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## Ways for Increasing the Financial Competitiveness of Tourism Enterprises

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### ABSTRACT

The article discusses the role of innovations in increasing the financial competitiveness of tourism enterprises in the Republic of Uzbekistan, the practical significance of measures taken by the state to ensure the competitiveness of tourism enterprises in various crisis situations. Proposals and recommendations are based on the analysis of the potential of tourism enterprises in Uzbekistan and some foreign countries.

**KEYWORDS:** *innovation, innovative active enterprises, competitiveness, financial stability, tourism enterprise, tourism*

One of the main goals of tourism enterprises operating in Uzbekistan in a modern market economy is not only to increase the competitiveness of their products, but also to improve the process of their creation. However, this goal can be achieved only by tourism enterprises with a high level of innovation activity. One of the factors that can increase the financial competitiveness of tourism enterprises is the active and effective use of innovative production technologies that lead to the formation of scientific, technical, production, financial, social activities in the new institutional environment.

An indicator of the application of innovations in the enterprise is called innovation activity. Innovative activity is the creative activity (creative energy) of producers of goods or services, expressed in the process of achieving on-demand innovation growth in technical and technological, economic, organizational, managerial, social, psychological and other indicators of goods or services offered to the market in a competitive period should be understood. Innovative active enterprises are enterprises that produce and implement new or improved products, technological processes or other types of innovative activities. Innovation is understood as a factor in increasing competitiveness, as the end result of innovative activities carried out in the form of new or improved products.

Competitiveness assessment is a complex process, says A. Flit [1], covering a variety of elements, some of which are difficult or impossible to measure. Even the first stage of evaluation - identifying competitive factors - can be very problematic.

The tourism industry is one of the fastest growing, fastest growing industries and requires constant innovation at various levels. The financial and economic formation of each region depends directly on the innovative activity in its territory, the innovative potential of the region, which consists of a set of intellectual, material, technical, information, monetary and other resources used for its formation at any time. An important factor that necessitates the introduction of innovations in the field of tourism is that

the activities of tourism enterprises not only shape the tourism sector in the region, but also become a source of income for the region and lead to the development of many related sectors. Many countries create special national organizations to promote various innovations in tourism activities and understand that this is an innovative activity that is a key factor in economic growth.

Such organizations also exist in the United Kingdom, Spain, Poland and other countries, but the example of Finland, where the state organization of the Tourism Council was one of the first to use innovative information technologies in the development of tourism [2]. Since 2001, Finland has been promoting the national database as a service. This database contains files containing information about attractions, accommodation, events, trips and excursions, telephone numbers of tourist enterprises, etc. The introduced innovations led to the development of partnerships and opened up prospects for the widespread dissemination of their information across the world's tourist regions, and by the middle of the first decade of the new century, Finland had become one of Europe's most popular tourist destinations.

Currently, the recovery in tourism will not begin until there is an opportunity to successfully lift travel restrictions. According to the World Tourism Organization, as of May 29, 2020, travel restrictions are in place in all tourist destinations (217 tourist destinations in the world) due to the COVID-19 pandemic, while 75% of tourist destinations remain completely closed to international tourism [3].

Despite the best efforts of world leaders to find ways to minimize the economic impact of the COVID-19 pandemic, the tourism industry will not recover until the emergency caused by the spread of the coronavirus is brought under control to safely remove tourism restrictions. The longer the threat to public health and the crisis associated with it, the harder it is for businesses, especially small and medium-sized enterprises, which form a major part of the tourism ecosystem, to survive, and the more problems and challenges their workers face.

As a result, tourism-dependent businesses are finding it increasingly difficult to maintain their financial stability and feel the need for some support from the government to prevent mass closures and job losses. Such support may be based on existing measures, including preferential lending and deferred loan payments and tax compliance, and / or additional tools such as redistribution of forces and funds or liquidity support mentioned above. Finally, the creation of incentives for the development of domestic tourism can create the conditions for the resumption of tourism enterprises in the early stages, when international tourism is limited.

The decline in the tourism industry has serious consequences, as these services account for 30% of global exports and account for one in ten jobs worldwide. If we look at the latest figures released by the World Tourism and Tourism Council, which represents the global tourism industry, we are at risk of losing more than 100 million jobs in 2020 due to the decline in global inbound tourism.

According to the forecasts and targets of the Committee of Tourism Development of the Republic of Uzbekistan, the volume of tourism revenues this year, excluding the

pandemic, will reach \$ 1.53 billion. This means that the industry's direct damage from the pandemic is \$ 1.3 billion, and when combined with the multiplier effect, it is about \$ 3.5 billion[4].

Entrepreneurs who provide tourism services in Uzbekistan and contribute to the development of tourism, such as hotels, tour operators, as well as organizations that promote the introduction of ICT in tourism, receive tax and customs benefits. In fact, the most popular type of tourism in Uzbekistan is cultural and educational tourism.

**Table 1 Targets for the implementation of the concept of tourism development in the Republic of Uzbekistan in 2019-2025 [5]**

No	Name of indicators	2018	2019	2020	2021	2022	2023	2024	2025
1.	Number of foreign tourists visiting in Uzbekistan (thousand people)	5 346	6 041	7 010	8 410	10 010	10 600	11 250	11 810
2.	Export of tourism services (million US dollars)	1 041	1 180	1 360	1 620	1 900	2 000	2 080	2 170
3.	Number of domestic tourists (thousand trips)	15 493	16 100	17 230	18 806	20 317	21 867	23 404	25 010
4.	Hotels and similar accommodation (in units)	914	1 100	1 620	2 200	2 600	2 800	2 900	3 050
5.	Number of rooms in residential buildings (thousand)	20,2	24	35	47	55	59	62	64
6.	Number of residential buildings (thousand)	41	49	72	95	110	122	124	128
7.	Number of tour operators (units)	983	1 100	1 190	1 250	1 320	1 390	1 420	1 450

Note. According to the results of the implementation of state and regional programs of tourism development, changes can be made to the forecast indicators.

Implementation of the above measures ensures the harmonization of the domestic regulatory framework with international standards and norms, create favorable conditions for the development of tourism, efficient use of financial and economic resources to increase the role of this sector in the economy, including 951 million tourism exports \$ 2.2 billion dollars in 2025.

An analysis of the pricing policy of hotel rooms in the country shows a significant difference in the cost of living in different regions. In particular, if the cost of accommodation in non-star hotels in Syrdarya, Andijan regions, the Republic of Karakalpakstan is from 100-140 thousand (\$ 10.5-15) to 300 thousand UZS (\$ 32) per day, then in such tourist centers in Tashkent, Bukhara, Samarkand and Fergana regions - from 250-300 thousand (\$ 26-31) to 800 thousand UZS (\$ 85).

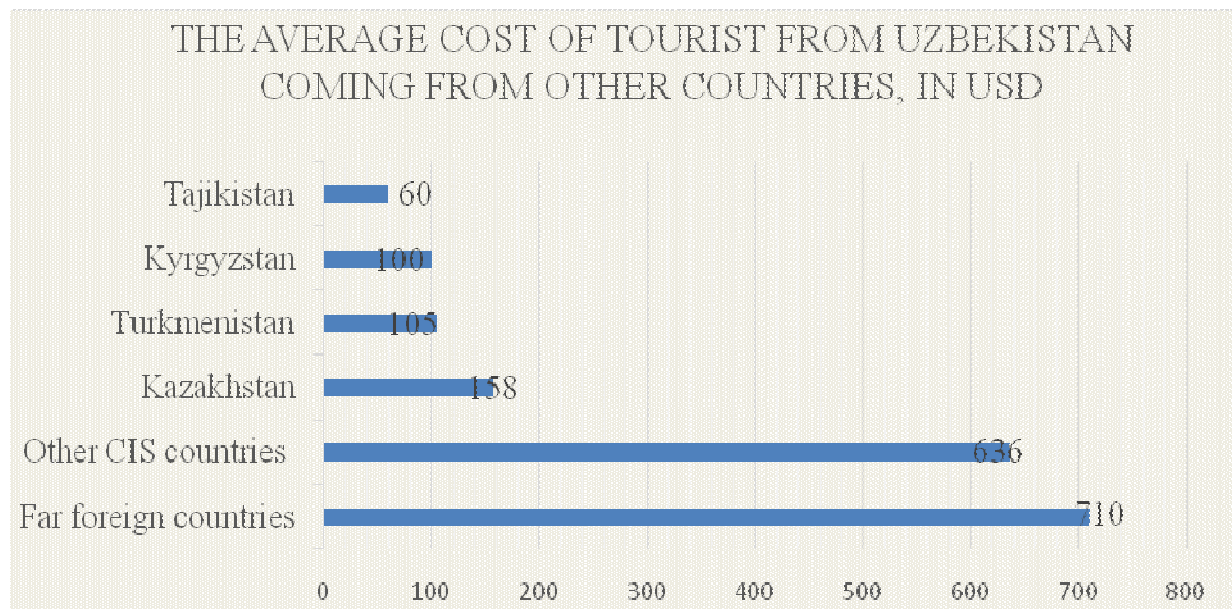
The situation with the cost of accommodation in family guest houses looks a little different. In particular, in Bukhara region, one of the main tourist centers of the country, the cost of living in family guest houses ranges from 40 thousand (\$ 4.2) to 70 thousand UZS (\$ 7.3), which is lower than in Surkhandarya region. 100 thousand UZS (\$ 10). At the same time, these prices are more than 160,000 UZS (\$ 17) in Kashkadarya and Samarkand regions. This is possible due to the large number of residential buildings in Bukhara region compared to other regions of the country (except Tashkent). For comparison, the number of residential buildings in Bukhara region is more than 2 times higher than in Khorezm region, and 25% higher than in Samarkand region [6].

As with the cost of hotel services, there is a significant difference between regions over the payback period for hotel industry costs.

Encouraging and supporting the increase in the number of hotels is one of the most pressing challenges facing the industry in the near future. It should be noted that the growth rate of tourism infrastructure facilities still lags behind the growth rate of incoming foreign tourists. Thus, if in 2018 the growth in the number of tourists was almost 100 percent, then the growth rate in the number of rooms did not exceed 9 percent.

The potential of the Republic of Uzbekistan in the development of tourism and its contribution to the economy is very large and the results achieved are insufficient. According to the State Statistics Committee, the share of tourism in the country's GDP is currently small – about 2 percent [7]. The number of enterprises engaged in tourism is about 400, most of which operate in Tashkent (73.4%), Samarkand (13.1%), Bukhara (4.5%) and Khorezm (1%). In other words, 92% of enterprises specializing in tourism services, as well as 93.1% of tourists visiting our country come mainly to these regions [8].

The average cost of one tourist is drastically different from that of another depending on the country of arrival. According to data released by the State Tourism Committee in early 2019, the average cost of tourists from Central Asian countries was \$ 60-160, while those from other countries were \$ 600-700 [4].



**Figure 1 The average cost of tourist from Uzbekistan coming from other counties, in USD\***

\*Based on data from the State Committee for Tourism Development of the Republic of Uzbekistan

In the future, we must not forget the need for investment to increase the "sustainability" and financial stability of tourism enterprises. If any crisis opens up new prospects, the COVID-19 pandemic could be a catalyst for tourism innovation and move towards sustainable solutions. Such solutions include investing in the digital transformation of the economy, improving the coordination of value chains in tourism in terms of environmental and financial competitiveness of tourist destinations. The problem of competitiveness of the region in the tourism market depends on the activities of both tourism enterprises and the positive impact of the city and district authorities on the factors that are important for tourists (conversion of resources into market supply, more benefits, more conveniences). As V.Shubaeva and N.Burova noted, "a comprehensive approach to the development of tourism in the region allows partners to coordinate their policies and actions, ..., to develop and implement activities that will help them compete in the struggle for consumers" [9].

Improving the competitiveness of tourism enterprises requires the development of a set of interrelated measures, and to assess the market situation requires a set of indicators that can be assessed by the competent authorities for the development of competition in the tourism sector of Uzbekistan. The extreme complexity of the set of indicators, the complex and costly processes of obtaining information can hinder the implementation of the standard of development of competition in regional tourism markets. In order to achieve real results in the development of tourism in a particular region, it is necessary to study new scientific developments and develop opportunities to apply them in practice, in their own areas. However, work on the introduction of innovations should be systematic. For effective work, dynamic development and competitiveness, tourism authorities, tourism market participants, tourism enterprises must develop and implement innovative strategies, identify key long-term directions for innovation and provide resources to achieve goals, ie prepare an innovative project.

Summarizing the above, it should be noted that tourism enterprises need to develop an innovation strategy depending on the position they occupy in the market, the

specialization of the activity, the competitive advantages that can be provided by its innovative potential. In this case, the new thing will certainly bear fruit, not only for the subject of the tourism market, but also for the region in which it operates and the tourists who visit this area.

Improving the simplicity and convenience of services for tourists is a key priority of tourism enterprises. Against the background of the rapid development of modern innovative technologies, it is one of the most universal types of tourism business with a multifunctional segmentation of its activities, where innovations are quickly and financially offset. Healthy competition is a necessary condition for success in any business. Tourism as the most versatile and demanding sector of the economy requires renewal using modern innovative technologies, approaches, methods, which not only ensure the competitiveness of tourism enterprises, but also the stability of their operations. Innovations in tourism enterprises are based on the novelty of services, increasing the efficiency of their production, economic and social efficiency.

The application of innovations in the field of tourism is aimed at the formation of new tourism products, the provision of unique tourism services, the application of new marketing approaches using the latest technologies and IT technologies, which increases the competitiveness of tourism products in national and international markets.

For the successful implementation of the set tasks, it is practically impossible to invest in the innovative activity of tourism enterprises, to create a modern high-tech infrastructure capable of integrating with tourism enterprises of different countries, to modernize and radically restart science with further commercialization of scientific results.

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## Important Steps towards the Development of Our National Heritage - “Wrestling”

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### ABSTRACT

During the former Soviet era, not enough attention was paid to our national struggles and their development, which were part of our national and cultural heritage. On the contrary, instead of preserving it, it has been used for planned purposes. As a result, the centuries-old forms of national wrestling have been shortened, and two of them have survived to the present day. But since independence, as in other areas, important steps have been taken to develop the struggle, which is our national heritage. This article addresses this issue.

**KEYWORDS:** *Greek wrestling, freestyle wrestling, judo, sambo, Uzbek wrestling, belt wrestling, International Wrestling Association and others*

According to the established rule, a one-on-one fight between two athletes is a *wrestling*. The art of wrestling has been known in many nations since ancient times. Wrestling was especially popular in Greece and was a regular feature of the ancient Olympic Games. Various forms of national wrestling exist in Greece, Italy, Japan, Turkey, Iran, Afghanistan, Russia, Uzbekistan, Georgia, Armenia, Azerbaijan, Kazakhstan and a number of other countries. The basic rules of modern sports wrestling were developed in several European countries in the late 18th - early 19th centuries. Historically, the International Amateur Wrestling Federation (IAWF) (it now has 144 member countries, of which Uzbekistan has been a member since 1993) was founded in 1912.

Greek wrestling, freestyle wrestling, judo, sambo and other types of wrestling are widespread in the international arena. In recent years, Uzbek wrestling has also gained worldwide recognition as a separate type of wrestling. Wrestling is one of the means of educating a person to be strong, agile, resilient and strong-willed. Wrestling is allowed from 12 olds according to doctors' advises. Archaeological finds and historical manuscripts confirm that wrestling has long been an integral part of the Uzbek way of life. A cylindrical pottery from the Bronze Age found in ancient Bactria, southern Uzbekistan, depicts two wrestlers, one of whom is playing the other. Another archeological find from the same period shows wrestlers wrestling. These unique findings indicate that wrestling was a part of the way of life of our ancestors even 1.5 thousand years ago.

According to Greek and other historians, in ancient times the daughters chose the groom by fighting with the boys. Later, the girls tried the groom in a wrestling match to test his bravery and courage. The conditions of Barchin in Alpomish, one of the Uzbek folk heroic epics, are a clear example of this. Also, Mahmud Kashgari's "Devonulug'oitturk", Alisher Navoi's "Xamsa", "HolotiPahlavon Muhammad", ZayniddinWasifi's "Badoe' ul-vaqoe", Hussein VoizKashifi's

"Futuvvatnomaisultoniy", Zahiriddin Muhammad Babur's "Boburnoma" those who have wrote facts about wrestling. In the 9th and 16th centuries, wrestling was a popular sport among the people because of invaluable work of Pakhlavon Mahmud and Sadiq Polvon, who lived in that period.

There is also a type of Uzbek people's individual wrestling called belt wrestling. There are many archeological finds and historical manuscripts related to it. A statue found 5,000 years ago in ancient Mesopotamia depicts wrestlers competing in belt wrestling. It should be noted that during the Soviet era, attempts were made to artificially squeeze the Uzbek national wrestling (kurash) out of the people's way of life. By the end of the 1990s, these attempts were thwarted. In 1991, KomilYusupov, a member of the wrestling dynasty and an international master of sports in several types of wrestling, developed the following rules of Uzbek wrestling (kurash) in accordance with international standards: Wrestlers compete in a 14 x 14 m to 16 x 16 m stand on a blue-green wrestling (kurash) rug with a red "danger line" at the edge.



The winner is determined by the methods used and the evaluation of their behavior on the field. It is not allowed to use suffocating or painful methods in wrestling.

One of the wrestlers wears a blue jacket, the other a green jacket (women wear a white T-shirt inside the jacket), a belt 4-5 cm wide is tied, men: 60, 66, 73, 81, 90, 100 kg and over 100 kg, women: 48, 52, 57, 63, 70, 78, and over 78 kg.

The International Congress of the International Wrestling Association (IWA) in Tashkent in 2003 set the official

competition time at 3 minutes for each match to be intense. According to the methods used, they were assessed as “chala”, “yonbosh”, “halol”, and those who violated the rules were punished with “tanbeh”, “dakki”, and “g’irrom”. If a wrestler receives an “halol” rating (or his opponent is punished with a “g’irrom”), it means that he has won. Getting a “yonbosh” rating twice (or being punished twice as a “dakki”) also means victory. “Chala” grades are taken into account, and so on. In the event of a tie, the wrestler with the last score wins, the wrestler with the same number of points and penalties wins, if the number of penalties is equal, the last wrestler loses, and if all are equal (or no penalty), the winner is announced by a majority vote.

After independence, the Wrestling (kurash) Federation was established in Uzbekistan in 1992, and the Belt Wrestling Federation in Uzbekistan in 2001. In 1998, representatives of 28 countries (USA, Bolivia, Great Britain, the Netherlands, Russia, Uzbekistan, Japan, etc.) became the founders of the International Wrestling (Kurash) Association (IKA) in Tashkent, which hosted a major international Uzbek Wrestling competition.

The Decree of the President of the Republic of Uzbekistan “On Support of the International Wrestling Association” (February 1, 1999) gave impetus to the further development of the Uzbek national wrestling. In the same year, the first World Uzbek Wrestling Championship was held in Tashkent, and an international women's competition was held in Bryansk, Russia. The International Wrestling Academy and the World Wrestling Development Fund were established under the International Kurash Association. “Kurash” magazine was established under the auspices of the association. Literary-artistic, social-publicist, information-advertising magazine has been published in Tashkent since October 1999.

In 2000, the month of Wrestling was held in Uzbekistan. During this month, about 2 million people came to the wrestling carpet. The traditional international competition named after the Honorary President of (IKA) Islam Karimov has been established in Great Britain. In 2001, the International Wrestling Institute (Tashkent) was established. The IKA has 66 national federations (2003).

Currently, Uzbek Wrestling is practiced by more than 600,000 people abroad. World, continental and national championships in this type of wrestling, as well as many international competitions dedicated to the memory of al-Termizi, Pahlavon Mahmud and many others are held in Uzbekistan.

In 2010, the International Wrestling Association was recognized by the World Anti-Doping Agency, which was an important requirement when applying for inclusion in the Olympic program. At the 36th General Assembly of the Olympic Council of Asia on September 20, 2017, wrestling was introduced for the first time in history as a separate sport in the program of the XVIII Summer Asian Games in Indonesia in 2018 and in China in 2022 year, 2026 - included in the program of the Summer Asian Games in Japan. Our wrestlers have won prizes at international wrestling events and have been defending the country's reputation. In particular, in 2019, Uzbek athletes won 1,231 medals at international sports events, including 378 gold, 402 silver and 451 bronze medals. At the same time, wrestlers have won a total of 73 gold medals at international sporting events, including 37 gold medals, which is 10 percent of the

gold medals won by athletes across the country in the previous year.

The above figures are certainly gratifying, but at the same time, some of the existing shortcomings hinder the further development of the struggle, in particular:

- First, the work on popularization of the national sport “Kurash”, especially among minors and young people, in order to strengthen the sense of national pride and patriotism of the younger generation does not meet modern requirements;
- Secondly, there is no integrated system of clubs that allows to identify and select talented wrestlers in this sport and their training, as well as the introduction of effective mechanisms for training coaches and referees;
- Thirdly, the lack of the necessary material and technical base and sports infrastructure in some districts and rural areas, the lack of development of sports equipment hinders the organization of training of athletes at the required level and the holding of international wrestling competitions is doing.

On November 4, 2020, the President of the Republic of Uzbekistan ShavkatMirziyoyev issued a “Decree on measures to develop the national sport of Wrestling and further enhance its international prestige”. According to it: “To pass on the rich traditions and values of wrestling inherited from our great ancestors to future generations, to increase the role of wrestling in the world arena under the name of the Uzbek sports brand, to support the interest of young people in national sports to further strengthen their sense of patriotism, to create the necessary conditions for all segments of the population, especially young people, as well as the peoples of the world to engage in this sport” were identified as key tasks.

In short, a number of measures have been taken to popularize, develop and introduce to the world our ancient sport of wrestling, which embodies our ancient values, in particular, the ideas of courage, bravery, patriotism and humanism, and to turn this value into a world masterpiece. At the same time, the growing popularity of wrestling leads to the organization of prestigious international competitions, modernization of existing infrastructure and logistics, and requires further attention improving the supply of sports equipment and clothing, expanding production in this area, as well as training qualified personnel, coaches and referees.

The main goal of the adopted concept of wrestling is: “The official introduction of wrestling in the European, African and Pan American continental games, the recognition of the International Olympic Committee through the recognition of the international organization GAISF (Global Association of International Sports Federations) and to create all the necessary conditions for its inclusion in the program of the International Olympic Games until 2028”.

In addition, according to the concept, the following are the priorities for further popularization and development of wrestling in Uzbekistan until 2025:

- Wide involvement of all segments of the population in wrestling, making wrestling a national sport in Uzbekistan;
- The formation of the necessary material and technical base and infrastructure for the wrestling.
- The gradual introduction of wrestling and martial arts as priority sports in the physical training of the Armed Forces and law enforcement agencies.

- training of professional wrestling coaches, referees, development of teaching aids, strengthening the scientific and methodological base of wrestling.
- To create a brand of Uzbek wrestling, to produce individual sportswear and wrestling carpets with investment, to take measures to commercialize wrestling.
- Promoting the wrestling among the population, including through the media.

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# The Role of Education and Sustainable Tourism in Achieving Cost Effectiveness during a Pandemic

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## ABSTRACT

The article highlights the importance of sustainable development and sustainable tourism, their economic, social and environmental aspects, and analyzes their role in achieving economic efficiency. In addition, the level of study of sustainable tourism in terms of the area and their problems are illuminated. The most developed countries widely implement educational programs in the field of tourism. These programs cover virtually all levels - from high school to university and virtually all prism sectors. The initial programs are focused on the hospitality sector, whose educational function is aimed at those who intend to work in the catering or leisure sector. In addition, the STEP and TEDQUAL training standards in the development of the Sustainable Tourism Program of the World Tourism Organization, which is being implemented within the framework of the UN program are extensively introduced. Its activities over the past decades and more have mainly been aimed at supporting the development of tourism education worldwide. This has been accomplished in a variety of ways. Sustainable tourism in Uzbekistan during the pandemic and its impact on economic efficiency and education and sustainable tourism has proven to be the best way out of this global epidemic without an economic crisis.

**KEYWORDS:** *tourism, sustainable tourism, educational programs, United Nations World Tourism Organization, Education and Science Council, Education Quality, STEP and TEDQUAL standards, Environmental issue*

## INTRODUCTION

Sustainable tourism is the concept of visiting a place as a tourist and positively impacting the environment, society, and economy. Tourism can include primary transportation to a familiar location, local transportation, accommodation, entertainment, recreation, food, and shopping. It can travel for leisure, business and the so-called VFR (visiting friends and relatives). There is now a broad consensus that tourism development must be sustainable; however, how to achieve this remains a matter of debate.

"Sustainable development (1993) (English sustainable development - supported development) - such a development of society, which improves human living conditions, and the impact on the environment remain within the economic capacity of the biosphere so that the natural basis of human functioning is not destroyed". The concept of sustainable development considers humanity's long-term progress, which is accompanied by an improvement in human life's economic component and

improved environmental conditions. The concept of sustainable development has three key indicators - economic, social, environmental. It is essential to improve people's quality of life connected to economic growth, taking into account the environmental component.

Thus, the following definition of sustainable tourism can be given. Sustainable tourism is a non-fluctuating set of relationships and phenomena resulting from travel and stay in a country (region) of persons who do not live and work there. Sustainable tourism - temporary departures (travel) of citizens of Uzbekistan, foreign citizens and stateless persons (in the future referred to as persons) from their permanent place of residence for medical, recreational, recreational, educational, physical culture, professional, business, religious and other purposes without engaging in activities associated with receiving income from sources in the country (place) of temporary residence, not subject to fluctuations. Sustainable tourism is temporary departures of citizens with various travel purposes, which achieve a balance of economic, social, and environmental conditions. It takes into account the social and cultural characteristics of the host country, tourists. By definition of E.M. Maksarova (1996), "Sustainable tourism is a type of tourism that ensures optimal use of environmental resources, supports the socio-cultural characteristics of host communities, ensures the viability of long-term economic processes, taking into account their benefits for all stakeholders". She also gives the following definition of sustainable tourism development: "sustainable tourism development is such a long-term tourism development, in which a balance is achieved in the implementation of economic, environmental, social and cultural development goals, the interests of all interested parties (tourists, receiving and guiding destinations, local population), based on the rational use of tourist resources and comprehensive partnership".

## Literature Review

Foreign scientists: David Airy, Gianna Moscardini, Jackie Delhi, I. S. Viktorovich, A. Saufi, D. O'Brien, H. Wilkins, I. P. Henry, G. A. M. Jackson, J. N. Nilsson, S. Gossings, and M. Jacobs have done a great deal of research on the importance of education in the development of sustainable tourism.

## The main part of the research works

Sustainable tourism is a type of tourism that meets society's needs, preserves what has been achieved, and increases future opportunities. A very important component is stability, constancy. It is important not only to preserve what has been achieved in economic terms in tourism but also to

develop a constant stable movement forward, tourism development, and all society's socio-economic needs. Tourism is one of the few sectors of the economy that, despite crises, political situations, and the fact that specific vectors of development are continually changing, maintain a surprisingly balanced development growth. Tourism is developing steadily, increasing annually from 3.5 to 4 percent per year. Sustainable tourism development is a stable change in a given industry, transitioning from one quality state to another. From year to year, the requirements of travelling people change, new types of tourism appear, new forms of travel appear, travel companies and hotels are changing, technological innovations are being actively introduced into life, which radically changes companies' organizational processes. Tourism is a branch of the economy that pays great attention to the sustainable development of the world; it is such an industry that aims to preserve peace in the world.

The World Tourism Organization has designated 2017 as the Year of Sustainable Tourism for Development. U.N. Secretary-General Ban Ki-moon stated: "Harnessing the tremendous benefits of tourism will be critical to achieving sustainable development goals and the post-2015 development agenda." The main goal of the Year of Sustainable Tourism is to explore and highlight the potential that tourism has to transform the world into an area of shared prosperity and well-being. In accordance with this goal, much work appears to study the world's tourism potential, develop mechanisms for its use in economic activity, its competent involvement and use from ecology and cultural heritage preservation. Tourism not only can, but tourism constantly stimulates economic growth and the economy's related sectors, approximately 53 sectors. Tourism contributes to the growth of new jobs.

Currently, every eleventh job in the world belongs to the tourism industry, every seventh and related sector of the economy. Due to the growth of tourist arrivals, the development of tourism in new tourist destinations, and new facilities' construction, holding significant events globally, the industry's growth is continually increasing. It is also important to note that tourism helps people in many countries avoid poverty and improve their well-being. Tourism should be seen as a factor that contributes to gender equality. A huge role is assigned to tourism as a sector that influences ecosystems and biodiversity contributes to protecting natural and cultural heritage. The International Year 2017 has been expected to raise awareness among the public and decision-makers of sustainable tourism's contribution to development while mobilizing all stakeholders to work together to turn tourism into a catalyst for change. The Year of Sustainable Tourism has encouraged changes in policies, business practices, and consumer behaviour to make the tourism sector more sustainable.

In tourism development, it is planned to highlight the role of tourism in five key areas: inclusive and sustainable economic growth; social inclusion, employment and poverty reduction; efficient use of resources, environmental protection and climate change processes; cultural values, diversity, cultural heritage, mutual understanding and security.

To fulfil tasks of strengthening the role of tourism in the above areas, it is necessary to carry out the following activities: to inform and educate to raise public awareness; to develop tourism policies; to build capacity in education. In

outreach activities, it is important to conduct a series of activities to promote sustainable tourism as a development tool. It is important to define the terminology, to show the role of sustainable tourism, the role in the economy of sustainable development. Important indicators of sustainable development are the following: aspects of social, environmental, economic development, on the one hand, and, on the other hand, the construction of integral indices, which can be used to judge the development of a region or country as a whole. Indicators of sustainable development are indicators that make it possible to judge the state of change in the economy, social sphere and ecology. Some variables are distinguished that can assess the indicators of the development of a situation, event, region. There is a system of eco-indicators for the organization of economic cooperation and development in the world. There is also a system of U.N. sustainable development indicators.

The system of environmental-economic accounting was proposed by the Statistics Division of the U.N. Secretariat in 1993. The World Bank (2008) proposed the "true savings" indicator. The General Progress Indicator is also used - a generalized indicator that replaces GDP as an integral measure. For the world to understand the role of sustainable tourism, it is important to generate new knowledge, knowledge in sustainable tourism, disseminate such knowledge, and hold conferences. Workshops, research dedicated to sustainable tourism creates interdisciplinary platforms.

### **Tourism Education: Challenges for the 21st Century and the Role of UNWTO**

At present, after more than 40 years of development, most developed countries are widely implementing educational programs in the field of tourism. These programs cover virtually all levels - from secondary schools to universities and virtually all prism sectors. The initial programs are focused on the hospitality sector, the educational function aimed at those who intend to work in the restaurant service or leisure activities. They have now been joined by programs that deal with other tourism elements, from voucher trading to attracting visitors. The latest innovation is special events programs, ranging from global events such as the Olympic Games to smaller events such as weddings and anniversaries to educate those wishing to work in the sector. The tourism industry is considered the world's largest employer and is likely to continue to grow and is currently supported by a comprehensive education program.

The development of these educational programs is important for two key reasons. First, it provides a source of educated and skilled workers, which is now an important component of many countries' economies. Quantity, more importantly, the workforce's quality, is often a determining factor in the success of tourism services, both in terms of customer satisfaction and the efficiency of delivery. The tourism business's success depends mostly on the relationship between customers and first-line service personnel, whether it is a restaurant, theme park or airport, and employees' ability to act quickly and efficiently.

There is, however, another critical component that should be introduced into educational programs in the field of tourism - a broader understanding of the nature, influence and impact on its tourism. As an activity, tourism can bring both benefits and losses to the community - the environment, the way of life, the economy, even during a global pandemic. Its

long-term success depends in part on how we deal with tourism-related issues. If we ignore them, tourism will not be able to remain sustainable. In this sense, tourism education is also essential, ensuring that those who make decisions about its future are aware of their role as stewards of the world's scarce resources. At this stage, the state plays an essential role in the life of tourism and education.

Summarising these two factors, we can say that the combination of the need for highly educated and qualified personnel who can quickly and effectively meet the requirements of clients with the need for people who know what their decisions will make long-term consequences will create a curriculum structure for educational programs in the field of tourism. This applies equally to educational programs for executive guides or travel agency managers or those who intend to start their own business. Everyone involved in this challenging field needs appropriate qualifications and education to gain an edge over competitors and maintain the long-term sustainability of tourism in general. So far, tourism education programs have been generally successful in focusing on providing knowledge and skills to succeed in a competitive environment.

It may come as no surprise to anyone that countries with well-developed tourism sectors are leading the way in tourism education, and it is in these countries, programs are being implemented everywhere, from schools to university doctoral studies. However, developing countries are also rapidly adopting tourism programs to support their nascent tourism activities. All developing countries are creating organizations that provide high-quality education in tourism, but at the same time, there are many regions where such programs are still not available, which represents a real limitation for countries in these regions in their attempts to use tourism to combat poverty. Therefore, there is an additional challenge for developing countries to meet their aspirations, ensuring access to high-quality tourism education.

#### **STEP and TEDQUAL teaching standards in the development of sustainable tourism**

The introduction of Education for Sustainable Development and support for developing countries to create their tourism to combat poverty are two critical areas of UNWTO's work. These destinations were the Organization's agenda and initiatives' main elements to help the tourism sector overcome the global recession. A striking example of this is the STEP (Sustainable Tourism and Poverty Alleviation) Program of the World Tourism Organization, which is being implemented as part of the U.N. Mission to develop the new millennium's poorest countries.

Somewhat unusual for the U.N. family is that the World Tourism Organization has affiliated members and full (fully state) members. These affiliated members have introduced three different types of bodies to the Organization, each of which is vital to tourism's successful development. First, they are members of the tourism business community, including private sector companies and their representative organizations. Secondly, there are many tour operators, such as tourist offices and congress offices. Thirdly, these are educational organizations that provide knowledge in tourism - universities, colleges, and schools worldwide. These three groups constitute the Council of Affiliated Members of the UNWTO and have their councils, the Council for Education and Science (EdSCo).

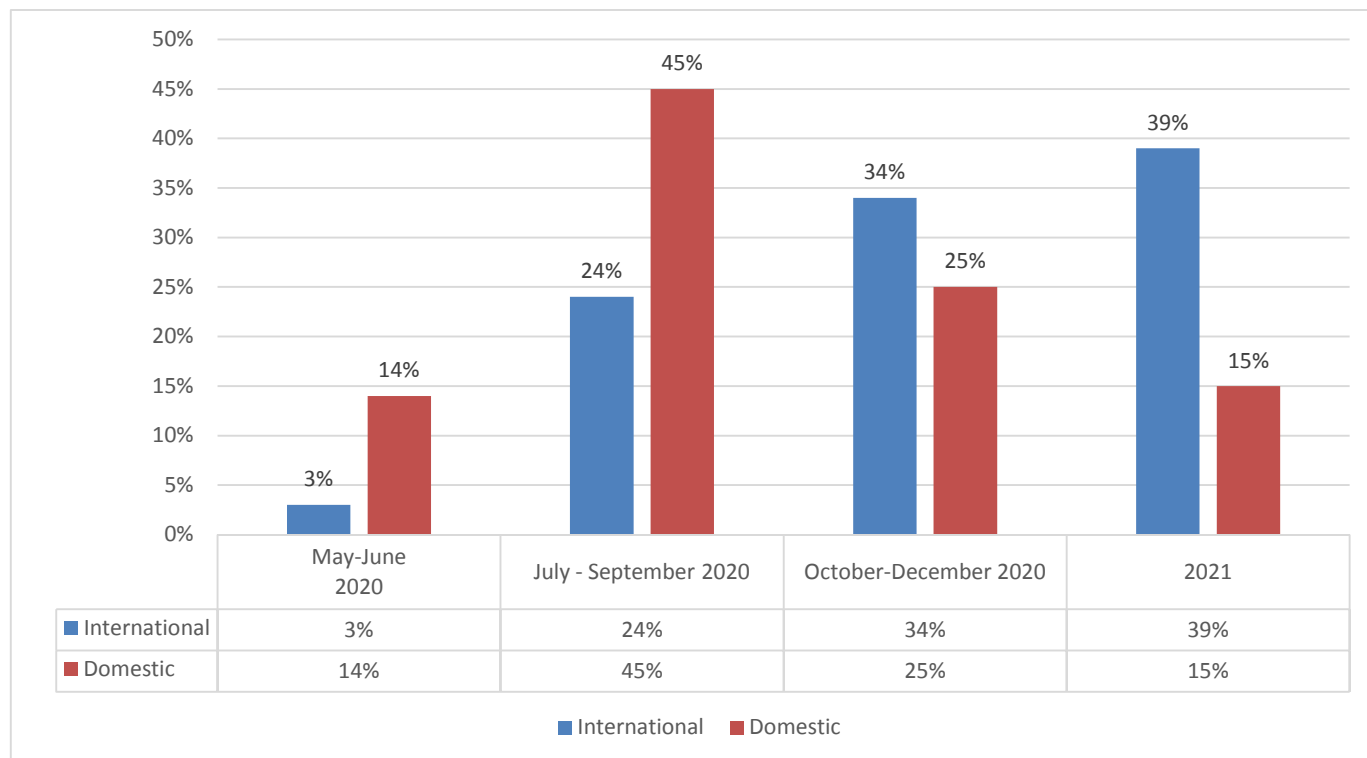
It is bearing in mind the above challenges for tourism education and the World Tourism Organization's broad objectives concerning poverty alleviation. The Council for Education and Science is at the forefront of helping to meet these challenges. Over the past decades or more, its activities have mostly focused on supporting the development of tourism education worldwide. This has been achieved in a variety of ways. Through its Quality Tourism Education Initiative (TEDQUAL), it has been able to improve the quality of education and ensure that it meets the needs of the tourism industry; as part of its patronage program, the Council provided support to universities in developing countries; through its training programs run by the UNWTO, he has offered highly qualified expertise to officials around the world and through his periodic conferences he has brought together educators from many countries to discuss a range of issues such as climate change good governance and sustainability. The Council for Education and Research is also planning curriculum activities to ensure that the tourism sector XXI meets clients' needs.

#### **Sustainable tourism in Uzbekistan during the pandemic**

Uzbekistan and its tourism industry have also fully felt the negative impact of the pandemic. Since the quarantine's announcement, more than 1,500 tour operators and 1,200 hotels have suspended their activities, which has led to a decrease in income for more than 250 thousand people. The government took a number of priority measures to support the industry. In particular, 1,750 business entities used the exemption from property and land taxes, which allowed them to avoid spending 60 billion souls.

UNWTO(2020) experts concluded that domestic tourism demand would recover much faster than international demand connected with the continuing restrictions on international travel in many countries. The analysis showed that, despite the continuing uncertainty in the fight against the spread of coronavirus. Domestic tourism can buffer the tourism industry.



**Diagram №1 Experts answer the question, "When will the tourist demand for your destination begin to recover?"****Source: UNWTO – 2020**

Taking into account the WTO recommendations on the restoration of tourism, on May 28, 2020, the Decree of the President of the Republic of Uzbekistan "On urgent measures to support the tourism sector to reduce the negative impact of the coronavirus pandemic" was adopted, in which the priority is the resumption of domestic tourism in the regions of the Republic from June 1, 2020, with a stable sanitary and epidemiological situation and with strict adherence to all sanitary standards. The same document adopted a package of measures to stimulate the early recovery of the industry, including, among other things, additional tax benefits and preferences, prolongation of the principal debt on previously issued loans and the provision of targeted interest-free loans, subsidies for start-ups and innovative tourism products. According to Abdukhakimov A., the head of the State Committee for Tourism, these measures should ensure the export of tourism services for more than 450 million U.S. dollars.

**Table №1 Indicators of the development of domestic tourism in Uzbekistan**

Index	2017	2018	2019
Estimated number of households, thousand units	6321	6565,8	6742,6
Of them made trips within the country	4463,8	4737,5	5972,3
They carried out trips, thousand trips	106814,4	119094,1	108517,4
overnight stay	24550	28982,5	12920
with in a day	82264,4	90111,6	95597

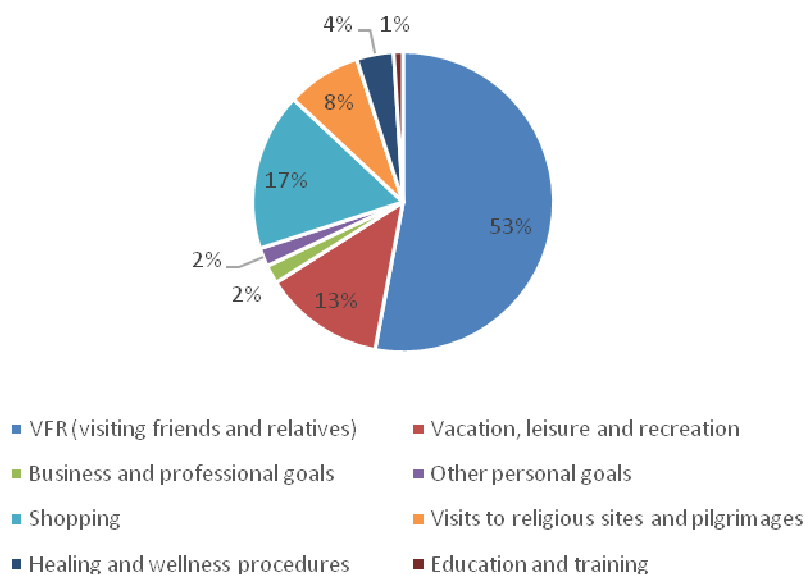
**Source: Compiled by the author based on the data of the State Statistics Committee**

An analysis of domestic tourism development in Uzbekistan showed that although this direction of the industry recently began to develop relatively, before the pandemic, it experienced stable growth.

However, in 2019, the number of trips within the country decreased by 9%, and the decline was due to a decrease in the number of overnight trips by more than two times, while trips without an overnight stay increased by 6%. In our opinion, the reasons for this decline could be the discrepancy between the price and quality of the provided accommodation services and the change in travel goals.

In 2019, the priority goals of travel within Uzbekistan were visiting friends and relatives, making purchases. Therefore, for the further development of domestic tourism, it is necessary to increase travel attractiveness, which is vacation, leisure, and visits to religious sites. After all, it brings the highest income to the industry.



**Diagram №2****Structure of trips within the country by mudflows in 2019**

**Source: Compiled by the author based on the data of the State Statistics Committee**

At the same time, given the pandemic's current situation, it is necessary not only to develop topical tourist destinations but also to create safe conditions for internal and external tourism. For this purpose, the Uzbekistan project "Safe travel guaranteed" has been developed in the Republic. The project is a new system of sanitary and epidemiological safety for tourists based on world standards. Certification of tourism facilities and related infrastructure, tourism services based on new sanitary and hygienic requirements will be mandatory for:

- all-state border points;
- air, railway and bus stations;
- objects of material cultural heritage, museums, theatres and others.

At the same time, the State Committee for Tourism, together with the Ministry of Health, form and will supplement the "register of safe objects", based on which tour operators will form tourist routes. Certification of business entities (catering services, accommodation facilities, transport services and others) is voluntary. An important part of this project will be training and advanced training of tour operators, tourism facilities, and related infrastructure personnel. A working group will also be organized with public organizations' participation for the widespread monitoring of compliance with sanitary and hygienic requirements for safe services.

The introduction of this system will make it possible to start the industry's resuscitation with domestic tourism as safely as possible. However, one should not adhere to optimistic forecasts that the domestic tourist flow demonstrated growth in March-April next year. It is primarily due to a decrease in most of the population's purchasing power during the quarantine. However, provided that the situation with the pandemic stabilizes and an adequate system of economic measures to eliminate its consequences, including if it is possible to achieve maximum preservation of jobs, by August, in our opinion, an increase in the number of domestic tourists can be expected. Many factors will contribute to this.

Rest is one of the basic human needs. Considering the rather psychological severe stress of the last half of the year, for most people, vacation, at least short (3-5 days), is merely vital, and this is an additional opportunity for expanding domestic tourism.

Security is a crucial factor in developing any type of tourism, and in today's situation, its relevance is difficult to overestimate. In Uzbekistan, throughout the entire quarantine, the situation was relatively controlled, and the statistics were more than stable, compared to other countries, in which the number of deaths was the same as the number of all infected people in the Republic, and sometimes even more. Therefore, most likely, the bulk of the population will prefer to travel around the country.

The cost of recreation is another distinct advantage of domestic tourism. Resting inside the country is safer and cheaper, which can become a determining factor in deciding on a vacation in the context of an economic downturn.

### **Conclusion and Suggestions**

In summary, Uzbekistan's tourism business needs to rethink its existing business models through innovation and digitalization radically. In our opinion, it is necessary to develop such market segments as rural and nature tourism, the potential of which is just beginning to unfold. The domestic tourism industry's activity and comprehensive support from the state will contribute to the expansion of sustainable domestic tourism in Uzbekistan, despite the emerging and still forthcoming difficulties in the restoration of the entire industry.

Achieving sustainable tourism in Uzbekistan during a pandemic through education, the foreign experience will bring many economic benefits. This work can be done in 3 steps:

- At the first stage, the development of sustainable tourism through the use of available qualified personnel. At the same time, the establishment of free and large-scale democratic competition among employees of tourism enterprises and organizations; (Organization of

various competitions and master classes among the staff to restore the flow of tourists);

- At the second stage, the creation of the calculation of preferential loans for students for travel; (Development of sustainable tourism through domestic tourism: development of credit programs covering 80% of trips for at least one year);
- At the third stage, it is necessary to determine educational tourism based on the ability to pay off international students, arrange for some international students contractual payments with a 50%, 40% and 30% discount.

The above processes serve as social assistance from the state to restore the population's income and health in the current pandemic. This situation also contributes to economic investment by the state in the event of a severe crisis.

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# Household Finance and its Effective Organization of Financial Resources

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## ABSTRACT

This article provides information on the effective organization of household finance, its main functions, the balance of income and expenses. The article also examines the composition of household financial resources and its important aspects.

**KEYWORDS:** household, family, household finance, function of household finance, household income and spending, financial resources of households and etc

One of the integral parts of the public financial system is undoubtedly the household system. It is known that in a system of market relations, the financial importance of a household is determined by what it is used for economically. Clearly, on the one hand, households are private owners of factors of production (labor, land, capital, entrepreneurial ability, etc.) and form their own sources of income on the same basis, on the other hand, households consumer goods and services in the economy emerges as buyers and on this basis determines market demand. At the same time, households accumulate a portion of society's gross income, participate in the creation of financial reserves through the purchase of real and financial assets, and also play a key role in the formation of centralized financial funds of the state through tax payments.

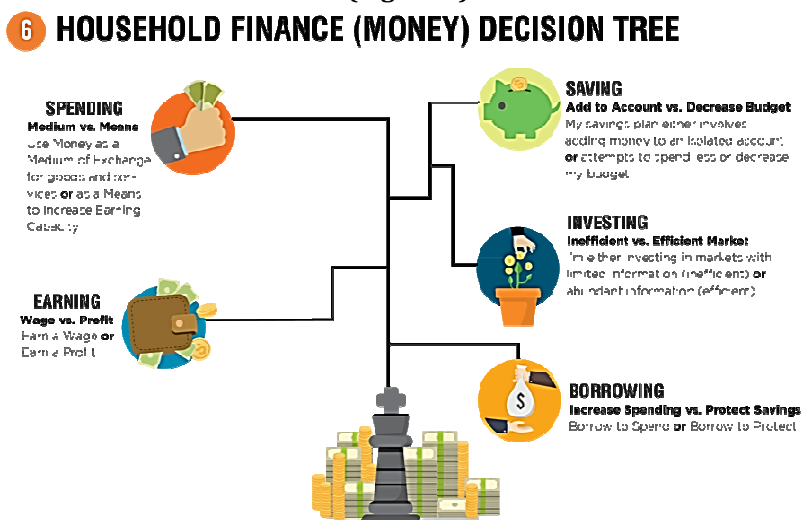
Typically, the term "household" is used in national statistics to refer to an institutional unit consisting of a population or a group of citizens. According to the modern international standard of the *System of National Accounts (SNA)* recommended by the *United Nations (UN)*, "households - a small group of people who live together in a single living space (area), fully or partially transfer their income and wealth to the common fund, and consume certain goods and services, especially housing and consumer goods, in general".

In some cases, the Uzbek economic literature allows the term "household" to be replaced by the term "household" or "family". Accordingly, the terms "household finance" and "family finance" are used interchangeably or as synonyms instead of "household finance". However, the concept of "family" or "household" is different from the concept of "household". First of all, it should be noted that the level of accuracy of the "household" is less clear than the concept of "family". For example, an elderly parent who lives in a place or in a house which belongs to their son cannot be a family member, even if they are members of the household. Similarly, a student who rents a room is part of the landlord's household, but cannot be part of his or her family, and so on. In other words, the household may include non-relatives or may consist of one person.

Summarizing the above, it can be said that households are one of the main actors in economic activity, as the outcome of this activity affects the well-being of not only one family, but the entire population of the country. A household is a household that is run by one or more people who live together and have a common budget. Depending on the type of activity, households perform both production and non-production functions. The former involves engaging in some kind of business activity, while the latter involves engaging in a variety of securities, banking, or leasing transactions.

Every business or organization has its own finances, that is, a system that regulates the movement of cash. Similarly, households have their own finances. Household finance is one of the most important elements of the financial system. As an economic category, it consists of a set of economic relations related to the formation, distribution and use of funds in households for consumption purposes and savings. Therefore, household finance consists of a set of activities. These include: spending, savings (or investments), earnings and borrowings. (Figure 1)

(Figure 1)





Based on the above, *household finance can be defined as follows: a set of economic (financial) relations related to the formation, distribution and use of funds for household consumption and savings in households called household finance*. Some economic literature defines household finance as an expression of the economic monetary relationship that arises from the formation and use of a cash fund to provide for the material and social well-being of household members. It is also generally accepted in the economic sciences that relations that occur uniformly and continuously in a particular field of socio-economic activity constitute the content of an independent economic category. Here we are talking about the socio-economic content of the category of "household finance". With this in mind, the definition of household finance can be defined as follows: in the course of their socio-economic activities, households and their individual members are involved in the formation, distribution and use of funds. The set of incoming monetary relations is called household finance. In our opinion, household finance is a set of activities related to the purpose for which the members of the household use the money they have for their livelihood. Household finance also has several functions:

- *The function of providing for the vital needs of the family*
- *Distribution function*

The first function of household finances is to create the conditions for family members to live. The development of market relations has a direct impact on the manifestation of this function. In a subsistence farm, the products created by the members of the household are mainly intended to meet their own needs. As a result of the emergence of the market and the formation of commodity-money relations:

- *The material, social, cultural, and other needs of the family expand;*
- *Household cash is created and multiplied;*
- *The family budget is formed - a monetary fund aimed at providing the family with material benefits.*

The distribution function of household finances includes the primary distribution of national income and the formation of primary family income. The distribution function of household finances consists of three stages itself:

- *formation of monetary funds*
- *distribution*
- *usage*

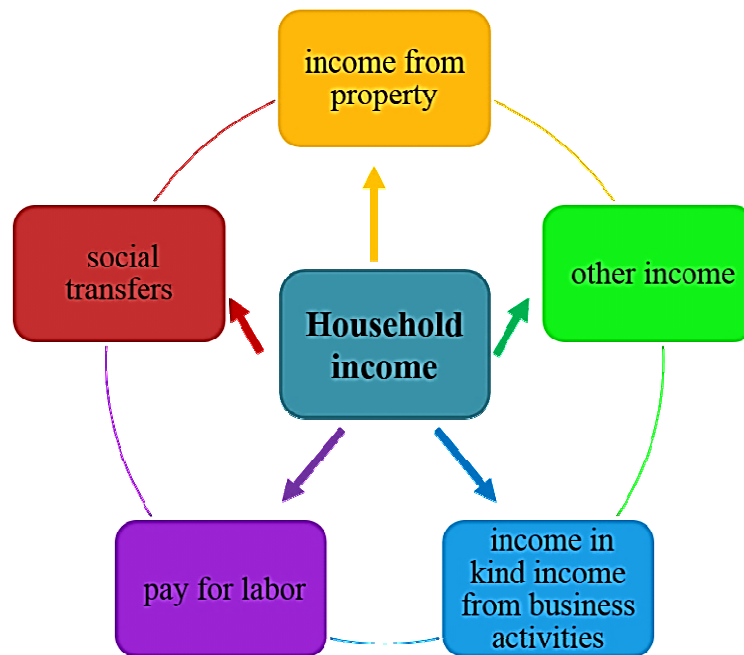
Both functions of household finance are interrelated and complementary. From the point of view of the microeconomic approach, the economy of the household is based on a complex set of relations between its various participants, which is quite complex. These relationships are determined by age differences, character traits, people's behaviors, and their different levels of income and needs. At the same time, healthy household development is possible only if its participants agree on economic (financial) decisions. In turn, the economic interests of the various participants in the household are coordinated through their regulation. By "regulating them" here is meant a change in the portion of income that per household member. Thus, it is clear that another function of household finance is to perform a regulatory function that supports the balanced development of the household as an economic unit.

Another incentive function of household finance is expressed in various forms and contexts. On the one hand, it is manifested due to the desire of households to increase the income needed to meet their growing needs, on the other hand, the growth of household income depends on the quality and results of labor activities should be based. The incentive function of household finance is realized through the creation of an incentive financing mechanism based on the development of the production process and effective fiscal policy aimed at increasing the real incomes of the population. Nonetheless, the view that the social function is a separate function related to household finance can be considered, in a sense, well-founded. Because household incomes, expenditures, and savings directly reflect the socio-economic status of the population and its individual groups, they have an impact on personality formation and demographic processes. In this sense, household finance determines the formation of living standards of all members of society and the characteristics of the structure of consumer demand, represents the dependence on the distribution of income, influences the socio-economic stratification of society. is the main factor.

The effectiveness of household finance depends on the scale of financial relations in households - the completeness of diversity in the manifestation of relations and the mechanisms that ensure their development. No matter what the financial decisions of the household, it still depends on the formation and use of their monetary funds. In this context, household financial decisions cover the following areas that are inextricably linked:

- *formation of household income;*
- *volume and structure of consumption expenditures (household consumption fund);*
- *opportunity and necessity to create savings funds.*

The process of household income generation is of fundamental importance. The total amount of money that a household receives over a period of time is called the income of the household. Such revenues come in different forms, are measured by a system of quantitative and qualitative indicators, and come from different sources according to their economic content. Natural income is not a commodity and is the result of the labor of members of the household who are self-sufficient. The higher the income, the higher the financial capacity of households and the wider the range of financial decisions. The structure of household income is shown in Figure 2:

**Figure 2****Figure 2 Household income structure**

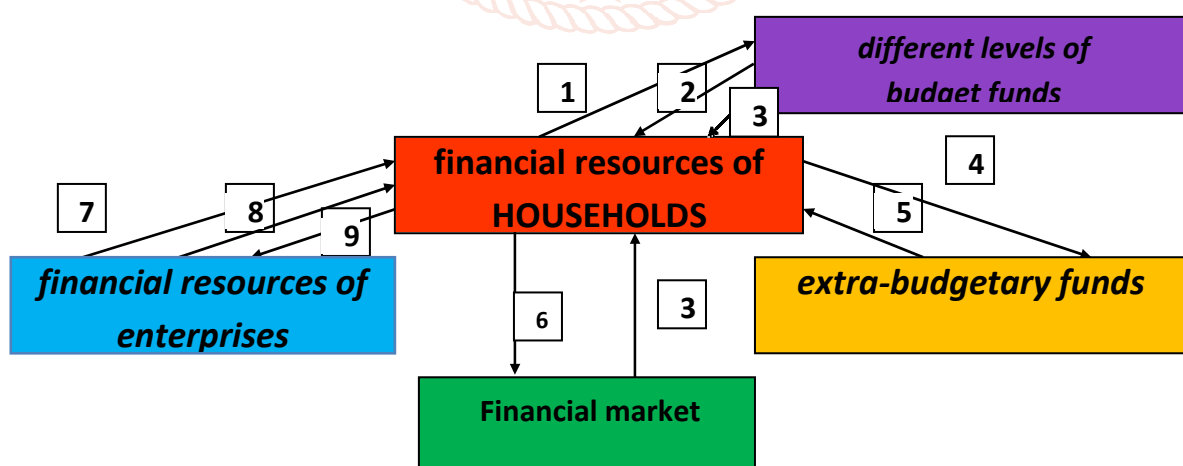
If a household's income is only enough to cover the subsistence minimum, then financial decisions should be made to minimize the household consumption fund and at the same time seek new sources of income and adapt mechanisms of subsistence (self-employment), self-sufficiency, secondary employment, assistance from relatives and the state, retail trade, etc.) Should be focused on 'application'. It is clear that as your income grows, the volume of consumption increases and its structure changes. However, even in this case, the growth rate of consumption may remain lower than the growth rate of income.

In general, the share of natural income in total household income is insignificant. However, its level, or weight, may vary according to the traditions, priorities, preferences, demographics, and social characteristics of the individual households.

The financial resources created by household members as a result of productive activities were part of the national income. The size of the household fund depends on the actions of each family member. The structure of household financial resources is as follows:

- *private funds, ie wages earned by each member of the family, income from subsidiary farms, profits from commercial activities;*
- *market-oriented funds, ie dividends, interest, loans*
- *redistribution funds - pensions, various benefits.*

In general, the financial resources of households are decentralized financial resources and are directly related to the turnover of financial resources of the country.

**Figure 3. Diagram of the turnover of financial resources of households**

1 - taxes, 2 - transfer payments, 3 - loans, 4 - insurance premiums, 5 - social security, 6 - savings, 7 - interest, profit, rent, 8 - wages, 9 - prices for goods and services, labor

Household finance is interrelated with centralized finance (state and local budgets, extra-budgetary social funds) and decentralized finance (enterprise finance, financial market). There is a continuous flow of one-way, two-way and multi-way cash between them. There is a constant flow of cash

between the government and households. Household members provide their labor to the public sector and sell their goods and services to the state. In return, they receive a salary and income. Financial relations also arise in the payment of taxes, levies, duties and various deductions to the

budget and extra-budgetary social funds. In addition, households receive various transfer payments from the state, as well as in-kind benefits and services. There is also cash flow between the household and the non-governmental sector - enterprises, organizations, and companies. Households use the goods and services of businesses and organizations and return their prices in cash. Legal entities can also provide households with credit resources, income in the form of dividends, interest, and rent. As a result of the flow of financial resources, households are able to meet their personal needs on a regular basis today and in the future.

In short, the household financial system is the most important link in the public financial system. The efficient organization of financial resources, that is, the balanced management of income and expenses, savings and investments, has a direct impact not only on themselves, but also on the system as a whole.

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# A Creative Approach to Improve Chemistry Effectiveness

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## ABSTRACT

This article provides a brief analysis of the creativity concept. Opinions are also expressed on the main features of creative learning and its positive impact on the education quality. Questions of training organization based on creative approach are considered on the chemistry teaching example.

**KEYWORDS:** *creativity, creative learning debate, non-standard activities*

Socio-cultural and socio-economic changes observed in the world poses a lot of challenges to society in preparing school graduates who are spiritually mature, educated, creative, socially active, who can contribute to the country development. This in its turn highlighted the need for education to move to a creative learning paradigm that provides the highly conducive environment necessary for an individual to develop creatively.

Creative learning as an innovative type of education in our country is shaping the main directions such as shaping creative thinking, developing creative ability and intellectual potential, finding new approaches to solving modern problems. Creative education is education that allows an individual to understand, develop, and evaluate themselves in a creative direction. [1].

The goal of modern education is not only the knowledge quality and acquired knowledge and skills quantity, rather, it is the development of the graduate's ability to make important independent decisions in complex situations, to be mobile and competitive, and to carry out cognitive search that yields significant creative results. An educational institution student can grow up to be a comprehensive junior specialist in his or her study and profession field [2].

Revealing each student's potential is one of the main creative education goals.

The main features of creative education are as follows:

- it is a creative education type, which main direction is the creative thinking formation, the creative abilities and intellectual potential development, the search for new approaches to solving modern problems;
- it is a fundamental and forward-looking education based on looking to the future and understanding the natural development of the economy and society;
- it is a continuing education, characterized by an increase school graduates' professionalism and social responsibility.

The priority of creative education is focused on creativity and ingenuity. At this point let's briefly comment on the creativity and ingenuity concepts analysis.

No matter to what period of history we look at, ingenuity has always been valued as one of the highest qualities of the

individual. We can see that the Thoughts of Eastern thinkers, the views of Greek philosophers, researchers, psychologists and pedagogues also highlighted the creativity and ingenuity development of a person as one of the main topics. Philosophical aspects of the creativity problem in traditional and creative education were presented in the scientific researches as S.F.Martinovich (the creation values are revealed), M. Arkadev (The principle of ingenuity implementation is emphasized), F.T.Mikhailov (specific issues of creativity), A.D.Tsedrinsky and other researchers, summarizing their ideas, creativity can be described as follows:

- one of the approaches to understanding the person and his essence, in which the man essence (his view as a three-dimensional intuitive-conceptual-emotional nature) is understood through self-awareness of spiritual, mental, astral and vital abilities for creative activity (in literature - creative);
- creativity is aimed at the external world development as a means of individual self-realization, and the individual is the self-development subject, his ability to think, choose and recognize, and indirectly the society developing task;
- the ability to generate unusual ideas, deviation from the traditional, algorithmic boundaries of thinking, to think spiritually and creatively to find solutions to problematic situations;
- when acting as a self-development subject at all age levels, integrity and self-awareness of pedagogical consciousness and is the direction of individual pedagogical thinking [4].

From a social and historical point of view, ingenuity manifests itself in a person as a process that occurs at a particular time or as a process related to social relations, as a criterion for evaluating a creative product.

Ingenuity is seen as the "production" of unconventional ideas, the intellectual ability to move away from traditional schemes and to solve problem situations quickly - "ability to think, feel, communicate, to express oneself in individual activities, to represent the person as a whole and its individual aspects, products of activity, the process of their creation" [3].

Emphasizing the importance of creativity and ingenuity in the individual self-development, we consider the ingenuity development through the creative learning process in high school students.

The upper class student not only determines the ingenuity development level in himself, but also determines his vital needs level. He not only tries to understand the possible directions essence of his future activity, but also to analyze his personal meaning, to understand what this activity can give him, how his personality, creative options, skills, tendencies correspond.



The ingenuity development issue is of great importance for creative learning, where the main goal is to develop the learner's ingenuity ability. The ingenuity development in a high school student is directly related to the teacher's ingenuity level development. It is an auxiliary tool to encourage and support mutual cooperation. Creative self-development puts a number of specific tasks in front of the teacher. (Table 1)

**Table 1**

<b>The educator role in the students' creativity development</b>	Identify mechanisms of individual creative self-development of a high school student
	Orienting a high school student to the creative self-development perspective
	Encourage a creative approach to non-standard situations in life
	Encourage the high school student's analytical, constructive, and critical attitude toward the surrounding reality
	Contribute to high school students' ability development to search for new ways to act independently

The creative education content is formed on three levels: general theoretical presentation, theme and educational materials.

The study material is considered both didactic and psychological aspects. In most general form, the learning material mediates the educational content transfer from the normative social knowledge plane and experience to the individual learning plane. Its purpose is to form a general knowledge and experience for each student. [1]

Besides, it is used in the teachers and learners' activities, i.e. in the problem-solving process. Traditionally, learning materials are structured in such a way as to ensure the knowledge and skills acquisition first. However, modern conditions require a person not only to master knowledge, but also the ability to transfer it from one knowledge area to another; thinking, debating, the ability to prove his / her point and to make assumptions.

There are lots of methods used in creative education to develop the creativity of a high school student. For example, project method (project activities), research method (research activities), creative methods ("six hats of thinking", "katena", "mental cards", "mental attack", "case-method", "random stimulus") and etc. In our study, we focused on the "Project activities" method.

*Project activities (project method)*- is a complex, integrated process of shaping the creative personality of a high school student. Its uniqueness is that it is unprepared, untested objective knowledge, to be active and independent in solving problems that the teacher or textbook does not have a ready answer without using the instruction or activity algorithms given in the teacher or textbook. Project activities allow students to develop intellectual flexibility, the ability to apply knowledge in non-standard situations, "in the search for similarities, generalizations, in creative approaches to different situations, and so on." [5].

In our opinion, we analyze the example of chemistry teaching process in the general secondary education system. Obviously, chemistry differs from other disciplines by its components. In addition to the theoretical mastery of chemistry, students conduct laboratory work and practical classes. The students' chemical experiments conducting process in can be organized on the basis of creativity-oriented education.

Let's take the topic "Metals corrosion" given in the 9th grade chemistry curriculum. This is one of the practical importance topics. However, in the textbook, this topic is given theoretically but not related to laboratory work or practical training. We suggest doing chemical experiments on this topic during the lesson or as a homework assignment. Chemical experiments are based on a creative approach. This can be done using the "project activity" method. According to it, students choose an object where the corrosion process takes place or create corrosion in a particular metal. Students are divided into groups and conduct practical exercises on the topic, offer their own practical projects on corrosion protection of metals. A group of students who submitted a project with a non-standard, creative approach will be highly appreciated.

Thus, the pedagogical potential of creative education in the creative self-development of the high school student was manifested as a set of opportunities, manifested in the knowledge of methods, forms, means of creative education and the sensitive period of adulthood, which allows to take into account the interests of high school students. In teaching organization in accordance with the creative education principles, the available resources are used in the creative education, which contributes to the use of personal qualities and teacher's creative abilities, changing curricula and programs. It should be noted that the consequences of ingenuity level increasing lead to emotional and personal changes.

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# Lymphotropic Therapy for Diseases of the Maxillofacial Region (Review of the Literature)

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## ABSTRACT

Lymphotropic therapy is an effective and simple method of saturating the lymphatic system with medications. This review of the literature examines the pathogenetic and practical justification for the use of lymphotropic therapy in maxillofacial surgery.

**KEYWORDS:** *lymph, lymphatic system, lymphotropic therapy, regional lymphotropic therapy*

## INTRODUCTION

The search for and development of new methods of drug delivery to target organs is an urgent problem of modern medicine. One of these methods is lymphotropic therapy, which ensures the creation of sufficient and stable therapeutic concentrations of drugs in the lymphatic region of the lesion, and, consequently, in the target organ [1]. Its essence consists in the introduction of active substances into a zone containing a large number of lymphatic vessels and nodes, which allows you to achieve saturation only of a certain region of the lymphatic system that drains this area. In recent years, lymphotropic therapy has been of increasing interest in clinical practice and is widely used in the treatment of various diseases [2].

The elements of the lymphatic system include: lymphatic capillaries, lymphatic vessels, lymph nodes, lymph trunks and lymph ducts [28].

Lymph is formed in the lymphatic capillaries by absorption from the intercellular fluid and moves only in one direction – from the "periphery" to the center. It consists of lymphoplasma, similar in composition to blood plasma, and lymphocytes, joining in the lymph nodes.

Lymphocapillaries have a blind origin in the intercellular space "like the fingers of a glove" and a lumen that exceeds the lumen of venous capillaries by 4-6 times, which allows large molecules, foreign bodies and microorganisms that do not correspond to the size of blood capillaries to penetrate into them. Lymph vessels are formed when the lymphocapillaries merge; they have bivalve valves that provide centripetal movement of the lymph [28].

As is known, there are 3 relatively independent systems of lymph vessels: intra-organ lymph vessels, superficial extra-organ lymph vessels, and deep extra-organ vessels [28].

