;

- it acts as a means of dosing and setting the limits of possible behavior that prevent abuse of the status of a business entity;

- It has a natural-legal character, determining the relative independence of business entities from the level of development of society and the organized activities of the state.

Various elements (powers) of the structure of subjective civil law play a specific role in this process. In particular, this role is most clearly manifested in law:

- possession, use and disposal of property for carrying out economic activities not prohibited by law in order to generate systematic income;

- insurance of property and business risk;

- use of detective and security services;

- requirements from all subjects not to violate the basic principles of civil law regulation of market relations;

- requirements from the relevant state bodies to fulfill the obligations imposed on them by law to ensure the economic security of private entrepreneurs;

- requirements for fulfilling contractual obligations;

- to protect violated rights, including honor, dignity, good name, and business reputation.

It is particularly necessary to highlight the role in ensuring the economic security of private entrepreneurs of the subjective civil right to detective and security security of private entrepreneurs, including the possibilities of:

- using detective and security services provided by laws and the contract and exercising control over the process and quality of their provision;

- requirements from detective and security services for the timely and proper performance of services provided for in the contract, non-disclosure to third parties of information constituting an

official or commercial secret, compensation for losses caused by non-fulfillment or improper fulfillment of the contract;

applying for protection to the judicial authorities in case of failure by the detective and security services to comply with the legitimate requirements of the customer.

The legislation does not clearly distinguish the types of legal means to ensure the economic security of private entrepreneurs. Not all elements of property rights that directly ensure the economic security of private entrepreneurs have been adequately consolidated in the Civil Code. There is also no regulatory mechanism for the implementation of the right of private entrepreneurs to self-defense and fulfillment of the state's program obligations to ensure the economic security of private entrepreneurs. Gaps and contradictions in the legislation regulating the activities of detective and security services limit the content of the subjective civil right to receive this type of service.

The system of legal means for the protection of subjective civil rights is a set of sectoral and intersectoral legal phenomena in structural and functional unity, united in order to prevent and suppress unlawful encroachments on legal opportunities and social benefits of participants in civil turnover.

The elements of the system of legal means of protecting subjective civil rights are classified:

□ by branches of law — constitutional law, civil law, administrative law, criminal law;

according to the method of protection: preventive — legal prohibitions, obligations and restrictions; protective — recognition of the right, invalidation of the transaction, award of performance of duties in kind, etc.; punitive — compensation for losses, recovery of penalties, compensation for moral damage, administrative fine, deprivation of the right to engage in certain activities, imprisonment, etc.;

□ the form of protection: jurisdictional — judicial, prosecutorial, administrative, notarial, etc.; non—jurisdictional - self-defense, operational impact.

The protective means of the private law complex presuppose the administrative independence of the subjects to put these means into effect, to "turn on" the mechanism of their application in the event of a threat of encroachment or encroachment on subjective civil rights. The public law means applied to the violator of subjective civil rights are exclusively punitive in nature (in the private law sphere, only a small part of the means representing measures of property liability belong to them).

The interaction of complexes of legal means of protecting subjective civil rights is carried out through the protection of civil rights of the same name by private law and public law branches of legislation, as well as the use of public law means of protecting civil rights in private law branches, and vice versa. The jurisdictional forms of protection of subjective civil rights include the procedural activities of competent state bodies and non-governmental organizations authorized by law to protect the disputed or violated rights of individuals and legal entities. The priority and most effective jurisdictional form of protection of subjective civil rights is judicial, which includes the procedural activities of the Constitutional Court of the Russian Federation, courts of general jurisdiction, arbitration courts, and the European Court of Human Rights.

Among the shortcomings of the legislative consolidation of the system of legal means of protecting subjective civil rights are the following: the use of concepts of different types of legal means of protecting civil rights without taking into account their corresponding semantic load; the consolidation of both protective and punitive types of legal means as methods of protecting civil rights; the lack of definition of concepts of some protective principles of civil legislation and general prohibition abuse of law.

The established mechanism of interaction between private law and public law means of protecting subjective civil rights suffers from a number of flaws. In particular, there is insufficient public legal protection of copyrights, state property rights, and intellectual property rights. The existing contradictions between public and private legal means reduce the effectiveness and sometimes undermine the foundations of civil rights protection.

