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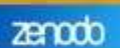
MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY



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WE ARE USING MORE SOCIAL NETWORKS AS A SOURCE OF INFORMATION

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Abstract: The intensity of today's times makes it very urgent to imagine our life without the Internet or social networks. The activities of most people are related to being aware of the daily news happening in the world through the Internet, social networks and telegram channels, and transmitting them to each other.

Key words: information, social networks, "popular culture", information attacks.

Information about the changes, events, and news taking place in our country and the world is reflected in all social networks. It is very convenient to use the Internet system, mobile phones and computer technologies to be aware of these news. In addition, social networks are a very convenient tool for exchanging information or reacting to an event, expressing one's opinion or communicating.

All this shows that social networks are an unparalleled opportunity for users to express their thoughts, views and feelings. That is why social networks "fascinate" a person of any age to an incomparable level.

Most of the youth use social media all day long, wasting their precious time. In this way, they have almost all the information and react to this or that issue based on their worldview. However, not all of the stated relations are the opinions of people with a level, that is, spiritual people, of course. Especially today, people who do not have enough knowledge and skills, without thinking about whether it is right or wrong, do not think about any information distributed on social networks or have knowledge and knowledge about some issues. regardless of whether they have the potential or not, they express their opinion. Or they post their written "works" or "articles", "messages", "poems" on social networks and praise each other.

The interesting thing is that some people don't even think about whether they should do it or not. Stupid sentences and spelling mistakes that "decorate" the information posted on social networks show the level of the user of that network. This causes regret and pity among social network users. Sometimes, it is impossible to even count the baseless and low-level information that is shared through social networks.

In particular, such groups have appeared in networks where users praise each other and smear someone's name in the mud. Gossip has become normal for them. And some people try to use the social network to discredit people they don't like, to beat them to the ground. Because there is no possibility to control social networks, they think that they can do anything on it. those who claim that freedom of expression can be used in such ways reveal their level to a large audience in such ways. That's why many people don't like these networks. But despite this, if we look at statistics, 96% of the world's youth communicate through social networks. This is a concept used to express the worldview of young people and the way of life - a specific, specific form of individual or collective life and activity. But the content of the concept is not limited to the expression of various aspects of human life. Scientific sources on the subject show that any lifestyle includes a number of parameters. These parameters are derived from the main directions of human life activity. For example, the most important direction of life activity is related to labor activity.

"It refers to the daily lifestyle aimed at meeting the basic physiological needs of a person. This way of life includes housing, clothing, household goods, as well as self-serving behavior[2]. At the same time, it is necessary to take into account the intellectual capacity of a person.

What types of social networks do we use today? According to the results of information analysis and statistics, Facebook is currently in the leading position as the most popular social network in the world. To date, it has been reported that the number of people registered on the Facebook network has exceeded several billion people. It is followed by Twitter, Instagram, LinkedIn, Google+, Pinterest, Snapchat, YouTube, Reddit, WhatsApp, Flickr, Weibo and TikTop.

Today, a lot of information is being published on social networks that serve to promote the reforms implemented in our country, the comprehensive achievements of our country in the world media space, and to improve human spirituality in every way. At the same time, various incitements, gossips, threats under the guise of "mass culture" and other vices, which are a combination of national cultures, continue to threaten our national mentality.

The aspect that dulls a person's taste is that corrupt ideas, immorality, and inhumane habits are entering our country under the guise of "mass culture" through social networks. All the ideological struggles that reject the nation's history, past values, and encourage the promotion of "mass culture" are conducted through social networks. After all, it is no secret that social networks are one of the main levers of the ideologues who lead the abyss. Therefore, this situation requires regular awareness of threats from each of us.

Malicious forces trying to put pressure on the human mind, heart and psyche are effectively using the Internet system and social networks as the most effective means of information attacks. At the moment, the reception of ideas and informational attacks alien to our national spirituality spread through the Internet and social networks by the youth and its consequences are worrying.