Lymphatic vessels are divided into regional – between the lymph nodes of individual anatomical areas, and collector, which are the central trunks and ducts. In relation to the lymph node, the lymphatic vessels are divided into bringing and carrying out. The lymphatic vessels that carry the lymph

from the regional lymph nodes are collected in large lymph trunks, which eventually form two main lymphatic ducts – the thoracic and right [28]. According to Petrenko V. M. (2003) the adult lymphatic system consists of 600-800 lymph nodes, which account for approximately 1/100 of the body weight. There are two large groups of lymph nodes; somatic (lymph nodes of the extremities, head, neck) and visceral (lymph nodes of the thoracic and abdominal cavities). The cervical lymph nodes belong to the mixed group, as they receive lymph from the organs of movement and internal organs [31]. There are 50 groups of lymph nodes [32]. The size of the lymph nodes varies from 1.5×2.0 to 21×45 mm [33, 34]. The lymph nodes contain smooth muscle elements located in the capsule, trabeculae and in the area of the gate, which allows the lymph node to contract and decrease in size, move the lymph and actively rearrange itself due to the peculiarities of functioning in different regions and under different influences [35, 30].

In the lymph nodes there is a reticular stroma, characteristic of the hematopoietic organs. Reticular tissue, which is genetically and functionally related to the shaped elements of blood, significantly affects the processes of cell proliferation and differentiation, and the intensity of hematopoiesis [36, 37, 38]. According to Ishchenko I. Yu. (2017), the connective tissue forming the stroma of the lymph nodes (LN) is the microenvironment, the "stromal niche", which plays an important role in the development and activation of immune cells by regulating cell differentiation and proliferation. It consists of various cell types (fibroblasts, macrophages, etc.), extracellular matrix molecules and adhesion molecules that regulate the processes of cell differentiation and proliferation through the production of soluble factors and through interactions between cells. Such interactions are important, since defects within the stromal niche strongly inhibit the function of the lymph nodes. In LN, the following stromal cell subsets are distinguished: fibroblastic reticular cells (FRC) forming a reticular network (stained with podoplanin), endothelial cells of lymphatic vessels (on LYVE-1), endothelial cells of blood vessels (on CD31), macrophages. In turn, FRC represent a heterogeneous subset of stromal cells in the LN: these are FRC-paracortex cells, follicular dendritic cells (FDC) in the lymphoid nodules of the cortex, and contractile FRC-like pericytes. FRC form a reticular network (RN), which not only serves as a mechanical framework for the LN, but also creates a kind of handrail along which dendritic cells, T- and B-lymphocytes move into the LN. MS forms channels for transporting lymph from the subcapsular sinus to the LN parenchyma.

Jia L. et al. (2012) believe that FRC are involved in the formation of the walls of lymphatic labyrinths (LL) in LN. The researchers found that LL arise at the periphery of the deep cortex and at the edge of the follicle, expand towards the medulla and pass into the cerebral sinuses at the cortical-brain border. These structures are populated by densely packed small lymphocytes, do not contain dendritic cells and macrophages. The LL wall consists of three layers: the inner wall is a layer of flattened lymphatic endothelium (stained on LYVE-1); The outer wall is a layer of FRC and their cytoplasmic processes, and the third layer is an amorphous substance and collagen fibers sandwiched between these two layers. Apparently, the LL are the zones of the most rapid transport of lymphocytes to the LN.

The movement of lymph depends on the following factors: consistency of fluid from plasma to interstitial space, and last – to the lymph vessels, the physiological activity of the organs and the contractility of the walls of lymph vessels and lymph nodes that contain smooth muscle cells; contractions of striated muscles, and all kinds of active and passive movements of the body and individual organs; a negative pressure in the large veins of the neck, which are for collectors of the thoracic lymphatic duct, fluctuations in intrathoracic pressure during breathing; pulsation of the aorta and arteries [28].

The anatomy and physiology of the lymphatic system, as well as its instant reaction to the pathological process of any localization and etiology, opens up broad prospects for the use of lymphotropic therapy in clinical practice.

The main metabolic processes are carried out at the level of the microcirculatory bed, which consists of arterioles with a diameter of 30-200 microns, blood capillaries with a diameter of 2-22 microns, venules with a diameter of 40-100 microns, and lymphatic capillaries with a diameter of 10-200 microns [6, 7]. In the body, the cells do not adhere directly to the blood capillaries, the exchange of substances between the cells and the blood occurs through the connective tissue, which is for them the "tissue of the internal environment" [8]. The connective tissue is filled with an interstitial substance of a colloidal nature, through which there is a movement of water, electrolytes, substances in a state of molecular dispersion, colloids and suspended particles from the bloodstream to the lymphatic system. Normally, interstitial pressure is close to zero or slightly positive [9]. The lymphatic system, absorbing water and dissolved crystalloids, colloidal solutions, protein substances, fats, complements the venous system in the process of tissue metabolism and drainage of the intercellular space. Since the diameter of the lymphatic capillaries exceeds the diameter of the blood capillaries, colloidal particles with a size of 20-80 microns become permeable to the lymphatic system [10]. The role of the endothelium of lymphatic vessels is not limited to the absorption of colloidal solutions and suspensions from tissues, it also participates in reactive changes in connective tissue [11]. Lymphotropic therapy is based on two main components – the principle of regionarity and the principle of increased interstitial pressure.

Petrenko V. M. (2017) points out that the lymphatic system is arranged as a chain of intervalvular segments with different wall structures, organizes a special path of outflow from the organs (collateral drainage to the veins) of tissue fluid in the form of lymph, and in its composition – antigens. The lymphoid system looks like a special prefix of the

cardiovascular system: lymphoid couplings of varying complexity of structure surround the tissue channels and vessels as their attachments-biofilters that regulate the cellular and protein composition of the internal environment of the body. At the heart of the lymphoid system are closed in a circle of blood vessels, through which the (re)circulation of lymphocytes occurs. The lymphatic bed drains the lymphoid formations, and brings the lymph to some of them for purification. The lymphoid and lymphatic systems are united at the periphery in an immunoprotective complex: the lymphatic bed and the lymphoid tissue around the blood microvessels cooperate to ensure the genotypic homeostasis of the body, make up the lymphoid-lymphatic apparatus as part of the cardiovascular system.

The lymphatic system plays a leading role in the pathogenesis of purulent-inflammatory diseases (Yu. E. Vyrenkov 1990-2008, Yarema I. V. et al., 1992-2010), since the spread of bacteria and toxins occurs mainly in the lymphatic vessels and lymph nodes, where they are delayed in the lymphatic system and the so-called toxic depot is formed. In this regard, the lymphotropic administration of antibiotics, immunomodulators, antioxidants, and anticoagulants is pathogenetically justified. Drug saturation of the lymphatic system allows you to create high therapeutic concentrations of antibiotics and other drugs on the pathways of bacterial factors, improve the rheology of the lymph, which makes it possible to unblock inflamed lymph nodes, reduce the likelihood of restriction and abscission of inflammatory infiltrates in the lymphatic system.

The idea of using lymphatic vessels for the administration of drugs, in particular antibiotics, was first expressed in the early 50s by B. V. Ognev. Conducting experimental studies, he discovered the leading role of the lymphatic system in the spread of tumor cells from the site of the primary focus, the migration of microorganisms with the development of lymphangitis, lymphadenitis and sepsis in inflammation [1].

Experimental research and clinical observations allowed us to use mainly 2 methods of lymphogenic therapy: direct endolymphatic administration of drugs through a catheterized peripheral lymphatic vessel and indirect drug saturation of the lymphatic system. The latter method is minimally invasive, does not require direct surgical intervention, special surgical skills, and is available for doctors to perform in any direction [1]. The results of numerous studies in recent years confirming the presence of a lymphatic bed in the maxillofacial region, as well as the successful application of lymphatic therapy methods in other areas of surgery, contributed to the beginning of their application in dentistry [5].

The advantages of lymphotropic therapy are the following: [12]:

- create a high concentration of drugs in the drug (antitumor, antibiotics, immunomodulators, proteolysis inhibitors, analgesics, etc.), which, when administered normally, do not sufficiently penetrate the drug, are quickly inactivated or removed;
- increase the concentration and duration of action of the drug in the tissues of the pathological focus;
- reduce the toxic effect of the drug;
- increase the passage of the drug in the brain tissue;
- enhance the analgesic effect of the drug.



Based on the direction and nature of treatment, S. U. Dzhumabaev, E. S. Dzhumabaev, and I. R. Fayziev (1986) first developed a classification of lymphatic therapy, according to which it is divided into the following:

A. Kinds:

1. General lymphatic therapy
2. Regional lymphatic therapy

B. Methods of lymphatic therapy:

1. Direct
2. Indirect

C. Methods of drug administration

1. Direct lymphatic therapy-catheterization of
  - a) the lymphatic vessel
  - b) the lymph node

2. Indirect lymphatic therapy:

- a) through a skin puncture
- b) intraoperative puncture c
- c) percutaneous needle-free injection
- d) electrophoresis

D. Mechanism of action:

1. Correction of microcirculation
2. Antibacterial therapy
3. Immunomodulatory therapy
4. Antitumor therapy
5. Detoxification therapy
6. Combined therapy

E. Regions of therapeutic effects of lymphatic therapy.

According to Gurbanov T. V. (2018) indirect saturation of the lymphatic system (lymphotropic therapy) is a promising method of drug infusion. Its essence consists in the introduction of active substances targeted in a zone containing a large number of lymphatic vessels and nodes, which allows you to achieve saturation only of a certain region of the lymphatic system that drains this area.

According to Yu. M. Levin et al. (2012), S. U. Dzhumabayeva, E. S. Dzhumabayeva (2017), endolymphatic therapy, both direct and indirect, is designed to create an optimal concentration of the drug in the lymphatic system "in its pure form", to ensure its maximum contact with pathogenic microorganisms in places of their retention and accumulation, mainly in the lymph nodes.

The study of Kantemirov O. I. (2001) shows that antibiotics are a unique group of pharmacological drugs, the effectiveness of which decreases over time. This aspect requires special attention both when evaluating their effectiveness and when developing evidence-based approaches aimed at prolonging the terms of their clinical use. In this regard, there was a need to find new ways of introducing drugs that would allow them to create long-lasting therapeutic concentrations in the body without increasing the dose. One such route of administration is the lymphatic system. The study of the distribution of drugs introduced into the lymph in different groups of lymph nodes showed that it is possible to achieve their greatest accumulation when administered taking into account the segmental structure of the lymphatic system.

Thanks to the research of the leading lymphologists of our country, S. U. Jumabaev, E. S. Jumabaev, the mechanisms of the influence of drugs introduced into the lymphatic vessels, the effects on the lymphatic system by physical, chemical, biological and other agents became clear.

Jumabaev E. S., Jumabaeva S. E., Saidhodzhaeva D. G. (2017) believe that regional lymphatic therapy, including regional stimulation of lymphatic drainage, antibiotic therapy and immunomodulation, lead to better clinical results in comparison with traditional methods of treatment, reduce the consumption of medicines by 1.5-2 times, reduce the number of injections by 2-3 times, reduce the duration of treatment by 10 - 25% and the cost of inpatient treatment by 25-40%.

As indicated by N. N. Nazarov, E. S. Dzhumabaev, Z. K. Gafurov, A. B. Makhmudov (2018), it is possible to prevent the occurrence of complications in purulent-inflammatory diseases by indirect regional lymphotropic therapy. The proposed indirect administration of antibiotics allows you to create large concentrations of the drug in the regional lymph nodes and keep them in the tissues for a long time.

Semak M. V., Bubnova N. A., Borisova R. P., Shatil M. A. (2017) believe that conducting a course of lymphotropic antibacterial therapy with a temporary pharmacological block with modern antibiotics in patients with chronic osteomyelitis contributes to a faster relief of inflammatory phenomena. In addition, the relapse of the disease occurs in such patients much less often than in patients who received traditional treatment. According to Zhanalin B. S. et al (2014) introduction of regional lymphotropic therapy in acute odontogenic osteomyelitis of the mandible in children has led to optimization of the structure of direct costs, more efficient use of antibacterial drugs, reducing the number of days of hospital stay and duration of antibiotic therapy, improvement of cost/effectiveness.

Taking into account the anatomical structure of the salivary gland, the use of lymphotropic therapy in inflammatory and dystrophic diseases of the large salivary glands is shown. Thus, the parotid glands contain lymph nodes in their structure. The parotid and submandibular glands are enclosed in dense capsules, which, when the volume of the gland increases, create additional interstitial pressure. Thus, the conditions that promote lymphotropic therapy are met [13].

Today, several methods of drug delivery to the parotid gland have been developed. This is a method similar to novocaine blockade of the salivary glands, in which subcutaneous fat is infiltrated over the parotid salivary gland [13, 14], as well as a method of subcapsular administration of drugs [13, 15]. These methods have a number of disadvantages associated with some anatomical and morphological features of the structure of the parotid salivary glands. The lobes and lobules of the gland are surrounded by their own thin, but dense shells, between which there is a loose connective tissue, which makes it difficult for the drug to penetrate and spread in the areas of the acinar structures of the glands [13, 16]. The results were improved and the treatment of chronic inflammatory and reactive dystrophic diseases of the parotid salivary glands was shortened by indirect lymphotropic therapy using anatomical intragastric injection of the drug into the salivary gland, infiltrating its central, lower and posterior parts. Injections are administered in areas of the gland with a low fiber density that are free from the passage of the branches of the facial nerve [13].

To date, the clinical effectiveness of regional lymphotropic therapy in the complex treatment of patients with purulent-inflammatory complications of mandibular fractures has also been studied. Fractures of the lower jaw account for about



80% of the total number of injuries to the bones of the facial skeleton. Despite some success in the treatment of this category of patients, the percentage of infectious and inflammatory complications in mandibular fractures remains high and varies from 5.5 to 41% [17]. It is clinically proven that lymphotropic therapy significantly reduces the duration of treatment and reduces the course doses of antibiotics by 3 times, as well as the risk of allergic reactions. This technique is easy to use, does not require special equipment and can be recommended for wide practical use [18].

Prikhodnaya V. A. (2008) believes that the method of lymphotropic antibacterial therapy in the complex treatment of open fractures of the lower jaw can influence the etiologic and pathogenetic mechanisms. Having an advantage over the traditional method of drug administration: it contributes to a longer maintenance of optimal concentrations of the antibiotic in the lymphatic system, blood, in the focus of inflammation, allowing you to significantly reduce endogenous intoxication of the body, normalize the drainage function of the lymphatic system of the maxillofacial region. The method of lymphotropic antibacterial therapy has no significant restrictions in use, is easily accessible, and allows you to reduce the consumption of medicines. Complex therapy of open mandibular fractures with the use of lymphotropic antibacterial therapy promotes rapid relief of inflammation, providing prevention of post-traumatic inflammatory complications.

Currently, it is also proposed to increase the effectiveness of the treatment of periapical abscess with the help of lymphotropic drug therapy using the drugs rocefin and tactivin. Inflammation of the tissues surrounding the tooth is quite common, which is mainly due to microorganisms that enter the periodontium through the root canal, periodontal pocket, or hematogenous and lymphogenic pathways.

Determining the effectiveness of the results of conservative treatment of exacerbations of chronic periodontitis consists of an analysis of the timing of relief of acute inflammation and the duration of the rehabilitation period of the patient [19]

The evaluation of the obtained results suggests the advantage of using the regional lymphotropic method in the complex treatment of exacerbations of chronic periodontitis in comparison with standard intramuscular administration.

According to Savin E. K. (2011), as a result of clinical radiological studies, a high efficiency of treatment of exacerbations of chronic apical periodontitis, in which lymphotropic therapy was used, was established. Lymphotropic therapy activated the reparative processes in the bone tissue of apical periodontitis, reducing the time for reducing the size and eliminating the periapical pathological focus of destruction in the area of the root apex.

The analysis of the effect of lymphotropic therapy on the local manifestations of osteomyelitis of the lower jaw was performed. It is proved that it more effectively stops them than the known methods of postoperative treatment. This is manifested in an accelerated and more pronounced decrease in the circulatory manifestations of inflammation, such as edema, hyperemia, and the condition of the mucous membrane of the transitional fold of the oral cavity [20]. There was an increase in the antibacterial activity of the antibiotics used, which is indirectly evidenced by a decrease in the number of people with purulent fistula compartments

and a decrease in the size of lymph nodes, including those surrounded by perifocal inflammation. In addition, lymphotropic therapy in the treatment of chronic forms of osteomyelitis of the lower jaw promotes bone regeneration, which is confirmed by orthopantomography data [21].

Observations of E. V. Turchina (2017) indicate that in patients with CHLO abscesses, after intramuscular administration of ampicillin in the blood after 4 hours, its concentration decreased by more than three times ( $1.00 \pm 0.44$  mcg/ml). Moreover, some of the subjects had a zero ampicillin concentration (from 0 to 6.5 micrograms/ml). In this group of subjects, the half-elimination period ranged from 0.25 to 1.5 hours. Meanwhile, after lymphotropic administration of the antibiotic in the mastoid process of the temporal bone in 4 hours, its concentration reached  $4.24 \pm 0.17$  micrograms / ml, and the half-elimination period was from 20.6 to 43.5 hours. The creation of the necessary concentration of the antibiotic throughout the entire period of treatment had a positive effect on the clinical course of the disease.

Lymphotropic administration of an antibiotic 1 cm below the mastoid process of the temporal bone in acute purulent periostitis of the jaw in the molar region leads to earlier, compared with other methods of treatment, elimination of antigenic substances from the site of inflammation, since in the cytogram of leukocyte infiltrates in the deep parts of the gingival mucosa 2 days after the start of treatment, monocytes and macrophages are present in greater numbers, which means that by this time the purulent-necrotic processes are completed and more pronounced reparative [2].

Chronic diseases of the oral mucosa are a serious problem in dentistry. Such diseases include lichen planus, which is characterized by a torpid course, polymorphism of clinical manifestations, complexity of diagnosis and low effectiveness of treatment [22]. In this regard, various methods of complex pathogenetic therapy using a wide variety of methods and means of treatment are proposed. Under the influence of lymphotropic therapy is not effective and ksantinola the nicotinate improves the clinical course of lichen planus of the mucous membrane of the oral cavity.

The positive dynamics is expressed in the reduction of unpleasant subjective sensations, the degree of hyperemia, the size of the lesion area by 2.5 times, the severity of the papular pattern and the epithelization of erosions. Thus, lymphotropic administration of derinate and xanthinol nicotinate allows to achieve improvement of the local and general condition of the patient, stabilization of immunological parameters, stable clinical results and longer remission [23].

It is advisable to use the lymphotropic method of drug administration to increase the effectiveness of therapeutic measures for oral candidiasis, since this disease causes changes not only in the epithelium of the oral mucosa, but also in the underlying tissues [24]. Regional lymphotropic administration of the antioxidant drug mexidol was used in the complex treatment of oral candidiasis. Mexidol initiates the detoxification function of the oral cavity, restores the antioxidant potential, normalizes the differentiation of epithelial cells and increases their resistance to the adhesion of fungi of the genus *Candida*. Lymphotropic administration of mexidol shortens the treatment time of patients and reduces the frequency of relapses of the disease [25].

Lymphotropic therapy has great prospects in modern medicine, including in the treatment of many serious infectious, chronic, including oncological diseases. There is an advantage of lymphological methods of drug administration in comparison with traditional ones: faster recovery and recovery of patients, a reduction in bed days, a decrease in the number of complications, and a reduction in the side effects of drugs [4, 26, 27]. The anatomy and physiology of the lymphatic system, as well as its instant reaction to the pathological process of any localization and etiology, opens up broad prospects for the use of lymphotropic therapy in clinical practice. However, many issues of this problem have not been precisely studied, which requires further experimental and clinical study [1].

**Conclusion.** Thus, with the lymphotropic administration of drugs, they enter directly into the organs and tissues from the lymph and blood due to the slow discharge of the drug from the lymph into the blood. Lymphotropic therapy is widely used in modern medicine in the treatment of infectious, chronic and oncological diseases. Since, the lymphatic system instantly reacts to the pathological process of any localization.

The authors note the positive aspects of the lymphotropic administration of drugs: faster recovery and recovery, a decrease in the number of complications, and a decrease in the side effects of drugs.

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# Synchronic-Diachronic Aspect of Lexic-Semantic and Functional Features of Scientific-Pedagogical Text of English

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## ABSTRACT

The article provides general information about the synchronous-diachronic aspect of the lexical-semantic and functional features of the English scientific-pedagogical text. The article shows that diachronic linguistics studies language change, and synchronic linguistics studies language states without their history. At the same time, the impact of the development of science on various areas of education, innovations in various areas of the English language will be discussed.

**KEYWORDS:** *scientific-pedagogical text, lexical-semantic and functional features, synchronous-diachronic aspect, science, scientific field.*

## 1. INTRODUCTION

Science plays an important role in the development of the country in all areas. Science has played a key role in the development of a number of countries, such as the Miracle of Japan and the Miracle of Singapore. With this in mind, our country has recently been paying great attention to the development of science. The Law of the Republic of Uzbekistan No. ZRU-576 "On Science and Scientific Activity", adopted on October 29, 2019, strengthens and expands such powers and opportunities. In the field of scientific research, a lot of work is being done today by the state, ministries, organizations and universities that support the scientific field. In particular, in determining the ranking of universities and the quality of education, great attention is paid to the contingent of scientists with academic degrees and titles, as well as the level of training of scientists. Increased incentives inspire young scientists and researchers at the university, and contribute to the international recognition of our scientific achievements and national experience.

## 2. Literature review

Text editing is a multifaceted and complex process that requires a great deal of knowledge, a broad outlook, and constant research from the editor. First and foremost, you need to choose a specific style and approach when writing scientific texts. For example, addressing a student as "you"(sen) in one place and "you"(siz) in another is a violation of personal style. In addition, it is disrespectful to students to use the word "you" in a scientific way. It is also important to avoid tautology when writing scientific texts. The author must be able to use synonyms and figurative expressions to avoid repeating a particular word. This requires editors of encyclopedia monolingual and multilingual dictionaries, and a lifelong companion and assistant to scholars.

## 3. Research Methodology

An English-language scientific and pedagogical text, on the one hand, repeats in a transformed form a complex and

multidimensional system of a "common" language, on the other hand, it submits to "the goals and objectives of a scientific and pedagogical discourse; which combines a diverse multicultural scientific and pedagogical experience, signs of interdisciplinary and inter-scientific knowledge, developing in the system of modern scientific and professional intercultural communications.

As one of the genres of scientific and pedagogical discourse, an English-language, scientific-pedagogical article has a number of formal content, lexical-semantic and functional features. This is, first of all, a rigid, regulated structure as a result of the traditionally established process of reproduction and transfer of knowledge; reflection in the total set of resources of lexical means of individual linguistic creativity, author's intentions and communicative goals, accumulated scientific and pedagogical, communicative and socio-cultural experience, educational traditions, values, approaches and innovative practice. The lexical means of English-language scientific and pedagogical articles are characterized by a rather high mobility, close, interaction of general literary general scientific and terminological vocabulary, its semantic and structural changes. Most clearly these characteristics are manifested at the level of terminological vocabulary, developing in interaction with other lexical layers and reflecting the latest processes - the globalization of scientific and pedagogical knowledge, the introduction of information and communication technologies, the integration of various scientific and pedagogical theories, concepts, approaches, tendencies towards the interaction of scientific and pedagogical knowledge with other areas of knowledge.

The peculiarity of the functioning of terminological vocabulary, in particular the use of one-component, two-component, multi component terminological units, abbreviated terms in the texts of English scientific and pedagogical texts, is associated with various ways of presenting scientific and pedagogical information through language, with the desire of the authors of scientific and pedagogical articles on the accentuation of the communicative and value aspects of the stated scientific and pedagogical message; to expand the potential readership; establishing intercultural professional contacts due to clarity, clarity, simplicity, consistency and ease of presentation. The following theoretical concepts served as the methodological basis of this research: the theory of discourse as a field of study of linguistic communication from the point of view of its form, function and situational, socio-cultural conditioning: T.A. van Dijk; ND Arutyunova; A.N. Baranov; Yu.S. Stepanov; M.J.L. Makarov; E.S. Kubryakova, V.I. Karasik, Z.I. Harris, K. Flottum; theory of scientific discourse: V.I. Tuzlukova, M.P. Kotyurova, J. Sinclair, F. Bosch, D. Biber; theory of interconnectedness and interdependence of communicative



systemic and structural features of language as a means of professional communication: BM - Rasparov; V.V: Dementyev; I.A. Sternin, W. Labov, D. Biber; theory of heterogeneity of essential features of a text as a complex formation: I.R. Halperin, Z. Ya. Turaeva, T.M. Nikolaeva, O.B. Vorobyova, J. Firth; theory of multidimensionality of links between text and other texts: Yu. M. Lotman; WG Bart; M. M. Bakhtin, V. V. Boguslavskaya-, J. Sinclair.

The research methodology lies in a comprehensive study of the English-language scientific and pedagogical text as a special discursive genre in the era of the development of global scientific and pedagogical communications. Our approach is observed in the study plan: 1) the peculiarities of the lexical-semantic organization of the text; 2) its linguistic and functional features; 3) the processes of formation of mechanisms for the accumulation and transfer of educational values, knowledge, experience and traditions. The theoretical significance of the research lies in the further development of the provisions of the linguistics of the text, the theory of scientific discourse on the example of an English-language scientific and pedagogical texts and the definition of its lexico-semantic features in the aspect of combining the analysis of discourse and corpus linguistics. This way of research expands the understanding of the patterns of construction of the texts of scientific and pedagogical texts and the peculiarities of their functioning in modern English, gives a more complete picture of the behavior of the language in scientific and pedagogical discourse and makes it possible to predict the prospects for its development the transformation of the most frequent phenomena into the only possible and mandatory for a given type of scientific discourse. Its results can be applied in courses of lexicology and stylistics of modern English, as well as in special courses on linguistics, text linguistics and scientific discourse.

The results and methods of research and pedagogical texts based on a combination of statistical and qualitative analysis can be useful for further research of individual discourse situations and texts, writing master's degrees, etc. diploma works on the problems of the English-language scientific and pedagogical discourse.

When doing research in comparative linguistics and translation studies, it is necessary to cite sentences in a foreign language in the original. It is also important to provide additional comments, such as "The translation is ours," if translated where necessary. It is important to define a style before starting text editing. This is done by a number of factors, such as the use of language tools, the use of terms, phrases, and metaphorical expressions. The author of the text and his copyright must always be respected. It should even state that the text was rejected by the editors with a reasoned explanation.

The editor is not allowed to make changes to the text without the permission of the author, which may change the ideas and thoughts in the text or have a strong impact on the content. In order to teach something to others, edit their text, and recommend something to the author, the editor must be well versed in the field. This requires both working on your vocabulary and keeping abreast of updates in all areas, especially scientific news.

The editor should be familiar with all literary genres and their requirements. We must never forget the "feeling of the tongue." Translated texts must retain the style and historicity of the original work. For example, the translation of Kadyri's

"Days Gone by" into modern English is not as effective as expected. The color of nationality and history should be preserved in the translation. The terms "qorachopon" or "xonlik" in the work can be interpreted.

#### 4. Analysis and results

Today in Uzbekistan, as in other areas, the development of science and education is at the crossroads of great changes and innovations. In this regard, the study of foreign experience, the study of the latest achievements of our national experience, the development of scientific inventions in various fields and directions, their introduction to Uzbek and world scientists and experts are also relevant issues of text translation and editing.

Also, one of the most complex processes in working with and translating text is the translation and editing of headings. It is well known that the title reflects the main content of the text and serves to attract the reader's attention. There are a number of requirements for headlines, such as brevity, relevance, relevance, and relevance to the topic. The title of novels in foreign languages, or the translation of the title of a literary, journalistic text, is of great interest to the participants.

#### 5. Conclusion

In conclusion, the synchronous-diachronic aspect of the lexical-semantic and functional nature of the scientific-pedagogical text plays a very important role in the translation of texts in English. This is an aspect of the scientific and pedagogical text that requires little attention, though it is not overlooked.

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# Ways to Increase the Place of Children's Literature in the Modern System of Analysis

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## ABSTRACT

This article shows how to develop children's literature in the modern education system. In particular, instilling a love for reading and raising children is a process of national importance. That is why this process is very important in our country and measures are being taken to develop children's literature. In addition, the state of development of children's literature in the education system in our country is analyzed.

**KEYWORDS:** *education system, children's literature, social services, youth literature, children's upbringing, fiction, education, folklore, harmoniously developed generation*

## 1. INTRODUCTION

Socio-economic, political, legal and spiritual changes in our society have placed new demands and tasks on the education system. The task of educating the younger generation in all aspects of the National Program of Personnel Training, especially in the native language and children's literature, imposes a great responsibility on teachers. President of our country Sh. Mirziyoyev said, "The most important task of the government, relevant ministries and departments and the entire education system, our esteemed teachers and professors, is to thoroughly educate the younger generation, to bring them up as physically and spiritually mature people. It is time to take our work to a new level, to create modern jobs for our children, to ensure that they take their rightful place in life." [1] We often liken the reader to a person standing in the middle of a river looking for water. An effective model of the modern economy should reflect three conditions. First, it must be socially oriented, that is, ensure that all categories of citizens live economically well.

Second, the economy must be efficient, that is, create the necessary conditions for the efficient use of all socio-economic resources.

Thirdly, in the development of the national economy, it is necessary to ensure organic coherence between social and economic directions, not only current but also in the future. There is an internal contradiction between these requirements, in which it is clear that the social sphere has a dual character. On the one hand, the individual, the community, the social group are distinguished as the "target sector" of the economy. On the other hand, the demand for efficient use of resources also applies to human resources. This takes it from the target area to the resource area and puts it on a par with material resources [2].

"Bringing up an independent, honest and courageous generation is one of the most pressing issues of our time," he said. Yes, fiction, especially children's literature, plays a big role in the development of such young people. Because little ones grow up listening to God, singing, proverbs, parables,

riddles, telling stories, listening to fairy tales. Through these genres, their hearts are filled with light, aspiration for life, and a sense of curiosity. They also grow spiritually. In particular, instilling a love for reading and raising children is a process of national importance. Therefore, great importance is attached to this process in our country. The so-called periodicals, children's books, reading aids, and education play a special role in educating children. The main task of literature is not only to educate students, but also to educate them. Reflecting on the role of didactics in the teaching of children's literature determines the relevance of this topic [3].

## 2. LITERATURE REVIEW

It is well known that children's works are also divided into several categories in terms of content, and the style of painting plays a key role in this classification. In some children's works, the creators express their views as an adult with extensive life experience, in harmony with the imagination and views of a young child, while in others, the direct narrative style on behalf of children is preferred. Completely new changes in Uzbek children's literature, which began in the 70s and 80s of the last century, have attracted the attention of many scholars and researchers. In particular, in the researches of such scientists as R. Barakayev, M. Jumaboyev these aspects are covered in detail [4]. Problems of studying the comprehensive systems of spiritual and moral education in our national pedagogy in the pre-independence period in connection with folklore samples in the presence of M. Sherboyev, T. Turdiyev, ZM Mirtursunov, H. Jumayeva, B. Kadyrov, A. Musurmonov and others. found its expression. During independence, K. Yuldashev, M. Murodov, O. Madaev, A. Ergashev, H. Jumayeva, M. Mahmudova, M. Jumaboyev, M. Bozorova, G. Kholboyeva and others on the educational possibilities of folklore in the process of literary education, especially on the analysis of folklore works of national traditions and values of our people pay special attention to the problems of link learning [5]. There are very few scientific works on the principles of effective use of folklore in the study of works of art in Uzbek literary education. There are scientific-methodical works and articles of such scientists as S. Dolimov and H. Abdullaev, M. Samadov, F. Badriev, O. Musurmonova, S. Matchonov, A. Tilegenov, V. Kadirov [6]. Regular updating and continuous enrichment of educational goals is a priority for the selection of new models of educational content. The growing need for updating the nature, methods, organizational forms and tools of the educational process in secondary education is primarily due to socio-economic, scientific, technical and technological factors. Today, the content of education should be closely linked to the needs of the individual, society, science and technology, industry. Accordingly, education, science and technology, technology, production should form a single system.



### 3. ANALYSIS AND RESULTS

To understand the role of fiction in society, it is necessary to consider the social functions it performs. The most important task of fiction is that it leads man to perfection, serves to perfect society. That is, it is expressed artistically through various objections. Indeed, fiction changes the world by changing people (and society). Because fiction not only reflects the real reality, it thinks on the basis of the ideal, recreates the reality on the basis of the ideal, the artistic judgment in a true work of art is based on the ideal. The ideal, as it is known, embodies the idea of a perfect person, a perfect society. The ideal is passed on to the reader through the ideal work of art that the creator misses, and know that the student who inherits the ideal miss is now a changed person. And change in man (humans) is, of course, the basis of change in society. So, one of the most important tasks of fiction is to rebuild society on an ideal basis. This is the biggest social issue in the literature.

If we look at the state of forms of social consciousness in later periods, especially in the present, we encounter diversity in it. After all, all of them now exist in parallel (from the mythological point of view to the higher scientific knowledge due to the difference in the level of development of humanity as a whole). Of course, we are talking about the progress of humanity, developed societies, and this is the right way. Among the forms of social consciousness, fiction and art are distinguished by the perception of being through artistic images. In particular, fiction works through words. The word is a universal means of knowledge and expression. The possibilities of artistic knowledge of fiction are much wider because it works through words: it has the opportunity to artistically study various problems in life, its various aspects. In Uzbek literature, the social significance of works of art and the coverage of social issues in works of art have been studied in different periods. But given the fact that all human activity acquires sociality, the social significance of fiction increases even more. Because fiction creates a person with other people, with the environment in which they live. In fact, when a person is born, he cannot be formed as a human being if he lives apart from human beings. There are many real-life examples of this. For example, the famous English writer R. Kipling's "Mowgli", D. Defoe's "The Adventures of Robinso Crusoe", Akiljon Husanov's "The Boy Who Grow Up in the Mountains". When creating a work of art, the artist first writes about the events he saw, experienced and felt. [8] This is due to the social pain in him. Based on the above considerations, it can be said that the coverage of fiction is a topical issue in the coverage of social malala. There are a number of works devoted to his research. But that did not solve the problem. Because in every age there are different social environments and issues, fiction tries to reveal them to the reader as much as possible.

Raising children is an important process for the state, because it involves all members of society. Therefore, great importance is attached to this process in our country. Because young people are our future, the more knowledge and education we give them, the more prosperous our future will be, and the more peaceful our country will be. The first task of every educator and educational institution is to identify the first concepts and feelings that are formed in the character of children in a timely manner and help them in their subsequent practical activities. The idea of a perfect man has always been sung in the folklore, and it has always been a noble dream of our people, an integral part of its spirituality. In the sacred book of Zoroastrianism, the Avesto,

honest work is interpreted as the main criterion of perfection. The idea of the perfect man is rooted in Islamic philosophy and has a broader meaning. The issues of spiritual and moral upbringing of the younger generation are wide in the folklore, and are based on the methods of upbringing, human values and patriotism; friendly brotherhood, harmony, diligence, love of profession, definition of good and evil, the consequence of good and bad words, honesty, truthfulness, noble upbringing, justice, fairness and dishonesty, brotherhood categories such as the importance of kindness and bloodthirstiness, bravery and cowardice, rudeness, hospitality and hospitality are interpreted.

### 4. CONCLUSIONS

In the upbringing of the next generation, the deepening of fiction, the formation and development of independence skills, the habituation of research, the development of intelligent and knowledgeable people who quickly understand the essence of life events should begin from primary education. It is well known that one of the noblest and most universal tasks of fiction is to express oneself, because we have often understood what man is capable of and what he has been deprived of by reading high works of art and analyzing them. The Uzbek people realized their identity through the works of such master artists as A. Navoi, A. Qodiriy, Cholpon, Oybek, Fitrat [9]. Especially thanks to independence, we are able to restore our spiritual values and realize that it is impossible to live in the old way. In conclusion, we would like to emphasize that one of the main sources of "Uzbek children's literature" - oral creativity - is the human spiritual superiority of folklore, the integrity of faith, patriotism, do. st-pages glorifying brotherhood, goodness, kindness, harmony, dignity, and honor are varied. Each of these pages has every right to be considered as a Code of Conduct. Modern education, if the ideology of independence is nourished by this heritage, if it adopts its best pages and rules, it will be able to fulfill its goals with honor. Because these two deep, rich, rich, meaningful areas of folk etiquette and example - the traditions of folklore and folk pedagogy - the comprehensive education of man, the perfection of man, the whole of our spiritual priorities. is a guarantee that our values will be valued.

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## Uzbek Folktale Mislabu: Motifs and Applicability of Propp's Functions

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Fairy Tale - a traditional story written for children that usually involves imaginary creatures and magic.<sup>1</sup>

### ABSTRACT

Fairy tales are very important for developing the worldview of children. In many cultures, they are used as an early method of teaching kids the difference between good and bad, courage and cowardice, love and hatred, and many other basic concepts a human must be able to differentiate. To examine the very essence of the Fairy Tale, its history, morphology, and structure, specialists have been trying to classify it in many different ways. However, modern scientists conclude that none of the existing methods of classification can be considered absolutely accurate. For instance, the approach offered Wundt<sup>2</sup> supposes division of tales into 7 groups, but the definition of each group is vague and actual classification becomes a hard task, because a single fairy tale may possess characteristics intrinsic to several groups at once. The ten categories proposed by Volkov<sup>3</sup> also do not stand up to criticism due to mix-up arising, since one tale might contain elements allowing to attribute it to several categories at the same time. Aarne-Thompson classification or Vladimir Propp's functions are also not exhaustive as some scholars note.

**KEYWORDS:** *function, motif, fairy tale, classification*

One of the basic causes of the classification problems is the extremely vast variety of fairy tale types, elements, motifs and plots. Analyzing the fairy tales of different nations readers can notice that there is a significant difference in approach, philosophy and moral of tales. This is influenced by history, culture, traditions, religion, geography and many other aspects. However, attempts to classify fairy tales show that there are some basic points that belong to any folktale. Such points can be seen in Aarne's classification and Propp's list of functions, they are also noted by other scholars and literature specialists.

The analysis below will be dedicated to applying the categories proposed by Vladimir Propp to the Uzbek fairy tale "Mislabu". And their correlation with the motifs defined by Chernousova<sup>4</sup>.

Propp defined the obligatory functions and their sequence within the fairy tale as follows:

- |                              |                   |
|------------------------------|-------------------|
| 1. Absentation               | 2. Interdiction   |
| 3. Violation of interdiction | 4. Reconnaissance |
| 5. Delivery                  | 6. Trickery       |

- |                     |                      |
|---------------------|----------------------|
| 7. Complicity       | 8. Villainy and lack |
| 9. Mediation        | 10. Counteraction    |
| 11. Departure       | 12. Testing          |
| 13. Reaction        | 14. Acquisition      |
| 15. Guidance        | 16. Struggle         |
| 17. Branding        | 18. Victory          |
| 19. Resolution      | 20. Return           |
| 21. Pursuit         | 22. Rescue           |
| 23. Arrival         | 24. Claim            |
| 25. Task            | 26. Solution         |
| 27. Recognition     | 28. Exposure         |
| 29. Transfiguration | 30. Punishment       |
| 31. Wedding         |                      |

In "Mislabu" the situation is a bit more complicated than in typical fairy tales. First of all, it consists of several seemingly unconnected episodes, developing in parallel. Also at the beginning it is hard to identify the main hero. In general, the main hero is the cruel king: he resolves hard task and finds the beauty he was willing to marry. The beauty helps him to escape from pursuers, but at the end a new main hero appears and defeats the cruel king and marries the beautiful Mislabu. However, motifs and functions can be distributed in relation to the cruel king, because the final winner did very little action.

First element: Absentation (Someone goes missing) appears in Mislabu not at the beginning of the story line. Actually there is no direct "missing" of something, but king's desire to find and marry Mislabu - a princess he had never seen - can be attributed to this element according to Propp's classification. This element corresponds to motif of "Searching for beloved" defined by Chernousova. Unusual thing about this fairy tale is that the Absentation is described after a short story about an old gardener, who is not a main character of the plot but appears several times along the tale to interconnect various elements and motifs into a single action.

One more element of Absentation can be noticed when the king can't find his parrot and asks people for help, promising gold and high position in the kingdom to one who finds and brings the bird. This part of the fairy tale can be considered as a short story within the story, and it is also used as a "connector" for general plot parts.

Element 2. Interdiction (Hero is warned). As soon as the main hero in Mislabu seems to be the cruel king, the motif of warning the hero should be addressed to him. Within the story king was warned twice: first, when the parrot told him that searching for the beautiful Mislabu will be a difficult task, and then, when an old man told him to give up the idea of marrying Mislabu, because many young and strong men

<sup>1</sup> Cambridge Dictionary. dictionary.cambridge.org.

<sup>2</sup> W. Wundt, Probleme der Völkerpsychologie, Stuttgart, 1921

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lost their lives trying. Both of warnings were violated (the third element). However, it should be noted that, within the main storyline there is a short parallel story about the cruel king's son – Bakhadu, who transforms into the main character at the end of the story, and that short story also has a classical motif of Interdiction related to the king's son. He was warned not to open the last of the forty doors in the castle he lived in, and not to look under the mat, that was on the floor in the room behind that door.

The third element (Violation of interdiction), follows in all three cases depicted above, and in the first two cases, with the king involved, the villain appears – PeryYunuskhan (in conformance with Propp's classification), but in the third case, there is no villain, and the boy just falls in love with Mislabu after seeing her picture under the mat. Elements from 4 to 7 (Reconnaissance, Delivery, Trickery and Complicity) do not apply this tale, and the Element 8 - Lack of something, here closely relates to Element 1 – Absentation, since the king feels need for Mislabu. King's desire to search for Mislabu personally, his route and the appointment of vizier to rule the kingdom while the king is on a trip can all be classified as Propp's Elements 9,10 and 11 Mediation, Counteraction and Departure respectively.

When it come the Elements 12 and 13 (Testing: Hero is challenged to prove heroic qualities and Reaction: Hero responds to test) they can be attributed to the case when the king finds a way to get into the beauty's castle and make her agree to marry him. As a result, hero becomes able to benefit Mislabu's magical helpers and items (flying horse, giants, you the sizing water).

The description of the way how the king gets into the Mislabu's castle and her bedroom, the process of tying her hair to make her agree to marry, the swimming of the king in youth sizing water and the agreement of Mislabu to marry king can be attributed to Elements 15, 16, 17 and 18 (Guidance, Struggle, Branding and Victory) respectively. The transfer of Mislabu's castle to the king's city can be considered as the Resolution (19) and Return (20) element.

After returning back home, king has to fight an PeryYunuskhan's army that was chasing since he stole Mislabu. The chasing itself (Element 21 - Pursuit) is not depicted in the fairy tale, but it is noted that the chasers reach the king in his kingdom, and he wins them, with the help of Mislabu (Element 22 – Rescue).

Although the king swam in you the sizing water, his return was not unrecognized (Element 23). Everyone in the kingdom knew that the king has returned.

Elements 24-30 are not directly present within the plot, and the final episode of the fairy tale relates to the motif of father-son competition, in which the cruel king is defeated and expelled (Element 30 - Punishment). His son marries Mislabu and rules the kingdom (Element 31 - Wedding and ascending the throne).

The analysis of the above Uzbek fairy tale in accordance with the general classification of functions and motifs reveals that

those rules apply to Uzbek folktales in the same manner as they do to English, Russian, and other tales.

Mislabu is considered a fairy tale with a complex structure. It differs from the traditional fairy tales by the presence of several plots, and the cruel main hero, who is finally defeated by his son, who never did anything heroic. But still the standard classifications match the storyline.

As a conclusion it can be noted that the assumption that all the fairy tales of different nation have common roots can be proven by classifying them and analyzing the outcomes. They all meet the same criteria (in general) and have similar structural elements. Even quite "unusual" tale as Mislabu, demonstrates features inherent in typical folktales of east and west. Analyzing fairy tales, Propp came to a conclusion that there are only 31 elements (functions) in tales all over the world. Keeping that in mind, along with the idea of the common origins of the fairy tales, a conclusion can be drawn that the motifs can also be classified and structured to simplify the research in this sphere.

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# Improving the Teaching of Physical Education in Primary School on the Basis of Modern Approaches

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## ABSTRACT

The scientific article focuses on ways to improve the quality of lessons, optimize lesson plans, and inculcate national and universal values in students based on best practices, based on modern approaches to teaching physical education in grades 1-4.

**KEYWORDS:** State educational standard, lesson, competence, modern approaches, types of lessons, lesson structure, pedagogical requirements, types of education, national values, universal values.

August 23, 2019 President of the Republic of Uzbekistan Educating young people in the spirit of patriotism under the leadership of Sh. M. Mirziyoyev and measures to enhance the status and prestige of the teacher in society School education in a video conference on the topic development is a great national goal and a nationwide movement In our society, there is a high level of respect for teachers

Despite the positive changes, there were still problems in the education system, the material and technical base of schools, and the fact that the knowledge and skills of some teachers did not meet modern requirements. After that, the relevant ministries and local authorities need to create a modern and rational system of education in the formation of "family - neighborhood - school - university" cooperation, the creation of teaching methods, educational standards, textbooks and manuals, the use of advanced foreign experience in education, the task of establishing school-university cooperation in improving the quality of education through national traditions and values. Today, one of the main issues facing us is to pay attention to the quality of education of secondary school students and the mechanisms for its implementation, to educate students on the basis of national and universal values. In the education system, general secondary education covers grades 1-9, and this stage of education is the most responsible period for students. Primary education has a special significance in the first stage of general secondary education, during which children are armed with primary concepts. All subjects in primary education are taught according to the curriculum, including physical education. Physical education, physical development and health of students are at the heart of all efforts to improve primary education. In this regard, we considered it appropriate to pay special attention to the physical education of primary school students. Physical education of primary school students today:

- physical education classes;
- extracurricular and extracurricular activities;
- physical education in out-of-school institutions;
- In the form of physical education in the family is increased.

The most important form of physical education for students is physical education. Because the lesson is a systematic form of physical education, the curriculum is taught by classified teachers in accordance with the State Education Standard for general secondary education.

According to the State Education Standard and the curriculum of secondary schools in the field of physical education approved by the Ministry of Public Education of the Republic of Uzbekistan in 2017, physical education classes for primary school students are 2 hours per week, 66 hours for 1st grade and 68 hours for 2-3-4 grades. as well as gymnastics, athletics, movement games, elements of sports: basketball, volleyball, handball, football, chess.

Primary school according to the requirements of the state educational standard The following requirements are required for teaching physical education to students marked. Requirement A1:

- can follow the rules of the agenda;
- Morning physical training and exercise during the lesson can do;
- can follow the rules of cleaning and walking;
- knows the types of mobile games and their rules;
- knows the effects of exercise on human health;
- Knows the basic rules of chess.
- Exercises (rowing, acrobatics, pole vault, balance storage, leaning and hanging, climbing) exercises can connect sequences to each other;
- physical qualities (agility, strength,
- speed, flexibility, endurance and coordination);
- can play logic games (chess, checkers, etc.) ;
- Prevention of injuries during exercise can follow the rules;
- Heart rate before and after exercise can determine the norm;
- Technical safety during exercise

can follow the rules. [1]

Age, gender and physicality of students in conducting lessons organizing and conducting trainings, taking into account their readiness expedient. Physical education for primary school students classes 2 times a week for 45 minutes on a strict schedule organized and held.

Students will have the knowledge, skills and knowledge provided in the science program acquisition and improvement of skills.

The following definition of knowledge, skills, competencies and competencies in pedagogy was given.

Knowledge - remembering and re-explaining learned information Give Ability is the ability to apply learned



knowledge in familiar situations. Qualification is the unfamiliarity of learned knowledge and formed skills apply in situations and generate new knowledge. Competence - everyday knowledge, skills and abilities available ability to apply in activities. [1]

In physical education, these concepts are interpreted as follows:

Knowledge - in physical education, students are exposed to new movements receives data and is at the initial imperfect level assumes performance. Ability is to make certain parts of the movement extremely fast, precise and purposeful represents the ability to perform appropriately, and it is in the learners occurs as a result of repetitive exercise.

Qualification - the same conditions of physical activity in students is formed as a result of repeated repetition in itself. [8] Physical education is unique in its content and organization features in gyms, special facilities, playgrounds held in the school yard, in the hallways of the stadium, in such a place special conditions are created for students to teach. To students in physical education classes, not in the usual school uniform, but special required to be in sportswear. In this case, physical activity will be easy to do.

The most basic that is related to physical education classes one of the issues is the structure of this lesson.

The structure of the lesson is the number of parts of the lesson, their sequence and content, duration - can be described as. [2] Lessons by experts in specialized scientific literature Different views have been expressed on the structure. For example, some experts that the lesson consists of introduction - preparation - main - final parts they know. A number of other specialist physical education classes organizational - main - final parts. [4] In fact, in our opinion, physical education classes today consists of three parts according to the structure and they are the preparatory part of the lesson, the main part of the lesson is called the final part of the lesson.

The preparatory part of the lesson teaches students the basics of a comprehensive lesson without preparing for the main tasks to be performed in the section This part is usually on average about 8 - 12 minutes, sometimes longer time is planned. The lesson is structured by the teacher in the main part of the lesson according to the development is defined in the curriculum of physical education in the classroom new exercises are taught or exercises previously taught are repeated.

The necessary theoretical knowledge is imparted. Physical 25-30 minutes for the main part of the lessons is appropriate. The organization of the main part of the lesson is different may be different. That is, State education in physical education standard curriculum sections (gymnastics, athletics, mobility games, elements of sports games, chess) in the main part of the lesson requires organization in different methods.

It usually takes 3-5 minutes for the final part of the lesson. Then the lesson In the main part, the physical activity of the students is reduced, and it ends with light exercises. Students are encouraged, reprimanded, assessed, and given homework if necessary. Organized, they leave the classroom. Properly organized lesson sections provide a great opportunity to ensure the continuity and effectiveness of the lesson.

Another way to improve physical education classes is to diversify physical education classes according to their pedagogical objectives.

In the effective organization of physical education classes, according to the pedagogical tasks of education and health, physical education classes, introductory lessons", "lessons of new materials", "mixed lessons", "improvement lessons", "control lessons" and "final lessons" rotates. [4]

Introductory classes are classes that begin at the beginning of a new semester of the school year, as well as at the beginning of a new section of the syllabus. They can also be organized in the form of lectures, talks, dialogues. In this case, the teacher can, for example, inform the students about the requirements of the curriculum, the work to be done during the school year, the requirements. Mixed lessons are the most common type in practice. The content of the mixed course includes sections such as explanation, teaching, mastery, reinforcement, and improvement. Reinforcement and refinement lessons - introductory, mastery of new materials, movement skills are formed after the lessons are organized in order to perform the exercises perfectly. Graduation courses are completely different from courses that vary in content and pedagogical function. These courses conclude the semester, a series of syllabi in the syllabus, and the syllabus during the school year. Final lessons are designed to assess students' knowledge and skills. In addition to the types of physical education classes mentioned above, classes also vary in the nature of their organization: accented classes, mixed classes, and complex classes. Accent lessons are organized according to the content of a separate section of the program. That is, the emphasis is on gymnastics, athletics, volleyball, basketball, and so on. The teaching process will focus on studying, reviewing, and improving the material in this section. Mixed lessons are focused on mastering and teaching several sections of the curriculum. In such classes, students are divided into groups and work under the supervision and guidance of a teacher on topics they have not mastered during the lesson. Complex lessons - the content is organized on the basis of several sections of the curriculum. In other words, according to specific pedagogical tasks, several subjects (volleyball, athletics, wrestling, gymnastics, etc.) are taught in one lesson. Such classes are rarely organized in practice. [3] In order to study the physical education classes taught in the primary grades of secondary schools, Samarkand region № 12, № 43, № 60 secondary schools. Bukhara region, 1, № 2, № Secondary schools No. 25. Sharof Rashidov of Jizzakh region № 40, № 44, № 46 secondary schools of the district. Jizzax № 6, № 10, № 14 secondary schools of the city physical education classes in the classrooms special pedagogical observations (interviews, special questionnaires) were conducted.

In total: 32 classes, 820 students, 18 primary classes teachers attended. As a result, the following cases were studied. Some physical education classes were not conducted at the required level and there are serious shortcomings in the physical education classes taught it turned out. These include:- Most of the school administration attended physical education classes the attitude is not positive. (The importance of physical education classes does not consider having a course).

- Low capacity of teachers, on their own failure or non-compliance with existing regulations.
- Equipment for the organization and conduct of physical



- education classes lack of
- Excellent in physical education for primary school the absence of a textbook.
- Special for the organization and conduct of physical education classes lack of facilities.
- Insufficient organization of open lessons in physical education and not to be discussed.

To overcome the above shortcomings, do the following we consider it necessary to implement and give as a recommendation.

- physical education classes (annual, quarterly, monthly and weekly) to make plans carefully and correctly;
- facilities and equipment required for physical education classes to ensure its availability;
- Physical education lessons in 3 parts according to pedagogical requirements to be, to follow the organization and conduct;
- The organization of student activities in the classroom by the teacher to be able to use the most effective methods;
- clear definition of pedagogical tasks in physical education lessons;
- of the next lesson with the tasks of the previous lesson adherence to the teaching of the task;- age, sex, level of physical fitness of students, taking into account their physical health

Exercise that has a positive effect on the development of the right choice;

- Physical education with other subjects on the agenda adhere to appropriate conduct;
- Carry out other types of education in physical education

- classes take into account the need to increase;
- to the professional activity of a physical education teacher it is necessary to develop a mechanism to increase motivation;
- Organize physical education classes on the basis of the State Educational Standard management control over the delivery and transfer necessary.
- Physical education on the basis of national and universal values to organize and conduct lessons.

Primary school according to the above recommendations to organize and conduct physical education classes for students gives high results and ensures the quality of the lesson.

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# Modern Model of Students' Scientific Activities in the Field of Physical Education

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## ABSTRACT

At the same time as the implementation of the national training program in Uzbekistan, a large-scale design work is being carried out in higher education institutions, the application of integrated modern models of student management.

**KEYWORDS:** *physical culture, education, student, program, national, personnel, pedagogy, group, practical, seminar, laboratory, independent education, physical education, sports*

At the same time as the implementation of the National Program of Personnel Training in Uzbekistan, large-scale design work is being carried out in higher education institutions, the application of integrated modern models of student management. The new model of modern education is based on the following author's educational technologies.

1. Person-centered education and systematic approach to the subjects of education, humanitarian and democratic relations;
2. Changing the role of the student: equal, proactive and independent conduct of their educational activities in the educational process;
3. Changing the role of the teacher: the organizer of independent learning activities of enterprising learners, a competent advisor and assistant, not only monitoring the level of knowledge, skills and qualifications of students, but also the correction of deficiencies identified in a timely manner be able to apply modern diagnostic methods to master the purpose;
4. Changes in teaching aids and methods:
  - A. interactive, based on the content of educational, creative and research activities, aimed at identifying and finding solutions to problems, the application of knowledge in practice, the creation of problem situations in education. teaching methods have become a tradition;
  - B. transition from frontal education to collective, group education (formation of creative groups);
  - C. the widespread use of information technology (software) in addition to traditional educational tools;
  - D. Students use educational materials only for independent study.
5. Changes in the means and methods of pedagogical management: the teacher is a modern engineer in his pedagogical activity, aspires to be an engineer, manager, able to identify problems, the ability to reconstruct and develop ideas, decision-making and to carry out with suliyat. The ability of the teacher to predict, to carry out not only his pedagogical (time norm), but also planning and design (scientific-methodical) work of students' educational activities, to achieve the expected results in educational activities and to develop the content and structure of the

achievement of joint educational goals, to plan and organize independent educational (scientific) activities of students, to organize the educational process in the form of educational dialogue and polylogy (field). During the transition from traditional to modern education, it is natural to face a number of challenges. First, the combination of the role of design engineer and modern pedagogical design tasks in the work of the teacher, the design of the student's educational activities with the change of the essence of the research subject and the consequent recognition of the existence of artificial research subject there is a need to create innovative diagnostic tools. Second, the introduction of the role of novelty and unusual subject of education for students (in the philosophical sense, the owner of the mind and will), in this sense, in educational activities independent of the interactive tools and methods offered by teachers known for lack of practical use skills. From the point of view of the methodology of physical culture and sports, the person (pupil, student, athlete, adult population) is undoubtedly the object of research, more precisely the object of pedagogical influence. Note: In the field of design, there is no real object. Not only this, from the biological, psychological structure of man and the position of his organs and systems (because it can be the object of biology and psychology), but all kinds of changes in the organism as a result of pedagogical influence are taken into account. Prior to the pedagogical experiment, the scientific hypothesis is given because there are no abrupt morphological changes in the tissue cells of the human body naturally (at rest). Therefore, as a subject of research in this regard, the methodology, ie a set of methods (technology), using the means of measurement to ensure the optimal predictable changes in the tissue cells of the organism, is reflected in the characteristics of a person's physical or mental (spiritual) change.

Despite the fact that the general theory of sports as a science has its own subjective perceptions, the author recognizes the existence of an objective real nature, the formation of essence and content between the pages of history, overcoming the contradictions and laws of objective development. L.P. Matveev noted. This way of scientific knowledge is, in fact, true for the fundamental and applied sciences, but also completely denies the contribution of subjective influences on the objective reality of the field of pedagogy, ie sports, working in an artificial environment. inaccessible. In the vision of the situation expressed by the author, it is acknowledged that from the point of view of formal logic, most areas of scientific research remain within the bounds of a false logical framework. It is acknowledged that the researchers will study the progress of the preparatory work from an objective real situation in the sports school for children and adolescents. But L. P. According to Matveev, in fact, the activities of sports coaches in children's and youth sports schools are fully regulated in

the textbook "Theory and Methods of Physical Education" on the basis of programs and regulations. This means that if the researcher concludes, it is in accordance with the general rules of the textbook, which confirms once again the validity of not only the researcher but also the general theory. In order to overcome the erroneous logical boundary, it is necessary to first acknowledge the existence of the fact of the subject of artificial examination in any existing pedagogical discipline. In this case, the methodology will change, that is, it will be necessary to recognize the need to move from scientific methodology to the methodology of artificial design of objects, processes, methodologies and technologies. Design can be understood in the sense of the development of project documents, including explanatory letters, tables, calculations explaining the operation of the artificial object in the natural and artificial environment and its structure. If we consider the emergence of something or a process that did not exist before as an innovation, it is impossible to create an innovative technology within the framework of traditional natural-scientific cognition methodology, because the objective real investigation before the occurrence of a new artificial object he was not there. From time immemorial, man has been able to know objective reality only subjectively, relying on his emotions, but for the first time in history, with the creation of measuring tools and techniques (techniques), his possibilities of objective cognition have expanded and further developed. Reaches the conditions of the modern model of education require the following general learning skills and competencies to be acquired in the first year.

1) independent activity of the student in lectures, practical and seminar classes: schematic, sequential recording of the main issues and conclusions in the independent performance of educational tasks (tasks); search, learn, understand, critically evaluate and retrieve data as needed; to present in the form of reports, abstracts, giving meaning in the language of signs and symbols; create a scientific authoring page in accordance with the pre-set requirements.

2) visual aids, information on the presentation of the completed assignment, scientific developments of the member of the scientific and creative circle (group) (essay, thesis, article, abstract, course work, graduation thesis, master's dissertation) acquisition of skills of free use of technological means;

3) communicative skills: the initiator of educational cooperation with teachers and other students, self-expression, compromise, dialogue on the topic, addressing questions close to the essence of the issue, round (audience) active participation in compliance with the rules;

4) skills of cooperation: mutual analysis and mutual evaluation in solving common tasks, culture of cooperation, team planning (design) of cooperation activities for the implementation of educational tasks, readiness and ability to work in a team;

5) analysis of the problem situation in problem reports, finding creative solutions to educational tasks, development of ideas, independent, collective decision-making. Forms of research work with students in higher education institutions are carried out mainly in two directions:

1. Form of educational research work based on the curriculum of educational directions;

2. Forms of research work of students under the guidance of professors and teachers. This type of higher education activity is carried out within the framework of the compulsory educational process and covers all forms of the educational process:

Block3 - general professional subjects, block 4 - specialty subjects,

block 5 - writing essays on specific topics in the process of studying additional subjects;

2. Identify problems in the field of physical culture and sports in the process of practical, seminar, laboratory and independent learning, perform tasks and assignments that have elements of the search for solutions;

3. Execution of individual tasks of research, research nature during the period of different qualification practice;

4. Development of methodical materials (assignment sheets) related to the use of research methods (questionnaire, pedagogical observation, chronometric and pulsometric analysis, testing, pedagogical control, mathematical analysis);

5. Preparation and defense of term papers and dissertations related to the problems of research planned at the departments;

During the academic year, students are required to master the tasks by gradually complicating and deepening the methods of scientific knowledge in the field of education in accordance with the STS, curricula and science programs of higher education. In the field of student research and development, Russian scientists have identified the following possible levels of self-development through the generalization of experimental data:

1. Reproductive-stereotype (problem solving is carried out according to the algorithm of pre-mastered thinking, activity and relations). Students turn to the teacher to better understand the research tasks, the algorithm of activity. They try to get results quickly with less time. They do not strive to develop a culture of teaching and research, especially personal qualities;

2. Adaptation (based on an algorithm developed in advance by the teacher, students perform research work. At this level, too, students' self-development, which has a personal value in teaching and research activities, the stability of aspirations, such as consciously engaging in activities, is not observed; 3. Creative-reflexive (students can understand the nature of the problem, model the research situation, options and solutions by updating their personal, valuable, creative potentials. Based on reflection, students can critically analyze the results of their creative achievements. They can identify and overcome barriers to intellectual, cultural and scientific development in general. During the second year, students will be able to individually determine the topic of research, as well as the work of scientific and creative circles of students, as well as the department of the faculty. will have a complete database of areas of professional activity. In the third year, students conduct independent research in accordance with the course work assignments (projects) prepared in advance by professors and teachers of non-abstract subjects. Most students' work in this category is abstract and in some cases can be practical. Ability to create the first innovative conditions in the field of physical education and sports on the basis of the first creative

research, which combines the course work, theory and practice of science, performed by talented students.

By the fourth academic year, the level of readiness of students is formed, which is sufficient to carry out both theoretical and practical course work in the specialty, to conduct independent research. Pedagogical practice, which is one of the requirements of the field of education, has a positive impact on the effectiveness of educational and research activities of students, the preparation and defense of graduate work brings them closer to the level of professional training. The introduction of individual research tasks into the educational process is one of the manifestations of innovative educational technology. Individual activities of students outside this type of classroom - have the characteristics of teaching, research or design, which are carried out during the development of program materials of the course, as well as forms of assessment of students' knowledge (final control, exam, test) ends with. Independent research of students in the system of higher education through the practical application of the acquired knowledge on the course, along with the study of some of the program materials, systematization, deepening, generalization, consolidation of knowledge; aimed at developing skills. Common among students' individual research tasks include: a syllabus according to the proposed plan (or independently developed) on a particular topic (module); abstract on a topic (module) or a narrow problem; compute on the topic (module) or compile practical tasks appropriate to different pedagogical situations, find solutions; events relevant to pedagogical situations, development of theoretical or practical functional model of processes; annotation, bibliographic description, retrospective research of additional literature indicated in the science program.

Students' individual learning activities are assessed by a science teacher (lecturer). In the final session, students will be assessed after reviewing the content of their individual study activities (student's oral and written reports). Assessment of students' individual learning activities is taken into account in the final assessment of the subject, the

weight of which can be from 30% to 50%, depending on the content and complexity of the task. In accordance with the curriculum of the field of study, it is important to prepare coursework and graduate work in the educational and research activities of students. The student takes the first independent step on the path of scientific research to complete the course work, learns to work with scientific literature, develops the skills of critical sorting and analysis of the necessary information on the topic. By increasing the requirements for writing course work from course to course, a real creative process environment is provided. Diploma work in higher education institutions is the final stage of education, which is aimed at in-depth study of the topic chosen by the graduate, strengthening and expanding theoretical knowledge. During the pedagogical practice, most students have a clear idea of the topics of their work, in addition to the analysis of the initial literature, the scientific value of the work is enriched on the basis of personal and practical experience. Abstracts on the topics of seminars and practical classes can also be used in the educational and research work of students, if several scientific articles (theses), based on sources.

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# Analysis of Physical Education Program for Primary School Students

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## ABSTRACT

Physical education plays an important role in strengthening the health of students, their personal development, preparation for work and defense of the motherland, as well as the acquisition of vital movements, skills and abilities.

**KEYWORDS:** *Physical education, student, education, quality, primary education, general, school, lesson, occupation, sport, class*

The state educational standard for physical education for general secondary education defines the requirements for the quality of the educational process, the content of education: the necessary and adequate level of training of students and graduates, the procedures and mechanisms for assessing the activities of educational institutions and the quality of physical education.

The course "Physical Education and Training" in general secondary education consists of the following.

1. Physical education classes - the main form of physical education and training at school. Their amount is set in the Basic Curriculum at the rate of 2 study hours per week.
2. Extracurricular forms of movement activities include pre-school gymnastics, physical education minutes and pauses in general secondary education classes, dynamic pauses in extended breaks, entertaining games.
3. Extracurricular activities forms: sports sections, electives, clubs opened according to students' interests, etc.
4. General school events: holidays, sports competitions, spartakiads, quizzes, etc.
5. Independence lessons: often in the form of homework, classes, trips, games, etc. in the branches of sports schools for children and adolescents. All forms and types of classes 8-10 hours per week for primary school students. -59 should provide a 10-12 hour movement regime for students.

The specified size is sufficiently necessary and minimally mandatory for the specified groups of students. A special regime is established for students with poor health, physical development and low fitness. Physical education plays an important role in strengthening the health of students, personal development, preparation for work and defense of the motherland, as well as the acquisition of vital movements, skills and abilities. The general management of physical education and sports in the school is entrusted to the principal and head of education. A commission is appointed by the school principal to oversee the organization of classes, sessions, wellness competitions, improving and strengthening the health of students, and improving the level of physical fitness. The commission consists of deputy

directors for education and spirituality and economic affairs, pre-service youth training, science, biology, music and art teachers, health workers, parents and students.

The functions of the commission are:

Completion of the curriculum, control of physical fitness of students twice a year. Provides advice and supervision to parents and students on physical development and preparation, health and strengthening, improving the quality of lessons, monitoring the timeliness of medical examinations, etc. The purpose of physical education is to improve the health, general and physical education of students, to provide them with knowledge on the theory and methods of physical education. Including:- to cultivate high moral, spiritual, volitional qualities, diligence, activity in students;

- to educate students to be physically strong, agile, healthy, strong and able to overcome difficulties;
- to develop students' vital skills (walking, running, jumping, throwing, climbing and falling, swimming, use of travel equipment);
- to enrich students' knowledge of exercise hygiene, anatomy and physiology;
- to inculcate the skills of sports propaganda, public, organizational, instructional, to get used to the correct interpretation of the aesthetics of movement;
- to develop professional and practical skills in high school students, taking into account their future careers;

The history of the Olympic Games, the ideas of Firdavsi, Abu Ali ibn Sino, Navoi, Babur, Mahmud Kashgari, Abdullah Avloni and other great scientists, the life of Alpomish, Pahlavon Mahmud, Barchinoy, Tomaris, Askar Polvon and other wrestlers, with the famous athletes of our republic today. to introduce;- From the first days of school, it is necessary to ensure that children learn the concept of "nature-health-man" in physical education classes. It is important for students to cultivate and deepen the protection of flora and fauna, pollution of water and air, and other similar qualities. These tasks can be successfully solved only if they make full use of all aspects of the organization of physical education. In grades 1-4, physical education classes are held with boys and girls. In grades 5-9, it is advisable to divide boys and girls into separate groups. Classes and classes with girls should be conducted by a female teacher whenever possible. Physical education should be combined with the positive effects of natural health factors (air, water, sun) and hygienic factors (personal and physical hygiene).

In hot climates of the country, physical education classes are held mainly in the open air, except in exceptional cases: rain, air temperature up to 14 ° C, on sunny days in the shade and outdoors. Physical and sports holidays in some sports or traditional folk holidays ( "Agility-beauty", "Ball, boys", "Ball girls", "Hope starts", "Football buds", "Golden autumn") will

help to increase the efficiency of the educational process of school-age children and strengthen their health.