The restriction of economic rights of citizens is a legislative narrowing of the natural law possibilities of their acquisition, content or list of powers, as well as options for the implementation process, carried out with the help of various legal means. Prohibitions and obligations aimed at establishing a certain (special) list of objects and a range of subjects of economic rights, as well as special requirements and conditions for subjects, the procedure for the emergence and exercise of economic rights can be called the main legal means of restricting the economic rights of citizens.

The limits and principles of restrictions on the economic rights of citizens are essential. At the same time, the limits of restrictions on the economic rights of citizens represent the boundaries of legislative narrowing of their natural legal scope, determined by the interests of protecting the individual, society and the state. The measure and content of the limits of restrictions on the economic rights of citizens should be established on the basis of the following principles:

legality — the introduction of restrictions only by law;

the priority of individual rights and freedoms is the proportion of interests protected by restrictions with human rights and freedoms;

taking into account the nature of limited economic rights — taking into account the natural legal nature and the sphere of functioning of economic rights, the development needs of which require their restrictions;

justice — preventing the restriction of the economic rights of a minority from infringing on similar rights of the majority or more significant rights).

The disadvantages of the regulatory and legal consolidation of restrictions on the economic rights of citizens and activities to ensure their legality, validity and protection include the following:

declarative, interpretative legislative consolidation of the goals and limits of the restriction of economic rights of citizens;

excessive expansion of the content of the registration and licensing function of the state in the field of economic rights of citizens;

delegating a significant amount of functions to limit the economic rights of citizens to subordinate lawmaking;

The consistent activity

of judicial authorities is not always consistent in resolving issues of legality, validity and protection of restrictions on the economic rights of citizens.

The social essence of civil offenses is expressed in their public danger, which is an objective and subjective category that:

reflects the prevailing (prevailing) interests in society in the relevant civil law regulation of public relations;

it manifests itself in the behavior of subjects in the form

of causing harm or creating a threat to its infliction and personal non-property relations regulated by civil law;

receives legal mediation in the form of duties and responsibilities of participants in civil relations.

V. CONCLUSION/RECOMMENDATIONS

The legal essence of civil offenses consists in their illegality, which is an objective discrepancy between the behavior of subjects and the obligations of participants

in civil relations arising from the norms and principles of civil law, business practices and other commonly imposed requirements, requirements of good faith, justice and morality, agreements and unilateral transactions, acts of state bodies and local governments, judicial decisions, generally recognized principles and norms of international law, and international treaties of Russia.

If we use the theory of the multidimensional nature of objects of civil offenses, then they can be defined as spheres (social object) and legal means (legal object) of civil law regulation, as well as social benefits protected by civil law (actual object). In most cases, the establishment of social

and legal objects is a necessary law enforcement step in identifying the actual object in order to implement such measures of civil liability as compensation for damages, recovery of penalties, compensation for moral damage.

The analysis of the specifics of the objective and subjective sides of civil offenses makes it possible to identify their mandatory and optional elements. In particular, the objective side includes an illegal act that acts as a legal expression of public danger; property or moral damage caused to the object of the offense (or the threat of causing such harm); a causal relationship between the illegal act and harm (threat of harm). Actual (real) property damage can act as both a mandatory and optional element of the objective side of the composition of civil offenses.

The subjective side includes guilt in the form of intent or negligence, purpose and motive. Guilt is a mandatory element of civil offenses, and the purpose and motive are optional. The basis of the so-called innocent liability provided for by civil law is not an offense, but an objective infliction of harm, which is subject to compensation.

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Rezyume: *Maqola Rossiya fuqarolik huquqlari nazariyasining dolzarb muammolariga bag'ishlangan. Mualliflarning fikricha, zamonaviy huquqshunoslikning nazariy va uslubiy asoslarining zaifligi bilan ifodalangan fuqarolik huquqining umumiy nazariyasi yetarli darajada ishlab chiqilmaganligi bilan bog'liq masalalarni ko'rib chiqadilar.*

Резюме: *Статья посвящена актуальным проблемам теории гражданского права России. Авторы рассматривают вопросы, связанные с отсутствием достаточной разработанности общей теории гражданского права, что, по их мнению, выражается в слабости теоретико-методологической базы современной юридической науки.*

Kalit so'zlar: *nazariy va uslubiy asos, huquq dogmasi, fuqarolik huquqining umumiy nazariyasi, fuqarolik huquqi tizimi, huquqiy ta'riflarning huquqiy tabiati.*

Ключевые слова: *теоретико-методологические основы, догмат права, общая теория гражданского права, система гражданского права, юридическая природа правовых дефиниций.*