It should be noted that "mass culture" does not choose language, religion, faith, race, place, people and nation according to its manifestation characteristics. It violates the principles of humanity in social relations by emphasizing the cultural and aesthetic values of the society. After all, when using social networks, of course, all of us should have information about media security, about the types of ideological struggle conducted by Western countries, and teach this to young people. The President said, "Another urgent issue that worries me all the time is related to the manners, behavior, cultural level, in a word, education of our youth. We are doing great work in this direction. But in order to further strengthen their effectiveness, we need to pay serious attention to a number of issues" [1].

In order to change people's consciousness and worldview through social networks, ideological and ideological influence, distribution of disinformation information, especially require vigilance. In the information attack, the human mind and the psyche of the nation are targeted. Basically, the idea of ideological influence by conquering the human mind and heart lies in the implementation of information attacks. This situation undermines the stability of the states and endangers the nation's historically formed values, its identity, survival as a nation and people. Every compatriot, first of all, young representatives of the generation will have to understand deeply.

In conclusion, as the head of our state, Shavkat Mirziyoyev, stated, "... the minds and worldviews of our children are not based on our world and national literature, which has been tested for centuries and is a treasure of high spirituality, but on the basis of some dubious and harmful information. we can't look at its formation indifferently." Therefore, today's era demands that we do not give any chance to the various negative situations in social networks that seek to deceive and trap our youth by spreading slander and fabrications on a global scale. After all, it is our main task to raise our youth in the spirit of loyalty to the Motherland and to increase their love for their people and country by protecting our national spirituality.

REFERENCES

1. Мирзиёев Ш.М. Янги Ўзбекистон стратегияси. - Тошкент: "O'zbekiston", 2021. – Б.257
2. Худойбердиев Д. Ёшлар истеъмолчилик хулқи: мазмуни ва шакллари, ўзгариши сабаблари ва оқибатлари. - Қарши: Фан ва таълим, 2021. - Б.122-123.
3. Lutfullayev A. "Influence of virtuality on human spiritual world" American Journal Of Social Sciences And Humanity Research, 2023. b-45-48.



THE ROLE OF THE ECONOMY IN THE DEVELOPMENT OF THE STATE

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Annation : This article talks about the economy, its origin and place in society. In addition, economic sectors were also discussed.

Key words : Economy , management , innovation , economic sectors

Economy (ancient Greek: oīkos "house, house" + nómos "noun, territory under management") is a set of relations that develop in the economic activity of society, as well as in the system of production, distribution, exchange and consumption.

For the first time, the word "economy" was used in scientific work in the IV century. From Xenophon BC, he calls it "natural science". Aristotle contrasted economics with chrematistics, which he considered to be a field of human activity related to profit. In modern philosophy, the economy is considered as a system of social relations viewed from the point of view of the concept of value. The main task of the economy is the continuous creation of such benefits that are necessary for human life and without which society cannot develop. Economics is a branch of industry that helps meet human needs in a world of limited resources.

Economics is the study of production, distribution and trade, as well as the consumption of goods and services. Broadly speaking, it is defined as a social sphere that emphasizes the practices, discourses, and material expressions associated with the production, use, and management of scarce resources. A particular economy is a set of processes that include its culture, values, education, technological evolution, history, social structure, political structure, legal systems, and natural resources as key factors. These factors give meaning, and the economy defines conditions and parameters. In other words, the economic sphere is a social sphere of interrelated human practices and operations, which is closely related to several spheres.

Economic agents can be individuals, businesses, organizations or governments. Economic transactions occur when two groups or two opposite parties agree on the value of the traded goods or services, usually expressed in a certain currency, or at a certain price. However, monetary transactions constitute only a small part of the economic sphere.

Economic activity is stimulated by production that uses natural resources, labor and capital. Over time, it is technology, innovation (new products, services, processes, expansion of markets, diversification of markets, increasing the level of income functions), such as intellectual property, and changes in production relations. (most notably, child labor has been replaced by universal access to education in some parts of the world).

The role of the digital economy in the economy in determining the competitiveness of countries in the process of globalization is unique. No matter which industry or sector of the economy we look at, we see the place of digital technologies in all of them. From services in the country's banking system, we can see the share of innovative digital technologies at the level of public services. The digital economy is used to represent two different concepts. First, the digital economy is a modern stage of development, which is characterized by the priority of creative work and information benefits. Secondly, the digital economy is a unique concept, the object of its study is the information society.