It is important that the organization and holding of competitions at school dedicated to the "Harvest" and "Navruz" holidays has become a tradition and a health check for the public. In order to make health competitions as popular as possible, they should be held first between classes, then between schools, districts and regions. The time and place of the finals of the Republican Championship should be determined in accordance with the Regulations of the Ministry of Public Education. Additional classes of 12-14 hours per week are distributed by public education departments or school administrators according to the level of development and age of the students. Teachers are paid extra for educational hours. Physical education classes at the school are held in the form of lessons. Classes are organized not only with general development exercises, but also with the use of various shells, simulators, games, Uzbek folk songs, lapars, dances. According to the Resolution "On the organization of general secondary education in the Republic", the concept of physical education for the training of advanced personnel in the 9-year general secondary education was reorganized in accordance with the "State Education Standard". The Ministry of Public Education of the Republic of Uzbekistan considers that 2 hours of physical education per week is not enough to fully load the child's body, and according to scientific research, only 11% of 45-minute physical education meets the physiological needs of students for daily exercise. Additional classes with students in grades 1-4 allowed for the use of school-based hours for classes, up to 3 hours per week, and 45 hours of physical education classes if available. It was recommended to introduce additional trainings.

Resolution of the Cabinet of Ministers of the Republic of Uzbekistan No. 27 of January 17, 1996 "On measures to radically improve the organizational framework and principles of football development in Uzbekistan", as well as No. 271 of May 27, 1998 "On further development of physical culture and sports in Uzbekistan" On the basis of the decision of the Board of the Ministry of Public Education of the Republic of Uzbekistan dated 26.01.1996 "On further development of football among students and children in the public education system of the Republic of Uzbekistan" football department was included in the school program for the first time. Football lessons are allocated 10-12 hours per school year for grades 4-9 (students in grades 2-3 are introduced to the basic elements of football). Given the need to amend the "Sports" section of the current program, starting from grades 3-4, basketball, volleyball, and handball. If the school has the opportunity to teach sports in the 3rd grade, it is planned to separate this hour from the "Moving Games" section.

16 hours in Grades 1-2, 14 hours in Grades 3-7, 16 hours in Grades 8-9, 14 hours in Grade 1, 16 hours in Grades 2-3 to study Gymnastics. There are 18 hours in Grade 4 and 20 hours in Grades 5-9. If it is not possible to teach gymnastics with the use of equipment, it is allowed to use auxiliary types of gymnastics (barbell, horizontal bar, solitary stick, etc.). For girls, it is necessary to conduct such exercises as rhythmic gymnastics, dance exercises, athletic gymnastics, exercises performed on exercise equipment, acrobatic exercises (these develop agility, courage, agility). In addition, the following mandatory exercises are provided for each class: rotating the hoop at the waist (from 30 seconds to 1 minute), jumping on

the hoop (in terms of time and amount), holding the body in a support position, bending the arms, writing;

For boys, the following are performed on the school's health field: climbing up and down gymnastics walls, hanging on handrail rings, moving on a barbell with arms, strength training on a horizontal bar, gymnastics, crossing obstacles, for example, barbells. base building, hanging exercises, pole vaulting, acrobatic exercises (single and double exercises), exercises with dumbbells, stones, simulators, athletic gymnastics, individual wrestling elements, etc. The Moving Games section has 38 hours in Grade 1, 36 hours in Grades 2-3, 12 hours in Grade 4, and 2 hours in Grades 5-7 (these are held in the first and last lessons of the term). In the process of physical education, the student, under the guidance of the teacher, acquires the skills and abilities to act in accordance with the requirements of each age group of the program. The development of skills and competencies in the process of teaching different movements is carried out in close cooperation with the development of physical qualities. At the level of development of physical qualities, the success of children's motor activity and the ability to master new forms of movement are determined by their ability to use them in accordance with the purpose. This process is as follows: training in motor activity - the formation of motor skills - the formation of motor skills - the formation of higher motor skills - the acquisition of specialized knowledge.

Motor skills are defined by a student's ability to perform each movement, learning movement activity, or mastery of a movement technique. There are two types of movement skills.

1. Implementation of integrated action activities.

2. It is expressed in some actions that vary in complexity.

The first type of skill is related to the need to solve sudden movement tasks in a changing environment, such as games, wrestling, and so on. In this case, motor activity is always characterized by conscious and already mastered actions and the creative use of formed physical qualities. As for other motor skills, they gradually develop into skills, from the initial mastery of motor techniques to the improvement of them. Motor skills are the level of mastery of motor techniques, in which the control of movements is automatic and the movements are very reliable. In this case, the automation of the method of performing each individual action does not exclude the conscious understanding of this or that action at all. In order to perform conscious tasks, control movements, and the suddenly changing conditions of performing movement tasks, it is sometimes necessary to apply the skill non-automatically. When the skill is regular, different variants of the action can be used.

However, its technical basis, for example, running in different variants) is preserved. In turn, changes in movement can lead to the emergence of new skills in a more creative way. This allows you to apply the acquired skills to a whole activity and choose the most suitable, most suitable options for the performance of actions. The formation of motor skills is the process of forming a dynamic stereotype of the interaction of the first and second signaling systems. In this process of teaching children to move, the teacher's influence on the child's mind - a word that helps to understand the purpose and function of the exercise - is of great importance. It is the most powerful stimulus of all the sensory complexes that occur in the motion analyzer. big.

The acquired skills allow to use physical and mental forces sparingly, to perform actions that are part of the integrated movement activity quickly and accurately. They relieve the constant focus on the method of conscious action and allow it to focus on the new tasks that arise. When actions are performed in an organized, precise, and rapid manner, positive emotions are created in the individual as well as in the child.

The first stage is the development of initial skills. It will be short in time.

In doing so, children become acquainted with new movements. This formation is characterized by extensive irradiation of the excitatory process in the cerebral cortex and insufficient internal braking. In connection with this, there is insecurity in children's movements, general muscle tension, excessive, unnecessary movements, inaccuracies in the perception of space and time.

This is the result of a widespread process of irradiation of motion and spreads to other centers of motion analyzers. The second stage is longer in time. It is characterized by the process of specialization of the conditioned reflex. During this stage, children develop the skills of repetitive exercises, and the correct execution of the studied movement gradually improves. This is accompanied by a degree of detection of individual reflexes and their entire system.

The second stage is characterized by the gradual development of internal differential braking, which limits the propagation of the excitation process, and the increasing role of the second signal system. However, at this stage the formation of motor skills is undulating. This is characterized by the occasional improvement or worsening of movements. Studies show that in the process of general development, such fluctuations in the quality of motor activity occur at the beginning of education. As motor skills become more refined and perfected, a complex system of temporal connections — the dynamic stereotype — emerges in the cerebral cortex.

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# Methods of Overcoming and Overcoming Fear in Children

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## ABSTRACT

The article describes methods of children and how to overcome fear. And also there has a school period of Thomas Edison. It also says that parents can help their children overcome their fears by giving them to different clubs. the article states that the teacher should beautifully immerse the child without scolding him for solving the example problem incorrectly The are has different methods to solve the fear of children, such as motivation methods.

**KEYWORDS:** *motivation, methods, feel, children, parents, fear, teachers, school, self- confidence, home, play games, primary education, encouragement, Thomas Edison, letter, class, free time, dance, sports, achieve goals, attention, lesson, music, punishment*

## INTRODUCTION

According to German psychologist Kurt Levin, "If a child overcomes his fears, he will look at the world differently." It is known that in the world we meet children who are afraid of different things. For example, at school, some children are afraid of the teacher's anger and shouting, and some children are afraid to go to the blackboard and talk, memorize a lion, and get two grades. One such method of overcoming and overcoming fears in children is the method of praise and encouragement. The method of praise and encouragement is one of the main methods that motivate the child and help him to overcome and overcome his fears.<sup>[2]</sup>

First of all, motivation means motivation, empowerment to think, feel, and act. In school, a teacher can use several methods of motivating students: approving, praising, encouraging, expressing confidence, rewarding. We can observe school-age children who are afraid to solve sample problems incorrectly, because the teacher fights in front of the whole class because the student solved a problem incorrectly, this situation is left in the eyes of all the children in the class, and they even when they solve it correctly, they are afraid to go to the teacher and check whether the example is correct or incorrect, because they will be left with the same situation in their minds. It is clear that the teacher's method of the punishment increases the fear of children instead of overcoming them. The student has solved the problem and the problem a little bit If so, encourage the child to correct and correct the teacher by encouraging him with words such as "bless you", "well done", "very kind", which will increase the child's self-confidence. and helps the child overcome and overcome their fears and strives to solve more examples and problems by striving to increase their knowledge of reading.

Vladimir Levi says: "Praise is very useful, it increases self-esteem, helps to overcome fear, increases confidence in one's strength, and allows one to express one's opinion freely."

Children are especially in need of encouragement if they are not strong enough. The use of the stimulus method is more effective in the upbringing of young children and adolescents because children of this age are very sensitive and agile in assessing their behavior and activities. The teacher should pay special attention to students who are overly pampered or overlooked. The educational value of incentives depends on the objective support of the majority. An example of this is the life of Thomas Edison. Probably few people have not heard of that famous story about Thomas Edison, which is half-myth and half-truth. According to him, Edison's schoolteacher was angry at his backwardness and sent a letter from Edison to his mother. Of course, Edison, who is a backward student, does not know what is written in it. She brings her teacher's letter to her mother. When the mother reads the letter, she says, "Your child is very backward, he can't do well in science, take him to another school!" There will be such things as The mother did not want her son to be discouraged, so she read the letter aloud to him, altering the content. "Your son is a wonderful boy, he excels in all the subjects in the class. Thank you!"<sup>[3]</sup> In fact, Edison found out that the letter was completely different years later when he was already known as a great inventor and wealthy businessman. Then his mother died, and he took his old clothes out of his pocket, finds the letter he brought from school. When you read it, it had the same ugly description.

Thomas Edison is reflected in the school records of a truly backward student during his school days. He was later expelled from school and taught at home only by his mother and began to recognize letters, and when he learned to read, he began to read various books on his own. From this, we can see that the mother punished her child, beat him, extinguished his desire to read, and used the method of praise without increasing his fear. Through the method of praise, the mother taught her child a beautiful science. brought up as a great person inventor in the future.

Another way to help children overcome their fears is through music and play. Sometimes we hear from parents who don't know how to overcome their children's fears. So many psychologists advise parents to give their children a variety of sports. If a child goes in for sports, he will overcome his fears. When a child goes to a sport, he meets and talks with other children wherever he goes and exercises together, and then repeats the exercises at home,

<sup>2</sup> J. Lashley "Working with young children, encouraging their development and solving problems", Book. for educators children. garden: [Per. from English] - M., 1991.

<sup>3</sup> Cheron, D. M., Ehrenreich, J. T., & Pincus, D. B. (2009). Assessment of parental experiential avoidance in a clinical sample of children with anxiety disorders. *Child Psychiatry and Human Development*, **40**(3), 383– 403.



trying to achieve more, forgetting his fears. only strives for the goal and overcomes fear. Alfred Adler is quoted as saying, "When it rains, many birds seek refuge, and the Eagle is the only bird that flies high to escape the rain, like the Eagle. When problems arise in life, do not try to be afraid of them. Overcome your fears by raising your head." Some parents do not even allow their children to listen to music, play games, or even watch children's TV shows. In this way, the child's fears increase. So kids need more free time. Some children express their fears by watching they are favorite show a lot, while others dance by listening to their favorite music, while others go to sports activities that they enjoy. overcomes and loses fear. Another way to help a child overcome fear is to listen to the child and explain to them slowly and correctly that they have done something wrong, without hitting them or scaring them. [4]

There is no one in the world without fear. Of course, some people are afraid of something. There is a little bit of fear in a person who says that he is strong and not afraid of anything. So, a little bit of fear in cats is a bit more in kids. According to research conducted by experts, the fact that a person lives in excessive panic, although this panic has no basis, gradually leads to mental and even physical weakness of the person. Constant fear will never allow him to reach his full perfection. For example, the difference between the physical and spiritual development of a child who grew up with a relatively free husband and a child who grew up with constant fear and control. One is a little more courageous, and perhaps a little more courageous, while the other is a little less courageous and more easily overcome by any disease.

For children growing up in fear and control, A. S. Makarenko warned about it in time. According to him, "Children with strong and weak-willed fears later grow up to be careless and useless people or oppressors who seek revenge for the atrocities they have committed throughout their lives." The child should be taught to live freely and without fear, without being oppressed or oppressed in the future. Only then will the child not think about the pressure from others, and will not be afraid to be the center of attention, only then will he be able to achieve his goals.

### Conclusion

In conclusion, we quote the advice of psychologists: "Psychologists advise parents not to forget that the purpose of punishment is to return the child from a harmful and dangerous situation, and not to hit, not to panic, not to punish." So without punishing the child for a trivial reason to motivate, to boost his self-confidence, to motivate him to conquer more and more. After all, Motivation is a great force.

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# The History of Visual Arts and It's Importance in People Life

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## ABSTRACT

There are many meanings of the workmanship throughout the entire existence of feel; subsequently, it appears scarcely conceivable to propose the one and only one and extreme examination based definition. A profound effect on the passionate and scholarly degrees of human cognizance that show-stoppers produce is their unmistakable component. In this article features of the historical backdrop of visual art and its significance in individuals life.

**KEYWORDS:** *Art, visual art, people life, aesthetics, artistic art, image, symbol*

## INTRODUCTION

Throughout the entire existence of style, there are many meanings of workmanship. Accordingly, it is essentially difficult to give a solitary and at last logically stable meaning of this idea. Based on my experience as an instructor of feel and writer of books on style and art hypothesis, I can offer my own meaning of workmanship, without in any capacity professing to be a definitive truth. In my assessment, art is the expert action of a craftsman, which intends to make imaginative pictures that are summed up, frequently emblematic in nature. The longing for improvement and in any event, for the production of the absolute easiest pictures exists in the creature world, however no creature is equipped for making images. This permitted the German logician Ernst Cassirer to call man "a creature that makes images". Imaginative innovativeness and art as its most noteworthy sign are image making exercises. Visual workmanship has consistently been and still is of a mimetic sort. In any structure, even as conceptual art, it is an impersonation (mimesis) and a proliferation of the real world. This assertion is the finish of the whole history of style and art hypothesis, and few individuals have addressed it. A particular component of masterpieces is the profound effect on the passionate and scholarly degrees of human cognizance. Aristotle, clarifying the impact of appalling workmanship on an individual, called this cycle therapy, that is, the purging of the mind with the assistance of dread and sympathy. The possibility of therapy, created by Aristotle according to sad and comic workmanship, gone on for a few centuries.

It was effectively examined by the scholars of the Renaissance and Modern Times, and in the 20th century it was upheld by Sigmund Freud and numerous other workmanship clinicians. We can say that the idea of therapy isn't totally obsolete today. There are numerous effective and questionable issues in the arrangement and understanding of art. One of them is the issue of legitimacy of show-stoppers. It assumes the presence of a fundamental inner association between a show-stopper and its creator. Without this association, workmanship loses its atmosphere, inventiveness and uniqueness, association with the ethnic

and public climate. Art turns out to be so without an individual start in the time of mass multiplication, where the association of crafted by art with the creator gets restrictive and regularly totally lost. This is the reason for a portion of the thoughts of postmodernism, which broadcast the "passing of the writer", the disintegration of his character in an unknown content that needs just a right reading talk.

Today, the need to comprehend the validity of a masterpiece is getting critical because of the issues of art imitations. This is one of the essential issues related with the development of the workmanship market and the unending expansion in costs for both traditional and contemporary workmanship. Valid, workmanship frauds have existed all through the presence of European art. It is realized that some significant bosses of the Renaissance produced crafted by counterparts, which was somewhat not an acquiring, but rather an exhibit of the all inclusiveness of the style and Renaissance adaptability. In the resulting time, the falsification of the craft of the bosses turned into a genuine industry, sabotaging the genuine creative qualities. Some workmanship antiquarians accept that the exemplary works of the XV-XVI hundreds of years. - this is 33% of the fabrication. It is realized that on the planet there are eight compositions portraying the "Mona Lisa". Which of them has a place with Leonardo da Vinci, and which are her fakes? Since the eighteenth century, craftsmen have been battling the developing counterfeiting industry, guarding the creativity of their work. The quick development of the methods for replication, particularly in such a fine art as illustrations, made it conceivable to acquire others' subjects and to fitting financially effective syntheses. The first to contradict this was the English craftsman William Hogarth, in whose work illustrations involved a more prominent spot. He spoke to the English Parliament with a proposition to pass a law as per which all realistic works needed to contain the name of the distributor and the date of assembling of the realistic work. This proposition was acknowledged is still lawfully legitimate today as the "Hogarth Act". Hogarth expeditiously protected the craft of designs, however in the field of painting, the literary theft industry kept on developing, carrying enormous benefits to the creators of fakes. Today, numerous names are known by craftsmen who provided the art market with very expert fakes. For instance, the Italian Giovanni Bastiniani was occupied with imitation of Renaissance forms, the Dane Han van Meegeren capably fashioned artworks by Vermeer, the Frenchman Yves Shadron made fakes of Leonardo's Mona Lisa. The specialty of the 20th century has additionally been the subject of broad adulteration. The German Otto Wacker fashioned artworks by Van Gogh, the Frenchman Jean Pierre Shekroun and the Hungarian Elmir de Hory were occupied with falsifications of Picasso's works of art. The subject of adulteration was and still is the illustrations of Chagall, Miro,

and Dali. All this is a little rundown of hidden world figures who adulterate art.

To stop the progression of misrepresented craftsmanship items, present day science utilizes different techniques, including Xrays, spectrography, nuclear investigation, and so on. Historical centers around the globe make inventories with portrayals of canvases by aces and their proprietors. In the United States, an extraordinary demonstration has been passed against the fake business, and the Federal Trade Commission (FTC) screens the exchange masterpieces. The artistic work of Uzbekistan, as a fundamental piece of the world craftsmanship, makes a commendable commitment to its improvement. In the specialty of Uzbekistan, totally new, beforehand non-existent sorts and classifications of workmanship have created and made huge progress. One of them was painting, and inside it significant compositional issues were tackled, and in which especially observable innovative triumphs were accomplished. Mirroring the existence of individuals, the interesting nature, the soul of the time and the pictures of counterparts has become the primary philosophical and imaginative errand of the painters of Uzbekistan. Creative accomplishments have become the object of steady investigation and examination. As per the advancement of artistic work, workmanship studies and craftsmanship analysis were framed and created. Along these lines, the investigation of the issues of the chronicled advancement of the expressive arts of Uzbekistan is presently pertinent both in hypothetical and reasonable terms. By the by, the quantity of adulterations of show-stoppers isn't diminishing, they fill the advanced craftsmanship market. Because of the enormous fame of crafted by Uzbekistan specialty of the 20th century, the fake business has moved its advantage from Western workmanship to Uzbekistan craftsmanship in later many years. This industry produces gigantic incomes and is identified with illicit, crimes.

Uzbekistan doesn't have a unique association that would control the offer of Uzbekistan craftsmanship abroad, which gives opportunity of activity to falsifiers represent considerable authority in Uzbekistan workmanship. The making of such an association requires the joint endeavors of workmanship antiquarians, restorers, craftsmanship sellers, and agents of workmanship exhibitions. Clearly, the Uzbekistan could take suitable administrative measures to control the cutting edge craftsmanship showcase and dispose of the exchange workmanship frauds. At that point, in the

continuation of the exercise, pride in the local land, for the old culture of its individuals, cites proclamations from the hadiths of the Prophet Muhammad: First bow to your mom, over and over, and afterward to your dad. Any individual who needs to go to paradise should get the gift of the mother.

What's more, here they review crafted by Odil Yakubov "All that will get back to business as usual", which tells that the child who made a journey to Mecca and got back to his country, should as a matter of first importance go to his mom and love her.

### Conclusion

To open the world of beauty to the child, to make him sensitive to the beautiful and to teach him to appreciate the beautiful and to create the beautiful with his own hands is not easy and not easy, but it is necessary. It should be answered to raise and educate children: familiarization with folk art, the development of pictorial paintings by artists with its imagery are the guides of a living tradition of art.

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# Problems of Rational use Ground Water of Bukhara Region

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## ABSTRACT

The article investigates and conducts complex geographic studies, gives a classification of soils, describes their physical properties and problems of rational use of groundwater in Bukhara region. The high level of formation of saline groundwater leads to salinization and water logging of soils. In this regard, one should carefully monitor soils subject to salinization and water logging. Reducing groundwater losses through the use of simplified ground-based operational methods salinity management, as well as the rational use of water resources, simplifying the distribution of systems at all levels, repairing canals and cleaning collectors.

**KEYWORDS:** *groundwater, soil classification, physical properties, mechanical composition, groundwater level, salinization, water logging*

The land resources of the Bukhara region have been thoroughly studied by Uzbek scientists, the quality and composition of the soil have been determined. Comprehensive geographic studies have been carried out, the classification of soils has been given, and their physical properties have been described [1,3,4]. Within the Bukhara region, morphic, transitional hydromorphic soils of the desert zone are distinguished, formed on deposits of various genesis and age. The humus content is 1–2% [2]. The soils have a different mechanical composition: from sandy loamy sand to medium loamy. The humus content is 0.6–1.8%. The concentration of nitrogen is 0.05–0.16%, total phosphorus is 0.09–0.11%. In terms of texture, they are different: from heavy loamy to sandy. The humus content in the layer is 0.3–1.8%, nitrogen - 0.03–0.16%. Desert sandy soils contain about 0.5% humus and 0.04–0.05% nitrogen.

The purpose of this article is to study the problem of rational use of groundwater in the Bukhara region. Bukhara region is located in the south-west of Uzbekistan, borders on Kashkadarya, Navoi regions and Turkmenistan. Population - 1.7 million people (68% - rural, 32% - urban). Total area - 40.320 km<sup>2</sup>: 64% - pastures; 4.7 - agricultural land; 2.4% - lakes with drainage water, the rest - unused land. The total area of irrigated land in 2013 was 274.9 hectares. The climate is sharply continental, winters are cold, summers are hot and dry. On average, there are 300 sunny days per year, the average annual precipitation is 90–120 mm, and the average annual evaporation is 1900–2000 mm. Almost 60% of precipitation falls in January - April. The annual amount of solar radiation is 150–160 kcal. The average air temperature is –15–16 °C [11,12].

In the Bukhara region, aboveground waters are fully provided with water from the Amudarya and Zeravshan rivers. The main source of water is the Amubukhara and

Amukarakul canals, additional - the Kuyimazar, Tudakul and Shurkul reservoirs. The hydrographic network of the region is represented by a large number of irrigation facilities and drainage networks. The main drainage faults are Central, Severny, Parallel, Tashkuduk, Parsankul and Ogitma. Bukhara region is located in the lower reaches of the river. Zeravshan [8,9].

The groundwater level (GWL) mainly depends on the terrain, depth and distance of drainage [13]. The main source of food and the reason for the close occurrence of groundwater is infiltration water from hydraulic systems. Precipitation also plays an important role in replenishing their reserves. The high level of occurrence of mineralized groundwater leads to soil salinization and water logging. To reduce soil salinization and water logging, it is necessary to analyze the reasons for temporary changes in the groundwater level, the location and scale of areas in the zone of risk of salinization and water logging, and to develop measures to prevent negative processes.

The temporal dynamics of the GWL was analyzed for the period from 2000 to 2013. The largest area of the groundwater occurrence zone at a depth of 1.1–1.5 m (Fig. 1.) was recorded in 2005, 2012 and 2013. - 20 thousand hectares (7.3% of irrigated land in the region), and the smallest - in 2000–2001. - 6.6–8.5 thousand hectares (2.4–3.1%). These indicators with a groundwater depth of 1.51–2 m, respectively, were 68.4 thousand hectares (24.9%) - in 2009–2013, and 40.3–44.2 thousand hectares (14,7–16.1%) - in 2000, 2012. The total area of the groundwater table at a depth of 1.51–2 m in 2000–2013. amounted to 164.7–184.4 thousand hectares (60–67%). The largest area of groundwater occurrence zone at a depth of 2.1–3 m was recorded in 2001, 2004, 2005 and 2006. - 180 thousand hectares (65% of the irrigated land in the region), the smallest - in 2000 and 2013. - 164.7 thousand (59.9%) and 170 thousand hectares (61.8%), respectively. In 2000, the area of irrigated land located in this zone of groundwater occurrence amounted to 14.4 thousand hectares (by 5.2%). In 2000, the area of the 3.1–5 m groundwater table was 57.9 thousand hectares, in 2013 - 13.9 thousand hectares, that is, it was almost 3.7 times less (5.1% of the total area of irrigated land in the region). The occurrence of groundwater at a depth of more than 5 m was noted in 2000 and 2002. on an area of 0.3–2.6 thousand hectares (0.1–0.9%). As evidenced by these data, indicators of the level of groundwater occurrence during the year can fluctuate significantly, and the area of land changes accordingly. One of the main reasons for the high level of groundwater occurrence on saline lands is the constant pressure-ascending inflow of deep groundwater [13]. The volume of infiltration water depends on the amount of vegetation



irrigation, intensity and frequency of precipitation, water-physical properties (permeability) of soils and rocks of the aeration zone [10]. The migration of waters infiltrating from the surface occurs until they reach the groundwater horizon, after which their vertical movement stops. They flow in the form of a soil flow towards the nearest natural drains (river valleys, gullies, ravines). When the infiltrated water reaches the groundwater basin, its level rises. As a result of a number of reasons - reservoir backwater, mass leaching of lands in spring with insufficient drainage, poor natural outflow of water from the territory and unsatisfactory condition of collectors, groundwater in the region is close to the surface almost all year round. Obstructed drainage and backwaters on collectors lead to a situation when the level of groundwater rises, and their outflow is impossible due to intensive use of land.

If the salinity of groundwater is relatively low, then, provided the level of their occurrence is low, the secondary salinization of the soil will be minimal or not at all. Intensive leaching of the soil contributes to the prevention of excessive soil salinization, but this also causes an increase in the level and salinity of groundwater. The source of salt accumulation is water with a salinity of 1.0–1.5 g / l. Mineralization of the Amudarya water at the outlet from the mountains was 0.2–0.3 g / l during the study period, and in the underlying territories - 1.0 and higher. The obstructed drainage and backwaters on the collectors lead to an increase in the level of groundwater and, as already mentioned above, due to the high coefficient of land use, their outflow is generally impossible. Large evaporation leads to strong soil salinization. Under these conditions, the regulation of the water-salt regime is extremely difficult. It should be noted that the land salinization of the Bukhara region is stable. Salinization is the result of irrational use of water resources [11, 14]. Soil leaching as a means of combating seasonal salinization under these conditions is ineffective due to the small capacity of the aeration zone and insufficient land drainage. In this case, the collectors are destroyed: slopes float and the bottom is poured. Arid conditions increase the transpiration of water and the accumulation of salts in the surface layer of the soil.

From what has been studied, it follows that the closer to the surface of the ground the groundwater, the greater their participation in water consumption and the lower the need for water, that is, the number of vegetation irrigations and associated inter-row soil treatments decreases [5]. In addition, due to the high standing of groundwater, there is an intensive accumulation of salts in the upper layers of the soil [6,7]. The prevailing landscapes of the Bukhara region are characterized by weak natural drainage and insignificant land slopes (0.0001–0.0002). In the absence of good drainage, difficulties arise in lowering and removing groundwater, regulating the salt regime of soils. Due to operational difficulties, most of the existing drainage systems are malfunctioning or inoperative and approximately 50% of the vertical drainage is not used at all. The existing collectors quickly flooded and are now operating in a backwater mode, in connection with which the level of groundwater rises, there is a low efficiency of flushing, and an increase in soil salinity.

In this regard, it is necessary to conduct careful monitoring of lands subject to secondary salinization. In addition, methods of ground-based simplified operational control of

salinity should be widely used in order to prevent it in specific fields during the growing season, as well as rational use of water resources, reduce unproductive water losses by streamlining its distribution at all levels of systems, repairing canals and cleaning collectors [15].

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## Some Considerations about the Socio-Political Movements of Young Khivans

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### ABSTRACT

This article analyzes the socio-political movements of the Young Khiva people in the Khiva Khanate in the early twentieth century. In particular, it is also mentioned about the fact that the revolution in Russia has a positive impact on the growth of movements towards democratic reforms in Turkestan. From the beginning of 1917 the movement for democratic reform was began in the Khiva khanate. The young Khiva people who armed with the idea of independence took an active part in this movement with the idea of changing the political situation in the khanate and implementing some democratic reforms.

**KEYWORDS:** *Young Khiva Party, Turkestan Province, Khiva Khanate, Interim Committee, Assembly and Council of Ministers, manifesto, democratic reforms, constitutional monarchy*

In the first quarter of the 20th century, the socio-political processes taking place in the Turkestan region, in particular, the establishment of Soviet power by the Bolsheviks in a forced way, unprecedented events took place in many parts of the world. For example, democratic movements in Russia began to positively influence the awakening of the peoples of the national territory. In Russia, the February Revolution, which was in 1917 year. In Turkestan, too, democratic reforms began to have a positive impact on the growth of the movement.

This process was the impetus for the struggle of the population living in the territory of the Khiva Khanate for the possession of democratic freedoms and rights. As a result, meetings, rallies and demonstrations took place in the cities of the Khiva Khanate. At a rally in Petro-Alexandrovsk (now Turkul) on March 7, 1917, Colonel Zeytsev, the head of the Amudarya branch of the Turkestan Governor-General's Office, was asked to resign. Instead of military administration, the Council of Soldiers and Workers' Deputies and the Executive Committee of Public Security were established in Turkul. This committee began to act as the board of the Amudarya branch.

From April 1917, the Khiva Khanate also began a movement for democratic reform. Young khivans who armed with the idea of independence, pursuing the interests of the people in this movement, took an active part in the idea of changing the political situation in the Khanate and carrying out some Democratic Reforms. For example, on 4 April, the young khivans took part in a meeting of the garrison of the Russian army in Khiva dedicated to the oath of allegiance to the interim government, asking the head of garrison to help them in carrying out some reforms in the Khanate.

At a time when the mood of democracy was rising, the young khivans persuaded Asfandiyorkhon to give side. In April 5,

1917 in the city of KhonKhiva signed a program (manifesto), presented by young khivans. In this document, it was announced the establishment of the elected Assembly and the Council of Ministers, the control of the state treasury, the construction of railways, Mail, Telegraph, the opening of new method schools, etc. [1.- B.44 – 45].

To control the implementation of reforms in the presence of the Hon, it was necessary to organize an interim committee (meeting) consisting of 30 representatives. In some historical literature, the name of the committee is incorrectly indicated as "mashruta". In fact, "mashruta" was a constitutional monarchy, which during this period was considered a method of Management in the Khiva Khanate. On 8 April, a meeting consisting of young khivans and large officials (chairman – BobookhunSalimov) and Council of Supervisors (chairman of the government– HusseinbekDevonbegiMatmurodov) was held in the presence of Khiva to manage the country. The assembly consisted of 30 people [2. –B. 46]. One of the leaders of the Young Khiva Party, PolvonniyazHojiYusupov (1861-1936), was tasked with stabilizing relations with the Russian government and Russian troops. Later, 19 more people, including 7 Turkmen, were included in the parliament. The young Khiva people became the ruling force in the Khiva khanate [3. - B.105-106].

As a cleric, BobookhunSalimov played a key role in the formation of the Council of Assembly and Council of Ministers, the organization of its activities, ensuring that its documents were on the basis of the Islamic Sharia. About this, Polvonniyoz Haji Yusupov writes in his memoirs: "Not to be outdone, we wrote in the manpes given by the khan that it consisted of thirty representatives. Then, in consultation with BoboAxunEshan, letters were sent to all the Khorezm fortresses to elect representatives to Turkmenistan, Kazakhstan and Karakalpakstan." [4.- B. 83].

The Majlis and the Council of Ministers in Khiva signaled that the country was embarking on a new path - reform and democracy. The Majlis and the Council of Supervisors included clerics, businessmen, intellectuals, and heads of Turkmen clans and tribes. The attitude to this news in Khiva society was different.

Young khivans were pleased: they saw the establishment of a constitutional monarchy as an expression of the fulfillment of their reform provisions. Their protesters began to lead new institutions of the state. A well – known figure of the young khivansBobookhunSalimov was the chairman of the Assembly, and their leaders HusaynbekMatmurodov was elected the head of the government-the chairman of the Council of Ministers.

In May 1917, a delegation headed by a member of the Parliament PolvonniyozYusupov was sent to Tashkent to negotiate with representatives of the Provisional Government. Asfandiyorkhon relied on military forces led by general HaydarKhojaMirbadalov (Tatar of the nation), the representative of the interim government in Khiva, and dissolved the meeting in June. Seventeen prominent young people from Khiva, led by HusseinbekMatmurodov, were arrested, and their seats in the Majlis included officials and representatives of high priests. In short, Khan appointed a new Constituent Assembly (chairman - OrtiqAxun) and a Council of Ministers (Chairman of the government - IshokkhuzhaKhujaev) from among those who are satisfied with him. All members of the young khivans' party were declared unbelievers and began to take cruel revenge on them [5.- C.58].

Thus, seventeen members of the former parliament, led by H. Matmurodov, have been arrested. BoboohunSalimov was also taken under strict control. To strengthen the khan's victory over the Young Khiva, and to put an end to new protests against the existing system in the khanate, the Provisional Government established the post of commissioner in Khiva on 25 July. In September 1917, Colonel Zeytsev arrived in Khiva with a large Cossack detachment. He supported the khan who was fighting against the Young Khivaites. On November 21, a "Sharia court of judges" was held against the young Khiva residents. In November 1917, Asfandiyorkhan, with the help of the Russian Cossacks, completely abolished the Meeting. The young Khivaites, who had been defeated in the struggle against the khan's oppressive regime, were forced to leave the country [3. - B. 107].

In November-December 1917, PolvonniyozYusupov, NazirSholikorov (1881 - 1938) arrived in Tashkent, MullaJumaniyazSultanmurodov in Petro-Alexandrovsk (now Turtkul) [4. -B. 174 - 176.]. Other leaders of the Young Khiva party, HusaynbekMatmurodov, IshakhodjaKhodjaev, AbdusalomHojiIslamkhodjaev, HojiAvazberdiEshonov, were executed on May 18, 1918 by the khan's order [6. - B. 12.].

These events played a decisive role in the later political life of the Khiva khanate. On the one hand, the forces supporting the order of absolute domination in the khanate were united and intensified, and the khanate ruthlessly shaped its policy. On the other hand, there have been changes in the opposition movement as well. When the raw idea of peaceful reform of society was thwarted, some of the Jadids, especially the liberal wing, abandoned active political struggle, while others - the Young Khivaites - changed their style of struggle, took an armed struggle against the ruling regimes.

In the manifesto, which was announced by the young khivans party on February 8, 1920 [7. -S. 479.]. The nearby functions of the Khiva Revolutionary Party were promoted. Later this official document was published in sources and literature [8.]. It was misinterpreted as the previously adopted Program (guide-line) of the young khivans party. In its time, this manifesto, published in the Russian-language newspaper "ИзвестияТуркЦИК" in Tashkent, consists of 12 articles, the main content of which is as follows:

1. Absolute abolition of the absolute rule of the country by the Khan of Khiva and his government;
2. Public property declaration of funds and properties belonging to Khiva Khan, princes, beys and ministers;

3. The use of large landowners in the chapter of improving the lives of the poor;
4. To open schools throughout the khanate for free education of children and to spend the income from the foundation;
5. Extraction of channels from the Amudarya for the acquisition of reserve and vacant lands in Khiva;
6. Opening of schools for free education of children in Khiva;
7. Opening of free hospitals and health facilities in Khiva cities and residential addresses;
8. The return of lands, property and other things taken from the poor population by Khiva Khan and his lords to their owners;
9. To find out exactly where the people's funds that were deposited in the Treasury during the reign of Asfandiyorkhon were spent;
10. Introduction to the construction of Railways and bridges;
11. Complete elimination of involvement in free forced labor (beggar);
12. Immediate action to overthrow the Khan and his government and as a result of the formation of the people's government it is necessary to begin the implementation of the above-mentioned program items, to wage a ruthless struggle against the khan's supporters, the bourgeoisie and the counter-revolutionaries who oppose the people's power [9].

The political, social and economic demands envisaged in the manifesto or party program proclaimed by the young khivans were born as a result of their struggle against monarchy in the Khiva Khanate for many years. Young khivans, who came to power with the help of the Red Army and the Bolsheviks, began to realize their ideas.

In conclusion, at the end of the Khiva Khanate, young khivans played a certain role. Monarchia, which is characteristic of the Middle Ages, was a method of despotic management, having passed its lifetime when it came to the beginning of the XX century. The young khivans, who were in a Democratic mood, wanted their people to live comfortably and consistently fought against the monarchical and Khanate system based on oppression and complication.

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## Some Features of Regional Policy in Turkestan

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### ABSTRACT

The zoning policy carried out in the Turkestan ASSR, from the 1922 very beginning had economic and administrative features. The Soviet government in 1923-1924, attracting to the zoning policy, in addition to the Turkestan ASSR, the Bukhara and Khorezm republics, on the one hand, sought to manage the economy of the entire Turkestan Territory from a single center and achieve economic efficiency, on the other hand, zoning was aimed at reviving and the development of a destroyed national economy.

This article reflects general aspects of zoning policies. The development and implementation of the economic and territorial zoning of the Turkestan ASSR is analyzed based on historical sources.

**KEYWORDS:** Regionalization, Turkestan ASSR, Bukhara and Khorezm republics, Turkestan Economic Council, All-Russian Soviets, zoning policy, zoning commission, national-territorial delimitation, industry, transport system, trade relations.

When the Soviet power was established in the territory of the Russian Empire, the Bolsheviks in the 1920 - 1921 paid particular attention to the zoning policy. Soviet, party and economic authorities worked to develop and implement economic and regional zoning in a large country. This policy was also implemented in the Turkestan ASSR.

At the VIII Congress of All-Russian Soviets in Moscow in December 1920, the issue of Russian zoning was revised to reconsider the centralization of the state apparatus formed during the policy of "military communism". [1.]. When the issue of regionalization was first addressed, the economic front was intended to carry out plans for labor sharing with the Center and the reconstruction of the technical base in all sectors of the economy. The 8th Congress of All-Russian Soviets entrusted the Central Executive Committee of the All-Russian Federation to elaborate all the details of the issue of zoning of Russia [2, -p. 321.].

The main proposals developed by Central Executive Committee were approved at the IX Congress of All-Russian Soviets in 1921, and Turkestan and its capital Tashkent were declared a separate economic district of the Russian Federation as the largest autonomous national association.

Seeing complete disproportions in the internal structure of the Turkestan ASSR, the Turkestan Economic Council, in accordance with the decision of the X Congress of the All-Union Soviets (September 1921), began reorganizing the regions of the republic within small territorial and administrative boundaries (provinces). For this purpose, a special subcommittee (subcommittee) was established under the State Planning Committee at the Labor and Defense Council. [3.]

The Regional Subcommittee (RCC) allocated Turkistan (including Khiva and Bukhara) economically to the following 11 sub-districts:

1. "The Semireche [Yettisuv] sub-district [the district] unites Almaty, Jarkent, Kopal, Urjar, Ucharol districts.
2. The Chuy sub-district unites Karakul, Pishpek counties, and partially the Avioota and Turkestan counties.
3. The Aris-Talos sub-district connects the rest of Pishpek, Avlyoota and Turkestan counties.
4. The Lower Syrdarya sub-district unites Gazali and Perovsk districts.
5. Tashkent Subregional connects Tashkent, Jizzakh and Uratapa districts.
6. The small region of Samarkand connects the Samarkand and Kattakurgan counties.
7. Fergana small district partially Khujand (it was an independent district until the beginning of 1922); unites Kokand, Namangan, Andijan, Ferghana, Osh and Naryn.
8. The lower district of the lower Amudarya unites Khiva and the Amudarya region.
9. The small region of Transcaucasia unites the entire Turkmen region.
10. The Republic of Bukhara is divided into 2 sub-districts:  
10. The Middle Amudarya sub-district is West Bukhara.
11. Eastern Bukhara is a small district of the upper Amu Darya " [1, -p. 2.].

Naturally, the policy of zoning in Turkestan was ignored in the territory of the Kyrgyz ASSR [Kazakhstan ASSR]. Historically, the Kyrgyz ASSR (the capital of Orenburg) was established in August 1920 as part of the RSFSR, mainly Kazakhs and Russians. Kyrgyzstan, that is, when the Kazakh ASSR was established, most of the Turkestan ASSR area was given to it. However, the issue of zoning had not yet been raised.

In the development of the Turkestan zoning project, the Russian Federation (RSFSR) Subcommittee on Gosplan considers two aspects: the water system and the existing administrative division. The first case focuses on the creation of the Chui sub-district and the second case on the creation of two sub-districts in the Zarafshan Valley [1, - p. 2.].

According to D. Krasnovsky, Chairman of the Zoning Subcommittee under the Gosplani Economic Council of Turkestan, dated May 27, 1922, the following features were identified as subdivisions:

1. Population.
2. Land access.

3. Ratio of pasture, forest and greenery.
4. Ratio of cultural crops (crop).
5. Livestock.
6. Natural and historical conditions [1, - p. 4-5].

In addition, many large areas of the national economy: industry, transport, water management, trade (commerce) and others were taken into account in the zoning process in Turkistan. All-Russian census materials of 1917 and 1920 were also widely used in regional policy [4].

It would be expedient to give a brief overview of the territory and population of the facilities and districts of the Republic of Turkistan in 1917 and 1920.

In 1917 Turkistan had 5 counties (Syrdarya, Semirechye, Fergana, Samarkand, Zakaspiy) and 27 districts in the Amudarya branch. (See Appendix. 1) However, the Turkistan Territory was 1 533 267 versta<sup>2</sup> in 1917, and in 1920 the territory of the Turkistan ASSR declined to 1,337,847 versta<sup>2</sup>. 20-21.]. Because the territory of Turkistan 200,000 versta<sup>2</sup> was transferred to the Kazakh ASSR, which was established in August 1920.

Later, a considerable part of Turkistan territory was given to this autonomous republic.

According to the All-Russian Census of 1917 and 1920, the small administrative division of the Republic of Turkistan was as follows: In 1917 the provinces and districts in Turkistan were divided into 32 cities, 170 urban-type settlements and railway stations, 603 volosts, and 4658 rural communities and auls. In 1920 there were 35 townships, 156 urban-type settlements and railway stations, 466 volosts, and 3825 rural communities and auls. In 1917 the population of the countryside was 9 461, while in 1924 their number decreased to 8916 [1, - p. 30-31.]. However, this list shows that in 1920 rural communities and populations living in one district in 1920 increased slightly on average.

The Turkistan Water Management Administration made some initial, though rough, decisions about zoning in recent years. They did not recognize administrative boundaries and used small-scale irrigation - a cross section of districts instead of existing provinces and counties for administrative purposes. According to the materials of the Department of Water Management, there will be 31 constituencies, instead of 31 districts in the Turkistan ASSR. These districts were: Kazali, Perovsk, Tashkent, Chimboy, Shurakhan, Avlyoota, Prokaspiy (Caspian Sea), Poltoratsk, Tajan, Murgab, Kattakurgan, Samarkand, Jizzakh, Khujand, Kokand, Fergana, Andijan, Pishpek, Norin, Przevalsk, Olma. , Jarkent, Kopal, Lepsinsk, Tokmak, Osh, Urjar, Namangan, Chernyaevsk, Turkistan, Mirzachul [1, - p. 66.].

As the preparations for the national-territorial demarcation in Central Asia began to intensify in the beginning of 1924, in the autumn of 1924, the zoning commission under the State Planning Committee of the Turkic Economic Council proposed a three-tiered administrative method of the republic: Center – Tashkent, constituencies and district volost. During this period, there were 6 provinces, 31 districts and 590 volosts in the Turkistan ASSR, together with 12 districts and 150 district districts, together with the Pamir [5, - p. 176 - 177.]. The administrative and economic division of the Turkistan ASSR consists of 12 constituencies: Sarkan (11 volost), Almaty (16 volost), Pishpek (16 volost), Shymkent (15 volost), Syrdarya (9 volost), Amudarya (6 volost), Turkmen (8 volost), Samarkand (18 volost),

Tashkent (9 volost), Kokand (18 volost), Andijan (22 volost), Pamir region (2 volost) [ 6, - p. 3.].

Besides Turkistan ASSR, districts were established at that time in the USSR and the PRC. For example, on October 1, 1924, by the decision of the All-Bukhara MIC, the administrative-territorial division of the USSR was reorganized and 5 districts were created in the place of provinces. The districts are divided into 15 provinces, 48 districts, 195 kents and many villages.

Zarafshan District consists of 3 provinces: Bukhara, Karmana and Nurata. It consists of 8 districts and 2202 villages.

The Kashkadarya district consisted of 2 provinces: Karshi and Shahrisabz, which have 9 districts.

There were 8 districts in Surkhandarya region.

The Turkmen (Amudarya) district consisted of 2 provinces: Karki and Chorjoui with 608 villages.

In Eastern Bukhara there were 6 provinces: Kulob, Boysun, Sariosiyo, Garm, Dushanbe, Kurgantepa with 3646 villages [4, - p. 173 - 174.].

On the eve of the Soviet zoning policy, it is also important to study the general state of the Central Asian region as an example of some constituencies. To begin with, let's talk about Tashkent District, which is administratively important in the constituencies. Although the district of Tashkent was the smallest of them, the administrative center of the district was located in Tashkent [5, - p. 3.].

On the eve of the zoning in Central Asia, the Tashkent District, which was part of the Turkistan ASSR, in the north with the Turkistan, Shymkent and Avliyota districts, north-east with Namangan district of Fergana region, Khujand district in the south, and Jizzakh in the south west, bordering the district [5, - p. 128.]. Consequently, although the territory of Tashkent district at that time was designed to centralize the administrative center, in fact the present Republic of Uzbekistan served as the basis for the establishment of Tashkent region.

At the same time, most of the territory that entered Tashkent at that time is now part of the Syrdarya region. In the twentieth century, the territory of Tashkent district was 34.4 thousand squares\*, with a population of 635.9 thousand people. people). The average square foot in the county was 18.5 people. [5, - p.129.].

Another important part of the Turkistan ASSR was the Kokand district. Initially, it was planned to establish the boundaries of the Kokand district in the northeast of the Kokand and Namangan districts of the Ferghana region and in the Khojand district of Samarkand region. Later, the territory of Kokand district consisted of Bogcha-Isfara district, Kholand district, Volga, Pistakuz, Nov, Unji, Ural and Chankuli. The boundaries of the Kokand district began with the Avliyota district, which turned south and south-west, separating the Kokand district and the Chatkal oasis. It also extended from the Syrdarya region to the Syrdarya region of the Mirzachul District, from the Syrdarya to the Turkistan. The territory of the district is further bordered by the southern part of Samarkand and the Republic of Bukhara, in the northeast - the Fergana and Andijan districts of the Ferghana region and the Pishpek district of Semireche (Yettisuv) region in the north. [5, -p. 131-132.].

The overall situation of the Samarkand region, which had a special place in the Turkestan ASSR, is as follows. It was planned to include Bogcha-Isfara, Golakandoz, Pistakuz Nov, Unji, Ural and Chankuli Volga of Khujand district of Samarkand region, as well as southern part of Mirzachul district, Syrdarya region.

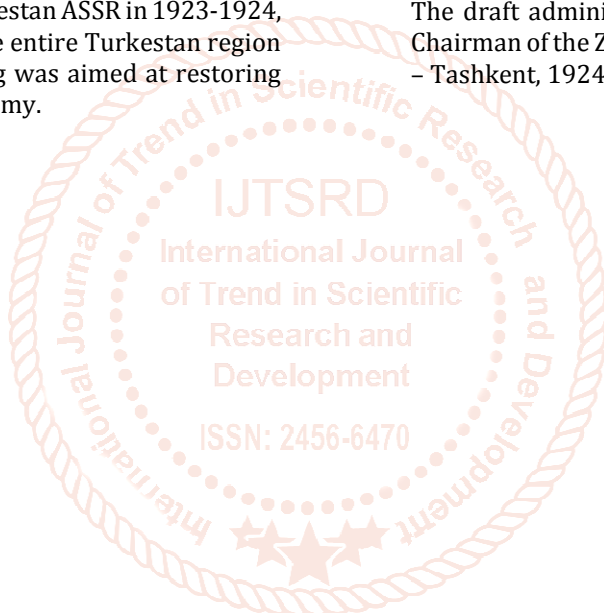
According to the Center's State Planning Commission, Samarkand district is bordered by the Turkestan region in the north and Syrdarya region, Mirzachul in the northeast, the Kokand-Fergana region in the southeast, the Republic of Bukhara in the south-west, and the Amu Darya in the north-west.

The territory of Samarkand district during this period was 66,700 square meters. The population of the district was 674.8 thousand people, the population density was 10.1 people per square mile. As of 1923, five major cities in the county were: Samarkand (population 71456), Jizzakh (9564), Kattakurgan (10219), Uratpa (13069), and Panjikent (3145). [6, - p.125-127].

In summary, the policy of zoning in the Turkestan ASSR was primarily economic and administrative. The Soviet authorities, in addition to the Turkestan ASSR in 1923-1924, sought to unify the economy of the entire Turkestan region and, above all, the regional zoning was aimed at restoring and developing the national economy.

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# Synthesis of Carboxymethyl Cellulose from Powder and Microcrystalline Cellulose in Isopropyl Alcohol and Ethanol Medium

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## ABSTRACT

Synthesis conditions of different substituted water-soluble carboxymethyl cellulose (CMC) based on microcrystalline and powder cellulose in isopropyl alcohol and ethanol medium are studied. Samples of water-soluble CMC with a degree of substitution of 0.38-0.40 based on microcrystalline and powdered cellulose were obtained. Also, by the one stage carboxymethylation of cellulose samples were obtained CMC samples with high degree of substitution.

**KEYWORDS:** microcrystalline cellulose, powder cellulose, carboxymethyl cellulose, etherification, degree of substitution, ethanol, isopropyl alcohol.

## 1. INTRODUCTION

Carboxymethyl cellulose (CMC) is the product of the interaction of alkaline cellulose with monochloroacetic acid or its sodium salt [1-5].

Obtaining of CMC from cellulose involves two stages of chemical reactions [6-7]. The first stage is the alkaline treatment of cellulose and the second stage is the reaction of carboxymethylation of alkaline cellulose with an alkylating reagent.

Depending on the type of raw cellulose, production technology, CMC is produced on an industrial scale, characterized by the degree of substitution (DS) and the degree of polymerization (DP). Currently produced CMC has above DS = 0.6 and DP = 400 [8].

Depending on the number of carboxymethyl groups, CMC grades are subdivided into low ( $\geq 0.5$ ), medium (0.55–0.85) and highly substituted ( $\leq 0.9$ ) grades. CMC samples with a degree of substitution greater than 0.9 are called polyanionic cellulose [9-11]. Traditional CMC acquires the ability to dissolve in water at a degree of substitution above DS = 0.5.

We have studied the possibilities of obtaining low- and highly substituted water-soluble samples of CMC based on microcrystalline cellulose (MCC) and powder cellulose (PC) by the suspension method.

This method allows to obtain products with a high degree of substitution and a uniform distribution of carboxymethyl groups along the cellulose macromolecule, which leads to an improvement in the physicochemical and operational properties of CMC.

## 2. Materials and methods

### 2.1. Material

Materials MCC (degree of crystallinity of 83%, degree of polymerization 280, particle size of 100 microns) and PC

(degree of crystallinity of 22%, degree of polymerization 420, particle size of 100 microns) were collected from the production part of Institute of Polymer Chemistry and Physics, Uzbekistan. Chemicals used during the study were sodium hydroxide (Tianye Chemicals, China), monochloroacetic acid (Azko Nobel Industrial Chemicals B.V., The Netherlands), ethanol (China), etc. All chemicals used were of reagent grade and used without further purification.

### 2.2. Synthesis of carboxymethyl cellulose

10 g of the cellulose-containing feedstock is treated with 60 ml of ethyl alcohol and dispersed for 15 minutes. With stirring, 40% NaOH solution is added. The alkaline treatment process is carried out for 90 minutes at a temperature of 16°C. Then a solution of monochloroacetic acid (MCA) dissolved in 60 ml of ethyl alcohol is added by vigorous stirring for 15 minutes at 16°C. After that, the temperature of the reaction mixture rises to 55°C and the esterification reaction is carried out for 3 hours. The product is filtered off on a glass filter and washed with aqueous ethanol. The product is dried at 60-70°C to a certain humidity.

### 2.3. Characterization

#### 2.3.1. Measurement of CMC yield

CMC yield was measured based on a dry weight basis. The net weight of dried CMC was divided by the weight of cellulose to get the yield value [12], as follow:

$$\text{CMC yield (\%)} = \frac{(\text{Weight of prepared CMC (g)})}{(\text{Weight of dried cellulose (g)})} \times 100 \quad (1)$$

#### 2.3.2. Determination of degree of substitution

To determine the degree of substitution, 0.5 g of dried sodium CMC was ashed gently between 45°C and 55°C for 24 h, and then dissolved in 100 mL of distilled water. 20 mL of this solution was titrated with 0.1 N sulphuric acid using methyl red as an indicator. After the first end point, the solution was boiled and titrated to a sharp end point. The carboxymethyl content was calculated from the degree of substitution [13], as follow:

$$\text{DS} = \frac{(0.162 \times B)}{(1 - 0.08 \times B)} \quad (2)$$

$$B = \frac{(0.1 \times b)}{G} \quad (3)$$

where, b is the volume (in mL) of 0.1 N sulphuric acid and G is the mass of pure CMC in grams.

### 2.3.3. Moisture content and ash content

Moisture content was determined at 105°C after 2 h in an oven. [14]. Also, the amount of ash was estimated by igniting the sample, at 58-60°C, in a muffle furnace [15].

### 2.3.4. CMC content

Exactly 1.5 g of CMC was added to 100 mL of 80% aqueous methanol solution. This mixture was stirred, kept for 10 min and filtered. The cake was washed with 100 mL of fresh 80% aqueous methanol and dried to obtain pure CMC [16]. The CMC content was calculated as follows:

$$\text{CMC content (\%)} = \frac{W}{W_0} \times 100 \quad (4)$$

where  $W_0$  (g) is the weight of sample before washing and  $W$  (g) is the weight of washed sample.

### 2.3.5. Determination of solubility

The solubility technique of Na-CMC is based on the dissolution of the sample in water, followed by filtration of this solution through filter funnels.

The filtering funnels are dried to constant weight for 2 hours at a temperature of 105°C, followed by cooling in a desiccator to room temperature.

700 g of Na-CMC solution are prepared with a mass fraction of 0.1% in terms of an absolutely dry technical product.

Dissolution is carried out for at least 2 hours with stirring with a propeller-type stirrer.

The resulting solution settles for 1.0-1.5 hours to settle insoluble particles and is filtered through a filter funnel on a water-jet pump, while the precipitate is quantitatively transferred to the filter. The filter residue is washed with 150-200 ml of distilled water with stirring with a glass rod, then washed with 10 ml of ethyl alcohol, and then dried to constant weight ( $m_2$ ) at a temperature of 105°C.

The solubility of Na-CMC in water ( $X_i$ ) in percent is calculated by the formula:

$$X_i = \frac{(m_1 - m_2)}{m_1} \cdot 100 \quad (5)$$

where  $m_1$  is the mass of the Na-CMC sample in terms of absolutely dry matter, g;

$m_2$  - mass of filter cake, dried to constant weight, g.

### 2.3.6. Infrared spectroscopic analysis

Infrared spectra of Na-CMC samples are recorded on a SPECORD IR-75 instrument in the range of 4000  $\text{cm}^{-1}$  - 400  $\text{cm}^{-1}$ .

## 3. Results and discussions

The esterification of MCC and PC was carried out according to the known suspension technology [17, 18] in ethanol. To do this, 20 ml of ethanol is added to 10 g of MCC or PC with vigorous stirring for 20 minutes, followed by the inclusion of 30 ml of a 40% aqueous solution of sodium hydroxide. Then 25 ml of ethyl alcohol containing 11.0 g of dissolved MCC was gradually added to the mixture, and stirred for 3 hours at 70 °C. The reaction product is filtered off, washed with ethyl alcohol and dried to constant weight at a temperature of 80°C.

The results of suspension carboxymethylation of samples of cellulose-containing raw materials of different nature and

dispersion under the same conditions are presented in table 1.

**Table 1: Physicochemical characteristics of CMC samples obtained from CC, PC and MCC**

Raw celluloses	DS of CMC	Solubility in water, %	CMC content, %	pH of 1 % solution
Cotton cellulose	0,65	97,0	53,0	9,6
MCC	0,70	100	73,0	8,9
PC	0,78	100	78,0	8,5

As can be seen from table 1, with the suspension method of obtaining such quality indicators of CMC as DS, solubility in water and the content of the main substance in the samples is quite high.

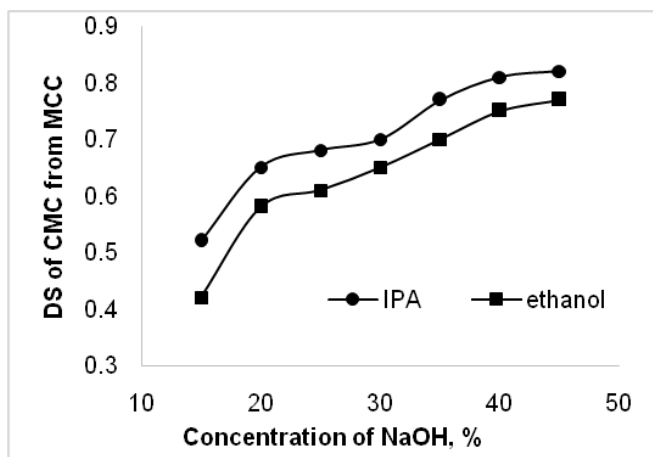
The high DS value of CMC obtained by the suspension method is explained by the low water content in the reaction medium, as a result of which the rate of side reaction of hydrolysis of MCC is significantly reduced in the aqueous organic medium, and as a result, the useful coefficient of the flow of the esterifying agent increases. And the high value of the solubility index of CMC samples is apparently explained by the high DS CMC values, in particular, its compositional homogeneity and low DP values.

The absence in Uzbekistan of the production of organic solvents, such as isopropyl alcohol (IPA), benzene, toluene and others, hinders the development of suspension technology for the production of CMC. Suspension technology of special grades of CMC can be mastered in the republic using technical grades of ethyl alcohol.

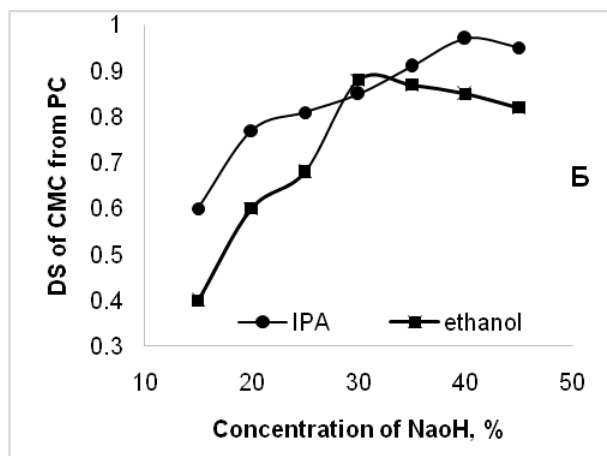
At present, the industrial production of IPA has not been mastered in the republic. Thus, local ethyl alcohol can be used in the production of CMC in a slurry manner.

We studied the effect of the carboxymethylation reaction of MCC and PC on the physicochemical parameters of the obtained CMC samples and determined the optimal conditions for the preparation of highly substituted CMC samples from the MCC and PC in the suspension method in isopropyl and ethyl alcohol.

Comparative studies of the alkaline treatment of MCC and PC at various concentrations of sodium hydroxide in the medium of IPA and ethanol were carried out.



**Fig. 1: Dependence of DS of CMC from MCC on alkali concentration**

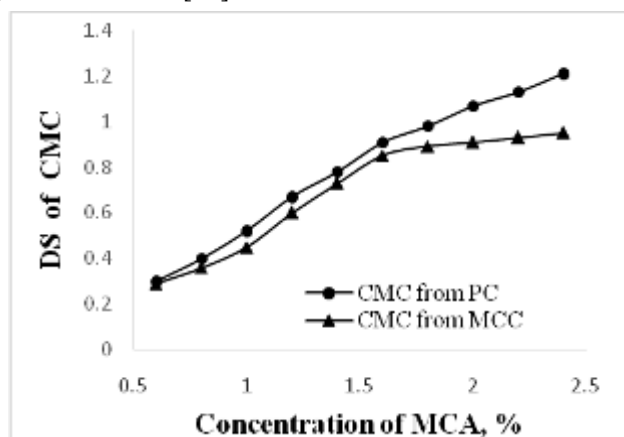


**Fig. 2: Dependence of DS of CMC from PC on alkali concentration**

Fig. 1 and 2 shows comparative data on the treatment of MCC and PC with alkali solutions of various concentrations in the environment of solvents of IPA and ethanol. With an increase in the concentration of sodium hydroxide solution up to 40% for MCC treatment and 30% for PC, the DS of CMC increases to 0.82-0.94 in the IPA medium and 0.75-0.88 in the ethanol medium, respectively.

The use of organic solvents in the process of carboxymethylation of cellulose-containing raw materials plays an important role, in particular, in increasing the availability of chemicals due to their low polarity than water, on the one hand. On the other hand, a decrease in the amount of water in the reaction medium, correspondingly reducing the rate of a side reaction of hydrolysis of MCA [19]. The polarity of the solvents increases in the order of IPA-ethanol-water. The higher the polarity, the lower the reaction efficiency [20]. With MCC carboxymethylation, the maximum DS values are reached at an alkali concentration of 40%, and in the case of esterification of an amorphous PC, a 30% sodium hydroxide solution is required. This fact is explained by the fact that the MCC has a highly ordered crystalline structure, and its crystallinity is 83% in the ratio of the crystallinity of the PC 22%. Therefore, for the penetration of the alkylating agent into the crystal structure of MCC, more concentrated alkali solutions are required than in the case of PC.

High values of DS of CMC from MCC and PC were achieved using 40% and 30% NaOH solutions. With a further increase in the concentration of alkali solution, a decrease in the DS of CMC values occurred. This is apparently due to the formation of sodium glycolate, which is known as a by-product in the synthesis of CMC [21].

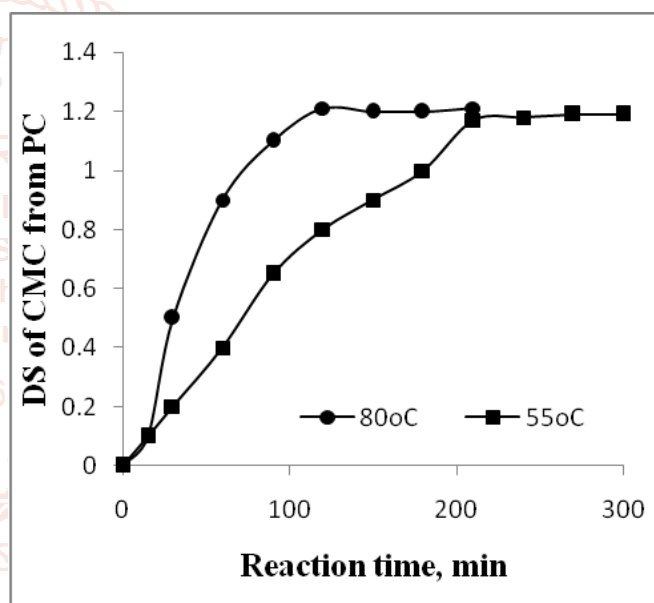


**Fig. 3: Dependence of DS of CMC on the consumption of an alkylating agent**

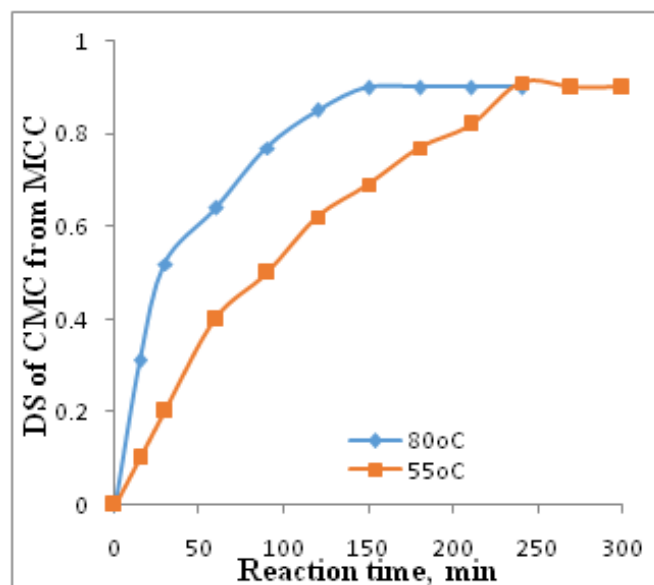
Figure 3 shows the results of the carboxymethylation reaction of alkaline samples of MCC and PC, which were obtained by treating them with 30 and 40% sodium hydroxide solutions, followed by etherification with various concentrations of alkylating agents. It can be seen that with an increase in the consumption of MCC to 2.2–2.4 relative to the elementary element of the feedstock, the SZ of the CMC samples when using the PC reaches 1.2. Under the same conditions of carboxymethylation, MCC in ethanol with vigorous stirring, DS CMC reached 0.89.

The dependence of the duration of the esterification reaction on the DS of CMC at a temperature of 55°C and 80°C was also investigated (Fig. 4.).

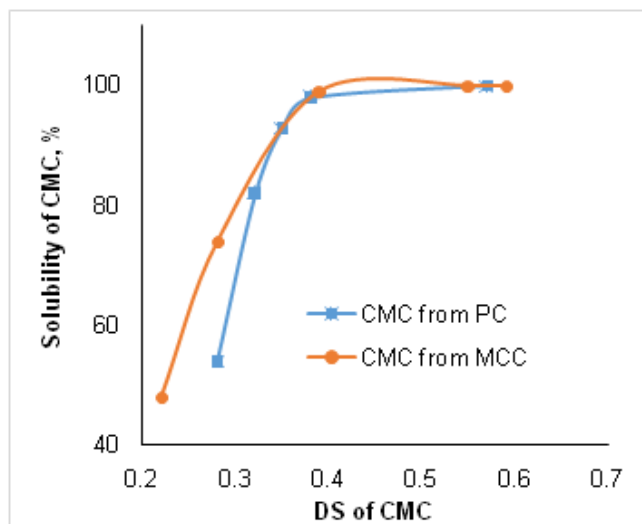
With an increase in the duration of the carboxymethylation reaction, the DS of CMC increases, approaching the maximum. With an increase in temperature from 55°C to 80°C, the reaction time sharply decreases. The high reactivity and low molecular weight of MCC and PC allow their alkylation to be carried out at small liquid modules, using reagents more efficiently for a short time and under significantly mild conditions. In addition, the high reactivity of the PC and MCC makes it possible to obtain their derivatives in colloidal form [22].



**Fig. 4: Change DS of CMC from PC on duration of reaction**







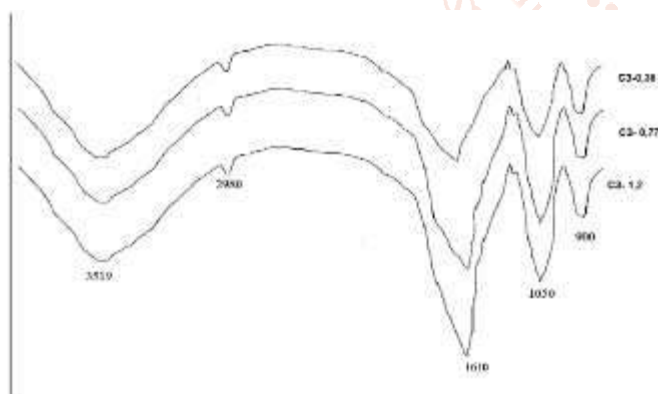
**Fig. 5: Solubility of CMC samples with a change in their DS**

Depending on the DS and DP, CMC is soluble in water, aqueous solutions of alkalis and practically insoluble in organic solvents. It is known that the complete solubility of Na-CMC is ensured with its  $DS \geq 0.60$  in water and  $DS \geq 0.45$  in aqueous solutions of alkalis [23].

The solubility of CMC samples from MCC and PC from their DS was studied.

As can be seen from Figure 6, the solubility of CMC samples obtained from MCC and PC reaches high values at low DS values. Starting from DS-0.35, CMC samples are completely soluble in water, which can be explained by the low values of the initial samples and the uniform distribution of substituents along the cellulose macromolecule.

The IR spectrum of CMC samples (Fig.6) shows that the carboxymethyl and hydroxyl groups of the polymer are in the absorption band of 1618, 1426, and 1300  $\text{cm}^{-1}$ , respectively.



**Fig. 6: IR spectra of CMC samples**

The IR spectrum of CMC samples shows that the carboxymethyl and hydroxyl groups of the polymer are in the absorption band of 1618, 1426, and 1300  $\text{cm}^{-1}$ , respectively. According to the presented data, the absorption bands at a wavelength of 1620 and 1423  $\text{cm}^{-1}$  correspond to two carboxyl and methyl functional groups of CMC [24]. Additional absorption bands at 2152 and 2376  $\text{cm}^{-1}$  may be associated with the presence of their by-products in CMC — a reaction or a combined bond of CMC with water [25]. Obviously, the wide absorption band at 3432  $\text{cm}^{-1}$  and 2909  $\text{cm}^{-1}$  is characterized with asymmetric vibrations of the hydroxyl ( $\text{—OH}$ ) and methylene ( $\text{C—H}$ ) groups, respectively.

These types of bonds have a light terminal hydrogen atom. Oscillations of this kind of bonds in the molecule are experienced only by a slight effect from the rest of the molecule. It can be argued that a set of energetically unequal hydrogen bonds is realized in such compounds [26,27]. Strong vibrations at 1610  $\text{cm}^{-1}$  confirmed the presence of the carbonyl group of the carboxymethyl anion ( $\text{—C=O}$ ). The absence of a wide band in the region of 2500-2800  $\text{cm}^{-1}$  and the high value of the position of the stretching vibration band of the carboxyl group indicate that the carboxyl groups are not at a high level, and they do not form hydrogen bonds with each other. Absorption bands of about 1423 and 1325  $\text{cm}^{-1}$  belong to the  $\text{—CH}_2$  group and the hydroxyl group ( $\text{—OH}$ ), respectively. Absorption in the region of 1140-1065  $\text{cm}^{-1}$  refers to vibrations of CO groups. With an increase DS of CMC SC, the intensity of the bands decreases, characterizing the planar deformation vibrations of hydroxyl groups. A band appears characterizing the vibrations of C-O-C of the simple ether bond. [28,29].

#### 4. Conclusion

As a result of the studies, low and high substituted CMC samples based on MCC and PC were obtained and characterized. Maximum of solubility of low substituted CMC was reached at DS-0.38 by consumption of MCA

It is known that obtaining highly substituted CMC i.e. polyanionic cellulose (PAC) is carried out by multi-stage carboxymethylation of the feedstock, which leads to an increase in the cost of the final product due to an increase in chemical reagents and energy consumption. It is shown that the use of PCs as a starting material in one-stage carboxymethylation makes it possible to obtain PAC samples, which are a valuable reagent for the oil and gas industry, in the production of drilling and other solutions in oil and gas production.

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# Thermal Conductivity of Composite Materials Based on Crystallizing Polymers

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## ABSTRACT

The lack of a theory of thermal conductivity of polymer composite polymers and homopolymers makes it difficult to predict the thermophysical characteristics of newly created polymer materials. Therefore, the issue of experimental study of heat transfer processes in polymers and materials based on them is relevant. The accumulation of experimental data on the thermophysical characteristics of new polymeric materials differing in nature and structural features contributes to the acceleration of the creation of the theory of their thermal conductivity. In this regard, this work presents an approach to solving this problem by increasing the spectra of experimental methods and their theoretical interpretation.

**KEYWORDS:** thermophysical properties (TPP); the nature of the thermal movement; heat transfer mechanism; polymer composite material (PCM); filler; fluctuation; dispersed phase; polymer matrix; thermal conductivity; electrical conductivity; phonon mechanism

The development and production of new composite materials with a set of specified properties is defined as one of the most important tasks of modern science. A special place belongs to polymer composite materials (PCM), which often have a number of such important performance characteristics that traditional materials for structural and other purposes do not possess [1].

One of the most important tasks of modern thermal physics and molecular physics is to establish the relationship between thermophysical properties (TPP), in

particular thermal conductivity ( $\lambda$ ) of polymeric materials with their structure at its various levels organization and the thermal motion nature. This relationship knowledge makes it possible to more deeply and comprehensively analyze the heat transfer mechanism in polymer composite materials (PC), which will help accelerate the solution to the polymer materials obtaining problem with predetermined TPPs. Providing polymer materials for the growing needs of various industries and, first of all, mechanical engineering, as well as the electrical industry, radio electronics and other branches of technology.

Knowledge of TPP PCM allows us to evaluate the products behavior made of these materials in various operation modes, thereby increasing the service life and increasing the reliability of such products. Thermophysical characteristics of PCM and their components are the basis for the scientific approach to thermal equipment

calculations and technology for obtaining PCM and their processing into products.

These materials use in the national economic sectors complex engaged in the production, processing and operation of PCM products, as well as the results of studying these materials TPP, ultimately saves the material and energy resources of the country.

Among the fluorine-containing polymers class, there are those that are characterized by significantly higher performance properties than polytrifluorochlorethylene (PTFCHE), and therefore, are widely used now in various sectors of the national economy. Such polymers are polyvinylidene fluoride (PVDF) and its modification - modified polyvinylidene fluoride (PVDF-M).

These polymers are characterized by high resistance to ionizing radiation, chemically aggressive media, and high temperature resistance, good dielectric and mechanical properties. Moreover, these materials have a relatively simple molecular structure, a sufficiently high regularity of the main molecular chain, and crystallize well, thus forming sufficiently perfect crystal structures. The crystallinity degree ( $\alpha$ ) and the crystalline formations size can be varied within a fairly wide range. In addition, the structure at its various levels organization and the molecular mobility of unfilled PVDF are well studied [2-4]. Based on this, it can be concluded that these polymers are promising as a binder for creating PCM.

The fillers effect on TPP polymer material is manifested in two ways. First, the presence of dispersed fillers particles in a polymer significantly affects its structure formation at its various levels organization.

In two-component composite material case, an important factor is the quantitative relationship between the volumetric content of polymer and filler in PCM. Volume content of filler in PCM:

$$\varphi = \frac{V_n}{V_n + V_p} \quad (1)$$

Where  $V_n$  and  $V_p$  - is the filler and polymer volume in the composition, respectively. If the filler content in the composition is within,  $0 < \varphi < 0,5$ , then in this case the polymer acts as a forming medium. That is, the polymer can be considered as a dispersion medium in which dispersed filler particles are embedded.

In the non-interacting components case of such a composite material, both components in them will be geometrically equal [1]. This means that the effective conductivity (in this case, thermal conductivity) of such

materials does not change and remains invariant when the places of the components change, i.e.

$$\lambda_{eff} = f(\lambda_1, \lambda_2) = f(\lambda_2, \lambda_1), \quad (2)$$

where  $\lambda_{eff}$  - is an effective thermal conductivity PCM;  $\lambda_1, \lambda_2$  - is thermal conductivity of the polymer and filler, respectively.

If the PCM has a filler content of  $0,5 < \varphi < 1$  by volume, then the polymer is the binder. That is, in such a material, the volume bulk is occupied by filler, which particles are interconnected by a thin layer of polymer [2]. A distinctive feature of the structure of such a PCM model is that the components in it are not geometrically equal, i.e.

$$\lambda_{\Phi\Phi} = f(\lambda_1, \lambda_2) \neq f(\lambda_2, \lambda_1) \quad (3)$$

A number of works, including [3; 4-7], are devoted to the experimental study of the thermal PCM conductivity based on crystallizing polymers and dispersed fillers. Reviews of experimental and theoretical works available in the literature devoted to this problem are carried out in [2-9].

As is known [2; 5; 8], the main physicochemical characteristics of polymer fillers are: the filler type, the filler particles shape,

dispersion, specific surface area of the particles and this surface state.

These features are decisive in the polymer structure formation, and hence its properties, including thermal conductivity [1; 2].

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# Study of the Salt Regime of the Soil under Various Irrigation Regimes

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## ABSTRACT

To obtain a high yield of cotton, it has a huge influence irrigation regime. To study the influence of the irrigation regime on the salt regime of the soil, we conducted observations on two experimental plots. Excessive content of readily soluble salts in soils leads to a decrease in the productivity of agricultural crops, in particular cotton.

**KEYWORDS:** readily soluble salts, irrigation regime, water regime, ground water, soil, salt regime, mineralization

In the soil and climatic conditions of the Karshi steppe, obtaining high yields of fine-fiber cotton with high technological fiber quality is closely related to the salt regime of the soil, since the excess content of readily soluble salts in soils leads to a decrease in the yield of agricultural crops, in particular cotton. This is due not only to the toxic effect of salts, but also to an increase in the concentration of the soil

solution, accompanied by an increase in its osmotic pressure. As a result, the suction power of root hairs decreases, they cannot use the necessary water from the soil, which causes a deterioration in the water regime of plants, and in some cases their complete death.

To characterize the soils of the experimental plots by the degree of salinity, the initial content of salts was studied (Table 1). Analyzing the data obtained, we see that the soil of section I, due to the heavier texture and close (1.5-2.0 m) occurrence of mineralized (6-10 g / l of dense residue) groundwater, is comparatively more saline than that of section 2. section I in the upper meter layer contained 0.496% solid residue and 0.0048% chlorine - ion. There were even more salts in the soil layer underlain below the meter layer: up to 0.725% dry residue and 0.063% chlorine-ion.

**Table 1 The initial content of water-soluble salts in the soils of the experimental plots**

Layer, cm	Denser residue	Total alkalinity	Chlorine - ion	Residue of sulfuric acid
<b>Plot 1</b>				
0-20	0,654	0,037	0,028	0,378
20-40	0,876	0,032	0,053	0,513
40-60	0,470	0,038	0,046	0,143
60-80	0,473	0,039	0,057	0,237
80-100	0,477	0,038	0,048	0,260
100-200	0,952	0,040	0,045	0,252
120-140	0,830	0,020	0,072	0,490
140-160	0,817	0,030	0,072	0,481
160-180	0,680	0,020	0,060	0,380
180-200	0,617	0,036	0,043	0,344
0-60	0,666	0,035	0,043	0,344
60-100	0,375	0,038	0,052	0,248
0-100	0,496	0,037	0,048	0,296
100-200	0,725	0,025	0,063	0,402
0-200	0,610	0,031	0,054	0,349
<b>Plot 2</b>				
0-20	0,120	0,034	0,012	0,056
20-40	0,108	0,037	0,018	0,039
40-60	0,122	0,029	0,033	0,034
60-80	0,140	0,029	0,033	0,042
80-100	0,116	0,032	0,014	0,048
100-120	0,460	0,026	0,021	0,275
120-140	0,656	0,017	0,023	0,427
140-160	0,600	0,018	0,025	0,305
160-180	0,448	0,018	0,033	0,261
180-200	0,338	0,020	0,018	0,207
200-220	0,260	0,025	0,033	0,130
220-240	0,128	0,024	0,014	0,056
240-260	0,124	0,025	0,012	0,063
260-280	0,118	0,024	0,009	0,057
280-300	0,126	0,024	0,011	0,063

0-60	0,140	0,033	0,021	0,043
60-100	0,129	0,030	0,023	0,045
0-100	0,121	0,032	0,025	0,043
100-200	0,500	0,019	0,024	0,295
200-300	0,171	0,023	0,015	0,073
0-200	0,315	0,026	0,024	0,169

Salt accumulation in the soil of section 2 looks different, here in the upper 0-100 and lower 200-300 cm layers of the soil, a small salt content is observed - respectively 0.121 and 0.171% of a dense residue and 0.025% and 0.015% of chlorine - ion. In the middle part of the aeration zone in the 100-200 cm layer, relatively more salt accumulation is noted, the total amount of salts increases to 0.5%. Consequently, according to the initial content of salts, the soil of plot I is subject to weak salinity. On site 2, the upper 0-100 cm and lower 200-300 cm layers are practically not saline, its middle part (100-200 cm) is slightly saline. The soils of the experimental plots are of the chloride-sulfate type of salinization. The salts are dominated by sulfates, the supply of which is more than half of the dry residue. The sulfate anions in the soil of site 2 exceeded 4.8-8.1 times, and of site 2-1, 8-5.0 times. Since the soil in plot I is slightly saline, in plot 2 it is prone to salinization in a deeper (100-200 cm) layer, when favorable conditions are created, water-soluble salts can easily move to the upper soil layers and cause danger to the normal growth and development of cotton.

The results of our three-year studies have shown that various irrigation regimes for fine-fiber cotton played a certain role in changing the salt regime of the soils of the experimental plots.

Experiments carried out on a site with a groundwater level of 1.5-2.0 m showed that under the influence of irrigation regimes, a sensitive change in the salt regime of soil occurs. So, in the experiment of 1988, with the mode of pre-irrigation soil moisture 70-70-65% HB (option 2), the content of dense residue in the 0-60 cm layer from spring to autumn decreased from 1.153 to 1.121% in 60-100 cm from 1.105 up to 1.046% and in the layer 100-200 cm it increased from 1.019 to 1.240%. However, the amount of chlorine ion at the end of the growing season in the 0-60 cm layer increases from 0.027 to 0.096%, in the 0-100 cm layer, from 0.028 to 0.075, in the 100-200 cm layer from 0.029 to 0.062%.

In variant I, where the regime of pre-irrigation soil moisture is 60-70-65% HB, the salt content in the soil increases significantly from spring to autumn. The same picture is observed in variants 3-4. So, if at the beginning of the growing season in the 0-60 cm layer there was 1.153% of a dense residue, by autumn it was found in option 3-1.270 and in option 4-1.261%. However, in deeper soil layers (100-200 cm), the salt content is lower (1.227-1.262% :) than in option I (1.328%). Comparative analysis of the obtained data showed that the most favorable soil reclamation regime is observed in variants 2-3, where the regime of pre-irrigation soil moisture is 70-70-65 and 70-75-65% HB.

The data on the salt regime of the soil in the area with deep groundwater, where the upper 0-100 cm layer is practically not saline, are given in table 4,5,3. under such conditions, as shown by three-year data, the salt content in the 0-100 cm layer both in terms of dry residue and chlorine-ion does not change significantly from spring to autumn under various irrigation regimes, it is maintained in a stable position. A

more noticeable change in the salt regime occurs in the 100-200 cm layer, where the soil is relatively more saline than in the previous layer. Here, in all the years of research under all soil moisture regimes, the movement of salts into the lower layers, i.e. water-soluble salts are washed out.

In 1986, the amount of solid residue with an initial content of 0.588% by autumn according to various variants of the experiment decreased to 0.229-0.539%, in 1987 from 0.600 to 0.231-0.408%, in 1988 - from 0.588 to 0.209-0.432%. If we consider the change in salts in the context of various irrigation regimes, then it can be noted that options with pre-irrigation moisture 70-75-65 and 75-75-65% HB turned out to be more effective in desalinating a layer of 100-200 cm. Desalination proceeds worse at a humidity mode of 60-70-65 HB. Var. 2, where the cotton was watered with a moisture content of 70-70-65% HB, occupied an intermediate position.

The decaying effect of preventive watering must be strengthened by carefully conducted vegetative watering. On our experimental plots, early spring preventive watering was carried out annually closer to the sowing of cotton, at rates of 1200-1500 m<sup>3</sup> / ha. If we take into account that in the area with deep groundwater, the soil is complex, with the exception of the arable layer, of light loam, has a loose constitution, facilitating from top to bottom and has good water permeability, then with such rates of preventive irrigation, it is quite possible to achieve desalinization of the soil to a depth of 2 m. Naturally, this was also facilitated by vegetative irrigation, carried out by norms for the deficit of the calculated layer in combination with high-quality inter-row cultivation, timely feeding of plants, weed control and other types of agro technical measures.

Thus, from the foregoing, it follows that on the irrigated lands of the Karshi steppe, subject to low salinity, during the cultivation of cotton, pre-sowing reserve preventive irrigation with rates of 1200-1500 m<sup>3</sup> / ha should be used annually as a mandatory agro technical method. The effect in soil desalinization achieved by these irrigations must be consolidated by using optimal irrigation regimes for fine-fiber cotton during its growing season in combination with other agro technical measures carried out using intensive technology. With the introduction of such interrelated agro-reclamation measures, a prerequisite is created for the maximum prevention of the process of movement of water-soluble salts from the lower, more saline layers to the upper ones. Thanks to this, farmers will be able to ensure the maintenance of the upper soil layers in the most favorable ameliorative state during the entire growing season.

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## Using Some Effective Teaching Methods in Higher Education System

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### ABSTRACT

this article discusses some features of teaching at higher educational institutions. Some methods of teaching and problems that teachers and students may face during their collaborative work also studied below.

**KEYWORDS:** *learning methods, higher education, student-centered methods, problem-based methods, training students, greater demand, structural changes, making decision, knowledge.*

Rapid changes of modern world have caused the teaching in Higher Education system to face a great variety of challenges. Therefore, research and exploration to figure out useful and effective teaching and learning methods are one of the most important necessities of educational systems, teachers and professors have a determining role in training students in all spheres. A university is a place where new ideas germinate; new methods and aspects are used. It is a unique space, which covers the entire universe of knowledge. It is a place where creative minds converge, interact with each other and construct visions of new realities. Established notions of truth are challenged in the pursuit of knowledge. To be able to do all this, getting help from experienced teachers can be very useful and effective.

Giving attention to students' education as a main product that is expected from education quality system is of much greater demand in comparison to the past. There has always been emphasis on equal attention to research and teaching quality and establishing a bond between these two before making any decision; however, studies show that the already given attention to research in universities does not meet the educational quality requirements.

Attention to this task in higher education is considered as a major one, so in their instruction, educators must pay attention to learners and learning approach; along with these two factors, the educators should move forward to attain new teaching approaches. In the traditional system, instruction was teacher-centered and the students' needs and interests were not considered. This is when students' instruction must change into a method in which their needs are considered and as a result of the mentioned method active behavior change occurs in them. Moreover, a large number of graduated students especially bachelor holders do not feel ready enough to work in their related fields. Being dissatisfied with the status at any academic institution and then making decision to improve it require much research and assistance from the experts and pioneers of that institute. Giving the aforementioned are necessary, especially in present Uzbekistan;

it seems that no qualitative study has ever been carried out in this area drawing on in-depth reports of recognized university faculties;

therefore, in the present study the new global student-centered methods are firstly studied and to explore the ideas of experienced university faculties, some class observations and interviews were done.

Then, efficient teaching method and its barriers and requirements were investigated because the faculty ideas about teaching method could be itemized just through a qualitative study.

Teachers participating in this study believed that teaching and learning in higher education is a shared process, with responsibilities on both student and teacher to contribute to their success. Within this shared process, higher education must engage the students in questioning their preconceived ideas and their models of how the world works, so that they can reach a higher level of understanding. But students are not always equipped with this challenge, nor are all of them driven by a desire to understand and apply knowledge, but all too often aspire merely to survive the course, or to learn only procedurally in order to get the highest possible marks before rapidly moving on to the next subject. The best teaching helps the students to question their preconceptions, and motivates them to learn, by putting them in a situation in which their existing model does not work and in which they come to see themselves as authors of answers, as agents of responsibility for change. That means, the students need to be faced with problems which they think are important. Also, they believed that most of the developed countries are attempting to use new teaching methods, such as student-centered active methods, problem-based and project-based approaches in education.

In some studies, the professors noted that there are some barriers to effective teaching that are mentioned below:

### **The requirements defined curriculum and resources in the teaching, the large number of students in classes, and High volume theoretical principles**

As to the use of new methods of training such as problem-based methods or project-based approach, researchers remarked that "*The need for student-centered teaching is obvious but for some reasons, such as the requirement in the teaching curriculum and the large volume of materials and resources, using these methods is not completely feasible*".

### **Do not take a problem-based learning and student-centered learning in their evaluation as a bonus for teachers**

If at least in the form of teacher evaluation, some questions were allocated to the use of project-based and problem-based approaches, teachers would try to use them further.

### **Do not use educational assistants**

Some believe that the lack of motivation in students and the lack of access to educational assistants are considered the reasons for neglecting these methods.



### **Lack of interest and motivation among students**

If each professor could attend crowded classes with two or three assistants, they could divide the class into some groups and assign more practical teamwork while they were carefully supervised.

### **Requirements related to faculty outlook in an effective teaching**

Having a successful and effective teaching that creates long-term learning on the part of the students will require certain feelings and attitudes of the teachers. These attitudes and emotions strongly influence their behavior and teaching. Below we give some examples of successful teachers attitudes.

### **Alignment with organizational strategies**

Coordination with the overall organizational strategies will allow the educational system to move toward special opportunities for innovation based on the guidelines. If teaching staff of the university know themselves as an inseparable part of the university, and proud of their employment in the university and try to promote the aim of training educated people with a high level of scientific expertise of university, it will become their goal, too. Thus, they will try as much as possible to attain this goal.

### **Interested in students and trust in their ability**

When a person begins to learn, according to the value of hope theory, he must feel this is an important learning and believe that he will succeed. Since the feeling of being successful will encourage individuals to learn, you should know that teachers have an important role in this sense.

### **Requirements related to the behavior and performance of teachers in effective teaching**

Teachers have to focus on mental differences, interest, and sense of belonging, emotional stability, practical experience and scientific level of students in training. Class curriculum planning includes preparation, effective transition of content, and the use of learning and evaluating teaching.

### **Encouraging creativity during teaching the lessons**

The belief that creative talent is universal and it will be strengthened with appropriate programs is a piece of evidence to prove that innovative features of the programs should be attended to continually. Certainly, in addition to the enumerated powers, appropriate fields should be provided to design new ideas with confidence and purposeful orientation. Otherwise, in the absence of favorable conditions and lack of proper motivations, it will be difficult to apply new ideas.

### **Explaining and developing knowledge on how to resolve the issues in future career through class discussion.**

Senior instructors try to engage in self-management and consultation, tracking their usage of classroom management skills and developing action plans to modify their practices based on data. Through consultation, instructors work with their colleagues to collect and implement data to gauge the students' strengths and weaknesses, and then use protocols to turn the weaknesses into strengths. The most effective teachers monitor progress and assess how their changed practices have impacted the students' outcomes. As they mention *"It is important that what is taught be relevant to the students' career; however, in the future with the same information they have learned in university, they want to work in the industry of their country"*.

### **Developing a satisfactory interaction with students**

To collaborate with students and impact their lives personally and professionally, teachers must be student-centered and demonstrate respect for their background, ideologies, beliefs, and learning styles. The best instructors use differentiated instruction, display cultural sensitivity, accentuate open communication, offer positive feedback on the students' academic performance, and foster student growth by allowing them to resubmit assignments prior to assigning a grade.

This study revealed the effective teaching methods, requirements and barriers in Higher Education System. Teachers believe that teaching and learning in higher education is a shared process, with responsibilities on both student and teacher to contribute to their success. Within this shared process, higher education must engage the students in questioning their preconceived ideas and their models of how the world works, so that they can reach a higher level of understanding. They believed that to grow successful people to deal with the challenges in evolving the society, most developed countries are attempting to use new teaching methods in higher education. All these methods are student-centered and are the result of pivotal projects. Research conducted researchers shows that using a combination of various teaching methods together will lead to more effective learning while implementing just one teaching model cannot effectively promote learning. However, based on the faculty member's experiences, effective teaching methods in higher education have some requirements and barriers.

In this study, barriers according to codes were divided two major categories: professor-related barriers and regulation-related ones; for these reasons, the complete use of these methods is not possible. However, teachers who are aware of the necessity of engaging the student for a better understanding of their content try to use this method as a combination that is class speech presentation and involving students in teaching and learning.

Using student-centered methods in higher education needs some requirements that according to faculty members who were interviewed, and according to the codes, such requirements for effective teaching can be divided into two categories: First, things to exist in the outlook of faculties about the students and faculties' responsibility towards them, to guide them towards effective teaching methods, the most important of which are adaptation to the organizational strategies, interest in the students and trust in their abilities, systemic approach in higher education, and interest in their discipline.

Second, the necessary requirements should exist in the faculties' behavior to make their teaching methods more effective. This category emerged from some codes, including having lesson plan; using appropriate educational strategies and metacognition training and self-assessment of students during teaching; using concept and pre-organizer maps in training, knowledge; and explaining how to resolve problems in professional career through teaching discussion, documenting of experience and having satisfactory interaction with the students.

In addition and according to the results, we can conclude that a major challenge for universities, especially at a time of resource constraints, is to organize teaching so as to maximize learning effectiveness. As mentioned earlier, a

major barrier to change is the fact that most faculty members are not trained for their teaching role and are largely ignorant of the research literature on effective pedagogy. These findings are in agreement with the research of Knapper, indicating that the best ideas for effective teaching include:

- Teaching methods that focus on the students' activity and task performance rather than just acquisition of facts;
- Opportunities for meaningful personal interaction between the students and teachers;
- Opportunities for collaborative team learning;
- More authentic methods of assessment that stress task performance in naturalistic situations, preferably including elements of peer and self-assessment;
- Making learning processes more explicit, and encouraging the students to reflect on the way they learn;
- Learning tasks that encourage integration of information and skills from different fields.

As conclusion we can state that, it was illustrated that a good teaching method helps the students to question their preconceptions, and motivates them to learn, by putting them in a situation in which they come to see themselves as the authors of answers and the agents of responsibility for change. But whenever the teachers can teach by this method, they are faced with some barriers and requirements. Some of these requirements are prerequisite of the professors' behavior and some of these are prerequisite of the professors' outlook. Also, there are some major barriers some of which are associated with the professors' behavior and others are related to laws and regulations. Therefore, to have an effective teaching, the faculty members of universities should be aware of these barriers and requirements as a way to improve the teaching quality.

Effective teaching also requires structural changes that can only be brought about by academic leaders. These changes

include hiring practices reward structures that recognize the importance of teaching expertise, quality assurance approaches that measure learning processes, outcomes in a much more sophisticated way than routine methods, and changing the way of attaining university accreditation.

The nationally and locally recognized professors are good leaders in providing ideas, insight, and the best strategies to educators who are passionate for effective teaching in the higher education. Finally, it is supposed that there is an important role for nationally and locally recognized professors in higher education to become more involved in the regulation of teaching rules. This will help other university teachers to be familiar with effective teaching and learning procedures. Therefore, curriculum planners and faculty members can improve their teaching methods.

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# The Results of the Final Engineering and Geological Studies of the Mass of Lyoss Grits

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## ABSTRACT

The results of investigation of morphological, retrospective and prognoses engineering-geological tasks concerning loess soils massifs are formulated. The main result of solution of retrospective engineering-geological tasks is the proposal of hypothesizes and mechanisms of loess soils subsidence formation. They are the base for four special and general theory of subsidence formation.

The result of solution of prognoses engineering-geological tasks is the elaboration of methods for calculation the expected subsidence of loess soils massifs under different mode of their wetting and the development of different methods (hydrogeomechanical, geochemical, geotechnical and complex) of improvement of loess soils massifs properties.

**KEYWORDS:** Engineering geology of loess soils massifs, subsidence of loess soils, hypothesizes and theories of subsidence formation, methods of improvement of loess soils properties

**Introduction** of great importance are the rocks of lyoss, formed by mankind among natural geological structures. They are very common on earth and are found on all continents of the Earth except Antarctica in large khajms threeraydi (Lisenko, 1978; lyoss...2001). This lyoss grunt is located on the highest surface of the Earth, manifested mainly in the Quadrangular formation of various Genesis.

The results of the study of morphological, retrospektiv (related to the past) and predictive engineering-geological problems with respect to the arrays of Lyoss grunt were formed. At relative deposition, the deposition values reach 0.17-0.21, the deposition thickness value at Natural loading effect is 55 m. shown to be equal. The main task of solving past Engineering and geological problems is the development of 8 hypothesizes and rules for the formation of sediments of lyoss grits, on the basis of which four general theories of formation have been identified.

According to the results of solving the predicted problems – it is necessary to develop methods for calculating the expected values of lyoss grounding in different wet conditions of their deposition, as well as methods of further improvement of the composition of lyoss grounding arrays: geochemical, geotechnical and complex.

The law of their compression is almost no different from some other grunt, if external forces affect the grunt of lyoss, which has a natural moisture content. But if we saturate the lyoss grunt, which is affected by the pressure, with water, then rashes are also formed in it. Such additional sediments are called extreme sedimentation deformation of the lyoss grunt.

E. V. According to the Kadyrov calculations, the land of lyoss is covered in an area of 4 255 600 km<sup>2</sup> of the Earth's surface, which makes up 3,2% of the landfill area on the planet on which we live. For many years, more precisely centuries, these rocks have attracted the attention of mankind. They are studied by geologists, soil scientists and geographers.

The massifs made up of these grounds are also mastered by builders, landlords and agricultural workers. The thickness of the areas where all these grills meet varies from a few tens or even hundreds of meters, their composition is specific and close enough; these are sandy-loys-dusty systems, the main part of which consists of fine sand (0.1-0.05 mm) and especially large-dusty (0.05-0.01 mm) - sized grains. The extreme dipping value of Lyoss grasses is determined using one-line and two-line methods, depending on the conditions of conducting experiments on the odometer instrument. But solving flat and spatial issues requires the use of parameters related to classical mechanics. Therefore, the extreme deposition value of lyoss grills can be expressed through the deformation module (1 and 2-formulas).

$$S_{sl} = \beta \frac{\sigma_{zp} h}{E_{sat}} - \beta \frac{\sigma_{zp} h}{E_0}$$

$$S_{sl} = \beta \frac{\sigma_{zp} h}{E_0} \left( \frac{E_0}{E_{sat}} - 1 \right) = \beta = \frac{\sigma_{zp} h}{E} \quad \varepsilon_{sl} = \beta \frac{\sigma_{zp} + \sigma_{zg}}{E}$$

Lyoss grasses have a number of specific engineering-geological properties, which are distinguished as in different types of soils. To such a category of properties, first of all, they have a low content of natural moisture, high porosity, low water resistance, and the main thing is a sharp increase and decrease in the degree of deposition and deposition. As a result, in engineering-geology, a scientific and practical department was created, which is called engineering geology of the massifs of lousse gruels. Within its framework, the engineering-geological conditions of the massifs of the laussian lattices, their formation, spatial-time changes under the influence of natural and anthropogen (technoogen), modern and predicted geological processes are also studied (Trofimov, 2008). This set of studies and set of data is aimed at solving the engineering and geological problems of three types of massifs of lyoss grunt: they are morphological, retrospektiv (related to the past) and prophetic species.

Solving the problems of the first type-allows us to evaluate the properties, condition, structure and composition of lyoss grits, as well as the massifs that they constitute;

The solution of the second type of problem is to give us the named characteristics of this Massif, the history of the appearance of sediments and their recovery;

The solution of the third type of problem is the prediction of the economic assimilation of the lyoss gruels. In this regard,



it is necessary to examine the solution of the problem predicted in the study of construction skills in the arrays of lyoss grasses as an examination.

It is permissible for us to definitely point out a few scholars who have added their great efforts and contributions in the engineering-geological studies of these peculiar massifs of lysos grunt. They Yu.M. Abelev, V.M. Alekseev, M.N.Y. Alekseev, V.P. Ananov, L.G. Balaev, V.S. Bykov, A.A. Velichko, B.F. Galay, N.Eat it. Denisov, R.S. Ziangirov, R.S. Of The Year, E.V. Kadirov, V.A. Korolev, V.F. Kraev, N.I. Kriger, V.I. Krutov, A.K. Larionov, M.P. Lisenko, G.A. Mevlanov, A.V. Minervin, S.G. Miranyuk, S.S. Morozov, A.A. Mustafev, V.A. Obruchev, V.I. Popov, E.M. Sergeev, V.N.Y. Sokolov, V.T. Trafimav, L.I. Turpin, Sh.E. Usupaev, P.V. Tsarev, Ya.E. Shaeovich, M.Sh. Shermatov, as well as F.A. Nikitenko, I.D. Sedlesky, G.A. Sulekshine, I.V. Finaev and others. Thanks to their theoretical research and research, as well as the practical work of the army of senior seekers, they were studied like other gruples, achieved remarkable results by a positive solution to each task.

In this article, we will get acquainted with the achievements in solving only the first problems mentioned above, that is, solving the problems of morphological engineering and geological functions in the study of lysous grits.

The main results of the engineering-geological study of the Lyoss grunt masses in the field of solving morphological problems are as follows:

- A. reliable descriptions of the distribution, composition, structure, condition and properties of lyoss grits and their arrays are obtained;

- B. the nature of the deposition of lyoss grinds is determined;
- C. the types of separation of lyoss grounding masses and the total value of sediments, as well as the description of the change of sediments by layers are determined;
- D. the regional legislation of the distribution of mass of sedimentary lyoss grits and the strength of sedimentary layers are indicated;
- E. requirements for engineering and geological exploration work have been developed in the districts where sedimentary rocks are distributed.

Further it can be noted that the process of deposition in the humidification of lyoss grasses - the fact that it is a mechanism of development of deposition - has been sufficiently studied in this regard to date (Abelev, 1968; Ananov, etc., 1976; Denisov, 1953; Krutov, 1982; Mustafaev, 1989). In this regard, many scientists have studied the fact that on earth, for example, even in northern Eurasia, the deposition and spread of lyoss is a different district, and the factors underlying them (Abelev, 1968, Ananov, 2004, Ananov and others, 1976; Kart..., 1989; Kriger, 1965, 1986; Kriger and others, 1981; Krutov, 1982, 1998; Larionov and others, 1959; Lyosslar., 1966, 1986, 2001; Lisenko, 1978; Mavlanov, 1958; Base., 2008; Trafimav, 2008). It is also determined that other mountaineers also have deposition properties: dusty salty and non-salty Sands, volcanic ash and artificial soils are identified. The data collected to date has also made it possible to characterize the excessively high values of the deposition indicators of lyoss grinds.

**Table 1 Classes of techniques for controlling the deposition of Lyoss grunt arrays.**

Groups of methods	Classes of methods	Methods types of	Basic techniques
hydrogeomechanical	Methods aimed at the deposition of lyoss grits by condensation and wetting	Methods of mechanical densification of sedimentary lyoss grinds	Flattening the hipper with heavy rollers. Pillows from lyoss grills restoration. Blow up and condense. Avavlik condensation. Condensation with the help of Catholics.
		Gidromechanical methods of eliminating the deposition of a wide lyocoid grunt mass	Wet the grunt massifs by pouring water into the pits. Deeply moisten the massifs. Densify by blasting extra soaked grunt massifs. Soaked grunt masses shake and condense. Steaming Lyoss rock Massif
Geochemical	Using physico-chemical melioration technologies, it is possible to determine the methods aimed at eliminating sediment	Thermal methods of eliminating the deposition of lyosimon rocks	Activate the side to the strengthening mass. Additional heated air to the massif to squeeze and drive.
		Methods of physico-chemical injection strengthening of sedimentary rocks	Strengthening the mass of lossy grits with dumbbells with dumbbells. Silicate. Ammonia. Reinforcement with urea resin.
Geotechnician	Methods based on scraping of sedimentary lyoss grinds	Methods based on industrial shearing of sedimentary lyoss grinds	In places where the highway is planned to be built, it is necessary to take the road beam-based sleeper lyoss grounding, etc.
	Methods based on armature of sedimentary lossy grunt massifs	direct techniques of grinding massifs with sedimentary lossy	Restoration of Sandy pillows. Scraping small-sized piles. Scraping the injecting and twisting piles into the indestructible sinking grunt.



	Methods based on the complete cutting of layers of calcareous sedimentary grits	Deep-foundation cutting of the sinking layer of lyoss grinds	The use of stumbling devices or clogging piles that cross the lyoss grinds. Restoration of sedimentary lyoss rock massifs with reinforced grunt columns.
	Based on the control of the humidity regime of sedimentary rock masses with lyoss methods	Water repellent activities	Area Planning Build waterproof screens to the foot of highways. Qualitative filling of the gaps between the pits and trenches around the pipe and other artificial structures at the base of the road. Management of emergency water out of the way and water leakage network.
Complex mixed	Methods based on combining different classes of techniques.	A set of activities that include different combinations of techniques of the first three groups.	Complex measures aimed at partial elimination of the deposition content of calcareous grits, structural and water-bearing protective measures.

It is known that the relative sedimentation value of lossy grills often reaches 0.09-0.15 (in urban and urban areas such as Tashkent, Odessa, Zaporozhe and Grozny), the base in Chirchik amounted to 0.3 MPa at a load of 0.17 (at a depth of 3-9 m), the depth at a natural load of 0.21 MPa at a depth of 22 m. ni established. The smallest values of the initial immersion pressure are V.I. According to Krutov (V.I. Krutov, 1998) reported that the extreme sedimentation rate of lyoss grunt was <0.02 MPa, while the relative sedimentation rate in it was known to increase to 0.12 MPa at the pressure effect of 0.3 MPa on the grunt.

The maximum value of the strength of the sinking area ie thickness 43-55 m. by arrangement, the value of the difference in the deposition of often lyossy grinds can also vary up to 30 m.

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# Uzbekistan and the Eurasian Economic Union (EEU): Integration in the Interests of the Country and the People?

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## ABSTRACT

Articles in the section, whether the Republic of Uzbekistan is a member of the Eurasian Economic Union or not, can be useful or harmful for our integrated economy.

**KEYWORDS:** *Eurasian Economic Union (EEU), integration, Interstate Council, Integration Commission, Free Trade Zone, NAFTA, Customs Union, Mecosur, Monetary Union, Monetary Union, Full integration, observer states, WTO (World Trade Organization), regional integration processes, tariffs, patents, tariffs, counter sanctions*

## INTRODUCTION

The Eurasian Economic Union was established on May 29, 2014 by the subject of international law for the free movement of goods, services, capital and labor and the implementation of common economic goals for the creation of conditions in the economy. Has been operating since January 1, 2015. The Eurasian Economic Union operates under an agreement signed by the governments of Armenia, Belarus, Russia, Kazakhstan and Kyrgyzstan.

### How does the OSCE work?

The main body of the OSCE during the Interstate Council. It may be adopted on the basis of an agreement reached with respect to the Member States. The permanent body of the OSCE is the Integration Committee. The board is scheduled to meet four times a year. Decisions of the Committee are implemented only if approved by two-thirds of the members. The votes of the members in the organization are determined by the meeting fees. Hence the treatment, Russia - 40; Belarus - 15; Kazakhstan - 15; Kyrgyzstan has 7.5 percent of the vote, followed by Armenia with 7.5 percent

Russia may be able to work on resolving the votes of the Russian Federation, provided that the performance of the fees is considered. **Toir Mansurov** is currently the Secretary General of the OSCE. In practice, there is an inter-parliamentary commission of the OSCE, consisting of 42 deputies from Russia, 16 from Belarus, 16 from Kazakhstan, 8 from Kyrgyzstan and 8 from Armenia. The Secretariat is headquartered in St. Petersburg.

A special bank is also working in Russia and Kazakhstan to solve economic problems and develop. The OSCE also has an anti-crisis fund, the purpose of which is to provide livelihoods for the implementation of the crisis in the world economy.

In 2012, the OSCE Court was also established. The court aims to resolve disputes over the development of member states.

Working in the second phase of the integrated Eurasian Economic Union form. That is, there is a "customs regime" between member states of the organization, which explains

that member states pursue the same trade policy. That is, for non-member states, the same level of customs has been established (the organization currently has some exceptions).

In March last year, it was decided that Uzbekistan would join the Eurasian Economic Union as an observer state. This means that we have taken a very big step towards joining the union (another, two, three, or even 5 years is a big step in our relationship with a member of the union).

**Relevance of the topic** In general, integration always stimulates economic growth. As long as the rule of law prevails in the integration organization over the interests of any member state. In the Eurasian Economic Union, however, states (mostly Russia) have repeatedly violated EU laws in their own interests. For example, after the events in Crimea, Russia restricted the flow of Ukrainian products to Kyrgyzstan and Kazakhstan. Or that Russia has imposed restrictions on the import of milk and dairy products from Belarus under various pretexts (mainly licenses) (this should not be a problem at all in the customs union). Or the recent problem with oil trade between Belarus and Russia, which has been fueled by Russia's preference for its own interests over those of other members of the alliance. As you can see, Russia is the main culprit in all the problems mentioned in the current example.

We are now receiving official observer status, and who can guarantee that there will be no such problems between Russia and our country after we join the union in the near future. Russia today is not a leading ally (as they think).

I have a question, why there are no reports of attempts to join the World Trade Organization (WTO)? Did it start again and stop like it did in 1994?

In general, we do not have to be a member of any organization to open the borders, in fact, in the current situation, simply removing the barriers at the border will bring us positive benefits (even without the agreement of any state).

### The content of the issue

How can Uzbekistan's current membership in the Eurasian Economic Community affect our economy?

Looking at the history of the world economy, we can see that most of the countries that have been involved in globalization and regional integration processes have returned to the pace of rapid growth. In general, increasing global specialization is accelerating the process of globalization between countries. Therefore, integration organizations are becoming one of the strongest factors in the economic development of states. But in the current situation, what are the consequences of Uzbekistan's membership in the Organization?

**Advantages:** First of all, customs duties will be reduced at the border for products entering our country. As a result, the prices of goods and services in the domestic market will naturally fall. Consumers will benefit from this, as they will be able to buy more expensive products at a lower price, as well as increase their choice. In the short run, this will lead to a reduction in the market segment size of manufacturers (as a result of increased external competition). In the long run, the competitiveness of domestic producers will increase and exports will increase in areas with a relative advantage. Areas that do not have a relative advantage may disappear (not all). It is natural that there will be positive changes in the logistics system.

**Disadvantages:** First, the Russian effect. Historically, at a time when European countries were imposing sanctions on Russia, Kazakhstan, a member of the organization, also received sanctions from several countries. In general, the extent to which Russia participates in the political process will have a direct impact on the organization's activities in the future. In other words, the imposition of sanctions on Russia by other major leaders will affect other members of the organization.

Membership in the organization could increase Russia's influence in our economy. This will more or less undermine economic freedom.

If we look at the history of the Organization, we can see that Russia has repeatedly violated the agreements reached within the Organization. The recurrence of such cases in the future will lead to the deterioration of the position of the organization (in practice, will lead to the failure of the organization). Or the actions of the Republic of Belarus: at the time of the EU sanctions against Russia, the Republic of Belarus took advantage of this situation, that is, no sanctions were imposed on Belarus from Europe. There have been many cases of the Republic of Belarus importing European products (many of which have been converted to "Made in Belarus") into Russia through Belarus (which has caused significant damage to the Russian government).

In addition, we have competing countries in the organization, which are mainly engaged in the export of raw materials. In this regard, the opening of borders to these states may not lead to any positive situation in practice.

### Conclusions and recommendations

In my opinion, the fact that Uzbekistan is joining the Eurasian Economic Union as an observer is the right decision. The issue of migrants has often been at the forefront of this alliance. I do not believe that joining the union will ease the situation for migrants. But I expected the decision not to join to make things worse for them. We know Russian politicians who do not tolerate any inferiority in achieving their goals. After the sharp decision not to join the union, there was a growing pressure on our migrants in Russia. And given Russia's influence in Central Asia, we could expect the pressure to be more than that. I think (if I think so) that this decision was made wisely and will help the national economy gain time until it recovers somewhat.

Will joining the alliance make accession to the WTO easier or harder?

One of the main conditions for accession to the WTO is the reduction of import tariffs. From this perspective, joining the

union will accelerate accession to the WTO. Why? At present, the average tariff rate in the country is 20% (if you add other duties, it will be higher). The average tariff in the Eurasian Economic Union is about 6%, and the average tariff rate in the WTO member states is about 9%. tariffs approach 6%). This will automatically eliminate the main problem of accession to the WTO. That is, in theory, joining the union will make it easier (or faster) to join the WTO.

### How will joining the union affect exports and imports?

The conclusion that joining the union will dramatically increase exports is not true. This is because the free trade agreement between the countries of the former Soviet Union has been in force since 2011. This means that until now, tariffs on exports to the countries of the Eurasian Economic Union have not been significantly affected. Joining the union may lead to a slight reduction in tariffs (a very small change), but it will not lead to a sharp increase in exports. However, import duties are the same not only for the member states of the Union, but also for other countries. That is, under the terms of the customs union, goods entering the territory of the union (regardless of the territory of the state) are subject to the same tariffs. For example, if a product from China enters the territory of Russia with a 5% duty, it means that it enters Uzbekistan with the same duty. Given the current level of tariffs in our country, joining the union will provide a huge incentive for imports in the short term. Of course, this process can seriously hurt domestic producers. Consumers, on the other hand, benefit from having the opportunity to buy cheaper than before. From an economic point of view, joining a union increases the well-being of society as a whole. Because the damage to domestic producers and the state budget will be less than the benefits to consumers.

However, these analyzes do not lead to the conclusion that it is necessary to join the union, because the above conclusions are based only on purely economic calculations. It does not take into account the fact that a state violates the laws of the Union in its own interests, restricts trade and the political consequences. Maybe the political consequences will be more costly for our country than the economic benefits, and if so, joining the union will not be justified. The issue of joining this union is the work of more politicians, and it is impossible to form a complete picture with economic calculations alone.

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# The Digital Economy is a Leading Factor in Ensuring a Healthy Competitive Environment-Barriers and Risks of Digitalization of the Economy in Uzbekistan

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## ABSTRACT

Digitalization is being introduced into social processes, the successful life of people increasingly depends on it, in addition, there is a large-scale introduction of digital technologies in the work of government organizations and structures. According to the level of development of the digital economy, Uzbekistan does not occupy a leading position in the world, but it confidently holds on to the group of countries following the leaders, improving its position from year to year. It is necessary for the state and business to work together to further develop the digital economy.

**KEYWORDS:** Digital economy, digitalization, barriers and risk, business

Today, new digital technologies, innovative business models penetrate into all spheres of economic life of society, influencing the very essence of the economy, forming qualitative structural changes in it. As a result, the digital economy is formed as a subsystem of the traditional economy, characterized by the active use of digital technologies and the turnover of specific electronic goods. The level of development of the digital economy is closely correlated with the country's competitiveness, which requires special attention of the state and business to its development. The article reviews the development of the digital economy in the world and Russia, identifies the risks and threats to the development of the digital economy, and suggests ways to overcome them. It is established that today the electronic economy already goes beyond purely economic processes. In this activity, it is necessary to take into account a number of problems, risks and threats identified in the article in order to focus resources and efforts on their neutralization.

digital economy, threats and risks to sustainable development, economic growth, state regulation of the economy, scientific and technological progress

On April 28, President Shavkat Mirziyoyev signed a decree "On measures for the widespread introduction of the digital economy and e-government".

The document provides for the accelerated formation of the digital economy with an increase in its share in the country's gross domestic product by 2023.

All healthcare institutions, schools, pre-school education organizations, villages and mahallas should be connected to high-speed Internet in 2020-2021.

The share of electronic public services is planned to increase to 60% by 2022.

The resolution also provides for the development of "digital entrepreneurship" with an increase in the volume of services in this area by 2023 by three times and bringing their exports to \$ 100 million.

The widespread introduction of digital technologies is planned at all stages of the education system. By 2022, digital knowledge training centers will be opened in all regions of the country as part of the "Five Initiatives" project.

The Ministry for the Development of Information Technologies and Communications is designated as the authorized body for the development of the digital economy and e-government. The National Agency for Project Management under the President retains the authority to implement crypto assets and blockchain technology.

Two new institutions will be established under the Ministry:

- "E-Government Project Management Center";
- "Center for Digital Economy Research".

In the structure of the central office of the ministry, the post of Deputy minister responsible for the accelerated digitalization of the agricultural sector, the introduction of modern information systems and software products in the field of agriculture and food security is being introduced. The Ministry also creates the department for the development of digital technologies in the agricultural sector and the department for the Development of geoinformation technologies.

In addition, the state share in the authorized capital of LLC "Unified Integrator for the Creation and Support of State Information Systems UZINFOCOM" is transferred to the Ministry of Finance free of charge.

The document establishes that state bodies and organizations have the right to hold competitions exclusively among residents of the Technological Park of Software Products and information Technologies under one contract for the development, implementation, integration and technical support of information systems and software products with a total cost of up to 1 billion soums.

By August 1, the Ministry has been instructed to implement a Unified National system of delivery and confirmation of delivery to individuals and legal entities of correspondence, notifications, summonses and other legal documents sent by state bodies and organizations through a network of postal communication facilities, as well as storage and accounting of information.

The digital economy is a system of economic, social and cultural relations based on the use of digital information and communication technologies. Based on these theoretical



positions, it can be assumed that digitalization is not an end, but a means, and the digital economy cannot be considered separately from the rest of the economy and should be interpreted as a segment of activity when the materialization of added value in the production of goods and services is carried out using digital technologies, especially for industries that are Internet – dependent.

At the same time, it makes sense and value if digital technologies and infrastructure promote cooperation in all spheres of the economy and levels of management. At the same time, a comfortable environment is being formed for the emergence, cultivation and implementation of various startups.

The digital economy, namely the emergence of new opportunities, certainly has a positive impact on human life. Thanks to the development of digital technologies, consumers can get the services they need faster, save money by buying products in online stores at lower prices. So, the electronic version of the book will cost you many times cheaper than its printed counterpart, on wholesale purchase on the Internet, having agreed with other consumers, you will save more than making purchases in offline outlets. In the end, the consumer can even start a business online, become an entrepreneur, without leaving home.

But there are a number of problems that prevent us from creating a healthy competitive environment and the digital economy as a whole. One of the main problems is the weak telecommunications infrastructure and communications. Due to low investment in ICT (2.8 % of the total investment in 2017), the density of communication base stations in the Republic remains very low (1 base station per 1,600 inhabitants). In contrast, in Kazakhstan, one such tower serves the ICT needs of 643 residents, and in Russia — for 235.

This leads to poor internet and mobile services slowing digital economic growth and widening the digital divide. Compared to the CIS average, in 2019, the average Internet speed (mobile and fixed broadband) in Uzbekistan was about twice as low.

The lack of digital skills in Uzbekistan can be a serious obstacle to digital transformation. Uzbekistan, as one of the few developing countries, has absolute adult literacy rates (100 % in 2016) compared to other countries with similar levels of GDP per capita (for example, in the Lao People's Democratic Republic, 84.66 % in 2015). On the other hand, in developing countries, despite the high level of adult literacy, digital literacy remains at a lower level.

Perhaps this can be explained by the low level of use and dissemination of ICTs in schools. Moreover, the shortage of computers in schools is further compounded by the indicator of the number of households in Uzbekistan with personal computers, 50 computers per 100 households. This is also confirmed by the trends in the labor market – according to a recent study assessing the lack of skills in the Uzbek labor market, 68% of companies surveyed noted the importance of IT and computer skills as one of the key reasons for hiring new candidates.

The UN e-Government Index reflects how a country uses information technology to ensure the access and integration of its people. In 2018, the indicators for Uzbekistan are almost equal to the average indicators for the CIS and exceed

the global average. Uzbekistan ranks 81st among 193 countries in the ranking.

Finally, the overpriced Internet, insufficient coverage, and low international Internet bandwidth are the consequences of a monopolized telecommunications industry. The market form of telecommunications industries in developing countries is often an oligopoly or even a monopoly. In Uzbekistan and in the rest of the CIS countries, the telecommunications industry is mainly limited to a single leading company, which is endowed with special powers and resources (for example, Rostelecom, Ukrtelecom, Kazakhtelecom, Aztelecom, etc.).

Based on the above factors, it would be appropriate to understand what risks the transformation has, to anticipate them at the initial level, to exclude them from creating further problems:

- first, the risk of cyber threats associated with the problem of personal data protection (partly the problem of fraud can be solved by the introduction of so-called digital literacy);
- second, "digital slavery" (using data about millions of people to control their behavior);
- third, the growth of unemployment in the labor market, as the risk of the disappearance of certain professions and even industries will increase (for example, many experts seriously believe that the banking system will disappear within the next ten years). This will be possible due to the further spread of information technology and its products, such as stores with electronic cash registers, bots that serve customers, self-driving cars, and other things);
- fourth, the "digital divide" (the gap in digital education, in terms of access to digital services and products, and, as a result, the gap in the level of well-being of people in the same country or in different countries);
- After analyzing the data, we can say that there are ways to solve these problems, they are:
- the abolition of the state monopoly on international gateways, which is planned for 2020. Liberalizing the telecommunications industry will allow Uzbekistan to provide its citizens with secure and affordable Internet services and benefit from the digital economy;
- support from the state for small business owners in the transition to the digital economy; - create a powerful data protection system;
- Liberalization of bank assets, important aspects of business and production where state control is still established;
- improve the quality of education in the field of IT.

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# On the Problem of Preserving the Ecological Purity of the Language in the Linguocreative Media Space

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## ABSTRACT

The article attempts to analyze the problem of the ecology of language within the framework of a new direction of linguistic thought.

**KEYWORDS:** *ecology, language, concept, ecolinguistics, relationship, ecological purity, derivation*

The close relationship between the ecology of nature and the ecology of language as a part of culture revived a new term and a whole direction in modern linguistics associated with it - ecolinguistics, which, in turn, was introduced into scientific circulation by the American linguist Einar Haugen [Ionova 2010: 87]. Being the founder of the concept of ecology of language and the founder of the theory of ecology of language, Haugen in 1970 defined the ecology of language as a science that studies "interactions between any language and its environment, environment" codes "(quoted from [Rarenko 2003: 73]). There are also a number of other conflicting opinions on the correlation of the authorship of this term and even the correlation of the terms "ecolinguistics", "ecology of language / languages", "linguistic ecology" and "linguocology" / "linguistic ecology". As a rule, these terms are used as synonymous (see, eg, [Moiseenko 2007; Ogdonova 2009: 122 and many others]), however, attempts are being made to differentiate them. The term "ecolinguistics" is used to refer to all areas of research that link ecology to linguistics.

This is how it is defined by Alvin Phill (after [Ionova 2010: 88]), and after him other scientists. According to Alvin Phill, "the ecology of language (s) examines the interaction between languages (with the aim of preserving linguistic diversity)"; "Environmental linguistics uses the methods and principles of ecology to learn a language (for example, the concept of an ecosystem)"; "Linguistic (linguistic) ecology studies the relationship between language and environmental problems" [Ibid.].

It is advisable to consider the object of ecolinguistics such manifestations of linguistic signs or units in which identical features of independent disciplines such as ecology and linguistics are clearly indicated at the junction of the general laws of their existence. And as the subject of this direction, it is customary to consider various aspects of the functioning of languages and discourses in their social and natural environment.

At the present stage of the development of media discourse, an important role is played by the problems of linguistic creativity, which in turn affects linguistic ecology. The tendency of the formation of new words, terms and related concepts does not always obey the traditionally accepted linguistic laws of a particular language. Sometimes there is even a clear contradiction of new formations with the basic structure of the whole word-formation system.

But nevertheless, adequate perception of the lexical form of new words unusual for language and widespread use, in particular in the media space, "fixes" it so much in the minds of speakers and listeners that they gradually begin to acquire the meaning of a norm. In this sense, as a reverse process of this phenomenon, the disappearance of the eradicated classical forms of words due to their "displacement" as a result of the results of linguistic creativity is also observed. If we consider the language as a reflection of the soul of the nation, the traditions of the people, the primary factor in the awareness of its originality, the issue of preserving the ecological purity of the language becomes especially relevant. At the moment, due to the expansion of technical capabilities in communication and their features of functioning, there is a tendency to replace verbal communication with sign, or non-verbal. The social characteristics of the language change somewhat. Increasingly, the author's neologisms, slangs, jargons are adjacent to a number of literary words. Understanding the process of formation of this kind of words will help to identify the reasons for such a wide use of them in the speech of native speakers. So, the formation of the dictionary of the so-called "systemic" slang - occurs at the expense of the same sources and means that are characteristic of language in general, and Russian in particular. Having appeared in such a grotesque guise, the borrowed slangism immediately actively enters the system of inflection: girl - girls, girls, street - to street, perent - with perent, zipper" lightning "- zipper, byte" white "- byte. It is interesting to note that some foreign words, which have long been assimilated by the Russian language, seem to be re-adopted in a different meaning (and sometimes with a different stress) and already in this meaning form derivatives: record (record) - "gramophone record"; record - "plate"; rally - "meeting"; smitingnutsya - "to meet"; ring - "phone"; ringing, tringanut - "to call by phone", ringushnik - "a notebook with phone numbers"; speech - "conversation"; to speak, to speak - to "talk".

- Affixation, as a means, is very productive and with primordial Russian roots: ottyag - "pleasure", to be delayed - "to receive pleasure, indulge in fun; pin up - "pay attention, cling, mock, get carried away"; joke - "something that you can laugh at, what you can get carried away with"; prankster, prank - "one who loves to find fault,
- The next powerful source of the formation of the lexical composition of slang is metaphor. Here are metaphors proper (such as pussy - "narrow triangular dark glasses", zagolyak - "complete absence of anything", extinguish - "kill"), and metonyms (such as hairy - "hippies").

In metaphor, there is often a humorous interpretation of the signified. As an example, let's call metonyms: splevich -

"ephedrine, a medicine for the common cold, which is used as a narcotic drug"; shaggy - "bald"; or metaphors with an ironic connotation a basketball player is a "short man."

Compared with the three named (foreign borrowing, affixation and metaphor), the share of other sources of the formation of the lexical fund of youth slang is insignificant.

- Borrowing thieves' argotisms: lawlessness - "complete freedom, revelry"; ksiva - "documents"; wet - "beat, kill."
- Antonomazia (proper noun as a common noun): Levis, Louis "jeans"; Masha, Natasha - "girl"; listening to Mendelssohn - "to be present at the marriage ceremony"; to drive mumu - "to lie".
- Synonymous or antonymic derivation (one of the components of a phraseological unit is replaced by a close or opposite word of the national language or slang): to hammer in a joint - "fill a cigarette with a drug for smoking" - to nail a joint - to nail a joint - to nail a joint; get on a needle - "start using drugs on a regular basis" - get hooked; add a needle - "teach someone to use drugs" - add a screw - add a jeff; get off the needle - "stop using drugs" - get off the needle - jump off the needle.

In addition, this series can be continued by describing such linguistic manifestations as truncation of roots, addition of roots, universalization, abbreviation, etc. These processes are especially vividly observed in the media space, where there is a "shift in communication towards non-environmental friendliness", which is confirmed by "environmental disasters", for example, such as the influx of foreign words, stylistic decline in speech, its jargonization, vulgarization, stamping, the use of obscene words and expressions, disregard for the formulas of politeness, depletion of the vocabulary of native speakers.

If all structural, linguistic and stylistic norms are observed in speech, but "the choice of goals is determined by anti-values (moral, existential, aesthetic, etc.)," then such speech is a manifestation of speech anti-culture, this concept is so understood. In other words, the goal set also determines the degree of environmental friendliness of speech. The degree of environmental friendliness of speech should be determined taking into account the goal of the performed speech behavior and its linguistic implementation.

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## Organizational form of Labor Motivation in Various Proprietary Enterprises

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### ABSTRACT

Motivation is complex and multifaceted phenomenon. Work place motivation is an endless struggle for both employers and employees. The reason is that labor motivation helps to increase the productivity of the enterprise. The article discusses the organization of labor motivation in various forms of ownership, as well as research on this topic. At the end of the topic the necessary conclusions are given..

**KEYWORDS:** *Work or labor motivation, financial incentives, moral incentives, proprietary enterprises, private and public sector and others*

One of the basic relations of the economic system of any society is undoubtedly the property relations. In short, property relations are economic relationships that arise in the process of owning, using, disposing of, and acquiring property. Ownership of property means that the property remains in the hands of the owner and represents a social form of appropriation of the material wealth created.

Although the economic content of a property relationship is determined by its integral aspects (possession, use, appropriation and disposal), the description of this relationship may differ not only in individual forms of property, but also within a single form of property. Property is the essence of both legal and economic relations in society. The legal and economic content of property is interdependent and interdependent, so property is both an economic and a legal category. According to the Law of the Republic of Uzbekistan "On Property", the forms of property in our country are as follows:

- private property;
- company (community) property;
- state property consisting of the property of administrative-territorial units (communal property);
- mixed property;
- property of legal entities and individuals of other states and international organizations.

Regardless of the form of ownership, the company or organization has a specific group of employees. So, what can be done to ensure that employees work effectively and sustainably over a long period of time, apply their knowledge and skills, use their creative potential in a successful work process, and are interested in it?

Such problems are undoubtedly the most fundamental problem in the social organization of labor in any society. Because it is the factor that can determine the successful future of an enterprise. The solution is to encourage work, or in other words, work motivation. Motivation is the process by which a stimulus that triggers the activity of the body and

determines its direction motivates these employees to work. Any leader should not forget to encourage their subordinates to work if they want to achieve effective performance. Motivation is also the process of creating an incentive system to achieve an employee's goals based on his or her needs, values, beliefs, and worldviews and using them.

It is known that each society had its own discoveries, new approaches, and even mistakes and shortcomings in the organization of labor activity. One thing is for sure, even innovations that have led to an increase in labor productivity over a period of time and increased production efficiency have become obsolete over time and have exhausted their resources or become less acceptable.

If we look at history, the first labor incentives began in the Taylor-Ford era, during which the main focus of incentives was on wages, providing the worker with the things he needed to survive. Needs and motives other than needs are denied. But from the late 1920s onwards in the USSR, and from the 1930s onwards in Western European countries and the United States (after the global economic crisis), a new principle of taking into account the needs of the economic man began to take shape in the economic policies of states and industrial corporations. Much attention has been paid not only to wages, but also to the satisfaction of other socially important needs through a more in-depth study of the motives of human behavior.

Today, there are many new search engines for incentives, rewards based on performance, which incorporate both old and new methods of incentives, but greater emphasis pays labor motivation than the previous stage. At the same time, if we define the *concept of labor motivation*, it is the desire to meet the needs of the employee (to receive certain benefits) through the implementation of labor activities.

The most common motivation for work is financial incentives. Among the financial incentives are sharp stratification of wages, the use of bonuses, social packages. Among the social incentives are decent working conditions; to an interesting, creative and meaningful work process; a great deal of attention is paid to the encouragement of improving community relations in his spare time. For example, in foreign countries, especially in Germany, a number of industries use specific criteria to encourage creatively skilled labor. In the implementation of a general policy aimed at reducing the workforce, the weakest workers are not laid off, but skilled, creative workers are transferred to other prestigious areas of labor consumption. The rest are offered not only to replace those who have left, but also to find new resources to increase productivity, to learn to work more efficiently. It promises to support those who have

succeeded in the new task and that their transfer to another job will depend on their efforts and the fulfillment of the tasks set before them.

As for moral incentives, they are aimed at motivating the worker as an individual, a system of democratic influence in order to increase the efficiency and initiative of his work. It should be noted that the motivation to work can also vary depending on the form of ownership of the enterprise.

Employees of private and public enterprises can be rewarded in different ways depending on their work. A survey was conducted among employees of private and state-owned banks in Pakistan. The state bank has 80 employees and the private bank has 70 employees. The majority of public sector employees were male, 84%, and the remaining 16% were female respondents. Similarly, the majority of private sector employees were male members, i.e. 87% and women only 13%. The majority of respondents in the public sector ranged in age from 31 to 40, or 34 percent. Respondents under the age of 30 make up 21 percent of the survey, and 30 percent are in the 41- to 50-year-old group. Only 15 percent of respondents were over the age of 51. However, in private sector banks, 36% of respondents fall into the category of 31 to 40 years old, and 31% of respondents are in the age group of 20-30 years. Similarly, 21% were between the ages of 41 and 50, and only 11% were over the age of 51. In addition, 56% of academically qualified staff, clearly masters, are from the public sector and 53% are from the private sector. The bachelor's degree is then 39% and 40%, respectively, in the public sector and the private sector.

The survey asked the following questions:

1. How much are you encouraged by external financial / monetary rewards in your workplace?
2. Are there opportunities for growth and development in your workplace?
3. What are the recruitment processes in your workplace?
4. How is the collaborative work environment developed so that you can work with employees in your workplace?
5. When working with family, work and family (during working hours, workload)?

Then, the following results were obtained.

1. Compared to private sector employees, public sector employees are less motivated by external financial / monetary rewards.
2. The public sector is less likely to grow and develop compared to the private sector.

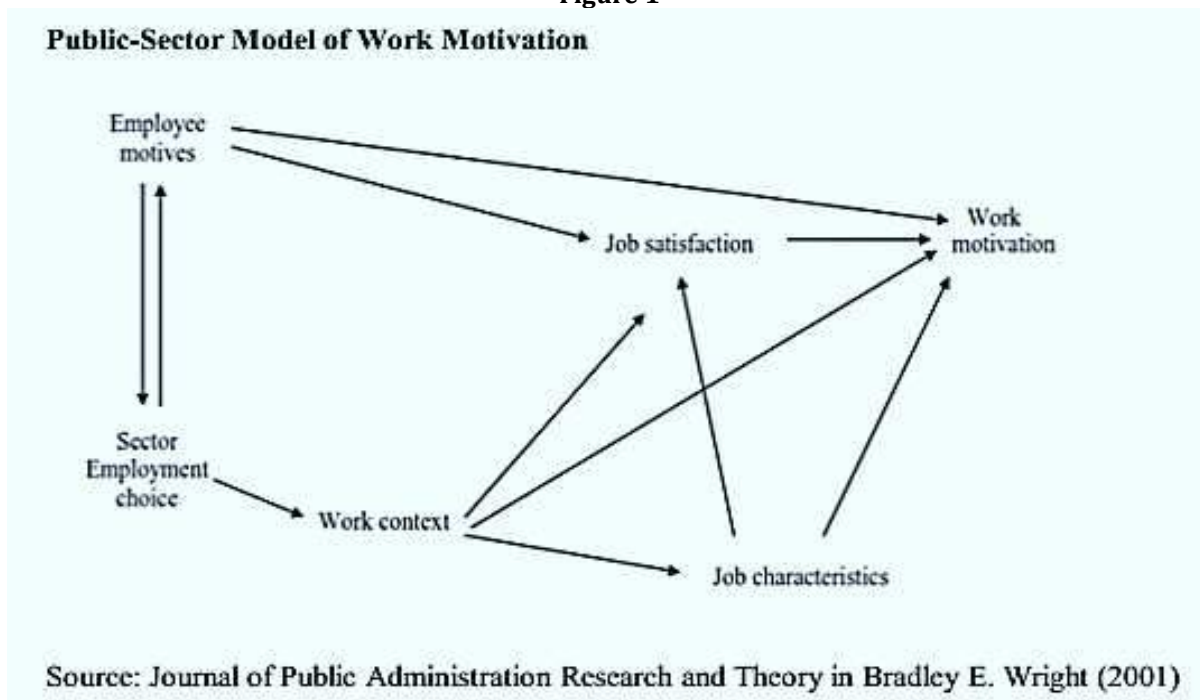
3. Recruitment opportunities for public sector employees are less encouraging than for private sector employees.
4. A supportive work environment is more stimulating for public sector employees than for private sector employees.
5. Public sector workers are less likely to face work and family conflicts compared to private sector workers.