Modernizing Uzbekistan today aims not only to develop, but to become one of the strongest countries as a result of comprehensive reforms implemented in various spheres of

society. In the digital economy, information in digital form is the main element of production in all socio-economic areas, and the gradual transition to such an economic system will further increase the competitiveness of our country on a global scale, the quality of life of citizens, create new jobs, and enable rapid economic growth. creates and ensures national independence.

In recent years, measures aimed at reducing the role and participation of the state in the republic's economy, widely introducing market principles and mechanisms in the management of economic sectors, and increasing the well-being and living standards of the population have been implemented.

At the same time, the current structure of economic bodies, the principles and methods of organizing their work do not meet the modern requirements of economic management, as well as structural changes in economic sectors.

In particular, there is no system for the formation of targeted directions (indicators) of socio-economic development of the country in the conditions of economic changes, as well as for identifying new sources of economic growth, taking into account existing internal and external factors and strategic priorities of reforms.

The system of coordination of work on the placement of production forces in order to ensure balance through the realization of the regional and sectoral development of the economy, including the potential of urbanization, has not been established to the required level.

Necessary measures for wide implementation of market principles, diversification of local production, filling the market with competitive goods and increasing the volume of their transfer to foreign markets are not being developed.

As a result, the low level of stable job creation does not allow to provide the population, especially the rural population with a stable source of income and prevents the development of quality human capital. In conclusion, comprehensive reforms implemented by the government of our country in recent years serve as a stable foundation of economic growth in order to ensure the stable development of the national economy. Taking into account that the negative impact of the pandemic on the world economy has not yet been completely eliminated, we consider it appropriate to further activate measures in the following directions to ensure stable high growth rates of the national economy in the near future:

- more active continuation of production modernization, technical renewal and diversification in national economic sectors;

- expanding the range of products with high added value in the industry and increasing the level of competitiveness in terms of quality;

- expanding the scale of production of products with high scientific capacity in the future by activating investments in human capital;

- activation of measures aimed at developing the export and import structure of enterprises operating in economic sectors, their production potential, and diversifying the export structure;

- implementing important strategic projects by conducting an active investment policy, as well as attracting foreign capital, primarily to material export-oriented and import-substituting production;

- to increase the level of employment of the population by creating new jobs as an important factor of the stable development of the national economy, and further encourage measures aimed at increasing the role of small business and private entrepreneurship in this process.

REFERENCES :

1. "Tech Blog: Amaliy dasturlash interfeyslarining (API) afzalliklari - Blog Detail - Science Gateways Community Institute (SGCI)". Sciencegateways.org. Olingan 27-10-2021.
2. "Kompyuter asoslari: Operatsion tizimlarni tushunish". GCFGlobal.org. Olingan 27-10-2021.
3. "Mobil texnologiyalar va uy keng polosali 2019". Pew tadqiqot markazi: Internet, fan va texnologiya. 2019-06-13. Olingan 12-13-2019.
4. Sayt Global Raqamli Biznesni o' boshqaruv markazi, 2019. [Elektronnyy resurs]. - Rejim dostup: <https://www.imd.org/dbt/digitalbusiness-transformation>
5. Stefanova N.A., Mursalimov D.A., 2018. Tsifrovaya ekonomika i ee v upravlenii sovremennymi sotsial-ekonomicheskimi otnosheniyami // Aktualnye savollar sovremennoy ekonomiki, 2018, 3: 44-47.

УДК: 63.632,7

**Developmental bioecology, dynamics, harmfulness of the tomato moth
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Introduction. The demand of today's market economy, the producer, like all industries, especially the new agrotechnical methods applied to agricultural crops, in addition to increasing the quality and quantity of the crop, is evaluated according to the level of additional profit remaining. This requirement is a very important field, especially in the application of measures to control harmful factors of agricultural crops, and in applying new technology to them.

Therefore, in order to increase the amount of yield obtained from the planted tomato plant, first of all, it is necessary to carry out measures to control pests that damage a certain part of the crop and reduce the quality indicators of the obtained part, and to take measures to fully preserve the product. In this case, it is necessary to identify the pests that cause damage to the plant in different phases, and properly organize measures to control them.