From the results of the study, we can conclude that public enterprises and private sector employees used different methods to motivate their work. The results of the study confirmed that the labor motivation of bank employees depends on their salary, additional benefits, work efficiency, quality control and colleagues' attitudes. Employees of private banks are more satisfactory than banks in the public sector because they have good wages, additional benefits, quality control, good relations with employees, development opportunities and high efficiency at work.

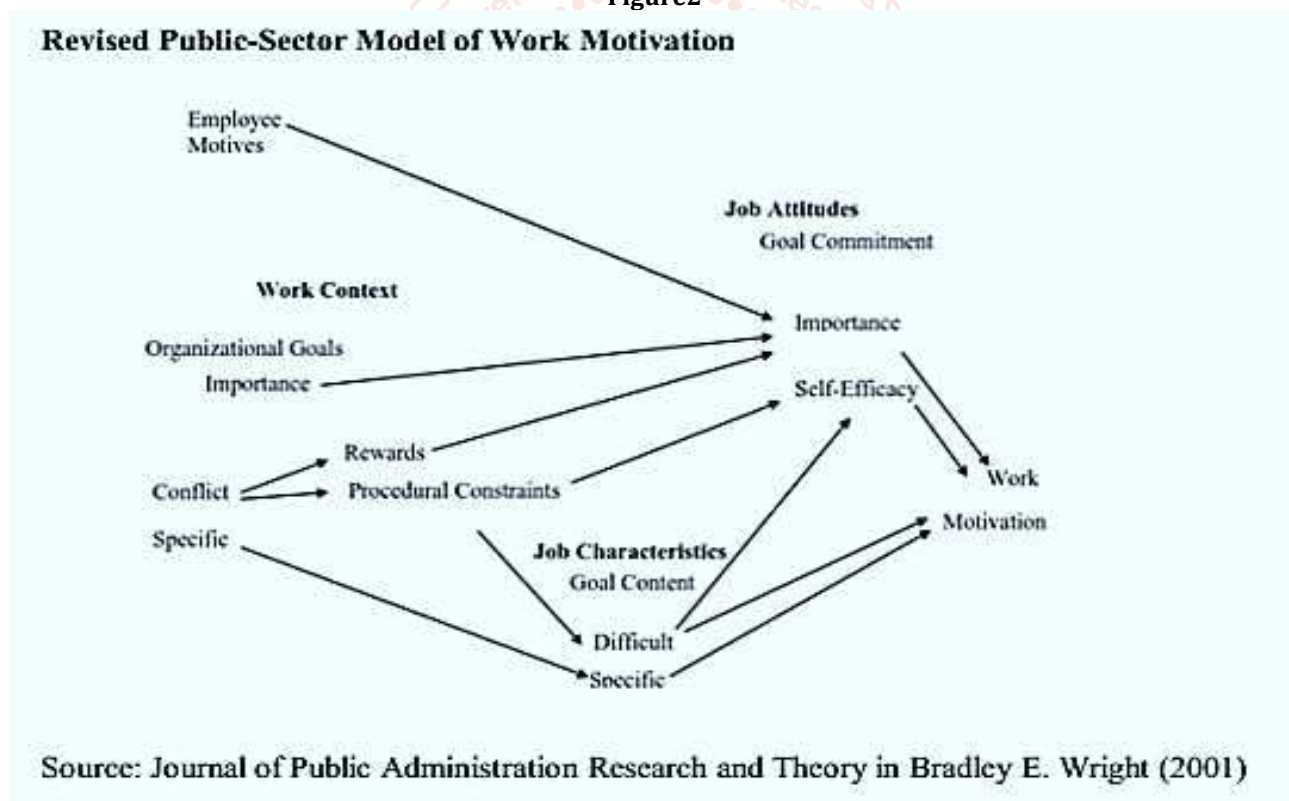
On the other hand, there are not enough benefits and opportunities for public sector employees, resulting in a relatively low level of motivation in the workplace. However, there are limitations to this study, and based on the results of the above survey, this does not mean that similar conclusions can be drawn about labor incentives in other organizations in Pakistan. This means that the population in the survey comes from a particular type of industry (i.e., the banking sector), which may not be a true representation of the population in other sectors, and therefore it will be difficult to generalize the survey results. However, the research is relevant in understanding the situation of both public and private sector organizations in Pakistan regarding the effectiveness of motivational factors. But at the same time, we are far from saying that labor motivation is low in all public organizations, and high in private organizations. This is because every company or institution rewards its employees according to their inner abilities.

Moreover, an article published by *Bradley E. Wright* (2001) focused on encouraging employee labor in the public sector. His research highlights employee satisfaction, job characteristics and working conditions, work motivation, and the organizational system of work motivation to be recommended. (Figure 1 and Figure 2)

According to Bradley, labor motivation in the public sector is formed primarily through the formation of the employee's attitude to work. If the attitude to work and profession is good, then it is necessary to create job satisfaction by creating incentive systems, reward benefits, job value, creating an appropriate management structure.

**Figure 1**


A new model of labor motivation in the public sector, i.e. the proposed model, is to create labor motivation through rewarding through psychological theory, establishing good relationships between colleagues, and compensating.

**Figure2**


For this reason, a clear motivation for employee behavior is manifested in the emergence of the employee's interest in his or her work, as well as in his or her psychological propensity to meet requirements and therefore in motivating him or her to do his or her job more effectively. Satisfaction with work can be provided only on the basis of the results of work achieved. This means that the employee must be able to develop in his work, to create career ladders. To do this, it is necessary to direct the main motives of work as follows:

- with individual-subjective orientation of employees - the stability of financial incentives; prospects for raising wages and social status;

- with the subjective orientation of employees - guaranteed stability; organizational support; description of specific tasks; confirmation of positive results with the participation of the team; open communication and trust;
- with the personal orientation of employees - to stimulate creative activity; giving responsibility for solving problems; support for initiatives; handing over a new unexplored front of the case; confidence in professionalism; collegial decision making; to help the community communicate effective ideas and ways to implement them.

In short, the motive of labor is a logical stage in the human mind. If labor brings the income necessary for the realization of interests and the satisfaction of needs, then among them (needs) as the motives of labor for man the needs that he pursues in his productive life participate as the most urgent and important needs. At the same time, as noted in the works of S. B. Kaverin and L. S. Shakhovskaya, the motive of labor is the desire to meet the needs that can be met not only in the labor activity, but also outside the labor activity. Based on the above surveys and research, it can be said that in organizations with a private form of ownership, employees have a much higher sense of appreciation, motivation, motivation and job satisfaction. The reason is that in private enterprises, the profits come from the services provided by employees, the volume of work, and are distributed accordingly. In organizations with a large share of the state, it is more difficult to organize labor motivation. For example, the process of financial and moral incentives for employees in public enterprises, despite the large workload, is very slow or almost non-existent, or vice versa. So, the organization of labor motivation and thereby increase productivity is one of the most pressing issues for any enterprise.

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# Agricultural Development is the Best Key Factor for Food Security

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## ABSTRACT

The article examines the formation of market relations in agriculture of the Republic of Uzbekistan, the negative impact of COVID-19 on the world economy.

**KEYWORDS:** *agriculture, the impact of the pandemic, the global crisis, agricultural development and others*

The largest sector of the economy of the Republic - formation of market relations in agriculture and effective functioning of all its spheres during the transition period, first of all, depends on factors such as the gradual implementation of economic reforms taking into account the peculiarities of the network, the restriction of interference of local authorities and state bodies on the basis of creating conditions for equal functioning of various forms of ownership and economic conduct, the formation of a competitive environment on the basis of the development of market infrastructure and ensuring sustainable economic growth of private and small businesses.

The negative impact of the coronavirus pandemic on the global economy is causing a variety of problems. Experts from the World Bank, the International Monetary Fund and other international organizations predict that the economies of many developed and developing countries will slow down by 2020. This, in turn, indicates the escalation of global unemployment and the growing number of people in need of social protection. In addition, the shutdowns will exacerbate global food shortages and food insecurity.

The study of best practices and achievements in agriculture of developed countries is great importance in the process of deepening economic reforms in agriculture of our country. First, the current conditions in developed countries, from farm activities to crop selection to planting and harvesting; second, economic relations in the system of production, receipt, preparation, processing and sale of goods; thirdly, the role of the state in both of these processes, clearly marketing research aimed at producing competitive quality products for domestic and foreign markets, export of products on the basis of quotas, conduct research on the mechanisms of economic support of the state in tax, insurance and credit issues are one of the urgent tasks.

Moreover, it is one of the priority tasks of many countries today to solve and prepare for these issues of social importance that can arise in the future. For example, the Reuters agency reported that based on the report of the U.S. Department of Agriculture (USDA), China bought 340 thousand tons of soybeans (the biggest contract in the last two years), 756 thousand tons of corn for consumption (the biggest contract in the last seven years) and 110 tons of soybeans from the United States. According to the agreement

in February 2020, China will receive from the United States an additional 76,7 billion dollars by the end of 2020 and it was intended to buy agricultural products in 123,3 billion dollars by the end of 2021. In addition, according to the UN Food and Agriculture Organization (FAO), in March of this year, the prices of food products in the world markets fell by 4,3 percent compared to February.

In the current global crisis and pandemic, agriculture is the most promising sector in our country in terms of employment and income, economic stability. These aspects were especially mentioned at the video conference held by the President of the Republic of Uzbekistan Sh. M. Mirziyoyev on April 14, 2020 on the issues of further development of the agricultural sector, increasing the volume of food production. The meeting focused on "doubling the production of fruits and vegetables and livestock. To achieve this goal, 55 districts specializing in fruit and vegetables, 86 clusters and 125 cooperatives should be leaders in this area. In order to systematically and effectively implement these tasks, the following comprehensive measures have been identified."

In particular:

- Development of fruit and vegetable growing. This requires the efficient use of 600,000 hectares of secondary arable land, with 136,000 hectares of fruit-bearing, 63,000-hectare new orchards and vineyards. Along with the introduction of 2-3 harvests, it is planned to develop 124 thousand hectares of decommissioned land and 155 thousand hectares of dry land by irrigation;
- It is planned to allocate 300 billion soums to the Agency for Horticulture and Greenhouse Development and the Agency for Development of Viticulture and Enology;
- Seed imports should be centralized so that there are no interruptions in the supply of seeds. It is planned to import about 300,000 tons of potatoes and 10-15,000 tons of seed potatoes annually. Therefore, Kurgantepa, Bakhmal, Zamin, Shakhrisabz, Kitab, Yangikurgan, Bulungur, Bostanlyk districts will be specialized in growing seed potatoes. Another problem in the system is the supply of fertilizers. Uzkimyosanoat has been tasked with establishing fertilizer shops in 55 fruit and vegetable growing districts, and restrictions on fertilizer imports have been lifted by the end of 2020.

Furthermore, during the quarantine period, it is planned to create conditions for the free movement of agricultural and industrial vehicles, farmers and workers in compliance with all regulations between districts, cities and regions. Allocation of additional 300 billion soums to horticultural and viticultural funds for the development of vacant and dry lands, which will be used to dig wells, establish orchards and vineyards, and provide greenhouses to the population. The

procedure for leasing for up to 7 years (with a grace period of 3 years), as well as the sale of the leased land for 5-10 years on the condition of growing certain types of food and directing the proceeds to the development of new lands is being introduced.

It is planned to introduce a system of providing special financial resources for the cultivation and purchase of fruits and vegetables, as in the case of cotton and grain. Instead, commercial banks provide the clusters with the financial resources they need for working capital. They can also get short-term loans of 3 to 12 months, pledging the crop for cultivation and export. In addition, commercial banks will gradually allocate at least 2 trillion soums from their liquidity resources for working capital loans.

In order to implement new projects in the field of fruits and vegetables and greenhouses, the task was to attract \$ 700 million in credit lines from international financial institutions and direct the funds released by commercial banks from suspended projects to agriculture. There are also benefits for fruit and vegetable exporters.

In particular, 50% of their transportation costs are covered by the Export Promotion Fund. An additional 50 billion soums will be allocated for this purpose.

As known, the feed base is the main factor in the development of livestock. At least 70 industrial feed enterprises will be launched this year. With the introduction of water-saving technologies to provide them with raw materials, the full development of 38 thousand hectares of "talmi" and "yaylov" lands is defined. In order to develop livestock and provide cattle, 74 family cooperative activities are launched in the Republic of Karakalpakstan, Bukhara, Jizzakh, Kashkadarya, Navai, Surkhandarya and Sirdarya regions. In each region, it is planned to organize farms intended for the preparation and sale of breeding cattle.

It needs to say that poultry farming is one of the seven treasures, now on the basis of cooperative experience of feeding poultry to households is widely introduced. To do this, large poultry farms in the meat line will distribute from 100 head to 500 households 3-day chicks, deliver their food, provide veterinary services. Forty days later, the cooperative itself buys meat in a centralized way. In this way, each family will be provided with an additional source of income and an increase in the employment of the rural population. The Ministry of employment and labor relations carries out additional incentive payments from the Public Works Fund for the period of feeding poultry to families participating in the cooperation.

In the current year, the system of raising fish production to at least 350 thousand tons, granting subsidies to those

working intensively in artificial basins will be established. Depending on the effectiveness of use, stratified rates of land tax are applied. In addition, in each region there are established exemplary districts specializing in fisheries, in which credit funds are allocated for the establishment of an intensive method of 10-15 fisheries (an average of 100 tons of fishing from 1 hectare), processing enterprises.

Attention was paid also to the development of beekeepers, the importance of the distribution of more than 20 beekeepers slots to households by increasing the production volume by 5 times, the establishment of a beekeeping cluster enterprise in each district, the establishment of a cooperative system was emphasized. In this regard, recommendations were made on the full operation of forestry facilities, the maintenance of more than 16,5 thousand new bee nests.

One of the reserves that provide the rural population with work at home is the silk industry. Considering that 382 thousand boxes of silk worm feed this year, this means that at least 750 thousand people are employed. Today, in the regions on the basis of the principle of "one household - one box of silk worm", silk worm seeds are distributed, farmer farms, cotton and grain clusters are also widely involved in the feeding of silk worm.

For the further development of the system, 145 billion soums of credit lines of commercial banks will be opened. Payment of additional incentive payments from the account of the *fund of Public Works* to the apartments, which received the specified harvest, was determined. The implementation of these measures aimed at the development of agriculture creates the opportunity to meet the demand of our country for food products and to expand exports. It serves to provide employment for low-income citizens and temporarily unemployed citizens and to increase the source of additional income. This, in turn, will be an important factor not only to provide the population with stable food products, but also to reduce their prices.

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# The Use of Internet Resources in Teaching Listening to Undergraduate Students Non-Language Faculties

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## ABSTRACT

The article is devoted to the use of Internet resources in teaching English, contributing to the development of listening skills. Special attention is paid to the aspect of improving the listening skills of undergraduate students of non-linguistic faculties.

**KEYWORDS:** *English language teaching; Internet resource; listening skills; out-of-school material; audio material; audio text*

For a long time in the methodological literature listening it was considered an aspect of teaching a foreign language that did not receive due attention from teachers [7]. This was explained by the fact that listening skills are automatically developed by students through their immersion in the language environment and practice, while working on grammatical, lexical and background material [8, 9]. Currently, members of the society need to develop a high level of proficiency in the learning process, because they themselves want to learn to understand what is said to them in English in a personal conversation, in business meetings, on television, in the theater, watching a film, traveling to foreign countries, listening to audio recordings, etc. [4, 5].

Listening is considered to be the most difficult aspect in mastering the English language. This complexity is explained by overcoming such factors as the nature of the language material, the conditions of presentation, the semantic content, the sources of information, as well as the individual characteristics of both the speaker (manner of speech, tempo, and presence of an accent) and the listener, his auditory experience and many others [6].

On the other hand, listening is a powerful tool for teaching a foreign language, since it promotes the assimilation of the lexical composition of the language and its grammatical structure, makes it possible to master the sound side of the language being taught, its phonemic composition and intonation: rhythm, accent, melody. In one of his recent publications, M. Rost described listening as «a necessary type of re-activity, because it provides the listener with information. Without understanding the information, no study can begin...» [6].

It should not be forgotten that listening, along with speaking, provides the possibility of communication in a foreign language. Without mastering the ability to distinguish foreign language speech by ear, communication with representatives of other cultures is impossible in principle.

Unfortunately, with two or three academic hours of English per week, the teacher is not able to pay due attention to the development of students' listening skills. More and more emphasis is placed on independent work, which it became

possible thanks to the appearance of Internet resources. As an example, let's look at some of them in more detail:

1. TED (Technology, Entertainment, and Design) is a universal online platform with many conferences of leading experts in the fields of science, art, design, politics, culture, business, global issues, technology and entertainment. The mission of the conference is to spread unique ideas ("ideas worth spreading") [1]. Recordings of the most outstanding speakers can be found on the official website TED.com. Currently, more than 1500 selected lectures with translations into different languages available on the website. All videos are uploaded with a Creative Commons license BY-NC-ND, which allows their free distribution [1].

The system of working with such a site, as with any other audio text, is reduced to the following scheme: "sound-text-sound" (\*+ T+\*). First, students are invited to watch the video without subtitles and catch the main meaning. This is followed by a detailed analysis of the text with the help of the presented subtitles, as well as, if desired, by the teacher, with the help of additional exercises on vocabulary and grammar. After that, the video is re-viewed, during which auditory-visual synthesis takes place, simultaneous transmission of sound and image (with subtitles or with a newly disassembled text), which contributes to the development of skills and abilities of speech perception by ear and stimulates oral-speech communication of students during further discussion of the video material.

2. Ororo.tv [12] - a website that provides access to the latest TV series and some movies with subtitles in different languages, which can be turned on and off at the request of the viewer. Watching movies and TV series in the original is of great importance in the process of teaching foreign languages, since it is based on one of the main methodological principles - the principle of clarity. While watching the video, all types of speech activity are activated. As you know, the information you see and hear is remembered five times better than the information you hear [3].

Viewing authentic video footage is also an option, an effective means of increasing the student's motivation to learn a foreign language, since they demonstrate the functioning of the language in the form adopted by its native speakers in a natural social context, introduce the norms and rules of communication and behavior, show various types of relationships and illustrate the language of facial expressions and gestures. Video is a unique tool for teaching speaking and foreign language communication [2].

3. BBC podcasts. BBC radio stations have a wide range of topics that, in the absence of subtitles, it will be useful to listen to as a background, which will include the listener in a state of "flow" and create the illusion of "full immersion" in



an authentic environment. Due to the feeling of the "streaming" state, forgotten knowledge of grammar and vocabulary begins to activate by itself, and the melody of the language itself is captured, which is also important when teaching speaking.

Here it is worth noting that in such radio programs as, for example, BBC Learning English-6-minute English [1] – presenters podcasts are native speakers, so it is provided the opportunity to listen to and learn a live language, in the form in which it is used by ordinary residents of English-speaking countries, that is, it uses authentic material. Podcasts are divided into 3 levels: the first - for beginners (elementary), the second – for students with average knowledge of English (lower intermediate and intermediate), the third-for students with higher-than-average knowledge (upper – intermediate). The advantage of the BBC Learning English project is that the rate of speech voiced by dialogs – different, depending on the level of language training. In 6 minutes of English, there are inserts from English-language dialogues from BBC correspondents; in addition, there are explanations of new English words and expressions. Please note that all explanations are given exclusively in English. Moreover, the podcasts are accompanied by a screech (a text version of the transmission).

It should be noted that many students of a foreign language. They do not realize that when they listen to their native speech, they are not aware of it.

In fact, they do not listen to every word, moreover, they underestimate the fact that a person closely links linguistic knowledge with existing experience and knowledge of concepts such as topic and culture. Farch and Kasper point out that the absolute understanding of audio text is an erroneous representation of how the natural process of perceiving information in the native language occurs [6]. The effort to understand everything does not lead to effective results, causes a feeling of fatigue and, ultimately, leads to failure.

In my opinion, it is necessary to teach students to select the necessary information, ignoring irrelevant ones, i.e. to teach

them to do so, how they do it in their native language [1]. The main thing is to develop the skill of guessing, to learn to anticipate what could be discussed, what the speaker could say in this situation, thus leveling possible gaps in perception.

Internet resources are an effective means of organizing the educational space, support social relations, as they allow participants in the learning process to carry out joint activities, use the Internet as a means of organizing the educational space. the latest materials in various formats, as well as train different types of speech activity. Authentic educational audio material is interesting, informative and informative, accessible to understanding, corresponds to the modern reality of a foreign-speaking society and creates favorable conditions for students to master new regional information, speech behavior of native speakers, promotes their acquaintance with the living language, the life of the people, its culture, and modern realities.

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# Increased Cardiac Troponin-T in Patients without Myocardial Infarction

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## ABSTRACT

According to the World Health Organization, the diagnosis of acute myocardial infarction (AMI) is based on two of the three main criteria: changes in the ECG (up to 25% of myocardial infarctions are not reflected in the ECG), anginous pain, and increased markers of myocardial necrosis. In 2000, the European Scientific Society and the American College of Cardiology made a correction to the definition of AMI, according to which the determining factor in the diagnosis of AMI is the detection of an increased level of specific markers of myocardial necrosis — cardiac troponins in the blood. Troponin is a protein that is part of myofibrils. Cardiac troponin contains three subunits: T, I, and C. Troponin C is non-specific for the myocardium, in contrast to the T and I subunits, whose structure in the contractile fibers of cardiomyocytes differs from similar proteins of other muscle cells. The widespread use of the determination of cardiac troponins in the blood significantly increased the detection of AMI (by 30-200%).

Until recently, it was believed that troponins enter the blood only as a result of the death of cardiomyocytes. However, in recent years, it has been shown that troponins can penetrate into the interstitial space, and then into the blood, when cardiomyocytes are damaged with an increase in the permeability of their cell membranes, which can be caused not only by AMI, but also by conditions accompanied by hyper production of pro-inflammatory cytokines (tumor necrosis factor- $\alpha$ , interleukin-1, etc.).

The aim of this study was to analyze the final diagnoses in patients with increased cardiac troponin-T levels without a clinical picture and characteristic ECG changes in AMI.

**KEYWORDS:** acute myocardial infarction, cardiomyocytes, cardiac troponin-T, anginous pain

## Materials and methods

The study included 54 patients (36 men, 18 women, aged 54 to 87 years, on average  $69.8 \pm 11.2$ ). The inclusion criterion

was an increase in the level of cardiac troponin-T above the diagnostically significant level (more than 0.3 ng / ml). The exclusion criteria were:

- clinical picture of acute coronary syndrome (typical angina attacks);
- ECG changes characteristic of AMI on the first day of inpatient treatment (elevation or severe depression of the ST segment, the appearance of new Q waves).

All patients underwent a general clinical examination. The level of cardiac troponin-T in the blood (using the device Cardiac Reader Roche, Germany) was determined at admission, or 14-16 hours after the deterioration of the condition. ECG registration was performed on admission to the hospital and daily. Echocardiography was performed on the device GE Vivid 7 (USA) according to the generally accepted method. In addition, the level of transaminases, urea, creatinine, bilirubin, total protein, MB-CK in the blood was analyzed, gases, blood electrolyte, acid-base balance were examined. Chest radiography was performed at admission, in some cases — repeatedly. If necessary, the patients underwent ultrasound examination of the abdominal cavity and kidneys, blood culture, and brain CT.

The severity of the patient was determined based on the calculation of the SAPS II index, which assumes an assessment of the urgency of the patient's admission to the hospital, the presence of chronic diseases, age, temperature, daily diuresis, blood pressure, heart rate, blood oxygenation index ( $FiO_2/PaO_2$ ), white blood cells, sodium, potassium, urea, bicarbonate and bilirubin, as well as an assessment of the level of consciousness on the Glasgow scale.

The final diagnosis was established on the basis of the analysis of the clinical picture, the study of the dynamics of the main symptoms, the data of a comprehensive examination, in some cases — on autopsy.

**Table 1 Mortality of patients included in the study and the level of cardiac troponin-T**

Nosological form	Total number of patients	Number of deceased patients	Troponin-T level in discharged patients (ng/ml)	Troponin-T level in the deceased (ng/ml)
AMI	22	11	$0.79 \pm 0.19$	$1.62 \pm 0.21^*$
Septic condition	16	9	$0.63 \pm 0.14$	$1.66 \pm 0.27^*$
Oncopathology	8	6	$0.74 \pm 0.49$	$1.49 \pm 0.34$
Diabetic nephropathy with CRF	4	2	$0.58 \pm 0.34$	$1.59 \pm 0.58$
Brain infarction	3	1	$0.61 \pm 0.45$	$1.31 \pm 0.61$
B12-deficiency anemia	1	1	0.49	1.69

Note. Here and in Table. 2: \* - statistical significance of differences between the level of troponin T in deceased and discharged patients ( $p < 0.05$ ).

Statistical processing of the results of the study was carried out using the program "STATISTICA 6.0". We used: the Kolmogorov–Smirnov test to assess the statistical significance of the difference when comparing the indicator of two independent groups; the Spearman test to conduct a correlation analysis. In all measurements, the arithmetic mean was used as an indicator of the average value, and the standard deviation was used for the spread indicator.

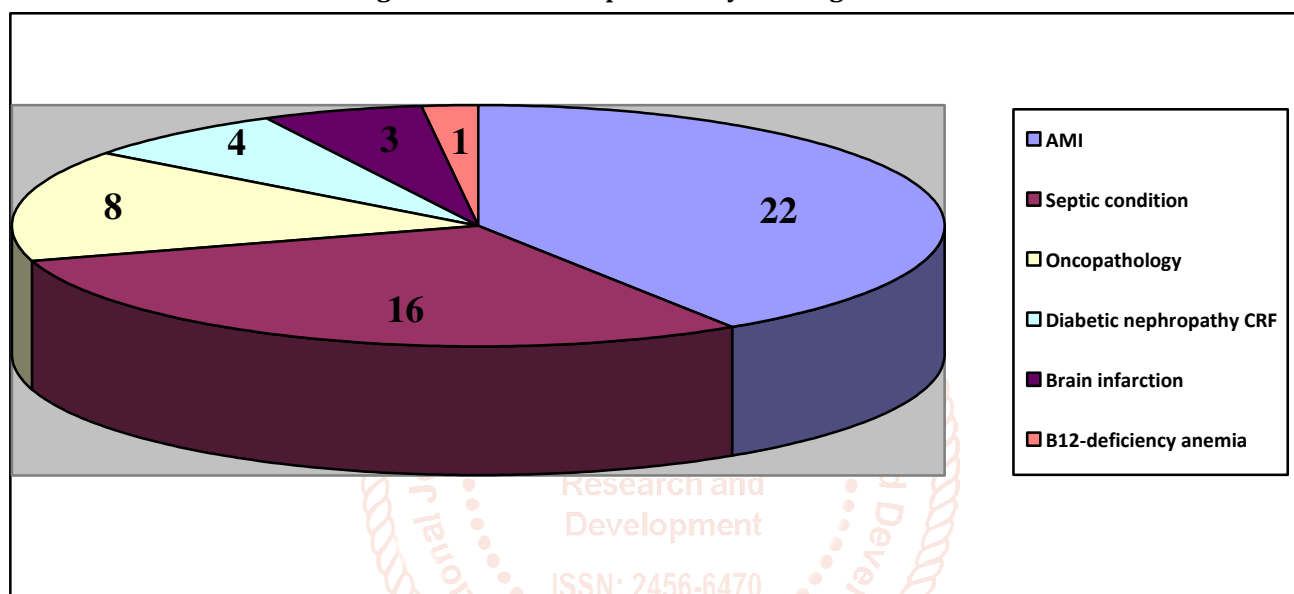
### Results and discussion

All 54 patients included in the study had manifestations of multiple organ failure: the SAPS II index ranged from 50 to 86 (an average of  $74.4 \pm 11.2$ ). 30 patients died. The level of cardiac troponin-T was in the range of 0.06-2.0 ng/ml (on average,  $1.21 \pm 0.12$ ).

In 22 patients out of 54 (40.7%), the final diagnosis was MINE. The diagnosis of AMI was made on the basis of the appearance of the characteristic dynamics of the ECG, the progression of congestive left ventricular failure. In 7 patients, AMI occurred on the background of decompensated diabetes mellitus, in 9 patients, AMI was repeated, and in 7 patients, there was repeated AMI on the background of decompensated diabetes mellitus. Of the 22 patients with AMI, 11 patients died, and the diagnosis of AMI was confirmed by autopsy.

In the remaining 32 patients, the diagnosis of AMI was not confirmed. Figure 1 and Table 1 show the distribution of patients included in the study by nosological forms.

**Fig.1 Distribution of patients by nosological forms**



In 16 patients were diagnosed with septic condition: 8 and generalized peritonitis (5-and — thrombosis in mesenteric vessels with gangrene of the bowel, 1 destructive cholecystitis, the 1st — perforation of the colon tumor, the 1st — pancreatic necrosis), 5-and — epistemology jade 2-x—destructive pneumonia, the 1st one is a common inflammation of the subcutaneous and intermuscular adipose tissue of the thigh. In 8 patients, various oncopathologies with cancer intoxication were detected (in 3-stomach cancer, in 2-lung cancer, in 1-prostate cancer, in 1 — cervical cancer). After computed tomography, 3 patients were diagnosed with a massive cerebral infarction (2-by ischemic type, 1-by hemorrhagic type with a breakthrough in the ventricles of the brain). In 4 patients, chronic renal failure was detected against the background of long-term diabetes mellitus with diabetic nephropathy (creatinine level was from 730 to 1131 mmol/l). 1 patient had severe B12 deficiency anemia (hemoglobin 59 and 64 g/l).

It turned out that the level of troponin-T in the deceased was on average  $1.61 \pm 0.28$  ng/ml, which is significantly higher than in the discharged patients ( $0.64 \pm 0.19$  ng/ml). This indicates an unfavorable prognosis of a pronounced increase in troponin-T.

The level of troponin-T in patients with AMI was practically the same as in patients with other diseases ( $1.24 \pm 0.21$  and  $1.20 \pm 0.19$  ng / ml, respectively).

Considering that the level of troponin-T was significantly higher in the subgroup of severe patients, a correlation analysis was performed between the level of troponin-T and the integral indicator of the patient's severity-the SAPS II index. A significant positive correlation was found.

In the majority of patients included in the study, the overall left ventricular contractility was reduced: the ejection fraction (EF) was in the range of 17-52% (on average,  $37.7 \pm 11.2\%$ ). The EF in patients with AMI was significantly lower than in other patients (Table 2). At the same time, the EF in those who died (from AMI and other diseases) was significantly lower than in those who were discharged.

In patients with AMI, there was no correlation between EF and the level of troponin-T, whereas in patients with other diseases, EF was inversely correlated with the level of troponin T (correlation coefficient  $-0.45$ ;  $p=0.003$ ). These data may indicate that the level of troponin may reflect the degree of cardiodepression in patients without AMI, whereas in AMI, the reduction in contractility is affected not only by the amount of necrotic myocardium, but also by other factors (hibernating myocardium, the presence of foci of fibrosis after AMI, etc.).

The present study showed that AMI is diagnosed only in 40% of patients with elevated troponin-T without a typical clinical picture of AMI. The remaining patients had another underlying disease with manifestations of multiple organ failure. It should be emphasized that all the patients included in the study were in critical condition when they were admitted. Increased levels of troponin-T correlated with the severity of the condition; in deceased patients, the level of troponin was significantly higher than in discharged patients. It should be noted that the level of troponin-T in patients with AMI and other diseases practically did not differ. There are reports in the literature that some severe diseases lead to an increase in the level of cardiac troponin-T in the blood. In the present study, an increase in cardiac troponin-T was detected mainly in patients with multiple organ failure. According to the literature data, it is multi-organ failure that leads to a "non-coronagenic" increase in cardiac troponins in the blood: for example, Ammann P., Maggiorini M., 2003, studied the level of troponin-T in patients with sepsis without AMI. As a result of this study, it was shown that an increase in troponin-T was significantly more often detected in patients with septic shock, which is the cause of multiple organ failure, while the level of troponin-T directly correlated with the level of tumor necrosis factor- $\alpha$  (TNF- $\alpha$ ) and interleukin-6 (IL-6). The authors suggest using troponin-T as an additional factor in the unfavorable course of the disease in patients with a septic condition.

**Table 2 Ejection fraction depending on nosology and outcome (%)**

The outcome of the disease	Values of the ejection fraction depending on the nosology		
	AMI (n=22)	other diseases (n=32)	p
Favorable outcome (n=24)	43.1 $\pm$ 9.1	52.1 $\pm$ 10.4	0.039
Fatal outcome (n=30)	23.6 $\pm$ 8.4	39.1 $\pm$ 8.9	0.028
p	0.013	0.021	

The increase in troponin-T levels in patients without AIM identified in this study appears to be associated with myocardial damage due to a systemic inflammatory response. A systemic inflammatory reaction occurs as a result of massive cell damage due to severe hypoxemia, acidosis, endo and exogenous intoxication, as well as exposure to microbial toxins. Damaged tissues secrete a large amount of pro-inflammatory cytokines, which contribute to the infiltration of tissues by neutrophils and macrophages, activation of lipid peroxidation, and hyperproduction of nitric oxide. All these processes aggravate the existing tissue damage, leading to the formation of a vicious circle and multiple organ failure. Ut a praecessi of hyperproduction de proinflammatory cytokines ut a praecessi of a systemica inflammatione reactionem, damnum cardiomyocytes cum progressum myocardial praesent est possibile. In particulari, pro-inflammatione substantiae, agere in cellam membrana, augere permeability. Hoc posito, factum est, et probatum in 1984 per Piper et al., tunc sustinetur Wu A. H., Ford L., 1999, et confirmatum per sequens opus per Ammann P. et al., 2003. Ut a praecessi, cordis troponins soluta in intercellular spatium. Auctores explicare posse diffusio cordis troponins-T et ego per integrum membrana tam parva magnitudine moleculis his servo se (33.5 et 25.5 kDa, respective), et per eorum alia ruptio in responsione ad cellularum hypoxia. In connection with the above, it can be assumed that the increase in cardiac troponins in the blood in patients with multiple organ failure is not a false positive, but indicates the severity of the process involving the myocardium in the pathological process. This assumption is confirmed by the decrease in left ventricular EF in the majority of patients identified in this study and the inverse correlation between EF and the level of troponin-T and EF in patients without AMI. The inverse correlation between EF and the level of cardiac troponins was revealed by verElst K. M. et al., 2000. The absence of a correlation between EF and the level of troponin-T in AMI patients is probably due to the fact that some patients suffered repeated AMI, that is, they already had a decrease in myocardial contractile function.

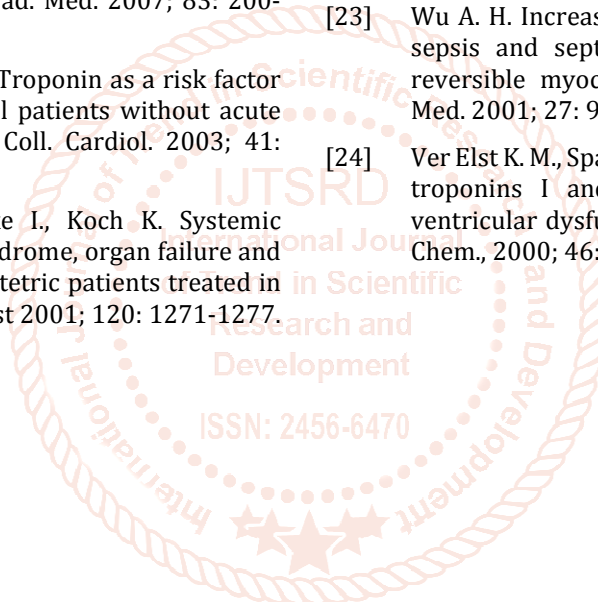
In conclusion, we can say that, despite the cardiospecific nature of troponin-T, its detection in the blood of patients in extremely serious condition, in the absence of other manifestations of AMI, is not a specific symptom of AMI, but

indicates the involvement of the myocardium in the pathological process, which may be a manifestation of multiple organ failure with a systemic inflammatory reaction. For this reason, the detection of elevated levels of cardiac troponins in the blood of this contingent is prognostically unfavorable.

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# Technologies of Improving Qualities in the Moral Education of Citizens of Andragogic Age, in Society

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## ABSTRACT

This article describes the technologies for improving the quality of moral education of citizens of andragogic age, formed in society, and the principles of teaching foreign languages in education at this age, factors are highlighted.

**KEYWORDS:** *andragogy, andragogic factor, methodology, moral education, technology*

Society is a set of historically determined collaborative activities of people. Everything in society (material and spiritual wealth, the creation of conditions necessary for human life, etc.) takes place in the course of a certain activity. The development of a society has a direct impact on the development and progress of people from different walks of life. The social sphere of society harmonizes social groups, strata, categories and their lives. Therefore, the improvement of the qualities in the moral education of citizens of andragogic age formed in the society is the main condition of a free and prosperous lifestyle.

There are positive qualities in the hearts of everyone living in our country, such as humanity, kindness and tolerance. One of the great values of our people is to respect the elderly, to enjoy their valuable advice and prayers based on their many years of life and work experience. There are wise sayings of our people: "The old man has an angel in the house", "The old man has a fairy in the house", "Old age is adorned with wisdom". This is not in vain, of course. It is commendable that this noble value and virtue is reflected in the policy of our state today.

By the Decree of the President of the Republic of Uzbekistan dated April 2, 2019 No PF-5700 "On measures to radically enhance the role of the mahalla institute in dealing with the problems of the population" "Advisory groups for the elderly" were established. According to the resolution, the UN General Assembly adopted a resolution in 1990 on social protection of the older generation, strengthening their attention and care, improving their living conditions, ensuring an active and meaningful life, and making full use of their rich life experience. The first week of October has been designated as the "Week of the Elderly" in order to celebrate the International Day of Older Persons on October 1 in our country, which was announced by the resolution of December 14. It is gratifying that the draft resolution focuses on the creation and improvement of technologies for improving the quality of moral education of older citizens in society, and significant work is being done to ensure the implementation of the decision. It should be noted that in order to ensure the high effectiveness of this decision, meetings are held with labor veterans in labor communities, various sports events are held among the elderly, in particular, walking marathons. All this (andragogic) is a

vivid expression of the high level of attention paid to the elderly. In a word, all conditions are being created in our country for the elderly to live a decent life. The place of great men is incomparable. After all, like our elders, he has served faithfully and selflessly for many years in the interests of the people, tasted the bitterness of life, educated the younger generation in the spirit of devotion to the motherland and guided them to the right path. The hands of the saints, who have made a great contribution to our peaceful and radiant days, are the ones who see the expressions of contentment on their faces and once again feel that the less we appreciate them, the less we appreciate them. The integration of our country into the world community, the rapid development of science and technology require excellent knowledge of foreign languages by specialists engaged in scientific and pedagogical activities. Successful solution of this task requires a clear methodological basis for the teaching of foreign languages in andragogical education. Because the main goal of andragogic education is to develop not only professional, but also economic, social and personal competence. This type of education is a process based on the interests and needs of the subjects of the pedagogical process, in which the primary criterion is to take into account the specific level of educational goals and practical aspects of knowledge acquisition. There are a number of factors that determine the success of foreign language teaching in andragogic education, which the facilitator should pay special attention to:

1. Practical life experience. Adult learners have a wealth of life experience, and this aspect serves to enrich the entire classroom practice. Practitioners say that it is useful to have older learners in the classroom, as they are not afraid to talk about their rich experiences in the classroom and are free to express their opinions on a variety of topics.
2. High motivational orientation. It should be noted that the interest in learning foreign languages in older learners is usually not directly related to obtaining a certificate, diploma, which is formed through their internal initiative. will come. Older learners are more motivated to learn foreign languages than younger ones. The high level of motivation is reflected in the fact that they do not miss classes, are always active in the classroom and do their homework.
3. Sustainability of social intelligence. In the process of teaching an intensive foreign language course in retraining and advanced training courses, one can be sure that older learners have strong social characteristics. Social intelligence develops according to personality types, personality traits, and cognitive, emotional, and behavioral components with specific

psychological structures. It is the social interaction of older learners, their ability to communicate quickly and easily with other listeners, and the organization of social events together in their free time that have a positive impact on this process.

The results of the study showed that the difficulties faced by older learners in the learning process can be overcome by adapting the learning environment, learning materials to the characteristics of the age, the development of effective teaching methods. Researchers C. Keillor and J. Littlefield have shown that the following criteria should be considered in order to prepare adult listeners to learn foreign languages:

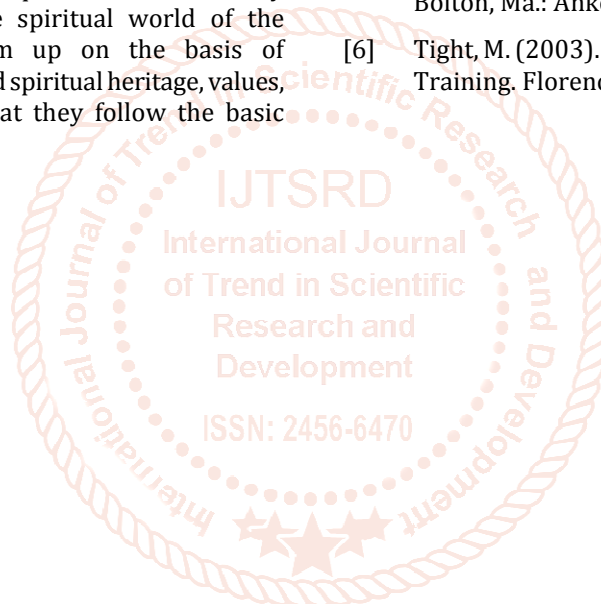
1. Create a calm, peaceful and friendly environment.
2. Decide on a culture of naturalness, tolerance, respect and like-mindedness.
3. Collaborate on diagnostics of knowledge and skills to be learned.
4. Develop a plan for learning a foreign language in collaboration.

In conclusion, the positive moral qualities of the elderly population form and enrich the spiritual world of the younger generation, bring them up on the basis of independence, the rich cultural and spiritual heritage, values, traditions and It is important that they follow the basic

program to master the traditions. It is no exaggeration to say that the elders have always been respected in our country, and it has become a responsibility and an obligation of the youth to respect them.

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# The Problems of Analyzing the Lexico-Semantic Category of Gender in the English and Uzbek Languages

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## ABSTRACT

This article discusses the problems of analyzing the lexico-semantic category of gender in the English and Uzbek languages, as well as the lexico-semantic comparison of gender in the English and Russian languages.

**KEYWORDS:** gender, sex, grammatical gender, lexico-semantic meaning, male, female, animal, masculine, feminine, neuter gender

The term gender refers to the socially constructed categories male and female, and *not* to such grammatical categories as 'masculine', 'feminine', 'neuter' or 'common'. The study of language in relation to gender has two main foci. First, it has been observed by many linguists that men and women speak differently; and second, it has been observed by many feminists and by some linguists that men and women are spoken about differently, and it is often claimed that the language is discriminatory against women.

Differences in male and female language use began to be noticed at least as early as the seventeenth century in the societies visited by missionaries and explorers, and the interest these differences caused often led to claims that in some societies men and women spoke completely different languages.

This, however, is an overstatement – what tends to happen to varying degrees in various societies is that the gender of a speaker will determine or increase the likelihood of choices of certain phonological, morphological, syntactic and lexical forms of a language while precluding or diminishing the likelihood of certain other choices.

We shall not expect to find an exact correlation between gender and sex. Indeed sometimes we have a surprising contrast as in the French of 'the male mouse' which is *la souris mate* ('the (feminine) male mouse'), for *souris* is a feminine noun. Similarly we noted *Miidchen* and *Priulein* and *la sentinelle* in the previous section. Yet although in some cases the gender is wholly idiosyncratic, we can at other times see some regularity. The German words are neuter because all words with the diminutive ending *-chen* and *-lein* are neuter, while in French occupational names such as *sentinelle* are all feminine. The explanation then lies in historical facts, which have overruled the obvious semantic probability that male creatures will be referred to by masculine nouns and female creatures by feminine ones [1;208].

There is no real problem in English, for English has, strictly, no grammatical gender at all. It has, of course, the pronouns *he*, *she* and *it*, but these are essentially markers of sex. The first two, *he* and *she*, are used if the sex is specifically indicated or known; otherwise *it* is used [2;25]. There is,

however, one qualification. There is a difference between the use of the pronouns for animals and for humans. *it* may be used for animals, e. g. to refer to a dog, and so may *he* or *she* if the sex is known. However, with humans *it* cannot be used, even if the sex is unknown. For the indefinite unknown human the forms *they*, *them*, *their* are used in colloquial English (even for singular) as in *Has anyone lost their hat? If anyone comes tell them to go away*. This is frowned on by some grammarians, but seems to me to be a useful and wholly acceptable device for avoiding the indication of sex. For reference to a specific human whose sex is unknown, e. g. a baby, *it* is sometimes used, but it is probably wiser to ask the mother first 'Is it a boy or a girl?'

Many languages have noun classes that function grammatically like the gender classes of the Indo-European and Semitic languages. Thus, in Swahili, there are classes of animates, of small things and of big things, each class clearly indicated formally by an appropriate prefix and requiring agreement with adjectives and verbs. These are often referred to as gender-classes. If we are thinking primarily of the grammatical function, that they are classes of nouns that require agreement with adjectives and verbs, the term 'gender' is appropriate, since that is essentially the grammatical function of gender in the more familiar languages. But, of course, it may be argued that some other term that does not suggest a relation with sex should be found (though the purist might be reminded that etymologically gender is not related to sex, but merely means 'kind'). Even with noun classes of the type that are not related to sex we find that there is no precise correspondence between formal class and its meaning. Not all the nouns of the 'small things' class in Swahili are small, while Bloomfield relates that in the Algonquian languages of North America there is a grammatical distinction between animate and inanimate nouns, but that both 'kettle' and 'raspberry' belong to the class of animates, though 'strawberry' is inanimate [3;128].

We have similarly noted anomalies with number. Semantically, the question of enumeration does not seem to be a very important one. Many languages have grammatical number systems, but others in various parts of the world (e. g., South-East Asia, West Africa) do not. Moreover, it is difficult to see why SEMANTICALLY the essential distinction should be between singular ('one') and plural ('more than one'). Many languages make this distinction in their grammar, but not all. Some classical languages Sanskrit, Greek and Arabic - had, in addition, dual - referring to two objects. Other languages, e. g. Fijian and Tigre (Ethiopia), have distinctions of 'little plurals' and 'big plurals' too. If we look at the problem of counting objectively it is not at all obvious that there are any 'natural' numerical classes that



might be expected to be shown in the grammar of all or most languages.

More important, perhaps, is the need to distinguish between individual and mass. This is a distinction that English makes quite clearly, though it is often ignored in the grammar books. The category is referred to as COUNT ABILITY, with the noun classes of COUNTABLES and UNCOUNTABLES or COUNT and MASS. Examples of count nouns are *cat* and *book*, while *butter* and *petrol* are mass nouns. Formally the two classes are easily distinguished. Count nouns alone may occur in the singular with the indefinite article *a* - *a cat* (but not *\*a butter*), while only mass nouns may occur with no article or with the indefinite quantifier *some* (not *some* in the sense of 'some or other') - *Butter is ...*, *some butter* (but not *\*Cat is ...*, *\* some cat*). Some nouns, e. g. *cake*, *fish* belong to both classes[4;137].

The semantic difference between these two classes is clear enough. The count nouns 'individuate' - they indicate individual specimens, while the mass nouns refer to a quantity that is not individuated in this way. But the distinction does not correspond closely to any semantic distinction in the world of experience, and this should be no cause for surprise. It is true that liquids are always referred to by mass nouns because they cannot be individuated. There is no obvious object that can be described as *\*a water*.

But there is no explanation in semantic terms why *butter* is a mass noun while *jelly* is count as well as mass; there is no semantic reason why we can refer to a single mass of jelly as *a jelly* but not to a mass of butter as *\*a butter*. On the other hand, while *cake* is count as well as mass, for the obvious reason that individual cakes can be recognised, *bread* is only mass we cannot talk of *\*a bread*, but have to use a different word, *loaf*. A foreigner could not guess, then, whether such words as *soap*, *trifle*, *cheese* would be count nouns in English. He has, moreover, to learn the 'individuating' nouns *loaf of bread*, *cake of soap*, *pat of butter*.

The count mass distinction is a fairly clear one - it classifies English nouns, though some, e. g. *fish*, belong to both classes. But mass nouns can, nevertheless, function as count nouns. Two obvious functions are, first, the use of such expressions as *a butter*, *a petrol* to mean 'a kind of butter' or 'a kind of petrol', and secondly *a coffee*, *a beer* to mean 'a cup of coffee' and 'a glass of beer'. It is best to treat these nouns as 'basically' mass nouns and these functions as types of individuation that can be applied to them for specific purposes - to indicate kinds and, with liquids, familiar quantities. Similarly, count nouns that refer to creatures may function as mass nouns to indicate the meat; we find not merely familiar usages such as *chicken*, *rabbit*, *fish* but can also freely form mass nouns *elephant*, *crocodile* and even *dog* (*The Chinese eat dog*) to refer to the meat. (But we have, of course, the specific words *beef*, *mutton*, *pork*, *venison* for the flesh of cattle, sheep, pigs and deer.)

Semantically, mass nouns are nearer to plurals than to singular forms of count nouns. This accounts for the anomaly of *oats* and *wheat* - there is little difference, unless it is clearly specified, between a large number of grains and a mass of them. In some languages liquids are not mass nouns, but plurals, e. g. in Bilin the word for 'water'.

The term 'count' is relevant to the fact that most count nouns can be counted - *one book*, *two/three/four books*. But there are two reservations. First, English has the words *scissors*,

*trousers*, *shears*, *tongs*, etc., which are formally plural, but cannot be enumerated except by using another noun *a pair of* -; this is formally like the individuating of the mass nouns, *a cake of soap*, *a pat of butter*. Secondly, although English uses the plural form with numbers above one, not all languages do. In Welsh, for instance, 'four dogs' is *pedwar ci*, though 'dog' is *ci* and 'dogs' *cwn*. In Tigre there are many mass nouns which have a singulative (individuating) form made by a suffix, e. g. *nahab* 'bees', but *nahbat* 'a bee'. But the singulative form is the form used with all numerals - not merely 'one' *hatte nahbat* 'one bee', *satas nahbat* 'three bees', etc. What seems to be important here is not plurality, but individuation.

The problems of gender as a lexico-semantic category in Uzbek appear in comparing words in three languages:

English: *mother*, *sister*, *girl*, *lady*, *woman*, *Helen*, *poetess*, *directress*, *aunt*, *hen*, *cow*.

Uzbek: *она*, *она*, *қиз*, *аёл*, *хоним*, *Ҳалима*, *шоира*, *раққоса*, *артистка*, *бия*, *хола*

Russian: *мать*, *девушка*, *женщина*, *сестра*, *Катя*, *поэтесса*, *сударыня*, *балерина*, *учительница*, *тетя*, *корова*, *курица*.

Uzbek nouns denoting male and female sex are of no grammatical significance in contrast to English and Russian ones. The grammatical significance of English nouns denoting male and female sex is observed when they are replaced by the pronouns *he* and *she*: [5;25]

*I have a brother. He is a doctor. I have a sister. She is a teacher.*

Some of the nouns denoting living beings do not express sex:

1. human beings: *doctor*, *friend*, *cousin*, *teacher*, *stranger*, *neighbour*, *student*, *clerk*, etc.
2. animals: *wolf*, *dog*, *bear*, *eagle*, *ass*, *goat*, *elephant*, etc.

If we desire to indicate the sex of what is expressed by those nouns, a word denoting the sex is added to them: *boy-friend*, *girl friend*; *man-servant*, *maid-servant*; *man-doctor*, *woman-doctor*; *male elephant*, *female elephant*; *he-dog*, *she-dog*; *male (tom-, he-) cat*, *female- (pussy- she-) cat*; *he- (billy-) goat*, *she- (nanny-) goat*; *dog- (he-) wolf*, *she-wolf*, etc.

In Spoken English there is a tendency to associate the names of animals with the female or male sex.

1. When the noun indicates the sex of the animal it is generally spoken of as **he** (*lion*, *tiger*, *bull*, etc) or **she** (*lioness*, *tigress*, *cow*, etc.);

*The tiger approached the camp: his dreadful roar made us shudder.*

*The bull lowered his head.*

*Our dog is called Jenny; she is of a very good breed.*

2. When the sex of the animal is not indicated by the noun, nouns denoting the larger and bolder animals are generally associated with the male sex (*elephant*, *horse*, *dog*, *eagle*, etc), while nouns denoting the smaller and weaker ones with the female (*cat*, *hare*, *parrot*, etc):

*The elephant lifted his mighty trunk.*

*The cat has upset her milk.*

In English inanimate things or abstract notions are usually personified and the nouns denoting them are referred to as



belonging to those of the male or female sex. Here are some traditional associations:

1. The things and notions expressed by the noun *sun* and by the nouns expressing such ideas as **strength**, **fierceness** (anger, death, fear, war, etc) are associated with the male sex:

*It is pleasant to watch the **sun** in **his** chariot of gold, and the moon in her chariot of pearl.* (Wilde)

*... it seemed as if **death** were raging round this floating prison seeking for **his** prey.* (Irving.)

2. The things and notions expressed by the nouns *moon* and *earth*, by the names of *vessels* (ship, boat, steamer, etc), *vehicles* (car, carriage, coach, etc), countries and by the nouns expressing such ideas as *gentleness*, *beauty* (kindness, spring, peace, dawn, etc) are associated with the female sex:

*The **Moon** was behind the clouds but an hour later we saw **her** in full.*

***She** is a good **car**.*

***She** was a good **boat**.*

***France** sent **her** representative to the conference.*

It is necessary to distinguish sex and gender in Russian. Sex is a logical semantic category which reflects biological characteristic (sex) of living beings. This category is formed by the nouns denoting male and female sex.

Gender is a formal grammatical category which is represented by a system of three-member opposition: masculine, feminine and neuter:

Masculine gender	Feminine gender	Neuter gender
Стол	парта	окно
Зал	станция	поле
Певец	мать	перо
Танкист	женщина	пальто
Цветок	кобра	озеро
Сарай	метель	собрание

The formal grammatical category of gender of inanimate nouns does not reflect biological characteristic (sex) of things. For example, the noun *стол* does not denote sex, but it is a noun of masculine gender.

In the nouns denoting male and female living beings sex and gender coincide:

*сын* (male sex, masculine gender)

*дочь* (female sex, feminine gender)

*конь* (male sex, masculine gender)

*курица* (female sex, feminine gender)

The grammatical significance of Russian nouns denoting sex is observed when replacing them with the pronouns *он* and *она* find choosing forms for adjectives, pronouns, verbs and nouns:

*У меня есть друг. Он спортсмен.*

*У меня есть подруга. Она учительница.*

*Хороший мальчик. Хорошая девочка.*

*Этот мальчик. Эта девушка.*

*Мальчик пришел. Девушка пришла.*

*Виджу мальчика. Виджу девушку.*

English nouns denoting sex cause more interferences when English is spoken by Uzbeks, than by Russians. Uzbek students usually make mistakes when replacing them with the pronouns *he* or *she*. It is difficult for Uzbeks and Russians to express sex in English when the means of expressing it differ.

## RENDERING OF THE ENGLISH NOUNS DENOTING SEX IN UZBEK

English	Uzbek
1.	
<b>N denoting male sex</b>	<b>N denoting male sex</b>
<i>father</i>	<i>ота</i>
<i>son</i>	<i>ўғил</i>
<i>uncle</i>	<i>тоға</i>
<i>cock</i>	<i>хўроз</i>
<i>bull</i>	<i>хўкиз</i>
2.	
<b>N denoting male sex</b>	<b>N which does not denote sex</b>
<i>boy</i>	<i>бола</i>
<i>nephew</i>	<i>жиян</i>
<i>buck</i>	<i>кийик, қуён, антилопа</i>
<i>lion</i>	<i>шер</i>
3.	
<b>N denoting male sex</b>	<b>эркак N</b>
<i>buck</i>	<i>эркак кийик, қуён, антилопа</i>
<i>lion</i>	<i>эркак шер</i>

Summing up the problem of gender in Modern English, it is important to say that:

1. gender is the grammatical distinction between; masculine, feminine and neuter;
2. the lexical - grammatical category of gender existed only in the OE period but in ME (middle English) this category has been lost;
3. in Modern English we find only lexical-semantic meanings of gender, that is, the gender distinction is based on the semantic principle;
4. English has certain lexical and syntactic means to express a real biological sex.

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## Methodological Terms

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### ABSTRACT

this article deals with describing methodological terms and phrases with their definitions, as well as the actual meanings of them. Moreover, the increase in use of methodological terms in scientific spheres show them the role in it. On the top of that methodological terms development and sequence enhance the rate of researching process.

**KEYWORDS:** *approach, methods, term, scientific field, observation, outcome*

### INTRODUCTION

A language is rich in various types of terms and phrases focused on implementing them in the long-life term. In accordance with progress of technology, in this sphere alters the position in an ahead. It should be mentioned that in scientific field there is a branch of research. One of the most important among them which overwhelmingly stands out is methodology. In order to absorb the meaning of this term it should be noted that full definition of methodology. Methodology is the science of method, or orderly arrangement; specif., the branch of logic concerned with the application of the principles of reasoning to scientific and philosophical inquiry (<https://www.yourdictionary.com/methodology>). Methodology dedicates to the approaches, techniques and methods which concentrate on teaching process and researching process. Research methodology is the specific procedures or techniques used to identify, select, process, and analyze information about a topic. In a research paper, the methodology section allows the reader to critically evaluate a study's overall validity and reliability. In methodology researchers utilize great many terms, as well as phrases to explain the research paper.

Methodological terms are considered to be the most significant figures for implementing concerning the aspect of science. There are majority of methodological terms in research sphere. The terms are used in terms of direction of research. The term and its problems in world linguistics today, the concept of term, such as the lexical-semantic and structural structure of the term the study of issues has risen to a new level. In this sense, all methods of term formation and selection in modern terminology in languages, their effect is in accordance with the norms of literary language of the terms being made arrival and active use, depending on the structural layers of the terms research on modern aspects is on the agenda being put. These, in turn, are the terms of the road in linguistics structural, semantic, derivational, thematic, lexicographic features creates the need for scientific research. Socio-political in the age of information technology due to active life, scientific discoveries and research the emergence of new terms is a mystery to no one not. This phenomenon is not new, it is new

for centuries necessary to express concepts, events, and objects which was. Thus, for one reason or another, the language the stock is constantly enriched with new words. That's it not only historical and political, but also cultural and scientific events (3).

Among the words "term" or "term" today some linguists say that there is a difference the fact that their opinions are colliding is more on this issue indicates that research needs to be done. Until the research is clarified, based on the fact established data, these words in different languages with the same lexical meaning the concept is that it stands in a synonymous sequence are counted.

### Term 1

General meaning "Lekin shamanni har bir xalq o'z tilidagi nom, atama bilan yuritib kelgan". ("Fan va turmush").

The word "term" comes from the Latin term - "border" means. The term is science, technology or art a word or phrase denoting a particular concept in the field. The combination is understood. Often in general vocabulary unlike words that are ambiguous and emotionally colored as the terms are devoid of expression, unambiguous and is applicable to a specific area. The term performs the same function in speech that the effective use of both would not be a mistake which is mentioned (2).

### Classification and interpretation of terms

Terms are also grammatic, like other words in construction, the language is subject to the laws. They are common terminology of lexical words, the way of mastering directly from other languages or with the calcification of other language terms it is created (with the help of suffixes in the native language). And the semantic declension of the term is the form of the word does not change, but its meaning or function will edit.

Alternatively, in terms of meaning between similar events or facts shows harmony. This associative basis is literary there is also metaphor and metonymy. For example, "wing" of the bird - "the wing of an airplane", "the human ear" - "Ear of the pot". Between-subject design study design, participants assigned only one condition, (assigned condition a or b, not both)

Confound an extraneous variable that varies systematically by condition, and thereby provides a potential alternative explanation for any condition effects

Control Group doesn't receive all or part of experiment to control extraneous variables

Correlational study/ Non-experimental looks at naturally-occurring relationships among variables, no variables manipulated, no causal statements

Demand Characteristics cues that may inform the participants what the study is about, or what responses are expected from them

External Validity high ex.vali. can be generalized beyond the specific sample or situation used

Factorial Design more than one independent variable is used

Interaction in factorial designs, occurs when the effect of one independent variable on the dependent variable is different

Quasi experiment two or more pre-existing groups of individuals are compared on some dependent variable (individuals are not randomly assigned to conditions)

## Research methods and approaches

A. Research terminology:

### Data

Information gathered during the research process. 'Raw' data is information which has not yet been analyzed.

### Empirical Research

Research based on first-hand gathering of data through interviews, questionnaires, ethnographies, participant observation, action research and so on.

### Ethnography

The direct observation, description and analysis of the activities and behaviour of members of a social group, for instance a youth gang.

### Informant

Someone that participates in a research project, generally through interview. Also referred to as a research participant or interviewee.

### Methods

The tools used to gather research data, for instance a phone questionnaire, face-to-face interview, gathering census data. Different methods are used in quantitative research and qualitative research.

### Quantitative Research

Research discovering facts about social experiences and trends where data is collected through measuring things and is analyzed through numerical comparisons and statistical inferences. Data is represented numerically as a percentage, a mean, and average etc. Commonly, data appears as a table, a graph, or a pie or line chart. As data is presented as representative, the sample, that is the source of the data, is extremely important.

### Qualitative Research

Research that is not presented as representative but as offering people's reflections or perspectives on an issue or experience. It is traditionally conducted via interviews or observation. Data is analyzed by themes drawn from informants' descriptions. Also referred to as 'interpretive' and 'grounded', qualitative research is more interested in questions of how and why than in how many.

## Theory

A substantiated (evidence based) explanation for the way something is as it is. The body of rules, ideas, principles, and techniques that applies to a particular subject.

## Transcript

The typed record of an interview obtained from audio or video recordings.

## Sample

A group of individuals selected by a researcher because they possess particular attributes of interest to the research project. A representative sample is one which is representative of a larger group. If the sample is selected carefully, the resulting data can be applied to the group as a whole.

## Observation

Observation is the systematic noting and recording of events, behaviours and objects in the social setting chosen for the study. The observational record is referred to as field notes, which are detailed, nonjudgmental, concrete descriptions of what is being observed. A participant observer is someone who is a part of the activity as well as making the observations.

In conclusion methodological terms and approaches are implemented respectively, in scientific spheres. The terms are divided into subgroups according to directions, as well as huge number of users. The activeness and passiveness of these terms based on the consuming them into practice. These are the main data about methodological terms which mentioned above. The research investigation shows the signed outcomes with the help of analysis.

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# Gender Problems of Uzbekistan in the Globalization Context

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## ABSTRACT

This article recognizes the need and significance of gender equality in the process of ongoing democratic reforms. Under the globalization influence, current issues such as gender problems, rising poverty and unemployment, discrimination against women in the labor market and marginalization, the increase in violence against women, and the international cooperation role in addressing these challenges have been analyzed to become more acute.

**KEYWORDS:** *globalization, women, law, women's rights, gender equality, asset, new Uzbekistan, women's activism, social, society, democratic reforms*

As it is noted in the fifth paragraph of the Millennium Declaration adopted by the UN General Assembly in September 2000 "globalization can only be universal and just, through a common future pursuit based on the diversity unity that belongs to the human race" [2]. From this context, the gender equality problem solution will be not only relevant, but also in special scientific and theoretical importance. As President of Uzbekistan Sh.M. Mirziyoev noted: "In recent years, women's rights and interests in our country, ensuring gender equality, family, motherhood and childhood protection, entrepreneurship development among women, creating new jobs for them, improving working and living conditions have become a priority of public policy" [1: 406].

Equality, based on the human development concept, means that all people have equal opportunities in education, health, employment and participation in the political society life, in meeting their material and spiritual needs. The opportunity equality is based primarily on the human rights equality and fundamental freedoms, regardless the material well-being, social status, beliefs, gender and ethnicity level [3: 407]. The Universal human rights declaration, adopted in 1948, occupies a central place in the international human rights treaties system. It states that human dignity is "the freedom, justice and general peace foundation" [4:1]. Lack of fundamental rights and freedoms can lead to the man and society, social and political unrest decline, the violence spread and the conflicts emergence.

The changing development technology, i.e., the transition from power models to cognitive, thinking, information models, is increasing the global role of human resources and, of course, these processes cannot be imagined without women participation, who make up more than half of the Earth's population [5: 370]. The United Nations (UN) has classified the gender equality issue as a global problem. "Achieving gender equality and empowering women is an unfinished task of our time and the biggest human rights problem in the world today", states UN General secretary Antonio Guterres [6]. He recommended that member states change existing gender models based on an unequal values

and double standards system. In particular, the gender equality issues in Uzbekistan are included in the global development in the new millennium.

Women with men equality is guaranteed by the Constitutions of many democracies. It is based on many international documents, agreements, conventions, declarations related to human rights. These documents set out nearly 70 international standards that constitute a common human rights concept that is unique to men and women [8:214]. The Development right declaration, adopted by UN General Assembly Resolution 41/128 on 4 December 1986, states that "development is a comprehensive social, cultural and political process aimed at improving the entire population and all individuals well-being on the basis of active, free and practical participation in the acquisition and fair wealth distribution". Uzbekistan joined the Declaration by the Oliy Majlis Resolution of the Republic of Uzbekistan № 504-I on August 30, 1997. Article 8 of the Declaration states "States should take all necessary measures at the national level to ensure the right to development and create equal opportunities for all in the use of basic resources, in education, health, nutrition, housing, employment and in the equitable income distribution. Effective measures should be taken to ensure the women active role in the development process" [9: 4].

Until now, Uzbekistan has taken a number of measures to ensure that women have equal rights with men. The Convention in 1979 on all discrimination elimination forms against women [10] (Uzbekistan ratified the Convention by Oliy Majlis Resolution of the Republic of Uzbekistan № 87-I on May 6, 1995) obliges State parties to take all appropriate measures to eliminate discrimination against women in order to ensure women's equal rights with men in education, employment, health and other economic and social life areas. The Convention on all discrimination elimination forms against women (CEDAW) was ratified by Uzbekistan in 1995 and CEDAW National action plans are regularly updated and implemented [11: 7]. A number of its articles have been incorporated into national legislation. Convention № 100 on men and women equal remuneration for equal labor, on in 1951 [12], must ensure that the men and women equal remuneration principle for equal work applies to all workers, it emphasizes. The ILO Convention "On maternity care" №183 in 2000 aims to ensure equality for all women in the labor, as well as in the maternal and child health and safety [13] However, the relevant legislation adoption is not always consistent with its implementation. In all countries of the world, including Uzbekistan, there are serious problems in this area due to the women low status in society and non-compliance with their rights.

In 2019, in the World Bank's annual report "Women, business and the law", Uzbekistan ranked 127th in the Gender equality index with 70.63 points. This figure is below



74.71 points of world average and the lowest among the CIS countries [14]. According to the 2017 indicators there are very few women representatives in decision-making in Uzbekistan, their share in the management structure was less than 2 %. The women share in the enterprises and organizations management is 11.7%. In the education, where more women traditionally work, almost two-thirds of the general education schools leaders, or 65%, are men. The employed women share (38.5%) in the population employment was almost twice as low as men. There is also a horizontal gender disparity in the employment distribution across sectors, most women work in health and education. Very few women work in finance (38.2%), IT (32.7%) and transport (7.2%). According to a study by the International labor organization, 80% of Uzbekistan population prefers men to earn money in the family, while women prefer housework and raising children. And 93% population thinks that a woman should do most of the housework even if her husband is not working. Overall, women's wages are 35% lower than men's. From the employers point of view, women are less expensive staff, because her family always comes first in professional growth and personal interests. At the same time, experts point out that women themselves are subject to gender stereotypes no less than men, they also instill them in their children minds. Higher education allows you to get a high-paying job. However, in 2017, the women share with higher education in the population aged 25 and over was 12.5% and that of men was 20%. In the traditional society of Uzbekistan, there is an opinion that the main task of a woman is to take care of the house and children. In this approach, the girls' education importance is secondary and work is considered to be in addition to the basic women responsibilities or not necessarily to work at all. The parents are responsible for the girl before marriage, and the spouse after marriage [15]. Based on these statistics, in 2019, Uzbekistan ranked 127th in the Gender equality index with 70.63 points.

According to religious tradition, a negative attitude towards women's political activities is maintained because the ideology that a woman's primary function is the family is still strong. While society does not condemn a married woman work, she noted that women's work has a negative impact on the population gender culture, low legal knowledge level, human rights, including secretly influencing people's worldviews, expressing concern about a lack of understanding of women's rights protecting importance as an integral part of overall social life democratization process [16:28]. Therefore, work has begun in our country to improve the legislation related to the family and women interests. Ensuring the women rights, both in the family and in society, remains a priority in the draft laws development. "On the prevention of domestic violence" ги қонун лойиҳаси ишлаб чиқилди, Оила кодексига ва бошқа норматив-ҳуқуқий ҳужжатларга ўзгартиришлар киритиш бўйича таклифлар киритилмоқда.

In order to organize systematic work on the consistent implementation of the Sustainable development goals of the UN Global agenda, our country has adopted the "National goals and objectives of Uzbekistan in the sustainable development until 2030". The 5<sup>th</sup> goal of Uzbekistan in the sustainable development until 2030 is "Ensuring gender equality and empowering all women." On September 2 last year, the law "On equal rights and opportunities guarantees for women

and men" was adopted. In our country, this high-level legislation, aimed at ensuring equal rights and opportunities for women and men, has introduced a new direction in the law and lawmaking - gender-legal expertise. The Senate committee on women and gender equality was established.

The fact that the new law guarantees gender equality in Uzbekistan shows that this issue has risen to the public policy level, and this is the country's progress sign in the human rights. As a result of the ongoing reforms, UN Secretary-General A. Guterres' speech on International Women's Day on March 6, 2020: "All over the world, politics is still run by men. A quarter of a century after the Fourth UN Women's Conference in Beijing in 1995, only 24.9 percent of the world's parliamentarians are women. .... of course a lot has changed — after all, in 1995, they made up only 11% of the parliament members. In four countries - Rwanda, Cuba, Bolivia and the United Arab Emirates - women now make up 50 per cent or more of the parliamentary corps". And the general secretary highlighted our country achievements in this regard: "In the post-Soviet space, women from Belarus and Uzbekistan have achieved the greatest success. Among the deputies, they make up 40% and 32%, respectively. In Kazakhstan, women won 27% of the seats, in Turkmenistan 25% and in Armenia 23%. The number of women deputies in Ukrainian Rada rose to 20%, in Azerbaijani parliament to 16.8%, and in Russian Duma to 15.8%" [14]. Indeed, 48 of the 150 deputies elected to the Legislative Chamber of the Oliy Majlis, or 32%, were women. In the Senate, the figure rose to about 25%. 31% of local councils deputies are women. The Uzbek parliament has risen to 37th place among 190 national parliaments in the world in the number of women deputies. However, 5 years ago we were in 128th place. Such drastic positive changes meant that the parliamentary elections were not just held "The slogan "New Uzbekistan - new elections" means that it is directly reflected in life. The gender issue was of special importance in the President speech of Uzbekistan Shavkat Mirziyoyev on September 23, 2020 at the 75th anniversary session of the United Nations General Assembly. In his speech, the head of our state said, "Gender equality policy has become a priority for us. The women role in public administration is growing. The number of women deputies in our new Parliament has doubled"[18], referring to the work being done in our country on women's policy.

To increase the women status in society, it is necessary to create real opportunities for education, financial resources, participation in political life. There are mechanisms developed by international organizations such as UN, UNESCO, UNICEF, ILO, and their implementation in our country should be strengthened. Creating an excellent institutional framework for gender equality, including the appropriate financial and human resources allocation for these purposes. To achieve the stereotypes elimination associated with traditional gender roles it is necessary to fully integrate the gender equality and standards principles in all public life spheres, to promote the gender stereotypes elimination through a wide educational activities range. Enhancing the civil society role, in particular non-governmental organizations, and establishing constructive dialogue with women's and youth movements is an effective partnership in addressing gender issues.

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# Increasing Financial Security of the Entity Based on Managing its Business Activity

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## ABSTRACT

This article discusses the financial security of industrial enterprises based on management of their business activity. Factors of formation of business activity of modern enterprises have been analyzed. Suggestions have been presented for improving the financial security of enterprises and business activity.

**KEYWORDS:** *enterprise, financial and economic security of the enterprise, business activity of the enterprise*

## INTRODUCTION

In the modern economy, crisis phenomena have led to an increase in the importance of issues of management of financial security of enterprises. The dynamism of the external and internal environment requires the management of the enterprise to search for new ways to improve the security of financial activities.

## Literature review

The works of many scientists are devoted to the study of the management of the financial results of the activities of enterprises. Some authors have investigated the issues of the influence of a variety of risks on the efficiency of enterprises. However, the issues of organizational and methodological support of the process of increasing the financial security of enterprises have not been sufficiently studied. Many managers of enterprises and their departments often find themselves unable to justify and develop ways to improve the security of the financial activities of their own enterprises.

Increasing the level of financial security of an enterprise is a continuous process; it covers many interrelated procedures that have appropriate requirements for their organizational support and economic justification.

One of the factors in the formation of the financial security of an enterprise is the level of its business activity.

The content of the concept of financial security of enterprises in relation to various branches of activity is presented in the works of Volodina I.G. [1], Golukhov V.N., Reikhart D.V., Shilenko Yu.V. [2], Reznik S.D. [3], Sorokina O.N. [4], Goncharenko L.P., Shlendera P.E., Badaeva O.N., Tsupko E.V. [5] and others.

Summarizing the views of scientists on the definition of financial security of an enterprise, the study offers the following interpretation.

The financial security of an enterprise is a certain financial condition, characterized by its ability and ability to withstand existing and emerging threats of its deterioration.

Most scientists define economic security enterprises in a broad aspect, including in it: financial security, intellectual, personnel, technical and technological, political and legal, information, environmental, power.

The main goal of managing the financial security of an enterprise is to ensure its stable and efficient functioning now and in the future.

The main functional goals of ensuring the financial and economic security of a production enterprise are [6]:

- ensuring high economic efficiency of work (profitability of all types of enterprises);
- ensuring high business activity, and, accordingly, ensuring financial stability and independence of the enterprise.

## Methodology of the research

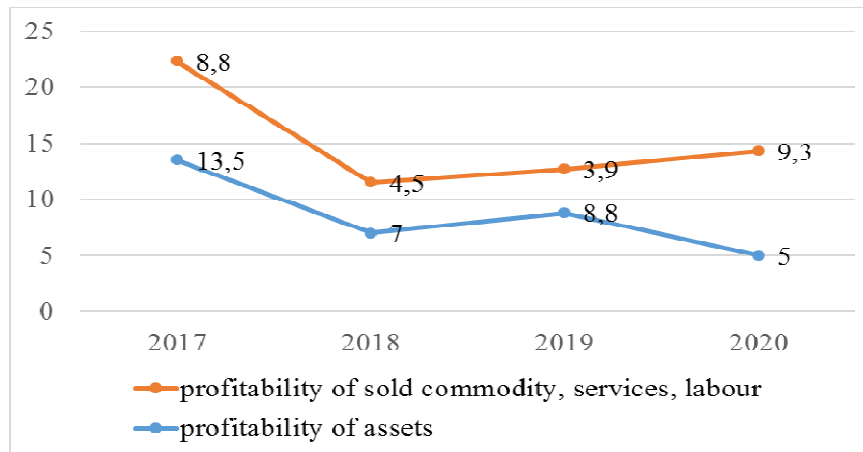
The purpose of our study is to substantiate and develop measures to improve the financial security of enterprises based on the management of their business activity. To achieve this goal, the study solved the following tasks:

- disclosed the essence of financial security of enterprises and the role of business management in ensuring it;
- the analysis of risk factors for the activities of enterprises was carried out;
- an analysis of the business activity of enterprises;
- organizational measures to improve the financial security of enterprises on the basis of business activity management are proposed.

The object of the research is the enterprise; the subject of the research is the process of managing the financial security of enterprises.

## Results

It should be stated that an analysis of the efficiency of modern manufacturing enterprises showed that, in the economy as a whole, the profitability of goods, works, and services sold in 2017-2020 was had a growth trend. So, in 2017, the profitability of goods was 7%, and in 2020 it increased to 9.3% (Fig. 1).



**Fig. 1. Indicators of profitability of sold goods (labor, services) and profitability of assets of industrial enterprises in 2017-2020, % [7]**

Comparing the results of 2020 with a more prosperous period in economic terms, when the profitability of goods was at the level of 13.5% (2018), we can note the presence of growth reserves for this indicator, as well as the availability of opportunities to reduce costs associated with the production and sale of goods, works and services, and the growth of profit from sales.

The level of business activity of enterprises directly affects their financial and economic situation. Deterioration of business activity of enterprises, or, in other words, a slowdown in the turnover of investments, also reduces the level of financial and economic security. A similar slowdown in the turnover of funds invested in current assets of enterprises is evidenced by the presence and growth of overdue receivables. The amount of overdue receivables in the economy as a whole in 2020 amounted to 2.2 trillion rubles. This is 12% more than in 2019, and in 2019 the indicator increased by 28% from the level of 2018 (Table 1).

**Table 1 Accounts payable and receivable of enterprises in 2017-2020 [7]**

No	Indicators	2017	2018	2019	2020
1	Total liabilities of enterprises, mln.soums	12178969	58340477	75182475	89014617
2	Creditor liabilities, mln.soums	6389304	27531558	33173617	38925596
	including overdue	956356	1469645	1881316	2428757
3	Receivable liabilities, mln.soums	6331251	26263685	31013596	35736421
	including overdue	855998	1482765	2015920	2275556

The main indicators of the business activity of industrial manufacturing enterprises annually assessed by state statistics are:

- general demand for products (order book);
- release of the main product in kind;
- stocks of finished products.

The analysis of these indicators showed that, according to two of the three indicators, the business activity of industrial production enterprises declined in 2019-2020. Thus, the demand for products, according to the estimates of enterprise managers, decreased only in 2020 by 41.75% on average per year. The output of the main product in 2020 increased by 14.5% and stocks of ready goods decreased by 4.5%.

The following are noted as the main factors limiting the business activity of organizations [7, p. 217]:

- insufficient demand in the domestic market (in 2020, 55% surveyed organizations);
- a high level of taxation (in 2020, it was noted in 40% surveyed organizations);
- –A high percentage of commercial loans (in 2020, it was noted in 30% surveyed organizations);
- lack of financial resources (in 2020, it was noted in 40% of the surveyed organizations);
- lack of skilled workers (in 2020, it was noted in 22% surveyed organizations);
- deterioration and lack of equipment (in 2020, it was noted in 22% surveyed organizations).

The study developed a model for managing the business activity of a manufacturing enterprise, which will allow, through the performance of management functions for each separate type of activity, to obtain the necessary information not only about the state of business activity, but also about the results of its management. In addition, the model assumes the formation of tools and a concept of business management at the same time, the basis for improving the financial and economic security of a production enterprise is the management of its business activity.

The directions of ensuring and maintaining the business activity of a manufacturing enterprise are proposed, including: increasing the volume of sales of profitable products in accordance with market demand; implementation of the economy regime at the enterprise in the direction of reducing all types of costs; improvement of the price mechanism, taking into account the improvement of the quality and competitiveness of products; pursuing a policy of reinvesting net profit in production, thus minimizing the use of long-term borrowed resources; maximization of the autonomy ratio, that is, the share of equity capital in the balance sheet; use, if necessary, of borrowed capital to maintain and develop economic growth, without violating, at the same time, the financial stability of the enterprise; ensuring the acceleration of asset turnover by optimizing the ratio of non-current and current assets (with an increase in the share of the latter), which will reduce the relative need for them.



## Conclusion

Summing up, it can be said that the financial security of an enterprise is a certain financial condition, characterized by its ability and ability to withstand existing and emerging threats of its deterioration. Additionally, increasing the level of financial security of an enterprise is a continuous process; it covers many interrelated procedures that have appropriate requirements for their organizational support and economic justification.

One of the factors in the formation of the financial security of an enterprise is the level of its business activity.

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## Features of Reading as a Process of Communication, Reading as a Goal and Means of Learning

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### ABSTRACT

The article says that literally, any periodical or textural reference to reading either asserts or implies that the main function of reading is to convey to the listeners by voice the thoughts and feelings of the writer. The author usually goes on to explain how reading should be taught in order to fulfill this mission.

**KEYWORDS:** *perception, thinking, understanding, interpretation*

Reading is one of the main ways to learn languages. Therefore, we must fully imagine what we are reading. In foreign methods, the following definition of reading is given. Following them, we agree that reading is more than recognizing words and collecting the concepts, information, and ideas put forward by the author, as they relate to the reader's previous experience and knowledge. Only the author of the passage includes some of the information; the interpretation of the rest of the information rests with the reader. No written text is a topic that is completely self-evident. When the reader interprets the text, he should refer to his stock of knowledge related to the text (see *The Language Art of Pamela J. Smith*). Farris, p 362).

Reading is one of the main abilities that a student must obtain within the process of mastering a foreign language in school. Reading is the understanding of written texts. This is a complex activity that involves both perception and thinking. Reading consists of two interrelated processes: word recognition and comprehension. Word recognition refers to the process of perceiving how written characters correspond to spoken language. Understanding is the process of making sense of words, sentences, and coherent text. Readers typically use background knowledge, vocabulary, grammar knowledge, text experience, and other strategies to help them understand the written text. Through reading in a foreign language, the student enriches their knowledge of the world around them. He gets acquainted with the countries where the language is spoken.

Teaching foreign language reading in line with the communicative approach has its own characteristics, primarily related to the organization of the learning process itself. Our observations during the students' practical training in schools show that, as a rule, working with texts for reading in the classroom is quite monotonous, it is mainly reduced to the control of understanding, most often through translation into their native language.

Monotony, low work rate do not contribute much to the development of full-fledged communication skills, which, as is known, are characterized by three parameters – completeness, depth and accuracy of understanding. Completeness reflects a quantitative measure and is manifested in the degree of understanding of the content of

the text; depth is manifested in the interpretation of the extracted information and in the understanding of the subtext; accuracy includes the adequacy of understanding the language form and content.

In this regard, it is necessary to pay more attention to the formation of students' actions that form the basis of basic reading skills, such as anticipating the content, highlighting semantic milestones, compressing the text and interpreting it.

The organization of communicative-oriented teaching of foreign language reading is connected, firstly, with the need to create an atmosphere of communication, a communicative environment in the classroom, and secondly, taking into account the specifics of the processes of perception and understanding.

Various organizational forms of work (individual, pair, group, collective) contribute to the intensification of foreign language communication in the classroom, which requires knowledge of the technique of forming training groups and pairs, methods and techniques for managing educational activities during the training session. It should be noted that the variability of the content of modern domestic textbooks on a foreign language (the presence of several texts on the same problem, alternative tasks) provides students with a choice of educational material based on personal preferences, and the teacher gives ample opportunities for alternating modes of work: individual (reading one of the texts), group (performing tasks for a separate text), collective (performing general tasks for all texts).

The main factors that affect the success of the processes of perception and understanding of a foreign language text can be divided into three groups:

1. knowledge of the surrounding world, the subject (topic);
2. knowledge of grammar and vocabulary of the language being studied;
3. understanding the context of presentation or functioning of language and speech material

Reading develops students' intelligence. This helps to develop their memory, will, and imagination. Students get used to working with books which in turn, facilitates independent practice in further reading. Learning to read is very important because it helps to develop other skills: speaking and writing.

The fact that a significant number of teachers either do not accept the above goal as a reason for learning to read, or, if they do, do not see its consequences, was recently noted in an analysis of the responses of more than 800 teachers to statements regarding oral reading found in the Inventory of Teachers' Knowledge about Reading, which was introduced as part of an extensive training program in the service sector. On this tool, 37 percent indicated that the main justification

for learning to read was to emphasize the accuracy of word perception. When asked to choose one of the possible reasons why a teacher would make children take turns reading parts of a story sequentially, 47 percent, or almost half, said that this gives all children the opportunity to practice word recognition skills.

Reading is one of the main skills that a student must acquire in the process of mastering a foreign language in school. In the foreign language curriculum, reading is considered as one of the leading language classes to be developed. It reads: "Read without a dictionary texts containing familiar grammatical material and no more than 4-6 unfamiliar words per 100 words of the text, the meaning of which, as a rule, should be clear from the context or familiar word-forming elements (in an eight-year school). Students should use the dictionary to read light texts containing familiar grammatical material and 6-8 unfamiliar words per 100 words of text (in a ten-year school)." Therefore, reading is one of the practical goals of teaching a foreign language in schools.

Reading is of great educational importance, since reading is a means of "communication, people get the information they need from books, magazines, newspapers, etc. Through reading in a foreign language, the student enriches his knowledge about the world around him. He gets acquainted with the countries where the language is spoken.

The content of the texts, their ideological and political spirit influence the students. We must develop in our students such qualities as honesty, loyalty and love for our people and the workers of other countries, and the texts that our students will read must meet these requirements. Thus, the ability to read is not only of great practical, but also educational and social importance.

Reading is not only an end in itself, but also a means of learning a foreign language. When reading a text, the student considers sounds and letters, vocabulary and grammar, remembers the spelling of words, the meaning of words and phrases, he also considers grammar and, thus, improves his command of the language being studied. The more the student reads, the better he remembers the language material. If a teacher teaches his students to read well, and they can read fluently enough and fully understand, he also helps them to acquire speaking and writing skills.

Note that according to the US methodologists, "reading comprehension consists of three important parts:

1. active, constructive process;
2. the thought process before, during, and after reading;
3. the reader's interaction with the text and the reading context.

In the process of learning to read, we often encounter various types of them:

- transactional reading theory (Louise Rosenblatt called these aesthetic and efferent reading positions);
- basal reading programs (for novice readers, which remain the most popular);
- focus on the literacy classes that your child enjoys, so that reading is a pleasure, not a chore;
- acoustic training (Phonics training involves learning the relationship between letters and the sounds they represent);
- writing;
- book club (reading, writing, student discussion groups, and class-wide discussions are included in the program).
- Book club, a reading program based on literature );
- directed reading activity;
- fluency of speech;
- scan;

Scanning is a reading method that is used when you want to quickly find certain information. When you scan, a question is born in your head, and you read the passage only to find the answer, ignoring unrelated information [2: 19].

It is known that learning to read can be arranged in various ways. The first is reading whole words, and the second is reading whole sentences. Students first read individual words organized according to the reading rules.

Reading and writing are related to listening and speaking, which are considered the two main language skills. The development of these two language skills is called emerging literacy. For example, recognition of a printed word. Thus, reading and writing are important ways of using language to communicate.

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# The Importance of Intellectual Property in the Formation of an Innovative Economy

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## ABSTRACT

In today's dynamically changing era, countries determine their development path through the development of intellectual property. The introduction of limitless scientific achievements in all spheres of society requires further improvement of the sphere of intellectual property in our country. This article examines the role of intellectual property in the innovation economy and important aspects of its development.

**KEYWORDS:** *intellectual property, human capital, GDP, World trade organization, World Intellectual Property Organization (WIPO), trademarks, commercialization*

## INTRODUCTION

Innovations are the most important factors in the modernization and diversification of the economy, ensuring its dynamic development and competitiveness, and further increasing the role and authority of the country in the world community. Therefore, today every state pays great attention to the wide use of innovative opportunities to ensure the stability of its economy and improve the well-being of the population. Innovation is based on intellectual property. The importance of intellectual property in the formation of an innovative economy is invaluable and closely interrelated.

Head of our state Sh. M. Mirziyoev noted: "If we do not raise the issue of intellectual property to the level of state policy, then Uzbekistan will not be competitive in 10 years." [1]

In today's era of rapid changes and updates, it is necessary not to limit with the existing achievements, but to intensify work on the development of new, based on the requirements of today's intellectual property products, innovations and improvement of intellectual property objects. One of the urgent tasks is to conduct research on these issues and develop scientifically based proposals and recommendations.

## REVIEW OF LITERATURE

Issues of intellectual property and its significance, protection as a separate subject of research are studied in the works of a number of foreign and our scientists. Analyzing the methods and means of intellectual property rights protection, Akramkhodzhaeva Z. S. focuses on the development of theoretical and practical conclusions on improving the legal norms and also the importance of the sphere of intellectual property in the economy. [2]

Toshev B.N. based his research on the development of intellectual property and copyright rights in a market economy, the essence of international acts in the field of intellectual property. [3]

Russian researcher N. N. Karpova gave her own definition of the concept of intellectual property. At the same time, for developing countries, WTO accession has highlighted the positive and negative aspects in ensuring intellectual property rights. In particular, the positive aspects include the following:

1. effective protection of intellectual property rights improves the investment climate;
2. development of a unified interpretation of the concept of the use of intellectual property rights (amendments to accounting, tax and financial statements in connection with the accounting of the use of intellectual property);
3. support for national manufacturers;
4. recognition of generally accepted trademarks on the national market;
5. lead to a reduction in the number of counterfeit and pirated products.

At the same time, for a developing state that becomes a new member of the WTO, the following negative aspects of intellectual property protection are noted:

1. the emergence of high competition in the foreign market;
2. reduction of requirements for industrial scientific and technical expertise;
3. loss of national producers of their positions in the market as a result of high competition between trademarks in the local market;
4. non-payment to the state budget of the fees paid when obtaining a patent by foreign applicants. [4]

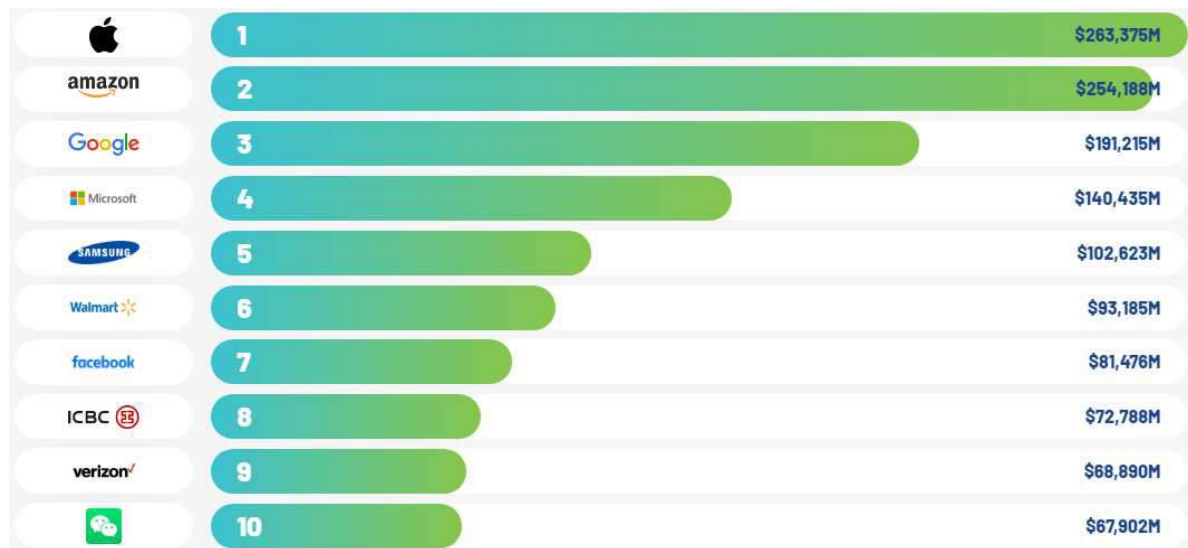
## RESEARCH METHODOLOGY

Methods such as statistical analysis, systematic analysis, comparative analysis are widely used in scientific research.

## ANALYSIS AND RESULTS

Today, the effective use of human capital, the widespread introduction of the created objects of intellectual property into the process of commercialization and the transformation of the industry into a leading branch of the economy are among the most important indicators for the economically developed countries of the world. There are such intangible assets, that is, trademarks, the value of which can be the GDP of the entire state. For example, the American online retailer Amazon for the third year in a row occupies high positions in the list of the most expensive brands in the world, its value today is \$ 254.2 billion. The list of the most expensive brands is led by Apple (\$263.8 billion), Google (\$191.2 billion), Microsoft (\$140.4 billion), Samsung (\$102.623 billion), Walmart Inc. (\$93.2 billion), Mercedes-Benz (\$65.04 billion) and others. [5]





**Figure 1 The world's leading brands and their values (The Global Top 10) [5]**

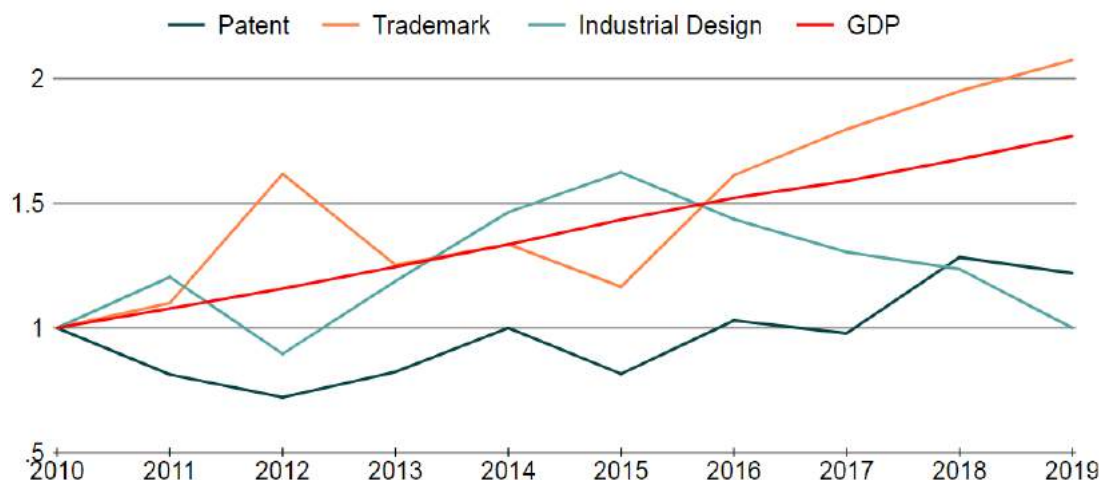
Brand awareness is an important element of the marketing strategy, and geographical indicators contain information about the features of the product related to its origin. They serve as a means of individualizing the product in the market, giving consumers the opportunity to distinguish clearly the product from other products based on its geographical origin. One of the important tasks facing us is to increase the authority of national producers and ensure the added value of products.

In Uzbekistan, there is no precise data on the share of intellectual property in the country's GDP, which is a very small amount. One of the main reasons for this is that our country has a poorly established system for evaluating intellectual property objects. These indicators are determined by the number of industrial property objects transferred and registered with the intellectual property organization in our country (Figure 2).[7]

Year	Patent	Trademark (class count)	Industrial Design (design count)	GDP (Constant 2017 US\$)
2010	374	4,100	250	132.86
2011	304	4,510	301	143.20
2012	270	6,633	224	153.76
2013	308	5,134	297	165.43
2014	374	5,475	366	177.30
2015	305	4,777	406	190.51
2016	385	6,610	359	202.12
2017	366	7,368	326	211.14
2018	480	7,993	309	222.63
2019	456	8,504	250	235.02

**Figure 2 IP (Intellectual property) filings and Economic Growth [7]**  
Source: WIPO statistics database; last updated 03/21

The figure 3 shows that the GDP of Uzbekistan tends to grow. In proportion to this, for the period 2010-2019, the number of registered objects of industrial properties - inventions and trademarks increased, in particular, the invention increased by 1.2 times, the trademark by 2.1 times, and the number of industrial designs remained unchanged (Figure 3).[7]



**Figure 3 IP (Intellectual property) filings and Economic Growth [7]**  
Source: WIPO statistics database; last updated 03/21

The importance of developing the field of intellectual property lies in the fact that it consists mainly intangible assets, and in achieving its high value, the main place is occupied by intellectual and technological products. With the growth of production using intellectual resources, their value does not devalue, but, on the contrary, increases.

Based on the above, one of the important tasks facing us is to establish a system of training appraisers with specialists of the World Intellectual Property Organization. International experience shows that large countries have established large institutions in this area, and created evaluation standards. Using special criteria, you can determine the cost of any goods and services.

## CONCLUSIONS AND RECOMMENDATIONS

In the modern technological progress, intellectual property is becoming increasingly important in the development of the economy of each country, determining the competitiveness of the state in the world economy.

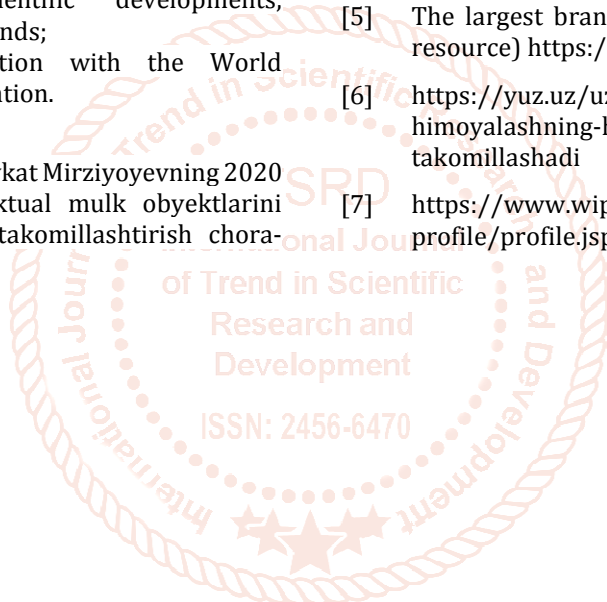
For the development of intellectual property in Uzbekistan, it is advisable to adhere to the following practical recommendations:

- development of the national strategy of the Republic of Uzbekistan in the field of intellectual property development;
- introduction of scientific achievements in each department and industry to strengthen the protection of intellectual property;
- commercialization of scientific developments, popularization of national brands;
- establishing close cooperation with the World Intellectual Property Organization.

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tadbirlari" [yig'ilishidagi ma'ruzasi](https://www.gazeta.uz/oz/2020/10/12/intellectual-property/)  
<https://www.gazeta.uz/oz/2020/10/12/intellectual-property/>



# Formation of Teacher Professionalism as an Integrative Psychological Event in the Context of Globalization of Education

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## ABSTRACT

The article examines the formation of pedagogical professionalism as an integrative psychological phenomenon in the context of the globalization of education.

**KEYWORDS:** *teacher, professional, personal growth, professional development, professionalism of activity, professionalism of the individual, professional imagination, professional aptitude, pedagogical activity, self-esteem, education, pedagogical assignment.*

## INTRODUCTION

Improving pedagogical professionalism plays a scientific role in increasing the effectiveness of the modern educational process. In modern conditions of globalization of education, the personal and professional development of a teacher at the professional level is determined by his professional identity and pedagogical significance. That is, it allows him to analyze his activities, have a positive approach to business, conceptually understand his professional skills and purposefully improve. The rise of personal and professional development to a professional level is a result that contributes to the accumulation of universal professional experience in a particular social and professional activity and determines the social significance of work. For this reason, the teaching profession is a complex system of socio-cultural life, which includes both an object and a subject, subject, purpose, meaning, norms, methods and techniques, means and results of pedagogical activity.

## Research methods:

historical, retrospective and theoretical and methodological analysis, generalization and interpretation of the data obtained, observation, interviews, questionnaires, content analysis, qualimetry and expert assessment.

## Content of the research:

It is known that pedagogical activity, like other professions, changes in the course of historical development. In the current conditions of modernization of education, some teachers take new socio-cultural forms, others do not undergo significant changes, while others may suffer from existing changes in society or leave their profession and change their profession, not at all withstanding it. However, as a result of the teacher's constant work on himself, striving for independent personal and professional development, over time, he achieves the achievement of great social significance - professionalism.

Today there are various pedagogical-psychological, philosophical-sociological approaches to the study of the

concept of "professionalism", but the formation of pedagogical professionalism as an integrative psychological phenomenon has not been studied.

In all the studies studied, the concept of "professionalism" is often characterized by the effectiveness or high level of human productivity. In particular, K.K. Platonov studied the high level of individual productivity, medium and low levels of productivity. He calls high productivity "professionalism." That is, high productivity, ensuring the development of the personality and the preservation of his health as a specialist, is characterized by a pronounced expression of such positive socially significant qualities as productivity, tension, courage and determination, accuracy of assumptions and assumptions, reliability, etc., organization, stability and experience.

According to the theory of the psychologist A. A. Derkach, **professionalism of activity** is a description of the quality indicators of the subject of labor, which is based on deep professional skills and competencies of a person, various knowledge and skills that ensure productivity, including creative solutions, high and sustainable efficiency, reflecting the possession of modern methods of solving professional problems and modern algorithms that encourage demonstration.

**Personal professionalism** is a description of the qualitative indicators of the subject of labor, which manifests itself in personal, professional and professionally important qualities aimed at the gradual development of a specialist, high development of acmeological invariants of professionalism, deep creativity, movement and aspirations, motivation and values.

Thus, personality and professionalism of activity are two sides of the same phenomenon, which are in dialectical unity. That is, it is a purposeful separation of the content of various acmeological technologies used in the process of solving practical problems related to the development of professionalism. However, some manifestations of this dialectical unity may dominate at different stages of the d

The peculiarity of pedagogical activity in modern conditions of socio-cultural changes is that the teacher is not only a mechanism for setting tasks for students in the educational process, but also a co-author who actively creates this content with them. The main task is to direct the content of education towards the individual, to turn it into a personal value for the student, that is, to create an atmosphere that will act as "ours". This, in turn, requires the teacher to actively enter the system of values and develop creative

thinking, form the image of "I" as a subject of active activity, focus on self-expression and self-expression. Total.

Pedagogical professionalism:

- first of all, the ability to measure the results of one's work and justify the process that affects the achievement of quality indicators in activities;
- secondly, it is defined by the metrics of creativity at different levels that ensure its success in the work process.

At the same time, it is important to clearly show the teacher's ability to check the quality of practical activity, mainly as a leading sign of professionalism. Of course, the problem of forming a professional teacher is explained by the fact that it begins with the ability to analyze the results of one's activity. The teacher first rises from analyzing the effectiveness of problem solving to understanding and analyzing tactical tasks, and then from understanding and predicting strategic pedagogical tasks. Thus, the teacher constantly restores his activity and corrects the form of its results.

All units of measurement that determine the level of pedagogical professionalism are in harmony with the following qualities of a teacher-coach: inspiration, dear friend, intellectual, coach, speaker, organizer, teacher, psychologist, sociologist, technologist, etc.

The following criteria of pedagogical professionalism are distinguished:

- subjective (individual spiritual institutions associated with the level of education of a person);
- objective coverage of important professional qualities (tolerance, kindness, sensitivity, composure, gentleness, compassion, kindness).

Pedagogical professionalism is defined as an integrated vocational education, whose professional growth and skills determine all areas of pedagogical activity.

The content of pedagogical professionalism is a generalization of scientific knowledge, skills, abilities, directions, spiritual and moral qualities of a person, the main motives and high results of pedagogical activity, as well as the fulfillment of subjective and social roles.

Thus, pedagogical professionalism as a subject of pedagogical activity is a characteristic that reflects the quality of the teacher's personality, high professional competence and readiness to effectively solve pedagogical problems. Also, the teacher consists of *practical structures*.

*The motivational and value structure* determines the focus of pedagogical professionalism on the chosen professional and pedagogical activity, reflecting the spiritual and moral content. This structure includes a set of ideas about the professional and creative activity of a teacher, the definition and achievement of an independent goal, his professionalism (professional "I-concept") and the need for creativity.

*The cognitive structure* is mainly formed in the process of vocational education and is an independent acquisition of knowledge by a teacher and, to a certain extent, the development of his knowledge.

*The practical structure* of the activity includes a set of effective professional skills, ways to achieve high results of pedagogical activity and the presence of perfect algorithms.

**The Professional Component Model** consists of the following components:

- a set of human qualities, i.e. personal orientation, attitude to the environment, originality of creative aspects, intellectual and individual operator qualities (dexterity, dexterity, business acumen, willingness to act, efficiency), sensitivity, striving for professional results, imagine your place in a team of colleagues;
- practical actions at a professional level (motor skills, i.e., active movement of an organ, skill, skill, qualifications);
- to understand their activities at a professional level based on their inner feelings (to receive, create and process information about the profession, professional understanding, professional knowledge, skills and abilities);
- awareness, professionalism, professional knowledge, experience and culture at a professional level (professional orientation in the field of scientific and theoretical knowledge, professional knowledge in the field of science);
- human psychodynamics, i.e. the state of cognitive self-awareness in extreme conditions of life (the intensity of experiences, the speed of their transition from one state to another, workload and difficulties in this professional sphere);
- in the process of performing professional tasks, depending on the requirements of the job, such as understanding your age and gender.

**The results obtained:** Personality structure at the professional level: personality motivation (orientation and its types); personality traits (abilities, character and its qualities, psychological process and mental states); holistic description of the personality (self-awareness, individual style, creativity as creative potential).

It should be noted that in professional self-awareness as an integrative description of a personality:

1. a person's understanding of professional norms, rules and an expert model as a standard for understanding the available qualities, that is, based on the scientific and theoretical foundations of the profession and the concept of personal activity;
2. understanding of these qualities by other people, i.e. comparing oneself with some professionally qualified specialists;
3. professional self-knowledge, assessment and fixation of the expectations of other people;
4. a person's self-assessment of his individual characteristics in terms of educational, pedagogical and spiritual characteristics;
5. self-determination by a person of positive qualities, positive creation of the "I-concept" in the future and positive self-esteem.

There is an increase in the effectiveness of pedagogical professional activity as a process of personal development. Personal development contributes to a change in professional activity and a deepening of ideas about it. The change in professional activity, its organization at a new qualitative level will lead to the professional growth of the teacher in the future.



## Conclusion

Thus, pedagogical professionalism presupposes an integrative psychological phenomenon that characterizes its essence. By participating in the educational and professional process, and then in the professional activity of a teacher, primarily as a future specialist, he not only creates exactly the same ideas about his profession and personal capabilities, but also actively develops them. He also develops as a person, forming an attitude towards himself as a subject of professional activity and as an active participant in it.

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# The Impact of Economic Relations between the Republic of Uzbekistan and the Asian Development Bank on the Economy of Uzbekistan

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## ABSTRACT

This article describes the cooperation of Uzbekistan with the Asian Development Bank, its main directions, goals and practical implementation of projects accomplished and being accomplished over the years.

**KEYWORDS:** *Asian Development Bank, international financial institutions, international capital, technical support, energy, private capital*

In the context of modernization of the economy, the development of sectors of the economy, the expansion of the private sector, the state lacks its own internal financial resources. Of course, the role of international capital will increase. Today, the importance of international financial institutions in global financial relations is high. International financial institutions have large financial resources and large powers. These organizations form the basis of global financial and credit relations. Cooperation with international financial institutions not only allows the country to attract large sums of money to the economy, but also to have a place and voice in global financial relations. Therefore, expanding cooperation with international financial institutions is one of the most important issues for any country.

Funds raised from international financial institutions play an important role in the structural restructuring of the country's economy, modernization of production, rapid development of each sector and industry. At the same time, by financing the private sector through foreign credit lines, there is an opportunity to expand the activities of enterprises, increase production and bring the products of our country to the world market. Especially in recent years, the financing of small businesses and private entrepreneurship through foreign loans and grants has been expanding, with a special focus on the development of women's entrepreneurship and manufacturing and services in rural areas.

Today, Uzbekistan is a member of a number of international financial institutions and has bilateral and multilateral cooperation with these organizations. In this case, the role of the Asian Development Bank is very important.

The Asian Development Bank (ADB) is one of the largest international financial institutions providing long-term loans for development projects in Asia and the Pacific. The organization was founded on August 22, 1966 with the signing of an agreement by 15 countries and is headquartered in Manila, Philippines. The President of the Asian Development Bank is elected for a term of 5 years. The bank started its lending activities on December 19, 1966. The purpose of the bank was to contribute to the economic and

social development of developing countries in Asia and the Pacific.

The main goal of the Asian Development Bank is to promote the economic and social development of developing countries in Asia and the Pacific. ADB promotes economic development and cooperation among Asian countries, ensures the growth of capital investment from public and private funds, participates in the regulation of economic plans leading to the development of regional trade, provides technical assistance in the preparation and implementation of external projects. It plays a key role in promoting the country's foreign trade and economic development. The organization also has the following 4 strategic objectives:

1. Promoting cooperation and economic growth in the Far East and Asia;
2. Poverty reduction;
3. Human resource development;
4. Rational use of nature.

According to the charter of the Asian Development Bank, there are several special funds included in the banking system, which are:

- Special fund for long-term lending on favorable terms;
- Asian Development Fund;
- Special Fund for Technical Assistance.

The Asian Development Bank provides loans to developing countries from these funds as follows:

- For a period of 25 years on a commercial basis at the expense of an ordinary fund;
- Up to 40 years for backward countries at a preferential rate of 1-3% from the Asian Development Fund.

The Republic of Uzbekistan became a member of the ADB in August 1995. In 1997, a representative office of the Asian Development Bank was opened in Tashkent. The head of the representative office is T. Konishi.

The programs and projects implemented in Uzbekistan jointly with the Asian Development Bank include 4 main sectors:

- agriculture;
- development of private entrepreneurship;
- regional cooperation in the field of transport and customs transit;
- improving social services for child protection and primary education.

The Asian Development Bank's loans are mainly used to finance the purchase of technology and equipment, partial reimbursement of working capital costs, financing of sub-projects related to the modernization, re-equipment and establishment of new production facilities in the agricultural sector. The main borrower of this credit line is the National

Bank for Foreign Economic Activity of the Republic of Uzbekistan. Sub-borrowers can be private, small and medium enterprises. To obtain a loan, a project must produce a product that can replace exports and imports and be self-sufficient in foreign currency.

To receive a loan from the Asian Development Bank, the borrower must have at least 25% of the value of the project. The borrower must have collateral for the building, structure, machinery and working capital from the production process, as well as other funds to cover financial costs. The collateral must be at least 120% of the loan amount.

The interest rate for the loan is as follows:

- Asian Development Bank interest rate + margin of the National Bank for Foreign Economic Activity of the Republic of Uzbekistan.

The margin of the National Bank is from 0.5% to 3% of the loan amount, depending on the value of subprojects. The loan management fee is 0.15% per annum (UZS) of the loan

amount. Repayment of the principal debt is made every 6 months.

The role of the funds allocated by the Asian Development Bank in the rapid development of our economy, as well as in improving the quality of life of the population in our country is very important. During Uzbekistan's membership in the Asian Development Bank, many fruitful projects have been implemented. As a result of cooperation, the economic development of our country has further increased. As of December 31, 2019, the Asian Development Bank has provided a total of \$ 8,671.36 million in loans to Uzbekistan. These funds were invested in a total of 221 projects. Projects on agriculture, natural resources and rural development; education; energy; financial health; industry and trade; transport; water and other urban infrastructure and services are focused on the development of important sectors and industries. The most funded sectors are: energy - \$ 2,004.91 million for 32 projects, finance - \$ 1,935.42 million for 38 projects, transport - \$ 1,777.87 million for 34 projects (Table 1).

**Table 1 Distribution of funds allocated by the Asian Development Bank to the Republic of Uzbekistan as of December 31, 2019 (million dollars)**

Networks	Projects	Funds provided (million USD) *	Interest rate
Agriculture, natural resources and rural development	33	784.68	9.05
Education	23	298.03	3.44
Energy	32	2004.91	23.12
Finance	38	1935.42	22.32
Healthcare	7	88.60	1.02
Industry and trade	4	175.90	2.03
Public sector management	21	632.21	7.29
Transport	34	1777.87	20.50
Water and other urban infrastructure and services	29	973.74	11.23
Overall:	221	8671.36	100

\*the numbers may not be accurately summed due to rounding.

**Source:** Prepared by the author based on the report of the official website of the Asian Development Bank.

The Asian Development Bank and the Republic of Uzbekistan signed a loan agreement about lending in the amount of 15.0 million US dollars for the implementation of the project "Financing the preparation of urban development projects in the Republic of Uzbekistan" with a repayment period of 25 years, including a grace period of 5 years on November 13, 2019. The total cost of the project was \$ 16.76 million, including:

Debt of the Asian Development Bank - 15.0 million US dollars;

The share of the Republic of Uzbekistan in the project was 1.76 million US dollars due to tax benefits, including exemption from value added tax, contributions to state trust funds, as well as corporate and personal income tax from legal entities and individuals who are not residents of the Republic of Uzbekistan;

The project implementation period is 4 years (2020 - 2023) (Table 2).

**Table 2 The main indicators of the project "Financing the preparation of urban development projects in the Republic of Uzbekistan"**

Republic of Uzbekistan					
	Name of expenses	Unit of measure	Overall*	Sources of funding, including:	
				ADB debt	Share of the Republic of Uzbekistan
The total cost of the project		thousand USD eq.	16 760,00	15 000,00	1 760,00
including:					
1.	Consulting services	thousand USD eq.	13 600,00	13 600,00	
2.	Financial expenses during the investment period	thousand USD eq.	710,00	710,00	
3.	Retained earnings	thousand USD eq.	690,00	690,00	
4.	Tax and customs privileges	thousand USD eq.	1 760,00		1 760,00
* The final cost of the project will be determined after the development of detailed design estimates and the results of tenders for the supply of goods (works and services).					

\* The final cost of the project will be determined after the development of detailed design estimates and the results of tenders for the supply of goods (works and services).

**Source:** Resolution of the Cabinet of Ministers of the Republic of Uzbekistan No. 426. 07.07.2020

The Asian Development Bank has set an estimate for repayment of debt and interest payments from 2020 to November 15, 2024. The loan amount was \$ 15 million, the loan term was 25 years, the grace period was 5 years, and the interest rate was

2.0%. According to the Asian Development Bank's debt repayment and interest payment forecast, interest payments on principal will be repaid between 15.11.2020 and 15.05.2024. The main goal is to repay the principal in parallel with the interest paid from 15.11.2024 to the end of the project, i.e. until 15.05.2044 (Table 3).

**Table 3 Asian Development Bank loan repayment and interest payment forecast for the project "Financing the preparation of urban development projects in the Republic of Uzbekistan"**

The amount of debt	15,0 million USD			
Loan term	25 years			
Preferential period	5 years			
Interest rate	2,0%			
Years	Interest on principal (thousand dollars)	Interest paid (thousand dollars)	Repayment of principal (thousand dollars)	Total refunds (thousand dollars)
15.11.2020	15,3			
15.05.2021	40,3			
15.11.2021	62,5			
15.05.2022	89,8			
15.11.2022	100,3			
15.05.2023	119,5			
15.11.2023	131,3			
15.05.2024	151			
15.11.2024		152,5	375	527,5
15.05.2025		148,7	375	523,7
15.11.2025		144,1	375	519,1
15.05.2026		141,1	375	516,1
15.11.2026		136,5	375	511,5
15.05.2027		133,4	375	508,4
15.11.2027		128,9	375	503,9
15.05.2028		125,8	375	500,8
15.11.2028		122	375	497
15.05.2029		118,2	375	493,2
15.11.2029		113,8	375	488,8
15.05.2030		110,6	375	485,6
15.11.2030		106,2	375	481,2
15.05.2031		102,9	375	477,9
15.11.2031		98,6	375	473,6
15.05.2032		95,3	375	470,3
15.11.2032		91,5	375	466,5
15.05.2033		87,7	375	462,7
15.11.2033		83,4	375	458,4
15.05.2034		80,1	375	455,1
15.11.2034		75,8	375	450,8
15.05.2035		72,4	375	447,4
15.11.2035		68,3	375	443,3
15.05.2036		64,8	375	439,8
15.11.2036		61	375	436
15.05.2037		57,2	375	432,2
15.11.2037		53,1	375	428,1
15.05.2038		49,6	375	424,6
15.11.2038		45,5	375	420,5
15.05.2039		41,9	375	416,9
15.11.2039		37,9	375	412,9
15.05.2040		34,3	375	409,3
15.11.2040		30,5	375	405,5
15.05.2041		26,7	375	401,7
15.11.2041		22,8	375	397,8
15.05.2042		19,1	375	394,1
15.11.2042		15,2	375	390,2
15.05.2043		11,4	375	386,4
15.11.2043		7,6	375	382,6
15.05.2044		3,8	375	378,8
<b>Total:</b>	<b>710,0</b>	<b>3120,2</b>	<b>15000,0</b>	<b>18120,2</b>

**Source:** Resolution of the Cabinet of Ministers of the Republic of Uzbekistan No. 426 07.07.2020



**Findings from the study:** In conclusion, modernization and more rapid development of the economy will require additional capital and additional financial resources. Also, in today's globalization, a number of effective projects for the development of the public sector and the real sector are being implemented in our country in cooperation with international economic organizations and international financial institutions. As a result of these projects, it contributes to the development of our economy. International financial institutions play an important role in financing the ongoing socio-economic reforms, development and modernization of our country. In particular, we can see the dynamic development of cooperation between Uzbekistan and the ADB.

The conducted research and analysis, as well as the experience of developed countries, show that the further development of mutually beneficial cooperation between international financial institutions and Uzbekistan is one of the most important and topical issues. Foreign investment in the national economy, long-term and low-interest loans from the financial markets largely depend on the country's prestige in the international arena. This, in turn, means that we need to constantly improve our position in the rankings, which are regularly calculated by international

organizations. The increase in the international rating and prestige of our country will allow attracting lucrative contracts, long-term investments, low-interest loans from international financial institutions.

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# The Problems of Food Scarcity and Famine in the World, its Impact on Political, Social and Economic Life

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## ABSTRACT

This article discusses the problem of global hunger and its impact on socio-economic life, absolute and latent hunger and its consequences, Food and Agriculture Organization of the United Nations (FAO), the global hunger index, its importance in scientific observation.

**KEYWORDS:** *Nutrition deficiency, hunger, famine, food problem, hidden hunger, the absolute famine, Global Hunger Index, malnutrition, economic crisis*

## I. INTRODUCTION

Providing food to the population in the modern world is one of the most important programmatic goals of the whole world community and each state. In the context of the global financial and economic crisis, which affects the economies of many countries, the problem of food security remains particularly relevant. The proportion of the population suffering from hunger and chronic malnutrition has increased. In the past, food crises and water supply crises (prior armed conflict) have occurred several times in some countries and regions. However, in recent decades, the problem of water and food supply to the population and the economy has become global.

## II. LITERATURE REVIEW

This article is based on publications of the United Nations World Food and Agriculture Organization (FAO), articles published on this topic in our country and abroad, as well as Internet materials.

The food problem has the longest history among the rest. Periodically it occurred at all stages of human development. At the same time, the world community's food production capacity is now sufficient to feed the entire population of the world. In recent decades, this problem has been completely solved only in the most developed countries. However, the uneven distribution of food across countries and regions means that between 600 million and 700 million people are currently experiencing global hunger. [17; 33]

During the 20<sup>th</sup> century, 70-100 million people died of starvation worldwide, more than half of them in China, and 30 million people died during the famine of 1958-1961. [8]

Famine is a social phenomenon that can become widespread in a country as a result of wars, droughts, natural disasters, earthquakes, various environmental disasters, and other natural phenomena. There are two types of starvation: overt (absolute starvation) and latent (relative starvation - malnutrition lack of essential, nutrients in the diet). [13; 610]

The following 7 countries are listed on the website Kun.uz: Eritrea, Sudan, Zambia, Yemen, the Republic of Sierra Leone, the Central African Republic, Chad. Currently, the worst food situation is in Yemen. The country's riyal has become very devalued. Almost all consumer goods are imported, and

inflation raises the price of these products. Famine in some parts of the country forced people to eat tree leaves. The number of people who do not eat regularly in Yemen may soon increase by one and a half times to 11.5 million. According to the UN, the escalation of famine is being exacerbated by years of drought in Yemen, Somalia, South Sudan and Nigeria. [11]

In the early 1990s, the problem of "hidden hunger" attracted worldwide attention. [2; 55] It occurs when the human body is deficient in micronutrients (i.e. vitamins and minerals). It is estimated that 30% of the world's population suffers from this problem. This leads to an increase in morbidity and mortality, a slowdown in cognitive (intellectual) development and a decrease in learning and efficiency, an increase in morbidity and disability, as a result of an increase in the productive capacity of the population, as well as a catastrophic loss of human potential. Overcoming micronutrient deficiencies is a necessary condition for development. The prevalence of iron deficiency anemia has not changed significantly, but in some countries it has even increased. In India, short stature, iron and iodine deficiency lead to a loss of productivity of 2.95 % of GDP per year. Iron deficiency of female agricultural workers in Sierra-Leone will result in a loss of \$ 94.5 million over 5 year. [3; 27]

Another factor that causes hidden hunger in the world is the consumption of poor quality food. Consumption of poor quality food can lead to about 200 diseases, including cancer. Given the global nature of the problem, the Second Committee of the UN General Assembly on Economic Affairs declared June 7 as World Food Security Day. [10]

The Global Hunger Index (GHI) is published annually by the German-based Welthungerhilfe and the Irish NGO Concern Worldwide. The Global Hunger Index (GHI) is designed to comprehensively measure and monitor hunger at the global, regional and national levels. GHI scores are calculated each year to assess failures and successes in combating hunger. [4] This index is determined by summing four indicators for each country:

- the share of malnourished population;
- the proportion of underweight children under the age of five;
- the proportion of children under the age of five below the norm;
- mortality rate of children under five years of age. [5]

Women suffer more from malnutrition and hunger in developing and economically backward countries. Because social inequality persists in these countries, and in difficult situations, women give up their food. According to the Food and Agriculture Organization of the United Nations (FAO), nearly half of pregnant women in developing countries suffer from anemia (iron deficiency). This results in approximately 110,000 birth deaths each year. [1; 33]

Malnutrition and rising food prices are other factors contributing to hunger. It is estimated that children suffer more from high prices. According to Save the Children, millions of parents in developing countries have been forced to feed their children less as food prices have risen to record highs over the past year. The organization conducted a survey of families in India, Bangladesh, Pakistan, Peru and Nigeria. One in six respondents said that their children were dropping out of school and helping them earn a living. According to the charity, the world's five least malnourished children live in the five countries surveyed. [14]

As a continuation of the above factors, another indicator of hunger is underweight among children under five years of age. In developing regions, this figure continues to decline on average: 33% in 1990 and 26% in 2006. In South Asian countries, it is 46 percent. By 2006, the number of such children had exceeded 140 million. [12; 25] In 2016, every fourth child in the world was lagging behind in development - that's 155 million children. In Africa, South Asia and Oceania (excluding Australia and New Zealand), one in three children lags behind in development. [9] According to a UN report entitled "Global Food Security and Nutrition Status 2018", about 151 million children under the age of five were underweight in 2017 due to malnutrition, reaching 165 million in 2012. Globally, Africa and Asia accounted for 39 and 55 percent of all short stature children, respectively. [6]

Malnutrition in childhood is the leading cause of approximately 35% of deaths in children under five years of age. [3; 27]

Malnutrition and poor nutrition, which are inextricably linked to hunger, are also serious global threats to human life. According to a study by German scientists, the CIS countries are in the top ten in the ranking of deaths due to malnutrition in the period from 1990 to 2016. In second and third place are Turkmenistan and Kyrgyzstan.

Followed by Ukraine, Moldova, Azerbaijan, Belarus, Tajikistan and Kazakhstan.

Russia finished in the top ten with 291 deaths per 100,000 people. The most nutritious foods are found in Spain, Israel and France. In these countries, 43-46 out of every 100,000 people die from malnutrition. [10]

### III. CONCLUSION

In the modern process of human development, the food problem will change, unskilled and excessive use of natural resources, increasing demand for livestock products, the allocation of food per capita and other factors, the constant rise in food prices observed. Which threatens food security, especially for the poor in developed and developing countries. However, it should be noted once again that in the future, food prices will rise only in relation to non-food products, so in terms of efforts to solve the global food problem, it is economically feasible to curb price growth rates.

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## Deviant Behavior Consequences and its Psychological- Pedagogical Importance

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### ABSTRACT

This article argues that deviant behavior is a human activity or behavior that does not conform to the established norms of society, is a social phenomenon, and that endangering human life can lead to bad consequences. To protect our children from such deviant behavior is to give them a psychologically and pedagogically correct upbringing.

**KEYWORDS:** *behavior, alcohol, morals, drugs, personality, society, deviation, lying, laziness, theft, alcoholism, suicide, child, upbringing, will, perception, ability, qualification, rehabilitation, psychologist, pedagogue.*

“...Happiness is not determined only by wealth and possessions.

A polite, knowledgeable and intelligent hard-working child is the greatest wealth not only of parents, but of the whole society.”

The first President I.A.Karimov

“High spirituality is an invincible force”

Socialization of a person is an artificial character profession, which as a person can form only between other people. If he is still in human relations, he cannot get rid of evil or animal nature in himself. A person will need a lot to grow to full maturity and become a mature personality. Man reaches maturity only when he is formed in society. Deviant behavior is considered to be the concept of deviations in the upbringing of people.

The concept of Deviant behavior (deviant behavior). The study of the problem of Deviant behavior is one of the indirect problems in the family of society. Psychologically analyzing it, it turns out that working with such people requires a great effort for a while to start them on the right path of life, to get them out of this path. To Deviant types of behavior, we can include the following: violation of the law, self-murder, drug addiction, alcoholism, etc. It is natural that these cases occur even between representatives of the two sexes. The problem facing society and the state is that the number of deviated individuals is reduced and eliminated.

Deviant behavior is a human activity or behavior, a social phenomenon that does not comply with the norms of morality established in society, and many other similar cases of deception, laziness, theft, drunkenness, drug addiction, suicide and many others are the characteristics of this behavior. Such behavior is considered to be psychologically incapable people who do not want to understand how much harm they cause to society. Institutions that control the existence of members of society in accordance with these social norms are called social control institutions. These

institutions include Family, School, neighborhood, law enforcement, etc. It is the core of the family within the institutions. The more important the upbringing in the family plays, the more sharply the number of people with deviated behavior in society decreases if the children are out of control. The upbringing of children is full of how perfect synonymy, humanly treated relationships are summarized in this word. This is perceived by every parent from a pedagogical and psychological point of view, this issue is becoming an incredibly relevant and extremely sensitive topic.

In the perfection of perfect children, parenting, teacher education, family environment and community environment directly affect the upbringing of children psychologically. Already now the so-called “mass culture” is an inhuman concept, the principle worldviews are showing their impact on the minds of young people in psychological terms by the minute. Protection of the minds of our youth from unwanted teachings, as well as enrichment of the gap in the consciousness of the connection with proper education and education is an important and responsible task of parents and educators. The misfortune of people – in his immorality.

The moral and moral factor of Deviant behavior is expressed in the low level of moral and moral character in the family and the surrounding environment of the child, in his lack of spirituality, in the oven on the utensils and in the alienation of the individual. The role of a healthy family environment in the upbringing of children and the formation of a harmonious generation is great. The child lives in a family environment from the date of birth. Family-specific traditions, values, traditions form a child's moth. Most importantly, children perceive, feel the demands of society through the school of family life.

Prevention of deviation from the norm and preservation of children are the most important tasks of parents. The reasons for deviation from the norm in children are the bad habits of parents, the situation in the family plays a decisive role. Due to the characteristics of children in classrooms in schools, parents should remember that it is necessary to adhere to hygienic standards in school and in the family. If no one in the family is interested in the school life of the child or is interested in the name, then his interest in the school is neutralized, then a negative attitude towards education is formed. In children, the deviation from the norm develops gradually.

The main reasons for this period are unacceptable cases in the family. In such families, the psychology and pedagogy of maturing children has a direct and indirect impact. One of the types of Deviant behavior can be attributed to drunkenness. With children of this category, a social



educator, a psychologist performs the following tasks in his activities. The first task of the activity of a social psychologist is to establish a diagnosis, aimed at preventing the child's addiction to alcohol. This task is carried out by collecting information about the child who has a tendency to consume alcohol, studying its real personal characteristics, collecting information about the family of the child, studying the sources that negatively affect the child, identifying the leaders of alcohol addiction, studying the negative sides that motivates the child to alcohol, studying the effects of micro place on the child. Its essence is that on the basis of the diagnosis made, a clear social pedagogical-psychological program of working with a child who has a tendency to drink is developed.

This program is carried out step by step, bringing out social adoration, correction or rehabilitation. Through rehabilitation, he laid the foundation for the adaptation of the child to a healthy lifestyle. With him begins to carry out prophylactic work. Instead, most of all, education stands at the core of the first. It implies the formation in the child the qualities that must be formed during his social pedagogical rehabilitation, the pedagogical influence on the behavior and activities of children and adults, the filling of gaps in the upbringing of the child, the formation of the skills and skills necessary to overcome the problem of drunkenness. Another task of the psychologist is legal protection. Its essence is to protect it even from the legal point of view through the activities of psychology. One of its subsequent tasks, a predisposition to drunkenness, requires the participation of various specialists in psychological activities with the child, creates conditions for meaningful leisure time, organizes socially useful activities for children, adults. In the process of carrying out socio-pedagogical activity in this, relations are established between many of its participants. As for the prophylactic, expressing confidence in him, promotion strengthens the achieved positive results and eliminates the appearance of signs of alcoholism. In social pedagogical activity, the focus of children's lives against alcohol abuse is carried out depending on the age characteristics of their educators.

Preschool and junior school age. Parents show the decisive effect in the formation of habits in a child from one year to seven years. Therefore, at this age it is important for a social educator to work with the family, which is based on the following principles:

1. Formation of a culture of relations between family members. Only in conditions of harmonious family relations can moral anti-alcohol habits arise. For the appearance of these habits in children of preschool age, it is necessary to formulate optimal behavior in parents.
2. Formation of a healthy environment of vital activity of the child. Social pedagogical activity should be aimed at the formation of healthy social-psychological pathways in parents, the promotion of the idea of the personal responsibility of parents for the consumption of alcohol by children. The fight against drunkenness with parents should be carried out according to the age of the child. However, the result of this activity is necessary to include parents in the education of children against constipation.

Knowledge of parenting education against alcohol abuse promotion them includes the following issues:

1. On the moral, religious and legal responsibility of the child for the harm of alcohol to the human body, the incomplete formation of the child, the bad consequences of the consumption of alcohol by children, the teaching of minors to drink alcohol.
2. Acquaintance with the peculiarities of the junior school age (anatomic, morphological, psychophysiological). To describe the first stage of education in the school as the most crisis stage in the life of the child, the difficulty of adapting to the initial stage, the beginning of active socialization of the young person, information on the social and psychological conditions of the educational environment.
3. Achieving normative behavior of parents for the formation of a healthy lifestyle in children from a small school age. This is a review of the family's drinking traditions, taking into account The Imitation behavior inherent in the small school age, paying attention to the achievements of the child in the school, helping children to spend their free time, making him out of unpleasant family-household conflicts. It is also necessary that the psychologist, in cooperation with the parents, develop a plan for the conduct of leisure and holidays without alcohol. The main methods of activity are family prophylactics, which are conducted in the form of conversation, advice, training. The social educator should give a moral description of the actions of parents. Family prophylactics should not be based on laziness, threats. It should be aimed at correcting the child's relations with peers, attracting them to positive activities, restoring their status in the family. The adolescence period (11 -14 years) is psychologically a crisis and the most turbulent period. This period is one of the most difficult periods of human activity. This process ends with the onset of sexual maturity. In contrast to the small school age when the child adheres to the instructions of adults, which are authoritative for him, the teenager tries to adhere to the principles of his behavior, his own views, the need for independence arises, adult exhortations are criticized, a negative attitude towards them is formed.

Exactly in adolescence, the first stage of alcohol addiction can begin. Because it manifests itself in the conditions of adolescent groups, and therefore has a description of "collective drunkenness". A child at this age tries to grow up or look like an adult. This can be manifested both in a positive and negative sense. The tendency to puberty, if not based on moral and social values, is manifested in the social negative sense: smoking , alcohol consumption, sexual irresponsibility, delinquency. In adolescence, adults from the age of 11 years are not able to influence the child as before. For the child, communication with peers begins to be of great importance. The lower the social status of a teenager, the less its influence on the group. Therefore, boys of this age-girls should be treated psychologically without interpretation-compromise.

Our children our future as parents, educators to their upbringing we all agree. Parents should be able to properly educate our children with all our strength and enthusiasm in bringing them to an adult level by adopting them from alien ideas and serving for the prosperity of our motherland.

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# Technological Features of Manufacturing APV Films

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## ABSTRACT

In this work, we describe a technique for obtaining APV films from binary semiconductor compounds CdSe, CdTe, CdTe: Cd by thermal evaporation in a vacuum.

**KEYWORDS:** Films of anomalous high photovoltage (APV), semiconducting compound CdSe, CdTe, CdTe: Cd, binary semiconducting compound

## INTRODUCTION

Knowledge of the characteristic microparameters of APV films allows us to clarify ideas about the nature of the generation of photovoltage in micro-photocells, and by them, in particular, the APV film is evaluated as a device and its scope is determined. Usually, when determining the characteristic microparameters to find the mobility, they resort to the photo hall effect, the interpretation of the results of which in film samples is associated with great difficulties. It was shown in [1-2] that, without referring to photo-Hall measurements, using the spectral dependences of APVN and APV effects, it is possible to determine characteristic microparameters, such as carrier mobility, diffusion length, number of micro-photoelements, and surface recombination rate.

APV-films (abnormal photovoltage) [2-3] are a functional converter that transforms the luminous flux of intensity  $F_0$  into anomalously high photovoltage VAPV. According to the adopted model [4], this transformation consists of three stages.

First, the creation of a photocurrent  $I_F$ , due to photo generation and spatial separation of nonequilibrium carriers at each micro p-n junction. Secondly, the emergence of elementary stresses at micro p-n-junctions as a result of the accumulation of space charges created by the photocurrent. Third, the formation of an anomalously high photovoltage by summing the elementary photovoltage at p-n junctions.

## Materials and Methods

In this article, we propose methods for creating optically controlled microcircuits based on a thin-layer AFN film.

The physical mechanism responsible for the appearance of the APV effect in semiconductor films with a periodic p-n-structure is known to be associated with incomplete compensation of photovoltage in p-n and n-p junctions due to a special technology of oblique deposition of films on a substrate. This small uncompensated photovoltage in the p-n-p cell ( $V_H < kT/q$ ) arises either due to asymmetric illumination or due to the asymmetry of the dark saturation currents of p-n and np junctions. Both of the above factors can participate in the formation of the AFN effect.

The practical aspects of the effect are determined by the efficiency of APN films, which are closely related to the photosensitivity of transitions, the value of which depends

on the absorption coefficient, the wavelength of the incident light, film thickness, the diffusion length of carriers, rates of surface recombination at illuminated and unlit faces, surface recombination of carriers, and the depth of light penetration. Coefficients that depend on the photosensitivity of the  $a_1$  and  $a_2$  transitions are included in the expressions for the transition photocurrents, i.e.  $j_{F1} = a_1 I_0$  or  $j_{F2} = a_2 I_0$ ;  $j_{F1}$  - p-n-junction photocurrent,

$j_{F2}$  - photocurrent of n-p-junction,

$I$  - illumination.

In this case, the most important tasks are the development of scientific methods for obtaining APN films (from various materials) with specified properties and methods of effective control over their properties under various conditions.

A wide class of semiconductor substances, in the films of which the APV effect was detected, confirms the possibility of obtaining APV films from any semiconductor [3-4].

To obtain APV films from CdTe and  $Sb_2Se_3$  compounds, we used the method of thermal evaporation in a vacuum. The vacuum unit is assembled based on a mechanical fore-line pump of the RVN-4 type and a steam-oil diffusion pump of the N-01 type, which provides a pressure of about  $10^{-4}$  mm Hg. Art. Crucibles made of aluminum oxide or beryllium were used as evaporators [5-6].