Methods of the experiment.

Taking measures to control pests in tomato fields was carried out based on the methods of Sh.T.Khujaev [2004], and dynamics with the help of the method of B.P.Adashkevich [1983]. Conducting scientific research and dispersion analysis of the results, mathematical statistical processing was carried out based on the method of B.A.Dospekhov [1986].

Results of the experiment: Despite the appearance of the tomato moth pest in the area in recent years, it was not found that it causes some damage to the planted tomato plant, for many years, no accurate information on the development of this species was obtained and no scientific proposals were developed. Due to the fact that the number of the pest was a little less, or because it was a species that had not been met before, its descendants scattered in the field were not fully taken into account. The level of damage caused by the pest, i.e. leaf gnawing, was considered as damage caused by other species.

In spite of such circumstances, it is known that in some years, the tomato moth appears from early spring, causes great damage to some early greened or transplanted tomato seedlings, and reduces the quantity and quality of productivity and as a result it was necessary to carry out special scientific researches and observation works in this regard.

In order to carry out high-quality and timely measures against the tomato moth, which is multiplying in tomato fields, it was first necessary to fully determine the bioecology of the development of the pest, to obtain the required information, and to organize countermeasures based on previously developed methods.

For this, this year, to determine the occurrence of tomato moth in the fields from early spring, to take into account the characteristics of bioecological development, observations were made to identify the tomato moth in the fields, starting from the greening of tomato seedlings in the fields, and the development of seedlings in the fields where the seedlings were planted. Taking into account that the pest is a species that has spread in recent years, observation work was carried out in various regions of our republic, that is, in the south and north.

The favorable weather in the spring months of this year, i.e. the rise in temperature in March, the average temperature of 13-15°C in April, created favorable conditions for the development of the tomato moth. As a result, in the tomato seedlings released in the field in the third ten days of March, the pest generations began to appear from the second ten days of April.

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We can see that the number of tomato moth butterflies that flew to the field and laid eggs publicly reached its maximum number in the first ten days of May. This development continued until the third ten days of May, when the graduation qualification period ended.

As it can be seen, it was taken into account that the development dynamics of the tomato moth was higher in the southern districts than in the northern districts of our republic.

In order to determine the development of the tomato moth depending on the stages of the tomato plant and the temperature of the environment, which are the main elements of abiotic factors, the relative humidity of the air, the pupae of the tomato moth that have overwintered were brought to the entomological garden in Nukus district and installed, and from the moment the butterfly flies out, the eggs cases of laying, hatching of worms and appearance of eggs, worms, and pupae of the first and second generations were taken into account.

As can be seen from the obtained data, butterflies from tomato moth pupae collected from the field this year in the conditions of Nukus district fly to the third ten days of April, and their egg-laying is observed in the first ten days of May. It was found that the worms of the pest appeared in the fields on ten days and caused damage. In the second ten days, these worms turned into pupae, butterflies of the second generation flew out of them, and in the third ten days, it was taken into account that these worms turned into pupae.

The obtained data revealed that in the northern districts of our republic, the offspring of the tomato moth, which emerged from the pupae from the third ten days of April, gave generation three times until the end of May.

Therefore, it is clear that it is necessary to carry out the proposed countermeasures starting from the overwintering of tomato moth generations. The reason was that the time of reproduction of pest worms coincides with the phase of true aphid formation of tomatoes grown from grains and transplanted from seedlings.

In order to determine the degree of damage caused by tomato moth worms to the leaves of tomato seedlings that have appeared in the field during the experimental work, five tomato fields planted from grains and transplanted from seedlings in the second ten days of April were planted from the first ten days of April to the last ten days. The places where the leaves of these plants were damaged by the tomato moth in May were taken into account.

As it can be seen from these data, it was taken into account that when tomatoes were planted from grains in the first half of April, enough laeves appeared and the tomato moth started to cause damage from the first ten days of May. In the fields sown and planted in the second ten days of April, in the beginning of May, when 2-4 true leaves were released, it was considered that the worms of the pest caused a certain amount of damage until the end of the month. It was taken into account that pests appeared in the fields planted in the third ten days of April by the end of May and caused damage by gnawing on the leaves.