The evaporation temperature of the semiconductor was achieved by controlling the current. The substrates were heated using an oven, the design of which makes it possible to change the substrate temperature up to  $600^\circ C$ . The temperature on the substrate and the evaporator was controlled by chrome-alumini thermocouples attached directly to them. Glass and quartz with metal contacts were used as substrates.

The technological mode of obtaining APV films and the choice of a material depend on a large number of factors and parameters, such as the temperature of the evaporator and the substrate, the deposition angle, the film thickness, the composition and pressure of residual gases in the vacuum chamber, and the conditions for the heat treatment of the films after deposition. In this case, each semiconductor material corresponds to its optimal mode, and often small deviations from it, even in one of the parameters, lead to the disappearance of the APV effect in the films being produced [7-8]. Therefore, the development of a technology for obtaining APV films from a particular material requires a large experimental research work, a large (number) number of test sprays with a sequential variation of several technological parameters, their combinations, and finding parameters specific for obtaining the APV effect on films from a given(selected) semiconductor material.

When studying the APV effect in films of elementary semiconductors (Si, Ge, and Se) and binary semiconductor compounds, it was found that films made of binary compounds have relatively positive degradation characteristics. For example, in CdTe and Sb<sub>2</sub>Se<sub>3</sub> APV films, the aging rate occurs at a low rate.

Therefore, the choice of a suitable material and the development of a technology for the production of APV films

from these materials makes it possible to obtain high-quality APV films with stable parameters for optoelectronic devices based on the APV effect.

Physical methods for studying the composition of materials play the most important role in the study of the production technology of APV films.

**Table 1**

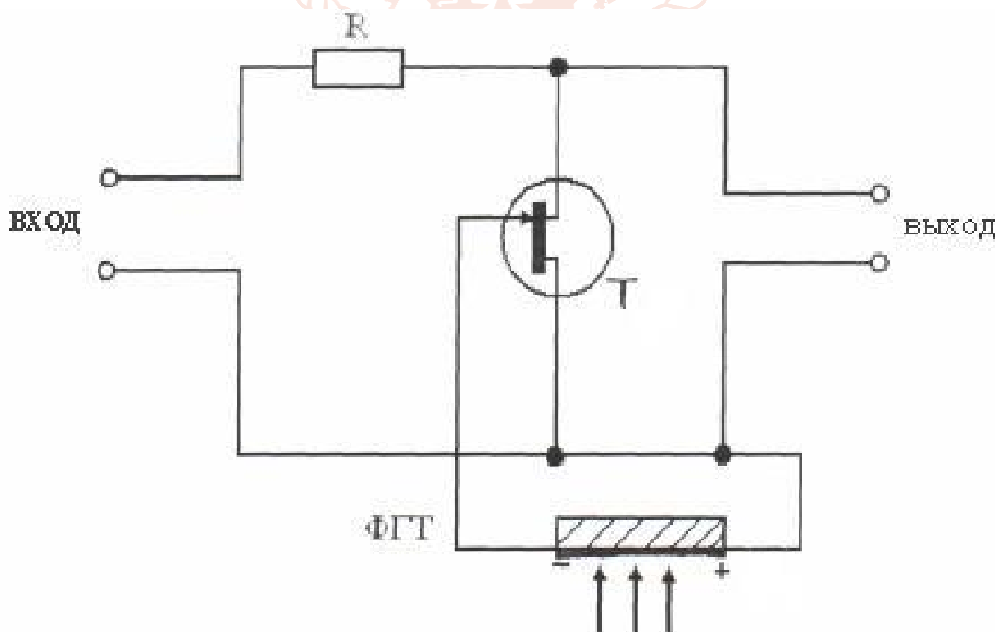
Sample number	Substrate temperature	Evaporation rate, mg / min	Sample resistance, Ohm
K31	100	3	10 <sup>5</sup>
K51	150	3	10 <sup>5</sup>
K53	150	0,5	5×10 <sup>5</sup>
K45	200	5	10 <sup>5</sup>
K47	200	3	10 <sup>6</sup>
K67	250	1	5×10 <sup>6</sup>
K65	250	5	10 <sup>6</sup>
K72	300	0,5	10 <sup>7</sup>
K75	300	6	10 <sup>6</sup>
K81	350	5	10 <sup>6</sup>
K93	400	3	10 <sup>7</sup>

Table 1 lists some features and parameters of the evaporation process, as well as recommended evaporators for materials that can be used in APV films of CdTe and Sb<sub>2</sub>Se<sub>3</sub>, comprehensive tests of APV films of CdTe and Sb<sub>2</sub>Se<sub>3</sub> were not carried out, however, taking into account that for a period equal to After several weeks, their abnormal high-voltage open-circuit photovoltage and short-circuit current have decreased slightly, it can be assumed that these APV films are relatively stable.

## Results

After analyzing the graphs of the temperature dependences, we can assume that the APV effect in films of the cadmium telluride type is associated with the summation of the voltages of p - n junctions formed at the interface between the hexagonal (0001) and cubic (111) phases. It should be noted that the APV effect in CdTe: Ag films and other complex semiconductor compounds are also associated with the p-n transition mechanism [9-10].

The resistivity of the films, calculated from the measured value of  $\rho$  and the geometry of the films, is several orders of magnitude higher than the resistivity of the starting material. This indicates the presence of high-resistance interlayers in APV films. For the Dember mechanism of the APV effect, the role of such interlayers is fundamentally important, since they prevent the exchange of current carriers between neighboring photo-active microelements. In films with the p-n transition mechanism of the APV effect, the role of such interlayers is not fundamental. Thus, the film is a battery consisting of  $N$  active sections separated by interlayers.



**Figure 1** Optically controlled microcircuits: T-MOS transistor, FGT-photodetector of generator type with a thin-layer APV-film.

Microelectronics is currently facing the problem of creating microcircuits operating in the nanowatt power range (about 10<sup>-9</sup> W). Thus, it is quite clear that the creation of such microcircuits requires a radical revision of many traditional methods and provisions.



## Discussion and Conclusions

A striking example of this is the introduction of APV films together with MOS transistors in the technology of manufacturing microcircuits in semiconductor instrument making. In such microcircuits, power consumption is reduced, efficiency is increased, and minimal heating of the MOS transistor is ensured, which leads to low gate leakage currents and high input resistance. Microcircuits of this type have a very high gain. They can have low noise and good frequency response. High voltage gain can be obtained if the gate voltage of the MOSFET is selected close to the cutoff voltage. With the help of APV films, microcircuits on MOS transistors become optically controlled. Opto-controlled microcircuits are non-volatile (Fig. 1). In conditions of solar radiation, an external voltage source is not needed to power such microcircuits. Such microcircuits are of particular value for microelectronics since they provide the ability to create complex integrated circuits and blocks from homogeneous components manufactured using a single technology.

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## Youth Media Culture Problems and Solutions

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### ABSTRACT

This article discusses the role of intellectual youth in society, the relevance of media culture, the problems and solutions in the field.

**KEYWORDS:** *Intelligence, youth, media culture, internet, communication, information technology*

The coronavirus pandemic has changed people's lives in many areas. It is no secret that even the conservative education system has been forced to adapt quickly to new conditions and to follow different procedures.

According to Uzanalytics.com, international organizations, including UNESCO, the Organization for Economic Cooperation and Development (OECD), and the World Bank are investigating the pandemic's readiness of secondary, special secondary and higher education for force majeure, they say. This is due to the fact that all educational institutions around the world have changed to a new format and have to use the experience of distance learning on a mass scale. That, in turn, has caused a number of problems. Firstly, there is a lack of digital literacy among teachers and students to use Internet technologies, secondly, low internet speeds, thirdly, low internet access in some countries or almost non-existent for the majority of the population, and fourth, most lack of technical means (computers, laptops, gadgets) for distance reading in majority of students. Clearly, this situation has had a negative impact on the quality of education. Technical failures and other factors led to disruptions in the learning process. In addition, many secondary, tertiary, and higher education institutions offer online classes. We have seen in online classes that many young people lack media culture. This method requires the timely development of recommendations without delay for scientists to study and analyze these situations, to anticipate their negative aspects and problems, as well as their positive aspects in human activities, as well as their complications over time.

Republican Academy of Sciences, Ministry of Public Education, Ministry of Higher and Secondary Special Education, Ministry of Culture and Sports, Youth Union, Ministries and agencies dealing with spirituality and enlightenment, national ideology Coordinated necessary to carry work on the introduction of media culture skills among young people, with a deep sense of the importance of today's media culture, the experience of conducting systematic and effective activities in this regard on a regular and ongoing basis.

With the above considerations in mind, the media education of the younger generation has identified the need to set a number of tasks to enhance media culture and implement them in a systematic manner. Because the future of our country depends on the morals of young people. As the poet Ahmad Shawqi said, "The morality of nations becomes a

nation, and when morality disappears, so does a nation". Our nation has a long history. During these periods, many thinkers, scientists, scholars, religious leaders have emerged. They have been recognized by scientists and thinkers around the world and have made a worthy contribution to world civilization. One of the biggest problems we face today is the lack of intellectual potential and thinking of young people, which has a negative impact on their use of the Internet. In this regard, without being spectators we need to arouse their interest in science, enlightenment and make effective use of the Internet. We can point to foreign media education as a factor.

The Chinese National Internet Domain has promised a reward for anyone, who identifies immoral photos without any hesitation. In the United States, funds have been allocated to provide content filters to protect schools from such sites. The Australian Ministry of Education has funded a € 1.3 million dollar for banning immoral sites among all schools and universities. In Israel, a special ultrasound device has been developed. It can be used to determine the age of a user. If he is young, he will not be automatically included in obscene sites. In the United Arab Emirates, access to the global network is provided through the only Internet provider in the country - Etisalat. In Saudi Arabia, a complex method called "Internet national" has been developed, which filters the addresses of users and messages sent. The implication is that we, as adults, need to protect and guide future generations who are going through their childhood and entering a new life.[1]

The inscription on the tomb of one of the pharaohs who lived 3,500 years ago: The fact that "Our young people are stubborn and stubborn, they do not pay attention to what the old say, they deny the values of their ancestors" confirms that the education of young people has been one of the key issues at all stages of human development. Another example is the great philosopher of antiquity, Socrates, who once said, "Where are these young people going?"

Ibrat, the son of Ishakhon Junaydullakhankhoja, one of the most serious representatives of his time, wrote in his articles about the extravagance of weddings, extravagance, and the fact that young people are more interested in running than in education expresses his views. It shows that the power to protect people from all kinds of evils is knowledge. He writes: "A man without knowledge is a wall without a foundation. An unfounded wall is very insignificant. Learn science - the morality of teaching is fun, the science of the times is necessary". [2] With these thoughts, Ibrat encourages modern youth to be fully aware of the secular knowledge of their time.

The Jadids focused on the moral and spiritual upbringing of the people and called on them to avoid various foreign cultures and morals. A. Cholpon's thoughts in this area are very instructive: "... O relatives! Our great request is that we should not imitate and imitate European fashion, glass, and

immorality, but imitate the cultures of science, science, craft, and industry. Europe's fashion and immorality make you homeless, homeless, and captive. Avoid it !!! European cultures, such as schools, madrassas, science, industry, and professions, make you prosperous, administrative, scholarly, and free you from the bondage of ignorance. Brethren, open your eyes and think!" [3] The issue of upbringing has been relevant in every age. It has not lost its relevance today.

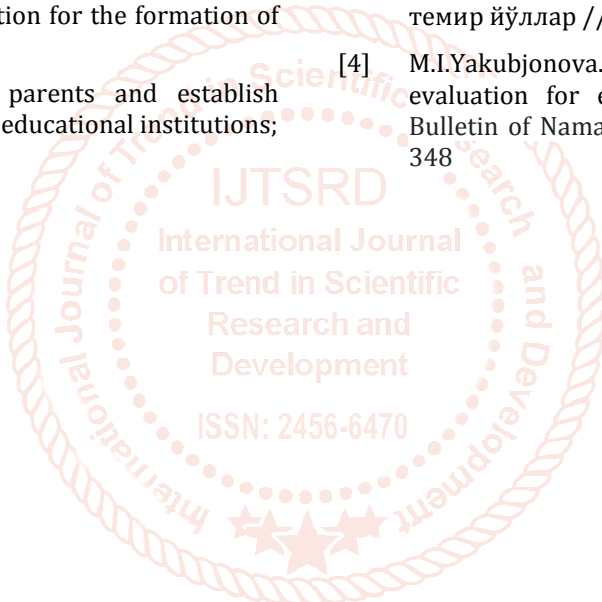
In conclusion, we can say that in recent years, the scale of priorities of state youth policy in our country is growing. Especially important are the principles of education of intellectual youth, initiative, scientific potential, increasing their creativity and social activity. The work that needs to be done to educate young people in the spirit of peace, tolerance, humane, interethnic dialogue and increase their social activism in society will never lose its relevance.[4] Emphasizing that the most important task is to work effectively for the bright future of young people, the education of intellectual youth, the following recommendations and comments can be made on the full implementation of the need for qualified young people:

- Encourage young people to learn relevant, important, necessary and useful information for the formation of media culture among them;
- Increase media literacy of parents and establish cooperation with families and educational institutions;

- Educational work, analysis of debates, debates, problems and contradictions, pedagogical and psychological prevention;
- Organization of educational work at all stages of the system of continuing education to ensure the effective movement of minors to the media environment, the acquisition of skills and competencies;
- Dissemination of foreign and domestic experience in the effective organization of media education;
- Creating the necessary pedagogical conditions for the organization of media education in educational institutions.

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## Mechanisms for Financing Investment Projects through Commercial Bank Loans

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### ABSTRACT

The article analyzes the role of commercial banks in financing investment projects. The experience of developed foreign countries in financing investment projects is studied. The activities of commercial banks for lending to investment projects were studied and suggestions were made for their improvement.

**KEYWORDS:** *investment project, lending practice, GDP, employment, loan portfolio*

### INTRODUCTION

At present it is impossible to imagine the socio-economic life without the activity of commercial banks without their financial support. This is due to the fact that commercial banks play a leading role in financing investment projects in the country by providing loans to investment project participants and customers thereby contributing to the overall macroeconomic stability in society.

In the context of modernization of the country's economy the importance of financing investment projects by commercial banks is growing from year to year. With the help of loans from commercial banks important sectors of the economy are being financed new investment projects are being built additional jobs are being created for the population and new products are being developed.

Regarding the role of commercial banks in financing investment projects Sh. Mirziyoyev noted that "The bank should develop measures to attract external sources of financing for investment activities along with their own funds". The topicality of this topic is reflected in the fact that the wide implementation of investment projects in the country and its comprehensive support taking into account the issues of financing investment projects at all stages of economic development.

It is gratifying that over the past 10 years the volume of lending by commercial banks has increased 35 times in the development of the economy of Uzbekistan. However, as we know the process of development and progress is fiercely competitive and the problems are improving in acocida. When banks finance investment projects they are assessed as low liquidity. This creates problems in allocating bank loans to these enterprises. An in-depth scientific and

methodological study of ways to solve these problems and management methods is an important task.

### Literature review

Many foreign and local economists have been working on the effectiveness of investment projects and their evaluation. From foreign economists who have conducted research on this issue:

Professor F. Mike and Professor V. Rong (2006) suggested that external financial constraints should be imposed on the effective use of investment projects and that domestic investment projects should be encouraged on this basis. At the same time scientists conclude that as the cost of external financing increases the value of cash will increase significantly [2].

Professor H. Wang, P. Liang, H. Li and R. Yang (2016) studied the relationship between investment projects focused on technological developments and their sources of funding, as well as sources of funding for research investment risk [3].

In addition, the well-known Russian economic Professor T. Mazurina (2013) justified the existence of the following conditions for the development of lending for investment projects at the expense of loans from commercial banks:

- existence of effective state investment and industrial policy (with indication of clear directions of placement of financial resources);
- development of investment infrastructure, which is the main direction of risk reduction associated with the implementation of investment projects;
- increase the investment attractiveness of enterprises [4].

According to Professor I. Yudina (2013) a necessary condition for the development of investment lending practices of commercial banks in developing countries is the diversification of risks [5].

Professor N. Karimov one of the Uzbek scientists studied the problem of increasing the investment lending capacity of commercial banks as the main problem in improving the mechanism of financing investment projects through commercial banks. This scientist cited factors such as improving the efficiency of risk management of investment activities in commercial banks, improving the feasibility of



business plans submitted by customers to commercial banks for investment projects [6].

Today the credit policy of the country's commercial banks has a number of shortcomings. Therefore, the main purpose of this article is to identify the existing problems in the practice of lending to investment projects of commercial banks to study the priorities of lending practices of foreign banks on the basis of practical analysis to present their best practices in the lending practice of commercial banks in Uzbekistan.

### Research Methodology

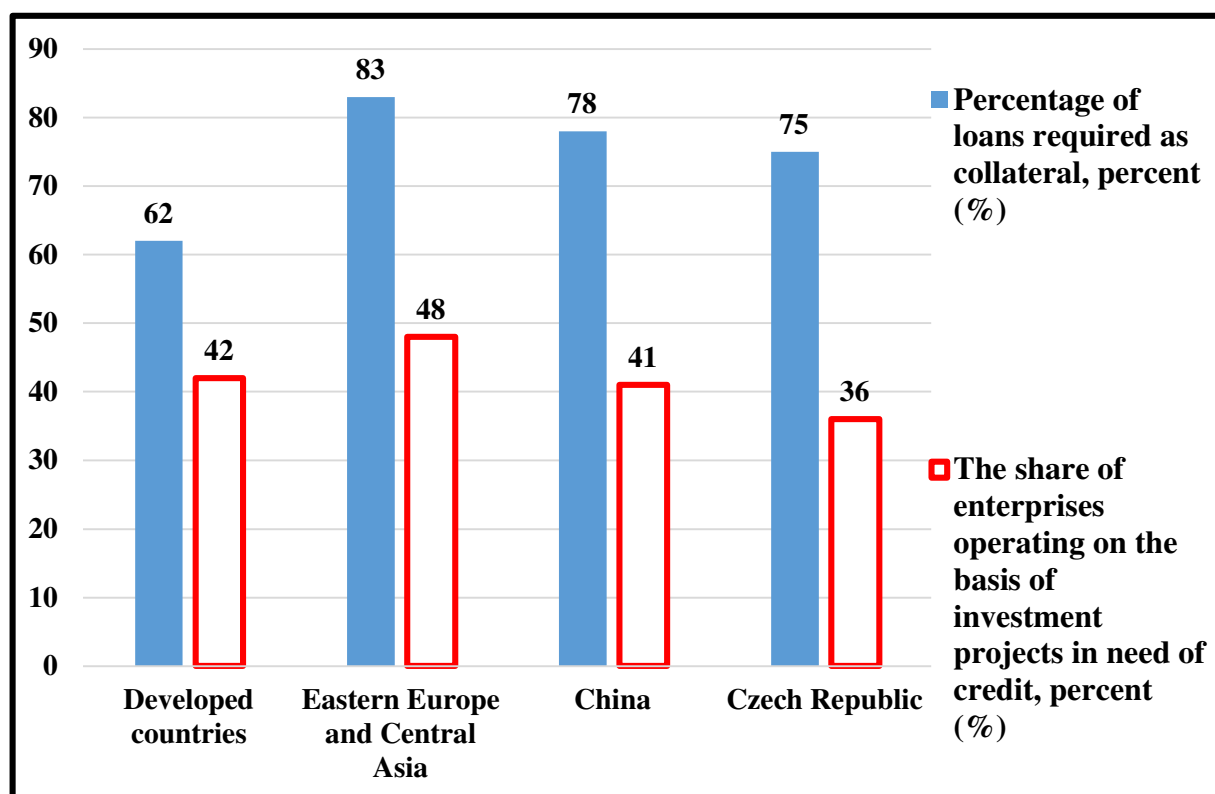
The research used a dialectical and systematic approach to determining the role development specific features of enterprises operating with innovative projects in the country complex assessment and comparative analysis statistical and dynamic approaches grouping methods. Econometric analysis was performed to determine the volume of loans that have a positive impact on the country's economy as well as the impact of innovative projects in particular loans to the real sector on GDP. The practical significance of this work is

that in order to ensure national growth in the country the quantitative growth of the country's GDP by 2025 will reach 350 trillion soums. Assuming that the total amount of loans required from banks to achieve this result is 25.543 trillion soums.

One of the factors of sustainable development of the economy is the financing of innovative projects. In this process the increase in employment and a comparative analysis of these indicators will be determined by the development of appropriate recommendations on this basis.

### Analysis and results

According to the World Bank the demand for bank loans by enterprises operating on investment projects is much higher in developing countries. While an average of 40 % of enterprises in developed countries need credit. Eastern Europe and Central Asia have a range of 45 % to 60 %. At the same time the demand for collateral in the lending process is above 60 % on average in developed countries and above 80 % in Eastern Europe and Central Asia (Figure 1).



**Figure 1. Demand for bank loans at the level of enterprises operating on the basis of investment projects in the world, percent (%) [7]**

Based on the experience of the above countries lending for investment projects should be aimed at solving specific socio-economic problems, such as improving the living standards of the population employment, increasing their economic activity. The use of the experience of investment lending tested in world practice in the context of the formation of the market in this area in the Republic of Uzbekistan, serves as an important theoretical and practical source.

A study of the financing of investment projects in the Russian Federation, which is one of the most developed countries revealed that there is a large imbalance in the supply and demand for investment project loans in the country. In 2013 Russia spent 30 billion US dollars. Loans have been allocated for investment projects in the amount of 50 billion US dollars, but the demand is 50 billion US dollars. According to the data 60 % of the allocated loans fall to banks and 40 % to credit institutions. The average amount of loans for investment projects in Russia is 45-50 thousand US Dollars. The average term is 5-6 years and the average interest rate is 4-5 %. The process of lending to investment projects in Russia the amount of these loans is 10 thousand U.S. dollars. It should be noted that the term is 30-35 years and the interest rate is 3-15%. In the Russian Federation as in all countries soft loans are provided for investment projects and in most cases they are engaged in agricultural and industrial production. When it comes to the effectiveness of loans the risk portfolio of many credit institutions in Russia is in line with international standards. Overdue indebtedness of every second credit institution did not exceed 2,7 %. In addition credit institutions operate with very good profitability averaging 127 % [8].

**Table 1 Quantity and share of credit investments of GDP and commercial banks in Uzbekistan [9]**

Indicators	2014	2015	2016	2017	2018	2019
<b>Gross domestic product</b> (trln.so'm)	177,1	210,1	242,4	302,5	406,6	511,8
<b>Credit investments</b> (trln.so'm)	34,5	42,7	53,4	110,6	167,4	211,5
<b>Change</b> (percent)	19,5	20,3	22,0	36,6	41,2	41,3

If we analyze the state of economic development in Uzbekistan: In 2019 the gross domestic product of Uzbekistan will reach 511,8 trillion soums and increased by 25,8 % compared to 2018. In 2014-2019, the country's GDP and the volume of loans from commercial banks had an upward trend. The volume of loans to the real sector of the economy in 2019 increased by 26,3 % compared to the previous year and as of January 1, 2020 amounted to 211,5 trillion soums. The relative level of loans to GDP amounted to 41,3 %. From this we can be concluded that the country's creative work is really widespread the demand for money is growing and this indicates that the level of credit supply is increasing. However, the fact that the relative level of loans to GDP increased by only 0,1 % compared to the previous year we can say that it has not increased shows that the loans allocated to the real sector in this country are insufficient (Table 2).

In order to study the investment potential of the banking sector today and study the opportunities for banks to finance investment projects the activities of the country's leading commercial banks "Agrobank" and "Ravnaq-Bank" were analyzed.

Analyzing the indicators in Table 2: The trend of changing the financial performance of Agrobank has been growing steadily over the years. According to Ravnaq-Bank the bank's total assets loan portfolio and investments have shown good growth rates since 2016. However, the investment performance of the two banks is very low compared to other indicators and even in Ravnaq-Bank we can see that this figure has decreased in the last year. From this, we can see that the bulk of the bank's revenue is accounted for by bank loans and that the investments provide almost nothing for the bank's revenue portion. This situation deprives the bank of investment activity income, which is a significant source of income for banks in the world practice.

**Table 2 Balance indicators of "Agrobank" and "Ravnaq-bank", billion soums [10]**

№	Name	2015		2016		2017		2018		2019	
		Agrobank	Ravnaq-bank	Agrobank	Ravnaq-bank	Agrobank	Ravnaq-bank	Agrobank	Ravnaq-bank	Agrobank	Ravnaq-bank
1	Investments	71,6	0,040	72,5	0,040	186,9	0,5	168,7	3,3	130,0	3,0
2	Credits	223,1	43,9	317,6	100,1	476,9	162,1	1108,2	315,6	4462,2	397,2
3	Total assets	2899,0	93,7	3192,5	239,1	3949,4	340,4	4981,5	438,8	10363,0	608,6
4	Charter capital	263,5	15,7	317,6	20,0	367,6	22,8	1335,6	100	2163,0	100

The above situation in turn has a negative impact on the bank's profitability. Therefore, today there are the following problems in expanding the participation of commercial banks as investors in public investment programs:

- the growth rate of bank capital lags behind the development needs of the bank and the needs of bank financing of the real sector of the economy;
- significant growth of net profit reduces the efficiency of attracting additional resources at the expense of interest;
- commercial banks sell their shares at a very low rate to expand the base of long-term credit and investment resources;
- the bank's issuance and investment policies are not interrelated, increase in the bank's equity does not lead to an increase in the bank's equity in other joint-stock companies;

As a result, investment activity in the bank has become an insignificant secondary activity sector.

### Conclusion/Recommendations

The following generalized proposals and recommendations for financing and improving investment projects through bank loans have been developed:

- Investment projects – According to the principle of repayment of lending practice the organization of loan repayment in several stages depending on the type of

loan for each loan, the payback period of the project, the sector of the economy in which the loan is issued and provide credit tracking and consulting services;

- Modernization of key industries in the country to increase the volume of bank's own assets, in particular, to expand the use of project financing in the financing of investment projects by banks;
- Improving the investment policy of commercial banks including, increase the share of investment assets in the asset structure, optimization of investment portfolio structure, we believe that it is necessary to increase the level of diversification of bank assets through the sale of non-profit assets and strengthen the organizational structure of investment departments.

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# The Republic of Uzbekistan's Role of Acceleration and Diversification of its Exchange and Exchange Policy

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## ABSTRACT

This article provides information on the measures taken by the Republic of Uzbekistan to accelerate the liberalization of its foreign exchange policy. There are ways of using foreign currency, which can be allocated from foreign currency, which is part of the gold and foreign exchange reserves of the Republic of Uzbekistan, or borrowed from sources of funds of international financial organizations such as the International Monetary Fund. Thus, the role and main indicators of economic diversification are interpreted in context.

**KEYWORDS:** *economy, currency, gold-currency, credit, account, liberalization, diversification, monetary policy, acceleration, debt, investment*

In the context of developing innovative economy, the issues of liberalization of monetary policy and diversification of the economy on the basis of the digital economy are invaluable in all areas. Accelerated development of liberalization of foreign exchange policy On the initiative of the President of the Republic of Uzbekistan Shavkat Mirziyoyev, a new stage of development and reforms has begun in our country. Also, based on the principle that "political independence cannot be achieved without economic independence", we believe that in the future it is necessary to focus on the following strategic directions of socio-economic development of our country.

**First of all**, it is of great importance to further strengthen macroeconomic stability and maintain the achieved economic growth rates, ensure the stability of our national currency, prices in the domestic market.

**Secondly**, the decisive factor is to further increase the competitiveness of our economy in the world market, modernize and diversify its industries and sectors, expand export potential, increase investment activity.<sup>1</sup>

As noted in the Address of the President of the Republic of Uzbekistan Sh. Mirziyoyev on December 28, 2018, including the most important priorities for 2019, joint investments with the World Bank, European Bank for Reconstruction and Development, Islamic and Asian Development Banks and other international financial institutions volume was \$ 8.5 billion.<sup>2</sup>

When the tasks outlined in the Address of the President of the Republic of Uzbekistan Sh. Mirziyoyev to the Oliy Majlis on January 24, 2020 are analyzed, compared to 2019, that is, along with the positive results in all areas, the volume of investments has increased significantly. In particular, foreign

direct investment amounted to \$ 4.2 billion, compared to 2018 - I would like to draw your attention to this figure - increased by \$ 3.1 billion or 3.7 times.

The share of investment in GDP reached 37%. For the first time, our country received an international credit rating and successfully placed \$ 1 billion in bonds on world financial markets.<sup>3</sup>

It is important to pay special attention to the following priorities identified in the state program "Strategy of Action" for 2017-2021, developed in our country.

Further modernization and diversification of the industry through the transition of high-tech processing industries, primarily to a qualitatively new level, aimed at the rapid development of production of high value-added finished products based on deep processing of local raw materials.<sup>4</sup>

In the early 1980s, the independence of a number of Arab states and the "oil boom" accelerated the process of modernization and established a free currency policy. This, in turn, has led to an increase in attention to the Arab states in the world economy and international relations. Publications of that period included the works of Russian orientalists S.A Kaminsky on the constitutional foundations of the Arab states, AG Georgieva and VV Ozoling on the economic, social and legal-state development of the oil-producing Arab countries. These were written by M.G Zakaria, A.I Yakovlev, V.V Mashin, A.M Vasilev, L.I Medvedko and others.<sup>5</sup>

In accordance with the Action Strategy for the five priority areas of development of the Republic of Uzbekistan for 2017-2021, the following is aimed at: introduction of market mechanisms of currency regulation, stimulation of export potential of the republic, active attraction of foreign direct investment, increase the competitiveness of domestic producers in foreign and domestic markets.

<sup>3</sup> Address of the President of the Republic of Uzbekistan Sh.M.Mirziyoyev to the Oliy Majlis. 24.01.2020.

<sup>4</sup> Decree of the President of the Republic of Uzbekistan dated February 7, 2017 No PF-4947 "On the Action Strategy for further development of the Republic of Uzbekistan." Issue 28 (6722) of the newspaper "People's Word" dated February 8, 2017.

<sup>5</sup> Kaminskiy S.A. Institute of the monarchy in the Arab East. - M.: Vostochnaya literatura, 1981; Georgiev A.G., Ozoling V.V. Neftnyye monarhiya Aravii. - M.: Izdatelstvo MGIMO, 1983. - 224 p.; Zakaria M.G., Yakovlev A.I. Neftnyye monarhiya Aravii na poroge XXI veka. - M.: Nauka, 1998. - 119 p.; Machine V.V., Yakovlev A.I. Persidskiy zaliv v planax i politike Zapada. - M.: Nauka, 1985; Vasilev A.M. Fakely Persidskogo zaliva. - M.: Politizdat, 1976. - 173 p.; Vasilev A.M. Persidskiy zaliv v epitsentre buri. - M.: Nauka, 1983. - 288 p.; Medvedko L.I. To the east and west of Suetsa. - M.: MGU Publishing House, 1981; Noveyshaya istoriya arabskix stran Azii (otv.red. V.V.Naumkin). - M.: Vostochnaya literatura, 1988.

<sup>1</sup> [https://uz.fundamental-economic.uz/?page\\_id=1150](https://uz.fundamental-economic.uz/?page_id=1150)

<sup>2</sup> Address of the President of the Republic of Uzbekistan Sh.M.Mirziyoyev to the Oliy Majlis. 28.12.2018.



It was noted that the priorities of the state economic policy in the field of further liberalization of the foreign exchange market are as follows:

**First**, to ensure full realization of the right of legal entities and individuals to freely buy and sell foreign currency and to freely dispose of their funds at will;

**Secondly**, the use of only market mechanisms in determining the exchange rate of the national currency against foreign currency;

**Third**, to increase the role of market instruments in the use of foreign exchange resources, to create a level playing field for all economic entities in the foreign exchange market, to increase the stimulating role of monetary policy in developing exports in non-traditional sectors, strengthening regional and international economic cooperation;

**Fourth**, improving the business and investment climate which will serve to attract foreign direct investment, knowledge and technology to all sectors of the economy to directly stimulate the production of quality jobs and high value-added products;

**Fifth**, the implementation of a strict monetary policy aimed at ensuring the stability of the national currency, the active and adaptive use of monetary instruments, the development of the government securities market, as well as open market operations and operations to pledge government securities to bank liquidity;

**Sixth**, to prevent excessive growth of the money supply by coordinating monetary and fiscal policies and ensuring the balance of the state budget;

**Seventh**, to increase the resilience of the banking system and its risk tolerance, including through the application of effective measures aimed at mitigating the possible negative effects of liberalization of monetary policy;

**Eighth**, to take the necessary measures for state support for the enterprises of the basic industries to operate effectively in the new conditions of monetary policy;

**The Ninth** of that is that the implementation of targeted measures for comprehensive social support that will reduce the negative consequences of the liberalization of foreign exchange policy on the living standards of vulnerable groups.<sup>6</sup>

From the above-mentioned priorities, it is clear that in our country there is a relationship of international agreements on the basis of tax legislation. Application of international agreements of the Republic of Uzbekistan on taxation and general norms of international tax law shall be carried out in accordance with the procedure established by this Article [1].

In order to deepen the structural reforms clearly defined in the Action Strategy, increase the competitiveness of the national economy through the modernization and diversification of key sectors, the following tasks are envisaged.

Increase the limited annual number of employees from 50 to 200 when considering construction organizations as small businesses [2].

At the same time, one of the main tasks is to ensure the compliance of accounting data with international standards. In this regard, a number of normative and legal documents are being developed in the country. In particular, their improvement is taking into account the harmonization of national accounting standards with IFRS [3].

It is obvious that in the liberalization and diversification of monetary policy in our country, the role of monetary relations based on internal principles is important. It is appropriate for us to focus on the concept of diversification in the context of our research. As a result of diversification in our country there is a wide range of complexes (For example, agro-industrial complex, forest industry) that produce a variety of goods, services and are engaged in production, supply and development, and this is called production diversification. In addition to its credit diversification. there is also a view (in which the capital provided as a loan is distributed among various objects in order to reduce risk and obtain high returns). Such diversification is associated with the process of cross-sectoral capital concentration and increasing inter-enterprise internal instability. Diversification processes began to develop rapidly, especially from the mid-1950s. One of the main reasons for this is that the acceleration of scientific and technological progress during this period has led to an intensification of competition between enterprises and firms. As a result, the profit margins of enterprises have become relatively equal, and the sources of specialization to increase production efficiency have become relatively equal, and the sources of specialization to increase production efficiency have become relatively equal. In this regard, it can be said that the need to implement diversification processes was initially manifested at the level of micro-enterprises, firms and companies. It was from this period that the economic content and essence, goals and directions of diversification began to be studied in the economic literature [4].

Since the word diversification is a modern term that began to be used in our country at a time when the current innovative economy is developing, we need to explain its essence more deeply. However, a correct understanding of the meaning of this word, its application in practice can increase the efficiency of any legal entity.

"Diversification" is derived from the Latin word (diversificatio), which means change, diversity, giving something a multifaceted, combined, multidisciplinary tone.<sup>7</sup>

what is diversification? "Diversification" (Lat. Diversi fi catio - change, diversity) - the expansion and renewal of the range of activities and products of enterprises (associations). Diversification is done for the purpose of achieving high efficiency, economic profit, liquidation of bankruptcy and other purposes.<sup>8</sup>

Diversification is the expansion of the range of goods and services in a firm or geographical region [5].

<sup>6</sup> Decree of the President of the Republic of Uzbekistan dated September 2, 2017 PF-5177 "On priority measures to liberalize the exchange rate."

<sup>7</sup> Dictionary of foreign words. M., «Slavyanskiy dom knigi», 1998. - 509 p.

<sup>8</sup> <https://qomus.info/encyclopedia/cat-d/diversifikatsiya-uz/>.

Diversification is an increase in the type of goods and services produced by a particular enterprise or conglomerate or economy [6].

Diversification is a measure applied to the expansion of industrial production into a wide range of activities and thus not to become overly dependent on only one type of product [7].

Diversification is the process of ensuring the stability of the amount of profit that comes from them through the purchase of securities of different enterprises [8].

Diversification is the simultaneous development of many unrelated production types [9].

Diversification is the diversification of an enterprise from one sector to another [10].

Diversification is the expansion of the range of enterprises, firms, corporations at the expense of industries other than the main business, their entry into other industries and the market of new goods and services [11].

"Diversification is the penetration of firms into other industries that are not directly related or functionally related to the core industry. Diversification is associated with the intersectoral concentration of production and the process of structural restructuring of the economy. In a broad sense, it means the expansion of economic activity into new areas, in other words the range of products, types of services and expansion into new areas."<sup>9</sup>

"Diversification of industrial production is a transition from one-way production based on the production of one type of product to multi-industry production with a wide range of products."<sup>10</sup>

American economists S. Fisher, R. Dornbush, R. Schmalenzi define diversification as "a strategy aimed at reducing the level of risk by dividing it into several assets." According to them, the main rule of diversification is "not to keep all the eggs in one basket."<sup>11</sup> While this definition is somewhat more general, it fully reflects the economic nature of diversification.

In the context of rapid development of the innovative economy in the liberalization and diversification of monetary policy in Uzbekistan, as well as the modernization of all sectors, the development of technical and strategic objectives, it is expedient to implement the following recommendations.

Minimization of backwardness in the liberalization of monetary policy in strategically important areas of monetary policy on the basis of modern and best international practices;

Development of long-term modernization in the liberalization and diversification of monetary policy, the investment climate that promotes the implementation of projects on international investment;

Development and diversification of monetary policy liberalization in the organizational and functional management system of the innovative economy, which leads to the development of the national economy and the use of digital technologies and increased competition between industries.

Further acceleration of the renewal process on the basis of modern international standards in the liberalization and diversification of monetary policy in all areas through the organization of innovative production fairs.

Given the crucial role of changes in monetary indicators in ensuring the stability of the exchange rate, the Central Bank should ensure the stability of the national currency and low inflation through the active and widespread use of monetary instruments.

Control over the task of conducting a strict monetary policy aimed at preventing excessive and unjustified growth of the money supply, ensuring the balance of government expenditures and revenues.

Improving government support for research and development in higher education and research institutions in the country (ITTKI) and applied research in the form of orders and grants in the liberalization and diversification of foreign exchange policy.

Taking into account the above recommendations, the main factors for the modernization of the chemical industry in our country, the acceleration of technical and technological renewal are:

Improving the process of liberalization and diversification of foreign exchange policy in the implementation of state and regional programs developed and implemented by the government;

Increase the effectiveness of bank loans in the liberalization of foreign exchange policy in the development of foreign investment climate;

Development of internal and external infrastructure of the country (construction, services, utilities, water, gas, electricity, transport, tourism, logistics, and others.);

Take into account the role of foreign exchange policy in the radical modernization of the construction industry and the expansion of exports and imports of finished products.

On the basis of these data, the positive development of the modernization environment in the country depends on the liberalization and diversification of monetary policy.

"Modernization is a process of technological renewal of production aimed at increasing the competitiveness of manufactured products (works and services). It is a means of eliminating the technological waste of enterprises and has a drastic impact on the efficient use of labor, material and raw material resources. The results of modernization, technical and technological renewal determine the conditions for the rapid development of high-tech competitive production [12].

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<sup>9</sup> Bolshoy entsiklopedicheskiy slovar / Gl.red. A.M.Proxorov. - izd.2-e. - SPb.: «Norint», 2001. - p.355

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# Accounting for Spare Parts of Construction Machinery in the Republic of Uzbekistan and Calculation of Cost of Services and Financial Results

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## ABSTRACT

This article explores the main objectives of the accounting and auditing of machinery and spare parts for construction companies operating in the country. The article examines the theoretical basis and methodology of cost accounting and audit of financial results of work (services) performed by construction machinery in construction companies.

**KEYWORDS:** *Construction machinery, work performed, cost of services, cost accounting, construction organizations, accounting, audit, product, prime cost, work performed, methodology*

At a time when the digital economy is developing in the country, the consistent positive measures taken by the government to support and encourage an active investment climate, innovative ideas, the development of separate sectors in the field of production and services. a number of software areas are leading to the rapid development of manufacturing activities, services and the service sector, as well as the construction industry. In particular, the issue of radical development of the construction industry in our country is given great importance as a key condition and criterion for the rapid development of our economy. Of course, one of the most important criteria for the successful implementation of such reforms is the effective accounting and auditing of machinery in construction companies. In order to improve the performance of machinery in construction companies, it is advisable to properly take into account the condition of their spare parts, ie their borrowing, and to properly audit them.

Materials for construction organizations come mainly from suppliers, general contractors and subcontractors, customers, supply and sales companies<sup>1</sup>. At the same time, we know that the correct accounting and control of the movement of machine parts in the existing production and construction enterprises in the country will be the basis for improving the activities of all construction and manufacturing enterprises.

The construction and manufacturing enterprises operating in the country are organized in a consistent manner. Therefore, it is important to always have spare parts for construction machinery. It should be noted that sometimes, during the effective use of construction machinery, they often fail in a timely manner. At such times, it is natural to be forced to borrow spare parts for construction machinery. In this case, there are cases when the borrowed parts for construction

machinery and equipment at a certain price, in practice, due to the increase in prices, return at a high price of 10-20 percent. At the same time, one of the important tasks of accounting is the timely and accurate recording of these transactions. It should be noted that in this case, we, the borrower and the lender, have a scientific and practical approach based on the general type of tax, that is, enterprises that are payers of value added tax.

**When borrowing parts for construction machinery,** we must first note that the turnover of goods is defined as the transfer of inventories on the basis of loan agreements in the calculation of value added tax. The auditor is responsible for the activities of construction and manufacturing enterprises, ie both the lender (when lending machine parts) and the borrower (when returning machine parts to the lender) value added tax (VAT) it is necessary to check whether the invoice is written and reflected correctly.

The VAT rate has been reduced from 20% to 15%. As a result, 2 trillion soums were left at the disposal of taxpayers last year. This figure is expected to reach 11 trillion soums this year. Having so much money at the disposal of entrepreneurs in a year will definitely give them a lot of additional opportunities to grow their business<sup>2</sup>.

Accordingly, if you have received construction machinery parts to be returned at a price higher than the price at which they were borrowed, returnable construction machinery parts in accordance with the terms of the loan agreement in the invoice issued at the time of loan repayment. you specify the price and the amount of VAT. The tax base for the sale of goods (services) is determined in accordance with Article 247 of the taxpayer, depending on the specifics of the sale of goods (services) produced by him. In this case, the cost of purchasing spare parts for returned construction machinery is the tax base for VAT. Let's consider a conditional example of these operations, ie "Samarkand Ta'mir Dizayn" (Borrower, VAT payer) under a short-term loan agreement in the amount of 11.5 million soums, including VAT. provided construction machinery parts.

"Samarkand Ta'mir Dizayn" is audited on the account of spare parts for construction machinery received by the borrower through the following accounting entries:

<sup>1</sup>Urazov K.B. Textbook "Features of accounting in other industries." Toshkent.2019 y

<sup>2</sup>Address of the President of the Republic of Uzbekistan Shavkat Mirziyoyev to the Oliy Majlis. 24.01.2020 y.



(thousand soums) Table 2<sup>4</sup>

№	Stages	Name of economic operation	Accounts correspondent		Amount
			Debit	Credit	
1.	Borrowed	Received spare parts for construction machinery	1010 (1090)	6820	10 000,0
		Amount of deductible VAT	4410	6820	1 500,0
2.	Loan repaid	Return of previously borrowed construction machinery spare parts of mechanisms is reflected	6820	9220	10 000,0
		according to the invoice VAT is calculated	6820	6410	1 500,0
		The real cost of spare parts of returned construction machinery is deducted	9220	1010 (1090)	12 500,0
		The loss of spare parts for construction machinery is reflected	9430	9220	2 500,0
		The cost of spare parts for construction machinery and equipment is between the cost of shipment under the loan agreement VAT was calculated on the amount of the difference (2,500.0 soums 15%)	9430	6410	375,0

In the activities of construction and manufacturing enterprises, the auditor is directly responsible for the correctness of the calculation and control of spare parts for construction machinery and equipment - on the basis of legal documents. It is advisable that the above accounting records be presented in the auditor's report in accordance with IFRS 21.

Due to the strategic development of the national economy of the republic, the economic resources and existing mechanisms of enterprises of various forms of ownership in the country are changing in structure. Recognition of machines and mechanisms as the main tool in the theory and practice of international accounting, these assets are becoming more and more deeply embedded in the practice of construction companies of the country, so they are modern construction companies, including joint stock companies, limited liability companies, subsidiaries and affiliates. societies, enterprises with foreign investment, private enterprises, etc. are becoming increasingly important. Creating an internationally competitive complex and ensuring its bright future will be carried out taking into account direct foreign changes and requirements. A national model can be created by applying international experience in any field. "Today we live in a time of rapid change. "Global conflicts of interest and competition are intensifying, and the international situation is deteriorating"<sup>5</sup>. Therefore, the issues of radical development of accounting and auditing in accordance with international standards are being implemented in the country under the state program. It should be noted that the following priorities are not mentioned in the State Program "Action Strategy" for 2017-2021:

- to ensure that people live in an environmentally safe environment, the construction and modernization of municipal waste recycling facilities strengthening their material and technical base, providing the population with modern facilities for waste disposal<sup>6</sup>.

The following shall be recognized as payers of value-added tax in the Republic of Uzbekistan carrying out business activities and (or) selling goods (services). The tax base is determined based on the market value of goods (services) determined in accordance with the procedure established by the State Tax Committee of the Republic of Uzbekistan: in the sale of goods (services) in exchange for other goods (services)<sup>7</sup>. In particular, this amount of VAT is determined by the recipient "in determining the amount of tax payable to the budget by the recipient of goods (works, services) actually received and (or) produced by the taxpayer and used for their own needs (works) has the right to take into account the amount of value-added tax payable (paid) on services"<sup>8</sup>in accordance with Article 197 of the Tax Code, that is, it must be accounted for and audited, and the submitting party must calculate it for payment to the budget. In accordance with the commodity loan agreement, it is necessary to return the inventory equal to the type, quality and quantity of the borrowed inventory. A loan agreement is considered concluded from the moment of delivery of money or goods<sup>9</sup>.

Accordingly, if you have received construction machinery parts to be returned at a price higher than the price at which they were borrowed, returnable construction machinery parts in accordance with the terms of the loan agreement in the invoice issued at the time of loan repayment. you specify the price and the amount of VAT. In this case, the cost of purchasing spare parts for returned construction machinery is the tax base for VAT. Let's look at a conditional example of these operations, namely "SUFAT ID" LLC (Lender, VAT payer) Short-term loan agreement of "Samarkand Ta'mir Dizayn" ITC (Borrower, VAT payer) provided spare parts for construction machinery worth 11.5 million soums,

<sup>4</sup>quarter of 2020. Financial accounting data of "Samarkand Ta'mir Dizayn".

<sup>5</sup>Address of the President of the Republic of Uzbekistan Shavkat Mirziyoyev to the Oliy Majlis. 28.12.2018 y. [www.lex.uz](http://www.lex.uz).

<sup>6</sup>"Decree of the President of the Republic of Uzbekistan No. PF-4947 of February 7, 2017 "On the Strategy for further development of the Republic of Uzbekistan", Issue 28 (6722) of the People's Word newspaper, February 8, 2017.

<sup>7</sup>Tax Code of the Republic of Uzbekistan Special Part, Part X, Chapter 34, Article 248. (As amended and supplemented as of January 1, 2020). National Database of Legislative Acts of the Republic of Uzbekistan, 31.12.2019 No. 02/19 / SK / 4256.

<sup>8</sup>Chapter 39, Part 1 of Article 218 of the Tax Code of the Republic of Uzbekistan (as amended and supplemented as of January 1, 2019). UzR. 24.12.2018 No. ORQ-508.

<sup>9</sup>Article 732 of the Civil Code of the Republic of Uzbekistan. 29.08.1996 y. (As amended and supplemented as of October 12, 2018).

including VAT. "Samarkand Ta'mir Dizayn" returned to SUFAT ID LLC 11.5 million soums, including VAT, within the period specified in the loan agreement, but "Samarkand Ta'mir Dizayn" bought spare parts for these construction machines for higher price, 1.5 million soums (including VAT).

"SUFAT ID LLC" The creditor's account of construction machinery spare parts is audited on the basis of the following accounting entries:

**Table 1<sup>10</sup>**

№	Stages	Name of economic operation	Accounts Correspondent		Amount
			Debit	Credit	
1.	Borrowed	The borrowing of construction machinery and equipment was reflected	5830	9220	10 000,0
		VAT was calculated (1 million soums 15%)	5830	6410	1 500,0
		The cost of spare parts for construction machinery and equipment was written off	9220	1010 (1090)	10 000,0
2.	Loan repaid	The loan was repaid Previously lent construction return of machine parts is reflected	1010- 1090	5830	10 000,0
		Amount of VAT to be taken into account	4410	5830	1 500,0

It is expedient for the auditor to conduct an audit of construction machinery parts in accordance with the established legislation during the direct audit. Lending and borrowing of construction machinery spare parts occurs in all construction and manufacturing enterprises.

According to the current legislation of the Republic, under a loan agreement, one party (the lender) transfers to the other party (the borrower) money or other items marked with the characteristics of the type, and the borrower to the lender at once or in installments, undertakes to return the same amount of money or items (loan amount) equal to the type, quality and quantity of the borrowed items.

In ensuring the digital economy and economic stability of the Republic and a decent life of the population, a special place is given to the creation of a favorable business environment for government agencies, businesses (construction companies) and individuals, their effective use of construction projects.

Therefore, over the past period, a number of reforms have been carried out in the movement of construction companies, the full support of their activities, the performance of work (services) by construction machinery. As a result, the work (services) performed by machinery in construction companies have become the main producers of the final products of the construction company. Most importantly, as a result of these reforms, we must create a prosperous and decent living environment for our people. If we don't do these very important things ourselves, no one will come to us from abroad<sup>11</sup>. In our country, it is important to accelerate the development of the digital economy, innovation processes and increase the efficiency of production, services and construction, as well as employment in a market economy. In the construction sector of our national economy, the main focus is on the rational and efficient use of material, labor, financial resources and services of construction machinery, the elimination of inefficient costs and losses. In this regard, the "Action Strategy for the further development of the Republic of Uzbekistan for 2017-2021" provides for 151 million dollars for 29 projects further expansion of production of construction materials. In 2017-2021, it is planned to implement sectoral programs involving 649 investment projects totaling \$ 40 billion. In rural areas, it is planned to build 15,000 affordable housing, 415 kilometers of water supply pipelines, 316 kilometers of gas supply pipelines and 291 kilometers of internal roads. In this regard, the state program outlines the following main tasks:

- strengthening the material and technical base of design and construction organizations, providing tax and other benefits and incentives for the introduction of new construction technologies. In particular, 5.7% of the gross domestic product (GDP) of 407.5 trillion soums created in 2018 had to be built<sup>12</sup>.

Today, the construction industry has become one of the most important "drivers" of the economy. The fact that the share of this sector in the GDP created in 2019 exceeded 6% clearly confirms this idea. In order to further develop this sector, it is necessary to harmonize construction norms with international standards, introduce modern construction technologies and materials, and radically reform the system of training for the industry<sup>13</sup>.

As a result of the reforms, 3,700 construction projects were implemented in 2018-2019<sup>14</sup>. It should be noted that the analysis of the work done so far shows that along with the achievements in the field of construction, there are a number of unresolved issues and shortcomings. Machinery in the construction industry in the implementation of multidisciplinary activities, such as the performance of work (services), the provision of construction organizations with material and technical resources and their maintenance, the positive provision of machinery in the construction industry there are also problems.

The Resolution of the Cabinet of Ministers of the Republic of Uzbekistan "On approval of the Regulations on the procedure for determining and maintaining the rating of construction contractors and improving the activities of the Ministry of Construction

<sup>10</sup>2020 year. "SUFAT ID" LLC information of financial account

<sup>11</sup>Address of the President of the Republic of Uzbekistan Shavkat Mirziyoyev to the Oliy Majlis. 24.01.2020 y. [www.lex.uz](http://www.lex.uz).

<sup>12</sup>[www.stat.uz](http://www.stat.uz) - Information Service of the Statistics Committee of the Republic of Uzbekistan.

<sup>13</sup>"Address to the Oliy Majlis" of the President of the Republic of Uzbekistan Shavkat Mirziyoyev dated January 24, 2020. [lex.uz](http://lex.uz).

<sup>14</sup> [kun.uz](http://kun.uz) official page February 14, 2020.

of the Republic of Uzbekistan" adopted in order to implement the priorities set out in the Action Strategy for the five priority areas. This normative-legal document takes into account the availability of machines and mechanisms suitable for the construction organization, including:

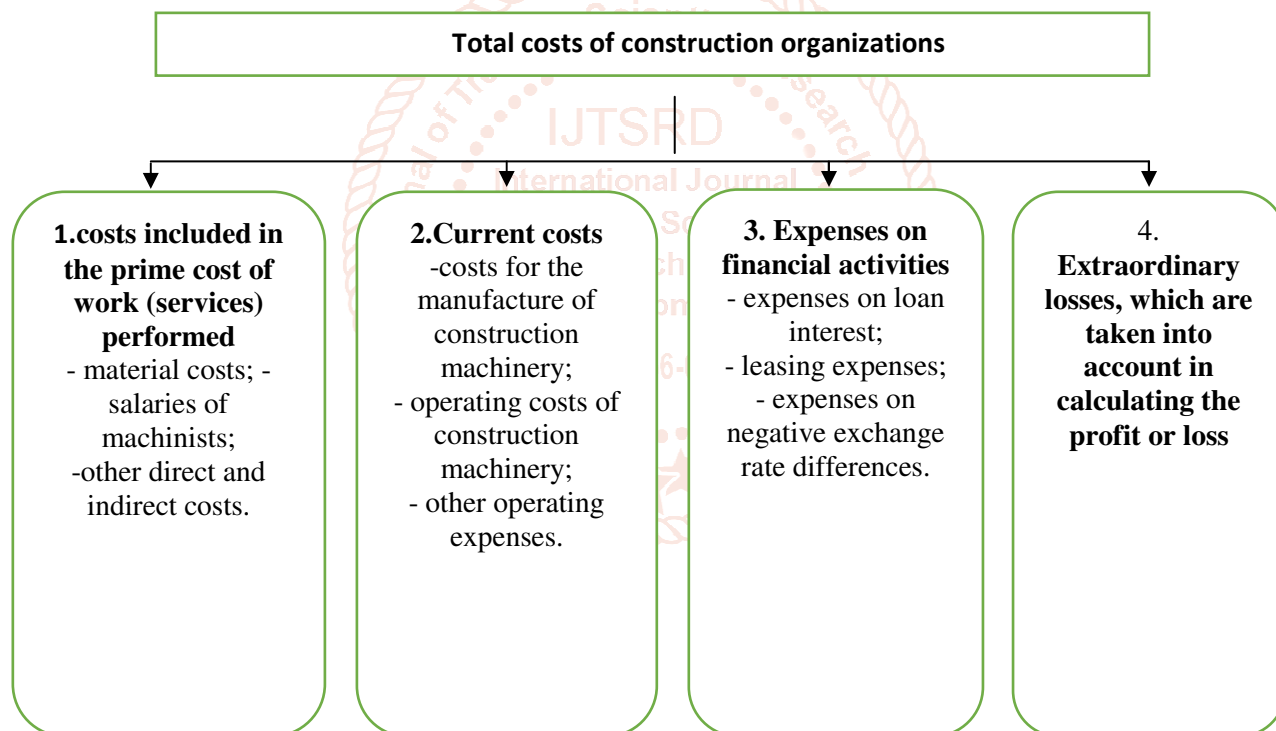
**Table 1<sup>15</sup>**

№	Name of construction contractors	Construction transport (pcs)		Excavator (V bucket - 0.5 - 1, 5 m3) (pcs)		10-25 tons truck crane (pcs)		tower crane (pcs)		small mechanization tools (pcs)	
		number	point	number	point	number	point	number	point	number	point
1	Complex										
2	Specialized										
3	Small										

It should be noted that the state of labor relations in construction companies does not meet today's requirements, there are still a number of problems in the use of modern construction machinery in their activities.

In this regard, the government is developing a comprehensive program of measures to increase the efficiency and profitability of construction companies, especially in the radical modernization of construction machinery, the widespread introduction of market infrastructure, innovations, scientific advances, as well as further improvement of labor relations in construction. In today's digital and innovative economy, special attention should be paid to the efficiency of work and services on the modernization of construction machinery.

In the context of the development of the digital economy, it is important and urgent to properly organize the cost of work (services) performed by construction companies in construction companies. One of the most difficult processes in construction companies is the analysis of production costs and cost. One of the main reasons for this is that costs are very confusing and difficult to account for. We need to pay special attention to the classification of costs in the accounting system<sup>16</sup>.



**Figure 1. Classification of costs on the basis of the Regulation "On the structure of costs of production and sale of goods (works, services) and the order of formation of financial results"<sup>17</sup>.**

Proper cost accounting is one of the most important tasks in construction companies. Accounting requires that you pay attention to specific criteria for the exact cost of the expense account. The auditor should pay special attention to the correct calculation of the cost of services rendered, ie the audit criteria, arising from the operation of construction machinery directly in construction companies.

In the context of the development of the digital economy in the country, one of the most effective areas is the study of compliance of accounting and auditing with international standards in the calculation of cost and financial results of

<sup>15</sup>Resolution of the Cabinet of Ministers of the Republic of Uzbekistan "On approval of the Regulations on the procedure for determining and maintaining the rating of construction contractors and improving the activities of the Ministry of Construction of the Republic of Uzbekistan." ID-10056.26.11.2019 y.

<sup>16</sup>O.Kh.Kholikulov, M.M.Kurbanova "Issues of accounting and reporting in the service sector in accordance with international standards." Proceedings of the traditional online scientific-practical conference "Current issues of accounting, economic analysis and auditing in the service sector." (May 5, 2020). Samarkand -2020, pages 95-97.

<sup>17</sup>Developed by the author O.Kh. Khalikulov.

construction machinery and their positive control. is calculated. It is known that many economists in our country have conducted research in this area. Including K.B.Urazov, D.Rafeyev, M.Umarova, U.Eshboyev, K.Akhmadjonov, N.Jurayev, O.Bobojonov, F.Abduvaxidov, D.Sotivoldiyeva, A.Karimov, F.Islomov, A.Avlakulov, U.Inoyatov, M.Abdullayev, M.Khamidova covered the theoretical and practical aspects of accounting and auditing in business entities engaged in construction activities.

**Financial result** - is an increase (or decrease) in the equity of an enterprise, association, joint stock company, etc. during a particular reporting period, in the course of its business activities<sup>18</sup>.

**Final financial result** - is determined on the basis of the difference between the income and expenses accounted for in the financial statements during the reporting period<sup>19</sup>.

**Financial result**-is the profit or loss for the reporting period. Profitability is an indicator of efficiency.

**Financial result** - is an increase or decrease in an entity's equity during the period in which it operates<sup>20</sup>.

**The results of economic activity** - are the results of economic activity of enterprises and organizations, which are the profit or loss<sup>21</sup>.

**Financial result (Profit or loss)** - is the result after deducting expenses from total income other than other components of gross income<sup>22</sup>.

**The final financial result (profit or loss)** is the reduction of operating expenses, financing activities and extraordinary income to the amount of expenses for these activities<sup>23</sup>.

Based on the above definitions, I recommend the following definition as a suggestion.

**The final financial result** is the actual state of profit or loss on the activities of any business entity during the reporting period, ie the end result<sup>24</sup>.

It should be noted that the audit of financial results in construction companies is one of the most important and integral parts of the audit, and its conduct has its own characteristics. At the same time, auditors require construction companies to perform work based on the type of activity, the formation of financial results, sources, the principles of distribution of financial results. The auditor checks the formation of financial results in construction companies through the following accounting records: 9030 - "Income from works and services", 9130 - "Accounts for the cost of goods sold (goods, works, services)", 9700 - "Extraordinary profit (loss) ) accounts 9800 - "Profit use accounts for the payment of taxes and fees", 9900 - "Final financial result" and other accounts. The calculation of income from construction work performed by construction companies depends on the method of their recognition. These methods include:

- full completion method;
- percentage of completion method;
- step method.

Income from operating activities in construction organizations consists of income from the sale of work (services), fixed assets and other assets. These revenues are credited to accounts 9030 "Revenues from works and services" and debited to accounts 4010 "Accounts receivable from customers" and 5110 "Accounts receivable". Revenues from construction (works, services) sold for cash are directly reflected in account 5010. The amount of income from work performed on the basis of the "Certificate of cost of work performed (expenses) - invoice" is recorded as follows:

**Debit 4010** "Accounts receivable"

**Credit 9030** "Income from work performed and services".

Prior to the commencement of construction, the customer must transfer at least 15% of the design and estimate value of the construction work to the contractor's account in advance, ie in installments, in accordance with the terms of the contract. Accounts payable to customers in construction organizations are recorded in account 6310 "Paints received from customers and customers". The amount of paint received from customers on the account of the construction organization is reflected in the accounting as follows:

**Debit 5110** "Accounts"

**Credit 6310** "Paints received from customers"

Paints received from customers reduction is carried out. This reduction is reflected in the accounting as follows:

**Debit 6310** "Paints from buyers and customers"

<sup>18</sup> M.Umarova, O.Eshboyev, K.Akhmadjanov "Accounting". Textbook. Mehnat Publishing House. T.:1999. p 192.

<sup>19</sup> U.Inoyatov, M.Abdullayev, M.Khamidova "Accounting". Study guide. Finance Publishing House. T.:2003. p 112

<sup>20</sup> A.Karimov, F.Islomov, A.Avlakulov «Accounting». Textbook. Editor-in-chief of Sharq Publishing and Printing Joint-Stock Company. T.:2004. Page 384.

<sup>21</sup> KBUrazov "Accounting and audit". Study guide. Teacher Publishing House. T.:2004. page 18

<sup>22</sup> No. 1 International Accounting Standard "Presentation of Financial Statements". (As amended in 2005).

<sup>23</sup> IFRS No. 21 "Chart of Accounts for Financial and Economic Activities of Business Entities and Instructions for its Application" dated 31.05.2017 (as amended). Part 5. Section 10.

<sup>24</sup> Recommendation of the author O.Kh. Khalikulov..



**Credit 4010** "Accounts receivable from buyers and customers"<sup>25</sup>

Proceeds from the sale will be transferred to the final financial result account at the end of the reporting period. To this end, the auditor compares the entries in the debit of account 9030 "Income from works and services" in the construction company with the entries in the credit account 9900 "Final financial result". These data are compared with the General Ledger, the current accounts in the 1S program, and the Financial Statement Form 2 "Financial Performance Report" indicators. Other income from operating activities in the process of profit audit in construction organizations, ie income from the sale of fixed assets (account 9310), income from the sale of other assets (account 9320), levied fines (account 9330), income from other main activities (9340 and on account 9390). Penalties will be credited to account 5110, which is a cash account. At the end of the reporting period, these revenues will also be transferred to account 9900, Final Financial Results. It is important for the auditor to pay particular attention to the accuracy of such accounting transactions in the accounts.

The profitability of construction companies is an important indicator of quality and efficient use of resources. Depending on the amount of profit received, it is possible to know the return on assets. The audit provides an opportunity to develop sound recommendations for further enhancing the profitability of the analyzed asset by type of asset. Profit is an important object of the audit. The auditor verifies that the benefits have been properly accounted for under the contract and have been used in accordance with regulatory requirements during the year. Such an audit is carried out through accounts 8710 "Retained earnings (uncovered losses) for the reporting period", 9900 - "Final financial result" and other accounts. The auditor verifies the correctness of the construction company's profitability through the following operations::

- verification of transactions by type of income received;
- check transactions by type of expense incurred;
- review of profit transactions used during one financial period.

The audit of the construction company's profit is carried out by checking the accounting entries in the account 9900 - "Final financial result". We approach such an inspection procedure on the example of the construction company SUFAT i D. The following entries were made in the account 9900 - "Final financial result" of construction organizations for the reporting period:

<b>Debit9910 - «Final financial result»</b>	<b>Credit</b>
Balance-	Balance-
2) 180 120,0	1) 1 056 444,0
4) 525 600,0	3) 785 641,0
5) 1 124 501,0	6) 278 222,0
7) 214 501,0	8) 545 689,0
Debit turnover2 044 722,0	Credit turnover2 665 996,0
	<b>Final balance621 274,0</b>

It is known that the total income of agricultural enterprises for the reporting period amounted to 2,665,996.0 soums, total expenses - 2,044,722.0 soums, and profits - 621,274.0 soums. This figure is subject to tax. The amount of tax was reflected in the accounts 9810, 9030, 6410, 5110 during the year. The auditor examines the annual income tax using the following accounting entries. Income tax accrued and paid during the year<sup>26</sup>:

Debit 9810,9030	Credit 6410	Amount 74 552,88
Debit 6410	Credit 5110	Amount 74 552,88 <sup>27</sup>

What is the profit tax indicator for each financial period of these transactions, compliance with tax legislation is thoroughly studied by the auditor based on the data in the table below.

**Table 1**<sup>28</sup>

<b>№</b>	<b>Type of tax</b>	<b>2019 yil (previous period) Base rate</b>	<b>2020 yil (in practise) base rate</b>	<b>Difference +/-</b>
1.	Profit tax	12%	15%	+3%

To do this, a special table in the financial statements «Financial results in construction companies is widely used. The auditor directly checks the financial statements by comparing them with current accounting data and determines their compliance with existing regulatory documents in the field. The auditor checks the distribution of net profit (loss coverage) for the reporting year through the following accounting entries:

Debit 8710	Credit 8531	Amount« <b>Profit amount</b> »
Debit 8531	Credit 8710	Amount« <b>Amount of losses</b> »

<sup>25</sup>Urazov K.B. "Features of accounting in other industries", Textbook.-T.:2019 y.

<sup>26</sup>Tax Code of the Republic of Uzbekistan Section 5. Chapter 19. Article 126.

<sup>27</sup>"SUFAT i D" LLC is based on the data of 2019.

<sup>28</sup>Author O.KH Khalikulov's development.

Work (services) performed by construction companies and their implementation is one of the important indicators for the industry. On this basis, based on the existing regulations on accounting, the proposal is **9030 - "Revenue from work performed and services rendered", 9040 - "Return of work performed and services rendered" and 9050 - "Buyers and customers"**. We consider it expedient to take into account the following additional accounts in the "given discounts" accounts.

Table 2<sup>29</sup>

Account number	Name of accounts	Account status	Account change	
<b>9030</b>	<b>INCOME FROM PERFORMED WORK AND SERVICES</b>	<b>Passive</b>	<b>debit</b>	<b>credit</b>
9031	Income from the sale of housing to natural person	<i>P</i>	-	+
9032	Income from the sale of housing to legal person	<i>P</i>	-	+
9033	Income from the sale of non-residential premises to natural person	<i>P</i>	-	+
9034	Income from the sale of non-residential premises to legal person	<i>P</i>	-	+
9035	<i>Income from the sale of construction machinery</i>	<i>P</i>	-	+
9036	<i>Revenues from the transportation of construction machinery</i>	<i>P</i>	-	+
<b>9040</b>	<b>RETURN OF PERFORMED WORK AND SERVICES</b>	<b>Counter-passive</b>		
9041	Return of housing sold to natural person	<i>CP</i>	+	-
9042	Return of housing sold to legal person	<i>CP</i>	+	-
9043	Return of non-residential premises to natural person	<i>CP</i>	+	-
9044	Return of non-residential premises to legal person	<i>CP</i>	+	-
<b>9050</b>	<b>DISCOUNTS FOR BUYERS AND CUSTOMERS</b>	<b>Counter-passive</b>		
9051	Discounts for accommodation for natural person	<i>CP</i>	+	-
9052	Discounts for accommodation for legal person	<i>CP</i>	+	-
9053	Discounts for non-residential premises to natural person	<i>CP</i>	+	-
9054	Discounts for non-residential premises to legal person	<i>CP</i>	+	-
9055	<i>Discounts on freight services for construction machinery</i>	<i>CP</i>	+	-
9056	<i>Discounts on transportation services for construction machinery</i>	<i>CP</i>	+	-

Given that the current digital economy is booming, if the above chart of accounts is used correctly by accountants in construction companies, it is a testament to the extensive work they have done to ensure that construction revenue returns are positive.

It is important that the auditor carefully verifies that the revolving accounts of the above accounts are properly reflected in the accounting records. In examining the principal benefits of a construction organization, the auditor requires that special attention be paid to the allocations. At the same time, the auditor's careful examination of contracts, consignment notes, consignment notes, invoices, invoices, power of attorney and other such primary accounting documents reduces the audit risk.

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# Role of HIFU Therapy in Treatment of Benign Prostate Hyperplasia (Sonablate®-500 Equipment)

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## ABSTRACT

The health and quality of life of elderly men is directly dependent on non-neoplastic diseases, among which benign prostatic hyperplasia (BPH) is of particular importance. Currently, various methods of minimally invasive surgical treatment of BPH are flourishing. Among the methods that can rightfully be considered the gold standards of surgical treatment of BPH (transurethral resection of the prostate, laser enucleation of the prostate), a special place is occupied by borderline techniques that work at the junction of conservative and surgical treatment of BPH. Such techniques include HIFU (High Intensity Focused Ultrasound) or transrectal ablation with high-intensity focused ultrasound, which allows directed ultrasound to destroy deep tissue without damaging nearby healthy areas. In the focusing area, the intensity of ultrasound reaches a very significant level, which is sufficient for a local increase in the tissue temperature in the focusing area up to 70-100 ° C. This leads to tissue necrosis of prostatic hyperplasia, and then, after rejection of the necrotic ablated areas, to improvement. Lower urinary tract symptoms associated with BPH.

**KEYWORDS:** *prostatic hyperplasia, ultrasound ablation, transrectal, minimally invasive*

## Relevance:

The increase in the life expectancy of the population has led to the fact that the proportion of elderly and elderly people has increased, in connection with which the structure and level of morbidity have changed. The health and quality of life of men over 50, according to the modern gerontological concept, is directly dependent on non-oncological diseases: benign prostatic hyperplasia, stress, cardiovascular diseases, erectile dysfunction. Given the increasing trend towards an increase in life expectancy and an aging population, the problem of BPH treatment seems to be very urgent [1, 2].

BPH is a disease characterized by overgrowth of prostate tissue that surrounds the urethra, resulting in obstruction of the urinary tract. In the structure of urological pathology in the United States, the following are sequentially distributed in frequency: diseases of the prostate gland, urinary incontinence, erectile dysfunction, and urolithiasis. Every year from 7 to 8 million patients seek medical help, concerned about difficulty urinating due to the presence of prostatic hyperplasia [2, 3]. In Germany, about 40% of urological beds are occupied by patients with this disease. Numerous studies of domestic and foreign urologists have shown that although the most vulnerable to prostate adenoma disease is the age from 60 to 70 years, however, over the past 20-30 years there has been a significant rejuvenation of patients with prostate diseases. According to autopsy data, BPH is detected in more than 90% of men over 80 years old. [3]. The mechanism of urination disorders in

patients with BPH is multifaceted and complex; its causes are bladder outlet obstruction (mechanical and dynamic components) and impaired detrusor function. It is the urinary disorders, represented by the symptoms of the lower urinary tract (LUTS), that are the main reason for the decline in the quality of life in patients with BPH. Any method of treating prostate adenoma is aimed primarily at eliminating or reducing the intensity of LUTS [4].

Currently, the assessment of the results of BPH treatment consists of two parameters: life expectancy and its quality. It is the patient's quality of life that is of particular economic and social importance. In recent years, the success of urologists in the treatment of BPH is quite significant, since they have mastered endoscopic and laparoscopic methods, and robotic-assisted technologies are being actively introduced [1, 2]. The choice of the method of treatment in patients with symptomatic BPH depends on many factors: medical, economic and social, in this connection, the treatment of BPH remains one of the urgent problems of modern urology. Many of the existing modern methods of surgical treatment of this pathology, despite their effectiveness, carry the risk of intraoperative, early and late postoperative complications. [3, 4].

Until now, the generally accepted "gold standard" of surgical treatment of BPH due to its safety and effectiveness, including long-term results, is transurethral resection of the prostate (TURP). But this procedure is not devoid of such intraoperative complications as bleeding, hyponatremia, and less often TUR syndrome. Despite this, TURP has been the procedure of choice in the surgical treatment of vesical obstruction (IVO) due to BPH for more than 50 years. However, the significant number of complications after TURP necessitates the search for new alternative methods of treatment. In recent years, the procedures of transrectal laser enucleation of prostatic hyperplasia, which include holmium and thulium laser enucleations, have become very important. Today, many authors refer these techniques to the new "gold" standard of surgical treatment for BPH. However, these procedures are not without complications and are often accompanied by ejaculation disorders, which significantly reduce the quality of life of patients with BPH, especially in sexually active patients. All of the above required further search and development of new minimally invasive technologies in the treatment of BPH. Over the past decades, many new experimental treatments have been developed, such as thermal tissue destruction, balloon dilatation, prostatic stents, transrectal microwave hyperthermia, aqua ablation [5, 6].

## The history of the method

Transrectal therapy with high-intensity focused ultrasound ((HIFU), English - High Intensity Focused Ultrasound (HIFU)) is one of the methods of treatment of prostate adenoma,



based on thermal effect on tissue. HIFU is focused ultrasonic waves emitted by a transducer that cause tissue damage through mechanical, thermal and cavitation effects. HIFU transmits ultrasonic energy, followed by thermal destruction of tissues at specific distant points from the ultrasound probe without significant temperature rise or tissue damage in the path of the ultrasound beam. Recently, the use of HIFU has expanded both in urological practice and in surgery and oncology [7, 8, 9].

The first work on the study of the biological effects of high-intensity ultrasound was carried out by Wood and Loomis [10] in 1926-1927. in Tuxedo Park, New Jersey. They observed the effect of ultrasonic waves on unicellular microorganisms, tissues, small fish and animals. In 1942 Lynn J.G., Zwemer R.L., Chick A. J., Miller A.G. the first work was published describing the possibility of local heating of tissues when focusing ultrasonic waves to one point. In their article, scientists describe a generator used in their work to focus ultrasonic waves, demonstrate the results of such an effect in experiments on paraffin blocks and beef liver [11].

Although HIFU research began as early as the 1940s at Indiana University, the study of the potential of HIFU developed significantly in the 1950s. As a method for the treatment of oncological diseases, HIFU was first proposed by A.K. Burov in 1956 [12, 13]. Due to the lack of visual control, the proven effectiveness of focused ultrasound in the destruction of tumor tissues at that time did not find clinical use.

In the 1970s. L. D. Rosenberg and M.G. Sirotyuk [14] developed non-invasive methods for measuring the acoustic field in tissues, a method for monitoring temperature measurement and increasing cavitation in tissues using special receivers, which made it possible to understand the mechanism of the destructive effect of ultrasound [15].

In the early 1990s, there was an early study of the role of HIFU in the treatment of BPH. A ground-breaking study was the work in experimental animals (dogs) on the safety and efficacy of HIFU by Sanghvi et al. In 1992-93. at the Indiana University School of Medicine Bihrlle et al. with the help of HIFU, the first group of patients with BPH was treated [6]. At the same time, the question arose about the possibility of using HIFU in the treatment of prostate cancer. And, the first application for the treatment of prostate cancer in humans was started in 1994 (Michael Marberger and Stephan Madersbacher) at the University of Vienna in Austria using the Sonablate-200 equipment [16]. The goal was to see if the energy delivered was sufficient to destroy the desired tissue. Research has shown that the treatment can be done safely. Since then, several research papers have been published on the use of HIFU, including a 5-year observation by Blana A. et al. [17] and a multicenter study in Europe by Thuroff S. et al. [18]

In 1995, another study from Indiana University showed that the entire prostate could be treated without damaging the prostate capsule or rectal wall. In 1999, in Japan, Dr. Toyaki Uchida treated patients with Sonablate-200. The device received approval for use in Europe with the CE mark in 2001 and 2004, and the treatment became available in hospitals and treatment centers in Mexico, Costa Rica, South Africa and the Caribbean. Health Canada approved Sonablate®-500 in June 2005 and the first Sonablate®-500 HIFU surgeries were performed in Toronto in March 2006 [19].

Today, all over the world, ultrasound ablation is used for the radical or palliative treatment of patients with tumor neoplasms of various localization: liver, pancreas, kidneys, prostate, breast, bone tissue, soft tissue sarcomas [20-24]. Significant experience has been accumulated abroad in carrying out such procedures, however, due to the relative youth of the method, there is still no need to talk about long-term results (except for data on ultrasonic ablation of prostate cancer).

HIFU therapy for the radical treatment of patients with malignant neoplasms is most often used in the treatment of localized forms of prostate cancer, as evidenced by the data of large randomized trials. Blana et al. [25], published the results of HIFU therapy in 146 patients with a mean follow-up period of 22.5 months.

In Russia, the method of HIFU-therapy of oncological diseases began to gain popularity only at the beginning of the XXI century [26]. In the clinic of urology named after R.M. Fronshteyn 1-MGMU them. THEM. Sechenov, high-intensity focused ultrasound ablation of the prostate with the "Ablaterm" apparatus of the "EDAP" company has been used since 2003. Over the past period, 95 treatment sessions have been performed. All patients underwent a conventional examination, including magnetic resonance imaging of the prostate with contrast [27].

In 2012, doctors and scientists from the Samara Regional Clinical Oncological Dispensary demonstrated the possibilities of high-intensity focused ultrasound ablation in patients with hormone-resistant localized and locally advanced prostate cancer. The study involved 341 patients. The mean follow-up time after ultrasound ablation was 36 (3-52) months, with significant clinical efficacy 3-year relapse-free survival in 95.5%. Two years later, the same scientists presented an estimate of the overall and 5-year relapse-free survival in 86.2% of patients with prostate cancer [28].

The emergence and development of such visual control methods as ultrasound and MRI made it possible to evaluate the effectiveness of the procedure performed online, and to control the zone of exposure to focused ultrasound. Since then, the biological effects of the action of high-intensity focused ultrasound on biological systems have been studied more deeply, and considerable experience has been accumulated in its application in medical practice [9, 29, 30].

Thus, this method of treatment was developed as a minimally invasive method of treatment, comparable in its effectiveness with the surgical method of treatment and various types of radiation therapy, but with fewer complications. Currently, the effectiveness of HIFU therapy is widely discussed in the medical community. Today in the world there is a highly developed material and technical base for the implementation of the method. Every year more and more medical institutions are equipped with equipment for HIFU-therapy under the control of MRI or ultrasound. A significant number of publications by doctors and scientists from different countries of the world on this topic testifies to the effectiveness of using the method and the prospects for conducting large-scale multicenter studies in this direction in Uzbekistan as well.

HIFU has many unique features and qualities, some of which are described here:



1. When used with an appropriate peak focal intensity in situ, HIFU can increase the tissue temperature in the focal zone to 80-100 ° C for a very short exposure time (1-10 s) while maintaining the intermediate tissue temperature at a physiologically safe level;
2. HIFU does not come into contact with the treated tissues and organs;
3. HIFU forms sharply limited and predictable lesions. The size and shape of each lesion depends on the width of the ultrasound beam, the intensity and duration of exposure [31, 32].
4. When the individual lesions are combined in a matrix format, a large contiguous lesion of the desired size and shape can be created [33].
5. As the tissue temperature rises rapidly, the need for blood transfusion is minimized during HIFU treatment [34, 35].
6. The energy of ultrasound does not ionize and can be used repeatedly.
7. The HIFU procedure can be performed on an outpatient basis

Thanks to the receipt of the US-made Sonablate®-500 device, for the first time in Central Asia in 2014, the Intramed clinic in the city of Samarkand began to use HIFU-therapy for BPH. The Sonablate®-500 System has been specially designed for the treatment of the prostate. Its sophisticated software allows, due to technologically advanced electronics, to provide accurate and safe treatment of patients with BPH.

#### Clinical application of HIFU for BPH using the Sonablate® 500 device

The device was developed after extensive animal safety research, analytical computer simulations and laboratory research. The Sonablate® 500 system is a medical device that uses high-intensity focused ultrasound (HIFU) energy to induce thermal coagulation tissue necrosis in a selected area at a specified distance from the focused transceiver element (s). A unique feature of the Sonablate® 500 system is the use of technology using the only TRUST ultrasound transceiver (transrectal ultrasound scanning and therapy) capable of performing both imaging and treatment. This dual-function piezoelectric ultrasonic transceiver is located in the transrectal probe and provides an accurate positioning of the focus of treatment, as well as visualization of the treatment process in real time; images are updated after each treatment cycle [36]. The Sonablate®-500 system includes a console, digital thermal printer, flat screen monitor, and two transrectal probes with two transceivers with different focal lengths, an articulated probe handle and a cooler module. There are other probes with different focal length combinations that are not included with the standard Sonablate®-500 system.



**Fig. 1. Equipment for ultrasonic ablation of hyperplasia tissue**

#### Prostate Sonablate®-500

The procedure was performed under spinal anesthesia after placing the patient on his back in a lithotomy position with raised and bent legs on a conventional operating table. A Foley catheter 16-18 Ch. Was inserted into the bladder. The bladder is then filled with distilled water. A high-frequency transducer, placed in a balloon filled with degassed liquid (Fig. 2) at room temperature or cooled, is inserted into the rectum, which provides visual control of the prostate against the background of the catheter and selection of the ablation zone. Cooling of the rectal wall is carried out using a special device - the Sonachill™ cooler (Fig. 3).



**Fig. 2 Ultrasonic transducer for HIFU therapy, filled with degassed liquid.**



**Fig. 3 Sonachill™ cooler for cooling the rectal wall during HIFU therapy.**

The Sonachill™ Cooler is a special device designed to circulate degassed water through a probe and to cool the rectal wall and HIFU transceiver. The Sonachill™ chiller is connected to the back of the Sonablate® 500 system with a detachable cable. This connection provides power to the Sonachill™ chiller and temperature feedback to the system. The three main components of the Sonachill™ device are:

- active cooling unit (liquid-air cooler);
- hose pump;
- water tank.

The built-in Sonachill™ degasser is capable of permanently degassing the water in the water circuit, making it unnecessary to use degassed water when first filling the system. The Sonachill™ is connected to the probe with connecting tubing. The Sonachill™ also has another critical function: removing any air bubbles from the closed system before starting the procedure. The water tank has a connector on the side wall that is connected to the syringe. This is done in order to change the level of the canister, increasing and decreasing the pressure in the canister by, respectively, pumping water or removing it.

Before treating a patient after the console and software are ready. Preparation procedures include:

- preparation of the probe;
- input of patient data;
- location of the patient;
- introduction of the probe;
- imaging of the prostate before planning treatment.

Critical factors for successful treatment are proper rectal / bowel cleansing and proper tube insertion into the patient's body. Before therapy, the patient should be subjected to at least one cleansing enema.

The patient should be positioned in a modified lithotomy position, the patient's abdomen should be fixed with a compression tape. A rectal examination is done to check for any remaining stool. In the presence of feces, the rectum should be rinsed with water until it is clean.

#### Probe insertion

1. Using a 60 ml syringe, fill it with ultrasonic gel (remove all air bubbles) and inject 10-30 cc. cm into the patient's rectum.
2. Using the 60 ml syringe from step 1, gently apply 10-30 ml of ultrasonic gel to the probe tip. Eliminate any air bubbles that may have gotten into the gel.

3. It is necessary to loosen and adjust the position of the probe so that the transceiver window is at the front and the reference mark is at zero angular level. After securing the cuff of the probe manipulator, the probe must be secured in this position.
4. Next, it is necessary to loosen the central handle of the probe manipulator and carefully insert the probe tip into the patient's rectum.
5. When the probe is positioned accurately and satisfactory preliminary visualization is achieved, the bracket of the multifunctional probe is rigidly fixed to prevent the focus of the ablation zone from shifting, after which, under visual ultrasound guidance in real time, the prostate is conditionally divided into 3 treatment zones from apex to base. prostate and 2 zones from one edge to the other (Fig. 4).



**Fig 4 Stages of bracket fixation and introduction of a multifunctional rectal probe (sensor)**

The multifunctional Sonablate®-500 transducer operating at a frequency of 3-8 MHz is used to demarcate the prostate capsule. The high-energy ultrasound beam combined with simultaneous target imaging ensures accurate and efficient tissue ablation. The multifunctional dual focus probe provides imaging of the gland margin and precise targeting in one compact device. This allows two emitters to be combined: the first provides imaging, identification of the target tissue, and treatment of the anterior prostate, and the second the posterior. The smart probe device allows the doctor to select between emitters by pressing one button without moving the probe. The system has 2 sensors: a low energy sensor (3-4 MHz) for imaging and a high energy sensor for treatment. The prostate is seen in the sagittal and frontal sections, the target area of the therapeutic effect is indicated. Both systems sequentially perform an intervention in which the treatment zone is first heated, and then cooled, during which the computer-controlled systems move to the next treatment zone, which is distant from the first zone. During the cooling phase, diagnostic imaging is performed, which allows real-time monitoring of changes in target

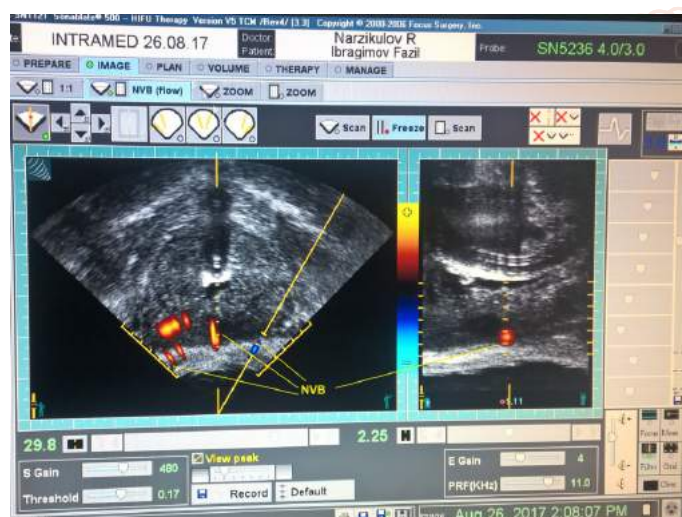


tissues within the affected area, as well as monitoring of sound changes in the nearby area of the rectal wall.

### Checking the effectiveness of treatment

Tissue Changing Monitoring (TCM) allows you to visually monitor the process of prostate treatment. If certain tissues have not been heated enough to destroy them, then the imaging will be done with TCM color coding. This allows this part to be processed in real time to confirm that the entire prostate has been treated. TCM calculates the changes that are taking place and displays them on the screen. The radio frequency signal is sent to the treatment site before the HIFU procedure, then another signal is sent after the HIFU to the same site. TCM detects tissue changes based on real-time comparison of radio frequency (RF) ultrasound echoes at each treatment site.

A special neurovascular bundle detector allows identifying blood vessels and nerves, as well as instantly integrating them into the image on the screen (Fig. 5). This makes it possible to automatically adjust the therapeutic plan for the procedure, which avoids damage to the neurovascular bundles - which is especially important for maintaining erectile function.

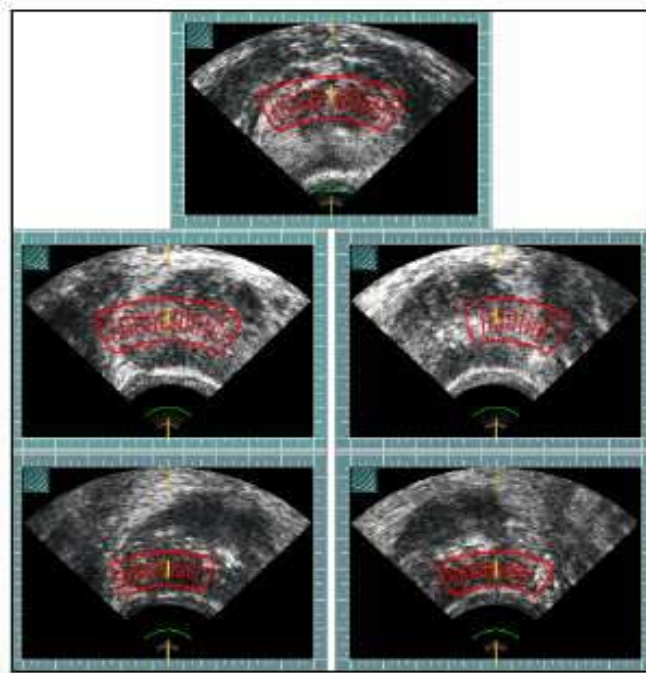


**Fig 5 Function of the neurovascular bundle detector.**

### Wide viewing angle treatment

A wide viewing angle of 90° allows visual coverage of the entire gland, and this allows most procedures to be carried out without moving the probe. This feature significantly reduces the time spent on treatment.

As shown in fig. 5, for the treatment of the entire prostate gland as a whole is divided into several zones. The first zone is always located along the anterior part of the prostate with subsequent treatment zones towards the rectal wall (posterior part), thereby ensuring that all parts of the prostate are treated. A 4.0 cm probe must be used to treat the front (top row). To treat the central part of the prostate (central row), a 3.0 cm transceiver must be used, if the rectal wall is at least 1.0 cm from the transceiver, then a 4.0 cm probe is used. the posterior side of the prostate is made using a 3.0 cm transceiver.



**Fig 6 Marking of zones of the prostate**

The safety function built into the Sonablate®-500 device allows you to prevent errors and even interrupt the procedure if any of the parameters go beyond the safe limits. The rectal wall is cooled to 16-20° C to prevent tissue damage. During the entire procedure, the position of the sensor relative to the rectal wall is constantly monitored. Measurement of visual visibility and continuous comparison with reference images (Reflectivity Index Measurement - RIM). The Sonablate®-500 software allows the surgeon to adjust the degree of exposure in each of the conditional zones that were formed during the marking before performing the ablation. The HIFU signal precisely and precisely affects the prostate tissue in different zones and allows you to accurately determine the treatment area in relation to the borders of the prostate or the external sphincter of the urinary bladder. After the completion of the operation, the bladder was drained with a Foley catheter 16-18 Ch.

### Conclusion

HIFU therapy in the treatment of BPH is one of the modern developing minimally invasive methods. Currently, there is insufficient data on the long-term results of HIFU use in patients with BPH. However, with the correct selection of patients and appropriate indications, the prostate volume is up to 90 cubic meters. cm, no middle lobe, no complications of BPH, it is possible to achieve significant clinical improvement. All this allows us to conclude that the HIFU method has the right to exist as one of the minimally invasive methods of treating prostate adenoma, however, additional research is required in this direction.

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# The Results of the Final Engineering and Geological Studies of the Mass of Lyoss Grits

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## ABSTRACT

The results of investigation of morphological, retrospective and prognoses engineering-geological tasks concerning loess soils massifs are formulated. The main result of solution of retrospective engineering-geological tasks is the proposal of hypothesizes and mechanisms of loess soils subsidence formation. They are the base for four special and general theory of subsidence formation.

The result of solution of prognoses engineering-geological tasks is the elaboration of methods for calculation the expected subsidence of loess soils massifs under different mode of their wetting and the development of different methods (hydrogeomechanical, geochemical, geotechnical and complex) of improvement of loess soils massifs properties.

**KEYWORDS:** *Engineering geology of loess soils massifs, subsidence of loess soils, hypothesizes and theories of subsidence formation, methods of improvement of loess soils properties*

**Introduction** of great importance are the rocks of lyoss, formed by mankind among natural geological structures. They are very common on earth and are found on all continents of the Earth except Antarctica in large khajms threeraydi (Lisenko, 1978; lyoss...2001). This lyoss grunt is located on the highest surface of the Earth, manifested mainly in the Quadrangular formation of various Genesis.

The results of the study of morphological, retrospektiv (related to the past) and predictive engineering-geological problems with respect to the arrays of Lyoss grunt were formed. At relative deposition, the deposition values reach 0.17-0.21, the deposition thickness value at Natural loading effect is 55 m. shown to be equal. The main task of solving past Engineering and geological problems is the development of 8 hypothesizes and rules for the formation of sediments of lyoss grits, on the basis of which four general theories of formation have been identified.

According to the results of solving the predicted problems – it is necessary to develop methods for calculating the expected values of lyoss grounding in different wet conditions of their deposition, as well as methods of further improvement of the composition of lyoss grounding arrays: geochemical, geotechnical and complex.

The law of their compression is almost no different from some other grunt, if external forces affect the grunt of lyoss, which has a natural moisture content. But if we saturate the lyoss grunt, which is affected by the pressure, with water, then rashes are also formed in it. Such additional sediments are called extreme sedimentation deformation of the lyoss grunt.

E. V. According to the Kadyrov calculations, the land of lyoss is covered in an area of 4 255 600 km<sup>2</sup> of the Earth's surface, which makes up 3,2% of the landfill area on the planet on which we live. For many years, more precisely centuries, these rocks have attracted the attention of mankind. They are studied by geologists, soil scientists and geographers.

The massifs made up of these grounds are also mastered by builders, landlords and agricultural workers. The thickness of the areas where all these grills meet varies from a few tens or even hundreds of meters, their composition is specific and close enough; these are sandy-loys-dusty systems, the main part of which consists of fine sand (0.1-0.05 mm) and especially large-dusty (0.05-0.01 mm) - sized grains. The extreme dipping value of Lyoss grasses is determined using one-line and two-line methods, depending on the conditions of conducting experiments on the odometer instrument. But solving flat and spatial issues requires the use of parameters related to classical mechanics. Therefore, the extreme deposition value of lyoss grills can be expressed through the deformation module (1 and 2-formulas).

$$S_{sl} = \beta \frac{\sigma_{zp} h}{E_{sat}} - \beta \frac{\sigma_{zp} h}{E_0}$$

$$S_{sl} = \beta \frac{\sigma_{zp} h}{E_0} \left( \frac{E_0}{E_{sat}} - 1 \right) = \beta = \frac{\sigma_{zp} h}{E} \quad \varepsilon_{sl} = \beta \frac{\sigma_{zp} + \sigma_{zg}}{E}$$

Lyoss grasses have a number of specific engineering-geological properties, which are distinguished as in different types of soils. To such a category of properties, first of all, they have a low content of natural moisture, high porosity, low water resistance, and the main thing is a sharp increase and decrease in the degree of deposition and deposition. As a result, in engineering-geology, a scientific and practical department was created, which is called engineering geology of the massifs of lousse gruels. Within its framework, the engineering-geological conditions of the massifs of the laussian lattices, their formation, spatial-time changes under the influence of natural and anthropogen (technoogen), modern and predicted geological processes are also studied (Trofimov, 2008). This set of studies and set of data is aimed at solving the engineering and geological problems of three types of massifs of lyoss grunt: they are morphological, retrospektiv (related to the past) and prophetic species.

Solving the problems of the first type-allows us to evaluate the properties, condition, structure and composition of lyoss grits, as well as the massifs that they constitute;

The solution of the second type of problem is to give us the named characteristics of this Massif, the history of the appearance of sediments and their recovery;

The solution of the third type of problem is the prediction of the economic assimilation of the lyoss gruels. In this regard, it is necessary to examine the solution of the problem

predicted in the study of construction skills in the arrays of lyoss grasses as an examination.

It is permissible for us to definitely point out a few scholars who have added their great efforts and contributions in the engineering-geological studies of these peculiar massifs of lyosses. They are: Yu. M. Abelev, V. M. Alekseev, M. N. Y. Alekseev, V. P. Ananov, L. G. Balaev, V. S. Bykov, A. A. Velichko, B. F. Galay, N. E. Denisov, R. S. Ziangirov, R. S. Of The Year, E. V. Kadirov, V. A. Korolev, V. F. Kraev, N. I. Kriger, V. I. Krutov, A. K. Larionov, M. P. Lisenko, G. A. Mevlanov, A. V. Minervin, S. G. Miranyuk, S. S. Morozov, A. A. Mustafayev, V. A. Obruchev, V. I. Popov, E. M. Sergeev, V. N. Y. Sokolov, V. T. Trafimov, L. I. Turpin, Sh. E. Usupov, P. V. Tsarev, Ya. E. Shaevich, M. Sh. Shermatov, as well as F. A. Nikitenko, I. D. Sedlesky, G. A. Sulekshina, I. V. Finaev and others. Thanks to their theoretical research and research, as well as the practical work of the army of senior seekers, they were studied like other groups, achieved remarkable results by a positive solution to each task.

ACS W	X

In this article, we will get acquainted with the achievements in solving only the first problems mentioned above, that is, solving the problems of morphological engineering and geological functions in the study of lyosses.

The main results of the engineering-geological study of the Lyoss massifs in the field of solving morphological problems are as follows:

- A. reliable descriptions of the distribution, composition, structure, condition and properties of lyosses and their arrays are obtained;

- B. the nature of the deposition of lyosses is determined;
- C. the types of separation of lyosses and the total value of sediments, as well as the description of the change of sediments by layers are determined;
- D. g) the regional legislation of the distribution of mass of sedimentary lyosses and the strength of sedimentary layers are indicated;
- E. requirements for engineering and geological exploration work have been developed in the districts where sedimentary rocks are distributed.

Further it can be noted that the process of deposition in the humidification of lyosses - the fact that it is a mechanism of development of deposition - has been sufficiently studied in this regard to date (Abelev, 1968; Ananov, etc., 1976; Denisov, 1953; Krutov, 1982; Mustafayev, 1989). In this regard, many scientists have studied the fact that on earth, for example, even in northern Eurasia, the deposition and spread of lyosses is a different district, and the factors underlying them (Abelev, 1968, Ananov, 2004, Ananov and others, 1976; Kart. ., 1989; Kriger, 1965, 1986; Kriger and others, 1981; Krutov, 1982, 1998; Larionov and others, 1959; Lyosslar., 1966, 1986, 2001; Lisenko, 1978; Mevlanov, 1958; Base., 2008; Trafimov, 2008). It is also determined that other mountaineers also have deposition properties: dusty salty and non-salty Sands, volcanic ash and artificial soils are identified. The data collected to date has also made it possible to characterize the excessively high values of the deposition indicators of lyosses.

**Table 1 Classes of techniques for controlling the deposition of Lyoss massifs.**

Groups of methods	Classes of methods	Methods types of	Basic techniques
hydrogeomechanical	Methods aimed at the deposition of lyosses by condensation and wetting	Methods of mechanical densification of sedimentary lyosses	Flattening the hipper with heavy rollers. Pillows from lyosses grills restoration. Blow up and condense. Avavlik condensation. Condensation with the help of Catholics.
		Gidromechanical methods of eliminating the deposition of a wide lyocoid mass	Wet the grunt massifs by pouring water into the pits. Deeply moisten the massifs. Densify by blasting extra soaked grunt massifs. Soaked grunt masses shake and condense. Steaming Lyoss rock Massif
Geochemical	Using physico-chemical melioration technologies, it is possible to determine the methods aimed at eliminating sediment	Thermal methods of eliminating the deposition of lyosimon rocks	Activate the side to the strengthening mass. Additional heated air to the massif to squeeze and drive.
		Methods of physico-chemical injection strengthening of sedimentary rocks	Strengthening the mass of lossy grills with dumbbells with dumbbells. Silicate. Ammonia. Reinforcement with urea resin.
Geotechnician	Methods based on scraping of sedimentary lyosses	Methods based on industrial shearing of sedimentary lyosses	In places where the highway is planned to be built, it is necessary to take the road beam-based sleeper lyoss grounding, etc.

	Methods based on armature of sedimentary lossy grunt massifs	direct techniques of grinding massifs with sedimentary lossy	Restoration of Sandy pillows. Scraping small-sized piles. Scraping the injecting and twisting piles into the indestructible sinking grunt.
	Methods based on the complete cutting of layers of calcareous sedimentary grits	Deep-foundation cutting of the sinking layer of lyoss grinds	The use of stumbling devices or clogging piles that cross the lyoss grinds. Restoration of sedimentary lyoss rock massifs with reinforced grunt columns.
	Based on the control of the humidity regime of sedimentary rock masses with lyoss methods	Water repellent activities	Area Planning Build waterproof screens to the foot of highways. Qualitative filling of the gaps between the pits and trenches around the pipe and other artificial structures at the base of the road. Management of emergency water out of the way and water leakage network.
Complex mixed	Methods based on combining different classes of techniques.	A set of activities that include different combinations of techniques of the first three groups.	Complex measures aimed at partial elimination of the deposition content of calcareous grits, structural and water-bearing protective measures.

It is known that the relative sedimentation value of lossy grills often reaches 0.09-0.15 (in urban and urban areas such as Tashkent, Odessa, Zaporozhe and Grozny), the base in Chirchik amounted to 0.3 MPa at a load of 0.17 (at a depth of 3-9 m), the depth at a natural load of 0.21 MPa at a depth of 22 m. ni established. The smallest values of the initial immersion pressure are V.I. According to Krutov (V.I. Krutov, 1998) reported that the extreme sedimentation rate of lyoss grunt was <0.02 MPa, while the relative sedimentation rate in it was known to increase to 0.12 MPa at the pressure effect of 0.3 MPa on the grunt.

The maximum value of the strength of the sinking area ie thickness 43-55 m. by arrangement, the value of the difference in the deposition of often lyossy grinds can also vary up to 30 m.

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# Uzbekistan and the Eurasian Economic Union (EEU): Integration in the Interests of the Country and the People?

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## ABSTRACT

Articles in the section, whether the Republic of Uzbekistan is a member of the Eurasian Economic Union or not, can be useful or harmful for our integrated economy.

**KEYWORDS:** *Eurasian Economic Union (EEU), integration, Interstate Council, Integration Commission, Free Trade Zone, NAFTA, Customs Union, Mecosur, Monetary Union, Monetary Union, Full integration, observer states, WTO (World Trade Organization), regional integration processes, tariffs, patents, tariffs, counter sanctions*

## INTRODUCTION

The Eurasian Economic Union was established on May 29, 2014 by the subject of international law for the free movement of goods, services, capital and labor and the implementation of common economic goals for the creation of conditions in the economy. Has been operating since January 1, 2015. The Eurasian Economic Union operates under an agreement signed by the governments of Armenia, Belarus, Russia, Kazakhstan and Kyrgyzstan.

### How does the OSCE work?

The main body of the OSCE during the Interstate Council. It may be adopted on the basis of an agreement reached with respect to the Member States. The permanent body of the OSCE is the Integration Committee. The board is scheduled to meet four times a year. Decisions of the Committee are implemented only if approved by two-thirds of the members. The votes of the members in the organization are determined by the meeting fees. Hence the treatment, Russia - 40; Belarus - 15; Kazakhstan - 15; Kyrgyzstan has 7.5 percent of the vote, followed by Armenia with 7.5 percent

Russia may be able to work on resolving the votes of the Russian Federation, provided that the performance of the fees is considered. **Toir Mansurov** is currently the Secretary General of the OSCE. In practice, there is an inter-parliamentary commission of the OSCE, consisting of 42 deputies from Russia, 16 from Belarus, 16 from Kazakhstan, 8 from Kyrgyzstan and 8 from Armenia. The Secretariat is headquartered in St. Petersburg.

A special bank is also working in Russia and Kazakhstan to solve economic problems and develop. The OSCE also has an anti-crisis fund, the purpose of which is to provide livelihoods for the implementation of the crisis in the world economy.

In 2012, the OSCE Court was also established. The court aims to resolve disputes over the development of member states.

Working in the second phase of the integrated Eurasian Economic Union form. That is, there is a "customs regime" between member states of the organization, which explains

that member states pursue the same trade policy. That is, for non-member states, the same level of customs has been established (the organization currently has some exceptions).

In March last year, it was decided that Uzbekistan would join the Eurasian Economic Union as an observer state. This means that we have taken a very big step towards joining the union (another, two, three, or even 5 years is a big step in our relationship with a member of the union).

**Relevance of the topic** In general, integration always stimulates economic growth. As long as the rule of law prevails in the integration organization over the interests of any member state. In the Eurasian Economic Union, however, states (mostly Russia) have repeatedly violated EU laws in their own interests. For example, after the events in Crimea, Russia restricted the flow of Ukrainian products to Kyrgyzstan and Kazakhstan. Or that Russia has imposed restrictions on the import of milk and dairy products from Belarus under various pretexts (mainly licenses) (this should not be a problem at all in the customs union). Or the recent problem with oil trade between Belarus and Russia, which has been fueled by Russia's preference for its own interests over those of other members of the alliance. As you can see, Russia is the main culprit in all the problems mentioned in the current example.

We are now receiving official observer status, and who can guarantee that there will be no such problems between Russia and our country after we join the union in the near future. Russia today is not a leading ally (as they think).

I have a question, why there are no reports of attempts to join the World Trade Organization (WTO)? Did it start again and stop like it did in 1994?

In general, we do not have to be a member of any organization to open the borders, in fact, in the current situation, simply removing the barriers at the border will bring us positive benefits (even without the agreement of any state).

### The content of the issue

How can Uzbekistan's current membership in the Eurasian Economic Community affect our economy?

Looking at the history of the world economy, we can see that most of the countries that have been involved in globalization and regional integration processes have returned to the pace of rapid growth. In general, increasing global specialization is accelerating the process of globalization between countries. Therefore, integration organizations are becoming one of the strongest factors in the economic development of states. But in the current

situation, what are the consequences of Uzbekistan's membership in the Organization?

**Advantages:** First of all, customs duties will be reduced at the border for products entering our country. As a result, the prices of goods and services in the domestic market will naturally fall. Consumers will benefit from this, as they will be able to buy more expensive products at a lower price, as well as increase their choice. In the short run, this will lead to a reduction in the market segment size of manufacturers (as a result of increased external competition). In the long run, the competitiveness of domestic producers will increase and exports will increase in areas with a relative advantage. Areas that do not have a relative advantage may disappear (not all). It is natural that there will be positive changes in the logistics system.

**Disadvantages:** First, the Russian effect. Historically, at a time when European countries were imposing sanctions on Russia, Kazakhstan, a member of the organization, also received sanctions from several countries. In general, the extent to which Russia participates in the political process will have a direct impact on the organization's activities in the future. In other words, the imposition of sanctions on Russia by other major leaders will affect other members of the organization.

Membership in the organization could increase Russia's influence in our economy. This will more or less undermine economic freedom.

If we look at the history of the Organization, we can see that Russia has repeatedly violated the agreements reached within the Organization. The recurrence of such cases in the future will lead to the deterioration of the position of the organization (in practice, will lead to the failure of the organization). Or the actions of the Republic of Belarus: at the time of the EU sanctions against Russia, the Republic of Belarus took advantage of this situation, that is, no sanctions were imposed on Belarus from Europe. There have been many cases of the Republic of Belarus importing European products (many of which have been converted to "Made in Belarus") into Russia through Belarus (which has caused significant damage to the Russian government).

In addition, we have competing countries in the organization, which are mainly engaged in the export of raw materials. In this regard, the opening of borders to these states may not lead to any positive situation in practice.

### Conclusions and recommendations

In my opinion, the fact that Uzbekistan is joining the Eurasian Economic Union as an observer is the right decision. The issue of migrants has often been at the forefront of this alliance. I do not believe that joining the union will ease the situation for migrants. But I expected the decision not to join to make things worse for them. We know Russian politicians who do not tolerate any inferiority in achieving their goals. After the sharp decision not to join the union, there was a growing pressure on our migrants in Russia. And given Russia's influence in Central Asia, we could expect the pressure to be more than that. I think (if I think so) that this decision was made wisely and will help the national economy gain time until it recovers somewhat.

Will joining the alliance make accession to the WTO easier or harder?

One of the main conditions for accession to the WTO is the reduction of import tariffs. From this perspective, joining the union will accelerate accession to the WTO. Why? At present, the average tariff rate in the country is 20% (if you add other duties, it will be higher). The average tariff in the Eurasian Economic Union is about 6%, and the average tariff rate in the WTO member states is about 9%. tariffs approach 6%). This will automatically eliminate the main problem of accession to the WTO. That is, in theory, joining the union will make it easier (or faster) to join the WTO.

### How will joining the union affect exports and imports?

The conclusion that joining the union will dramatically increase exports is not true. This is because the free trade agreement between the countries of the former Soviet Union has been in force since 2011. This means that until now, tariffs on exports to the countries of the Eurasian Economic Union have not been significantly affected. Joining the union may lead to a slight reduction in tariffs (a very small change), but it will not lead to a sharp increase in exports. However, import duties are the same not only for the member states of the Union, but also for other countries. That is, under the terms of the customs union, goods entering the territory of the union (regardless of the territory of the state) are subject to the same tariffs. For example, if a product from China enters the territory of Russia with a 5% duty, it means that it enters Uzbekistan with the same duty. Given the current level of tariffs in our country, joining the union will provide a huge incentive for imports in the short term. Of course, this process can seriously hurt domestic producers. Consumers, on the other hand, benefit from having the opportunity to buy cheaper than before. From an economic point of view, joining a union increases the well-being of society as a whole. Because the damage to domestic producers and the state budget will be less than the benefits to consumers.

However, these analyzes do not lead to the conclusion that it is necessary to join the union, because the above conclusions are based only on purely economic calculations. It does not take into account the fact that a state violates the laws of the Union in its own interests, restricts trade and the political consequences. Maybe the political consequences will be more costly for our country than the economic benefits, and if so, joining the union will not be justified. The issue of joining this union is the work of more politicians, and it is impossible to form a complete picture with economic calculations alone.

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## Creating Creativity in Primary School Students

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### ABSTRACT

One of the most important aspects of modern children's upbringing is the development of creative abilities, the factors of creativity, several types of creativity, the purposefulness of such creativity and its main goal of efficiency.

**KEYWORDS:** *Creativity, ability, fine arts, painting, intellectual, shrewdness, intelligence, intelligence, intelligence, artist, creative thinking, creative potential, intellectual potential, individual, virtue*

One of the most important aspects in the education of modern children is the development of the dignity of creativity in them. There are many factors of creativity, the merit of creativity involves the inclusion of several types of aspects in its content.

From a scientific point of view, creative abilities are the ability to make creative decisions, which in its essence means understanding, accepting and understanding and creating something that is completely new.

If we take a look at the everyday life of a person, then one should not be afraid to create something, when the task is assigned, immediately understand its essence, here is a step-by-step knowledge of how to create this new thing, be able to draw an algorithm of its creation, as well as quickly and without difficulties to perform all. The same applies to words in the Uzbek language, which express the dignity of creativity – perceptive, interpretive, sharp, intelligent. In fact, getting all these features in the direction of creating something new is exactly a sign of creativity.

What will be the merit of creativity in primary school students of school age? Perception of all lessons and the speed of their understanding, the ability to go beyond the limits of the process of reading, the ability to relax from the contents of the lessons, the desire to acquire new knowledge, fatigue from reading, the constant openness of consciousness and thinking, the ability to perceive all surrounding changes on their basis, the ability to observe them, the Consequently, this is a pedagogical task, which is purposefully formulated in the appropriate pedagogical conditions.

In Russian, not the sentence “mental acuity”, but another word is used. This word is equivalent to the word “smekalka”. The content of “smekalka” is told about the process of thinking and being able to implement it, even from the most difficult-looking situations, with the right, clear and quick way out of the existing opportunities to the maximum.

The content of the formation of creativity on the basis of samples of Fine Arts in primary school students at school age is said to be the direction of creating innovation of personal qualities and qualities on the basis of psycho-emotional, volitional-empathic and emotional-empirical influence on the student through the influence of Fine Arts. In the process

of creating innovation, the qualities and qualities necessary for the individual will consist of a set of humanitarian and universal values that arise in a person under the influence of fine works of art, they will be: rapid advancement of innovations, openness, openness, sincerity, loyalty, kindness, nobility, love of truth, correctness, avoidance of sins, confidence in good deeds, composure, seriousness, reflection and rotation, it is the process of gaining real validity and stagnation throughout human life.

From this point of view, in general, several factors of creativity merit manifest themselves in a bright way, they: mental capacity and readiness for creativity: in this case, it should be noted that the ability to use intelligence in a timely manner and at once is one of the main requirements of creativity. The main principle that relies on creativity is exactly the intellectual maturity. In any case, if in the elementary school student, even trying to form creativity on the basis of works of Fine Arts, it is necessary that the student has well mastered the subjects from all disciplines and spheres, especially natural sciences. When they say why, they teach the reader to reason, reason, understand the essence of things, understand a certain internal order and order, harmony and geometry. Without this, there will be no artistic thinking, visual thinking and potential. Consequently, if we want to form creativity on the basis of fine art samples in primary school students, we must pay special attention to the integration and coherence between disciplines, the link between the content of internal education.

-creative potential and not to be afraid of risk: creativity in any of its manifestations dictates creativeness and risk. A person who has learned to moderate will be far from creativity and will not understand creative attempts. Why such a person can rely on and lead a peaceful way of life (or the structure of houses, its materials, the laws of carrying out the lesson, the way of dressing, the methods of planting cotton, etc.) it is necessary to break and or replace it with new methods, he himself thinks that the methods are not enough, that there are such.

This is considered sufficient to maintain economic stagnation. However, the process of economic growth requires a new look, a new look and new actions. And they can be created not by a moderate person, but by a person with creative thinking. Accordingly, the president of the Republic of Uzbekistan, having widely promoted the concept of “human capital” today, expressed concern about the lack of such creativity for the growth of the national economy.

On May 28, 2019, President of the Republic of Uzbekistan Shavkat Mirziyoyev held a meeting dedicated to the implementation of the tasks set for the development of Science and higher education. The importance of creating scientific schools on the basis of the National University of Uzbekistan and Tashkent State Technical University, formation of a generation of scientists on nanotechnology,



material science, semiconductor Physics, Biophysics and Biochemistry, Biotechnology was emphasized.

At the meeting with the scientists it was agreed to establish permanent commissions in four directions. The first commission shall constantly analyze the activities of research institutions, provide practical assistance in solving existing problems, the second Commission shall analyze and evaluate the educational process and quality of education in higher educational institutions, the third Commission shall analyze the spiritual and educational work in higher educational institutions, the implementation of 5 initiatives, it was determined that the fourth Commission will work to attract our compatriots abroad, who have achieved significant achievements in the field of higher education and science, to the activities on the specialty of our country.

"The neglect of investing in human capital could send a sharp decline in the competitiveness of the country. After all, for the economic development of the country, it requires the education of talented people. At this time, correction of some shortcomings in cognitive and socio-emotional abilities in childhood is costly when reaching the age of puberty. Therefore, the development of human capital by the government in the first 1000 days of the life of the child will have an economic effect.

Emotional-moral readiness for the creation of innovation: the desire for the creation of innovation itself is not enough. This is evidenced by the complex processes in life, the resistance of society and the population to the penetration of innovation, the processes of struggle, opposition. So, apart from the person, the will, the deep respect and respect for his work, the confidence in his own power, the proper distribution of his opportunities, the possession of his own team, etc., that is, one of the very necessary characteristics that is required is the issue of the emotional, psychological and moral readiness of the individual to create this innovation. In creativity, the issue of morality prevails. Because a creative person requires a respectful approach to both his personal and visual property, and to the property of others. Because, "cognitive capacity is not the only indicator of human capital. Socio-emotional skills such as courage, willpower and honesty usually bring great economic benefits. Health is also important. Because of, the labor efficiency of healthy people will be high." physical-the presence of a talent factor: any creativity can be both natural and nurtured. If creativity is formed on the basis of a natural

factor, then this individual will easily experience the manifestation of his capabilities, but the main condition for demonstrating talent is the ability to work. If a talent is a lazy, hardworking, egoist, then naturally from his talent neither to himself, nor to society will benefit. And the trained creativity serves its owner first of all. Because such creativity will be purposeful, and the result will be considered its main goal.

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# Water Sources of the Southern Fergana Landscape and their Role in Recreation

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## ABSTRACT

This article provides information on water sources in the Southern Fergana landscape and their role in recreation.

Rivers, lakes and groundwater make up the water resources of the region. The foothills and plains of the region belong to the area that hydrologically consumes and evaporates water, and the mountains to the south of it from the surface and groundwater runoff.

The Syrdarya is a transit river that begins and flows out of the region. Its left bank to the middle stream flows at a certain distance to the Kayrakkum Reservoir, creating recreational landscapes in the region.

The main rivers flowing into the region are the Sokh, Isfayram and Isfara rivers, which are actively involved in the formation of recreational landscape complexes. Some of them start in the Alay Mountains (Isfayram, Shohimardon), while Isfara is a fast-flowing mountain river that starts from the Turkestan ridge. As they emerge from the mountains, the water of these rivers divides and spreads into irrigation canals and ditches, none of which reaches the Syrdarya.

One of the rivers abounding with water in southern Fergana is the Sokh. It starts from the Matchokh mountain node, which is separated from the Alay, Turkestan and Zarafshan mountains, by a glacier at an altitude of 5549 m. It flows through a deep and narrow ravine in the upper reaches of the Sokh River. Here the average depth of the river valley is 1190 m, and the average slope of the slopes is 27 degrees. Such a gorge-like depth of the valley not only creates a unique landscape, but also helps to draw and collect the surrounding groundwater. As the river rises to the hillside, the river valley widens. Finally, near the village of Sarikkurgan, the river rises to the plain and forms a classic conical spread with a width of 70 km and a length of 50 km. The basin is 66 percent shale, 20 percent limestone, 7 percent granodiorite, and 7 percent conglomerate, sandstone, clay, and gravel. There are many glaciers in the Sokh river basin and they are located at a much lower level (2650-4400 m). There are 99 glaciers with a total length of 211 km and an area of 170 sq. Km in the upper reaches of the river, but according to new data, the number of these glaciers has decreased significantly. These glaciers cover 6.9% of the river basin. Sariqkurgan water distributor, Oqchi hydroelectric power station and a water distributor have been built at its foot. Each of these waterworks is a unique spectacle of the recreational landscape. Sokh provides water to the arable lands of the Dukhan oasis districts. The Isfayram River begins with small glaciers on the northern slope of the Alay River. Near the village of Uchkurgan, the river water is distributed to irrigation canals. Near the village of Polmon, the Quvasoy canal receives water from it. The main river of

Quvasoy is Besholshisoy in the region. It is called Yazyovonsoy.

42 % of the Isfayramsay basin is covered with limestone, 27% with shale and 23% with granodiorite. In the middle and upper reaches, forest-shrubs and meadows occupy 23% of the basin.

It is the second largest glacier in the Isfayram river basin after the Sokh river. Its basin consists of 72 glaciers with a total length of 109 km, with an area of 134 sq. Km. or 6 percent of the basin. The glaciers in this basin are located 500-600 m above the Sokh basin, and their lower parts are covered with moraines. The abundance of small lakes and moraines around the glaciers is one of the important recreational landscape features of this river basin. There are 26 lakes in the basin, with a total area of 1.6 sq. km.

The Isfara River starts from the Shirov Glacier on the northern slope of the Turkestan ridge. It rises 78 km southeast of Konibodom to the plain part of the valley, forming its own conical distribution.

52 % of the river basin is covered with shales and sandstones, 28% with limestones and 12% with granodiorites. Forty percent of the basin is thickly covered with vegetation. In the upper reaches of the basin, there are 34 glaciers with a length of 102 km, with a total area of 88.7 sq km, or 5.8% of the basin. The glaciers here are 170 m higher than the glaciers in the Sokh Basin.

The Shokhimardonsoy is formed by the confluence of the Aksu and Koksuv rivers near the village of Shokhimardon, starting from the northern slopes of the Aloy ridge. It is divided into Margilansay, Oltiariqsay and Fayziobodsay in the village of Vodil.

46% of the basin area is covered with limestone, 15% with shale, 11% with granodiorites and 17% with current deposits. Shrubs, forests and pastures cover 40% of the basin. At the headwaters of the Shokhimardonsoy are 20 glaciers with a total length of 41.5 km, which occupy 52.6 sq km or 3.7% of the basin area.

According to the V. L. Schultz classification, these rivers, which belong to the type saturated with ice-snow water, have a flow regime typical of this type of rivers. The maximum watering period in these rivers is July-August, and the lowest flow is March-April; Between July and September, more than 40 percent of the annual flow is in the Sokh and Isfara rivers.

Due to the height of the catchment areas and the saturation of perennial snow and ice water, the amount of water flowing in these rivers varies little from year to year. This is because the amount of runoff generated by the melting of ice

and perennial snow is determined not by the amount of oil burned in the same year, but by the heat balance. In July-September, the heat balance fluctuates less from year to year, and is almost constant over the years.

In terms of water resources, the total area of glaciers in the basins of the Sokh, Isfayram, Isfara and Shohimardon rivers

is 345.3 sq. km. With ice water flowing from so much area, 138,000 hectares of land can be irrigated (I. A. Ilin).

The annual flow of river water varies with the seasons, which is one of the main factors determining the nature of the seasonal load in the recreational-landscape areas.

**Table №1 Seasonal distribution of flow**

(as a percentage of annual)

Rivers	Spring	Summer	Autumn	Winter
Sokh	10.3	61.6	20.8	7.3
Isfara	11.5	60.2	16.4	11.7
Isfayram	16.9	49.7	20.1	13.3
Shokhimardon	16.4	45.1	22.3	16.2

The rivers named above are different in terms of turbidity. The average annual turbidity of water at their outcrops is 0.13 kg m<sup>3</sup>, and in the distance from Isfayram to Sokh it is 0.2 kg m<sup>3</sup>. 500t per year from the area of 1 sq. Km of the Sokh river basin. , Isfara 200t. , Shokhimardon brings 100 tons and Isfayram brings 39 tons of ice (I.A.Ilin).

There is the Shursuv River between the Sokh and Isfara rivers. It starts from the Isfara-Logan sediment and carries the flow collected from groundwater and wastewater through a deep valley in the Guzan-Burgan ridge to the plain near the village of Karimdevona. It is a low-water stream.

The water supply of the region is characterized by the lack of natural lakes. The conditions under which a lake is formed in this area are not sufficient. Although the relief conditions that form the lake are sufficient, there is no atmospheric precipitation and no excess water reserves that form the lake. There are lakes such as Kolikubbon and Yashil lakes in the upper reaches of the Shohimardon river basin, and only a few temporary lakes on the left bank of the Syrdarya.

Kolykubbon is located 7 km south of the village of Shokhimardon, in the valley of the Koksuv river, the right tributary of the river, at an altitude of 1724 m above sea level. Kulyubbon is a lake formed by the accumulation of water by collapsing the mountain slope and blocking the Koksuv valley as a result of a strong earthquake. The length of the dam along the river is about one kilometer, the width (at the highest point of the dam) is 160 m and its height above the water surface is 20 m. Tugan is composed of rocks of various sizes from the marbled limestones of the Paleozoic period. Some of them have a cross section greater than 15m.

The lake stretches from north to south for 700m in length, 200m in width, 130m in area and 5-10m in depth. The bottom of the lake is covered with mud and the sand lies in a mixed state. The shores are steep and high, but the southern coast is flat and covered with sand. The lake deposits are mainly composed of sediments brought by the Koksuv River and rocks that have eroded from the rocks. In the middle part of the lake, dolomite piles form inverted folds. The area of the lake is shrinking year by year due to the fall of many light rocks into the lake where the folds are bent on both shores.

The water of the lake is fresh, the clarity is 5-6m in July-August. On the hottest days, the top layer of water heats up to 15 degrees, the color is greenish-airy. However, its color changes throughout the day. It is dark blue in the morning,

green in the open air on a sunny day, and red at sunset. The color of the lake water is determined by its clarity and absorption of sunlight. The purer the water, the clearer its blue color, and the rocks in the water give the lake water a green, yellowish-green hue.

The lake is mainly filled by the Koksuv River. The water of the river increases in July-August due to the melting of ice and snow in the mountains. The lake has four glaciers with a catchment area of more than 11 sq. km. The water level of the ash rises from May and peaks in August-September. From October, it will start to decline again. Such fluctuations in the water level are mainly due to the difference between the amount of water in the Koksuv River that flows into the lake and the amount of water that seeps under its dam. During the winter months, the lake is mostly filled with groundwater, its water surface drops sharply, becomes shallow and freezes.

As a result of the low temperature of the lake water and the rapid change of its level, it is poor in flora and fauna. Due to the fact that the river water is flooded by the lake, its amount does not change dramatically during the year depending on other rivers. For example, the difference between the water consumption of the Sokh river in the months of the highest and lowest months is 110 m<sup>3</sup>, in the Isfara river - 40 m<sup>3</sup>, in the Shokhimardonsoy river - 14 m<sup>3</sup>, in the Koksuv river this amount is only 2 m<sup>3</sup> sec. The shores of the lake are covered with rose hip, camel thorn and tamarisk bush, and the slopes are covered with spruce and various shrubs. In general, there are a lot of poor, bare areas for ornamental plants behind the arid climate and insufficient humidity, not to mention the mountain slopes around the lake.

At a distance of 100-150 m to the south of the lake there are small but very beautiful Yashil and Aydinkol lakes. Due to the complex mountainous terrain, these lakes are shaped like a crescent moon, the western part of which is open to the Koksuv River. The area of the ash is about 5 hectares, with a depth of 1-5 m. The bottom of the lake is muddy and rich in organic matter, the water temperature rises to 15-20 degrees on sunny summer days.

The green lake is saturated with the water of the small Archali river, which flows into it from the south-west, the spring water from the foot of the western slope, and partly from the Koksuv river. The Koksuv River flows into the lake from late May to late August. The lake supplies its water to Koksuv through a small ditch that flows from the northeast. In dry years, the lake water almost dries up.

## Water-Saving Irrigation Technology Uses

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### ABSTRACT

This article presents the results of field experiments of the authors in theoretical and natural conditions. Field experiments were carried out on the territory of the Hodjayakshaba MFY of Kagan district, Bukhara region. The technology of muddy water irrigation for drip irrigation of gardens has been developed. The implementation of drip irrigation technology in intensive gardens has resulted in a 20-60% reduction in water consumption on arable land, up to 50% on mineral fertilizers and up to 30% on fuel and lubricants. Also, the level of ground water does not rise due to the irrigation water requirements of the plant and excessive water supply, low water evaporation from the soil, as well as uniform moisture throughout the field.

**KEYWORDS:** irrigation, drip irrigation, irrigation methods, sludge water, ground water, water resources, salinization, root, evaporation, agrotechnics, water shortages, water saving technologies, pre-irrigation moisture, mineralization, irrigation techniques, growing season

### INTRODUCTION

Strategy of actions on five priority directions of development of the Republic of Uzbekistan for 2017-2021 in the section "Modernization and accelerated development of agriculture" will further improve the reclamation of irrigated lands, the development of melioration and irrigation facilities, intensive methods of agricultural production, modern agricultural technologies. Introduction of high-performance agricultural machinery these are the main tasks. Decree by the President of the Republic of Uzbekistan dated November 27, 2017 No PP-3405[2]

The decision was mainly aimed at improving the efficiency of irrigated land, the use of low irrigation water, and higher crop yields. The population of Uzbekistan will reach 39 million by 2030 Due to climate change, Uzbekistan's water resources are estimated at more than \$ 7 billion. m3 is expected to decrease. At the same time annual water resources amount to 44 bln. cubic meters of water per capita and 1130 m3 per capita. The Decree of the President of the Republic of Uzbekistan dated October 25, 2019 "On Measures for Expanding Mechanisms to Promote the Implementation of Water-saving Technologies in Agriculture" provides for the procedure of state support for introduction of water-saving irrigation technologies from January 1, 2020. The introduction of drip irrigation technology equals to \$ 8 million per hectare. Sums will be provided.

### The purpose of the study

Alluvial, mechanically heavy sandy loam soils of Bukhara region, scientifically based on irrigation method for drip irrigation of gardens and vineyards with the level of ground water 1.5-2.0 m, mineralization 1.0-3.0 g / l and their growth. The development of scientific and practical recommendations for the study of the impact on development, productivity and productivity.

### Research objectives:

- Determination of soil conditions (type, mechanical composition, water-physical properties and productivity of experimental fields);
- Determination of hydro geological and ameliorative conditions of experimental fields;
- Determination of scientifically based irrigation methods of drip irrigation of gardens and vineyards in the grassy alluvial soils of Bukhara region with mineralization of 1–2.0 m / l of ground water level 1–3 g/l;
- Determining the impact of scientifically based on irrigation regime on drip irrigation of gardens and vineyards on water-physical properties of soil, salt regime, changes in soil surface water and mineralization, their growth, development and productivity.

**Methods of fieldwork:** Field, laboratory researches and phenological observations were conducted on the basis of "Field experiments" (Research Institute of Agro technologies of Crop Breeding and Seed Production) (PITI 2007).

**Scientific novelty:** Drip irrigation of gardens and vineyards in muddy water with alluvial, mechanically heavy sandy soils, ground water level 1.5-2.0 m, mineralization 1.0–3.0 g / l in Kagan district of Bukhara region. a scientifically justified irrigation method has been developed and their efficiency in reducing the negative effects of river water shortages and water shortages has been established;

It is important to conserve water resources in conditions of water scarcity, apply drip irrigation technology to increase the efficiency of 1 m3 of river water, to study their impact on the growth, development and productivity of gardens and vineyards.

**The main part:** More than 90% of water resources are used in agriculture, primarily in agricultural production, with the aim of ensuring food security of the population [3]. In recent years, the welfare of the population of the country has been improving dramatically, and its number has been increasing year by year. However, water resources per capita



are decreasing from year to year due to limited water resources. Analysis shows that over the years, the demand for water is increasing, so we need to use a drop of water and use it wisely.

Drip irrigation system is a pressure irrigation system designed to supply the plant with the required amount of water to its root surface in the required amount of time.

With the introduction of drip irrigation, water use and crop irrigation have a number of advantages. With the introduction of technology, the main goal is to save water for drip irrigation, water is only given to the root zone of the field, and other areas remain dry. The irrigation regime is appropriate for the water demand of the plant and is not

supplied with excessive water, with low evaporation from the soil and water does not disperse across the field.

To date, M.Khamidov, B.Matyakubov, M.Sarimsakov, Sh.Azizov, SA Mamatovs are doing research on the use of drip irrigation technology. They were used only when muddy water was discontinued, and we had direct use without interrupting muddy water.

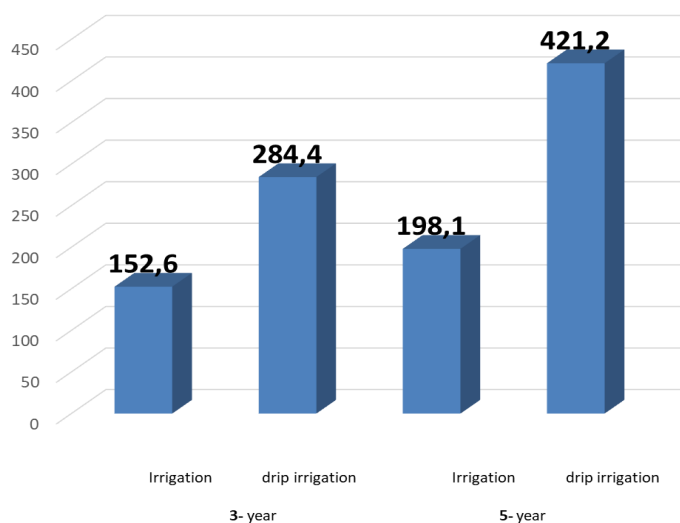
**Results of the study:** The implementation of drip irrigation technology of intensive orchards on the area of 3 hectares in the educational and scientific center of Bukhara branch of the Institute for Drinking Water. Given that till now drip irrigation is only used with clean water, direct drip irrigation with muddy water is practiced for the first time.

#### Irrigation norms and yield of vineyards

Years of research	Experiment options	Total water consumption, m <sup>3</sup> / ha	Yield, ts / ha	Water consumption per 1 ts of crop, m <sup>3</sup>	Sugar content, %
3 Year	Furrow irrigation	2580	152,6	30,1	21,8
	drip irrigation	1365	284,4	13,1	22,1
5 Year	Furrow irrigation	4150	198,1	24,4	20,7
	drip irrigation	2850	421,2	18,2	21,9

During the experiments, water savings were up to 40%, while in conventional irrigation water consumption was 4200 m<sup>3</sup> / ha, and for drip irrigation the water consumption was 2500 m<sup>3</sup> / ha (Figure 1). Fertilizers saved 52% compared to usual. At the beginning of the vegetation season, the average ground water level was 194-198 cm, and in the middle of the growing season, between July and August, groundwater levels were about 175-181 cm. The soil weight was 1.31 g / cm<sup>3</sup> in 0-30 cm of plowed soil, 1.39 g / cm<sup>3</sup> in subsoil (30-50 cm) and 1.40 g / cm<sup>3</sup> in 0-100 cm layer.

Yield, ts / ha



Water consumption per 1 ts crop, m<sup>3</sup> / ts

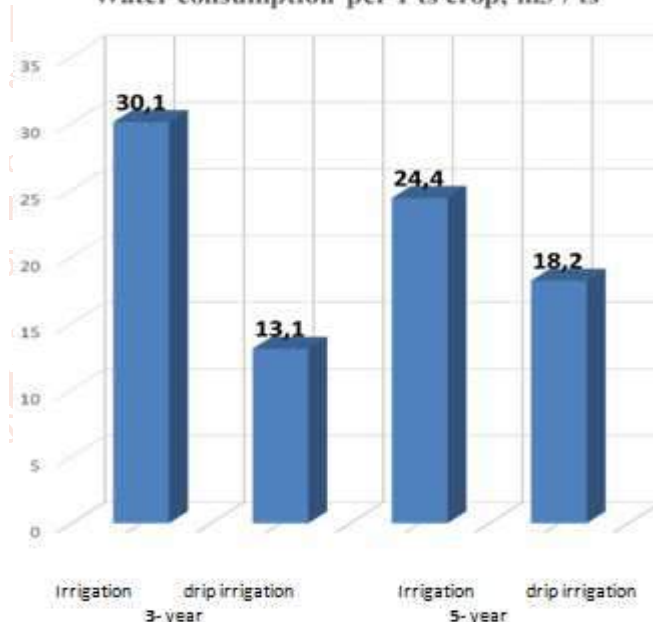


Figure 1 Watered condition of the vineyard



According to the results of the limited field moisture content of the soil, in the 0-50 cm layer of soil it was 19.5% of the soil mass, while the limited field moisture content in the 0-100 cm layer was 19.8% of the dry soil weight. Drip irrigation was performed 10 times, irrigation rates were set at 240-260 m<sup>3</sup> per hectare, seasonal irrigation rate was 2450 m<sup>3</sup> / ha, or less than 1550 m<sup>3</sup> / ha was used as a control.

According to soil salinity data, at the beginning of the growing season, the chlorine ion was 0.025% at the beginning of the growing season and 0.021% at the end of the growing season, and 0.021% and 0.012% in the 0-100 cm layer, respectively. . At the beginning of the growing season the dry residue in the plowed layer was 0.526%, at the end of the growing season it was 0.297%.

### Conclusion

In the active soil layer, it was 0.479% and 0.282%, respectively, and the seasonal salt accumulation coefficient was 1.79 in the deposition layer, 1.77 in the dry residue, and 1.76 in the 0-100 cm layer, respectively. , Was 70. Based on the observations of the experiments and laboratory analyzes, we can conclude the following. It is recommended to apply drip irrigation and to irrigate the soil with irrigation norms of 240-260 m<sup>3</sup> / ha and seasonal irrigation norms of 2450 m<sup>3</sup> / ha, keeping 70-80-60% of pre-irrigation soil moisture.

The soil layer keeps the soil soft. There is no loss of water for sewage and filtration in the field, uniform soil moisture is maintained on different slopes. Even with minimal irrigation, the growth and development of seedlings is accelerated.

Increased demand for water resources requires the efficient and rational use of water resources to mitigate the negative effects of water scarcity, achieve high yields and ensure food security. To date, research has been conducted on the development of new water-saving irrigation technologies based on scientific research, which shows that high levels of mineralization are maintained by drip irrigation. Economically, 50% of the cost will be lower and positive results will be achieved.

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