The above information shows that this year the number of tomato moth worms increased publicly at the end of April and in May, and there was an opportunity to lay eggs in the tomato field, it was found that the pests selected the fields where there were enough true leaves at the beginning of April. The reason was that the pistil butterflies of the tomato moth, which flew out in April, laid eggs in 15-20 days and the larvae hatched, and in May, the number increased even more, and the third generation larvae multiplied in the plants at the end of the month and caused damage. In such tomato fields, it was found that tomato moth worms have a high chance of

causing damage, and by the middle of the growing season, the number of future generations of the pest has increased.

Conclusion. In Karakalpakstan, spring came early in this year. The tomato sprouts prepared in advance are released to the fields from the second ten days of April, and from the first ten days, they are planted from the grains in the fields, at the beginning of May there were appeared the phases of creating leaves, budding and flowering phases at the second and third ten days, the appearance of fruits in the fields with the most optimal conditions, created an opportunity for the first generation of the tomato moth pest from the village to fully feed and multiply in these places. As a result, it was found that the pest's offspring, which multiplied in the field since early spring, reached their maximum number by the end of May and spread to many fields and caused damage.

Literature

1. Torenliyazov E.Sh., Khojaev Sh.T., Kholmurodov E.A, Plant protection. Tashkent, Navruz. 2018. -876 p.
2. Dospekhov B.A. Methodology of field experimetn. - M.: Kolos, 1985. -351 p.
3. Khojaev Sh.T. Modern methods and means of integrated protection of plants from pests. - Tashkent: Navruz, 2015. -552 p.

IMPORTANCE OF NEUTRALIZATION OF SUPERPLASTICIZERS FOR
CONCRETE MIXTURE

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Abstract. In the neutralization process, diethanolamine was used in an amount from 5% to 30% relative to the superplasticizer mass. The obtained results showed that when diethanolamine was used in an amount of 10% compared to the mass of superplasticizer, the plasticizing property showed the highest result, and the elasticity of the cement mixture was 20 cm. When diethanolamine is used in the amount of 20%, the flowability is 16%, when 25% is used, the flowability is 14cm, and when diethanolamine is used in 30%, the superplasticizer obtained when applied to the cement mixture shows the lowest plasticizing property and is 11cm. It can be seen that in the process of neutralizing the superplasticizer with diethanolamine, a superplasticizer with the highest plasticizing properties was obtained when 5% of the superplasticizer mass was used from a 20% diethanolamine solution.

Keywords: sulfonaphthalene, concrete, neutralization, spreadability, diethanolamine, pH, flowability.

1.Introduction.

It is estimated that 15 countries worldwide cultivate about 87.4% of the total production of sugarcane crops. Among them, major countries include Brazil, India, Pakistan, Thailand, Cuba, the Philippines, Mexico, Myanmar, and Argentina [1]. Furthermore, it is expected that annual production of sugarcane will be greater than 1.5 billion tons worldwide [2]. The fibrous residue, approximately 40–45% sugarcane after juice extraction, is called “Bagasse” [3]. It is reused as fuel in the sugar cane factory to produce heat, generating 8–10% of ash, known as sugarcane bagasse ash (hereafter SCBA) [2]. Every year, Brazil manufactures 2.5 million tons of SCBA [4], the largest in the world. India is the second largest producing country of sugarcane crops after Brazil, which yields nearly 350 million tons per annum [5]. Thereby, the application of plasticizer or superplasticizer becomes a satisfactory solution [6]. The actions of plasticizers go beyond improving workability, as they reduce the volume of voids in hardened concretes, improving their mechanical performance [7]. In the case of concretes with RA, the absorbed water is offset with the use of chemical admixtures to obtain the same workability as conventional concretes [8]. In the studies about recycled concretes, several are the chemical admixtures adopted, such as plasticizer based on a blend of organic polymers and admixtures; lignosulfonate-based superplasticizer; and superplasticizer of high activity based on a combination of modified polycarboxylates in aqueous solution.

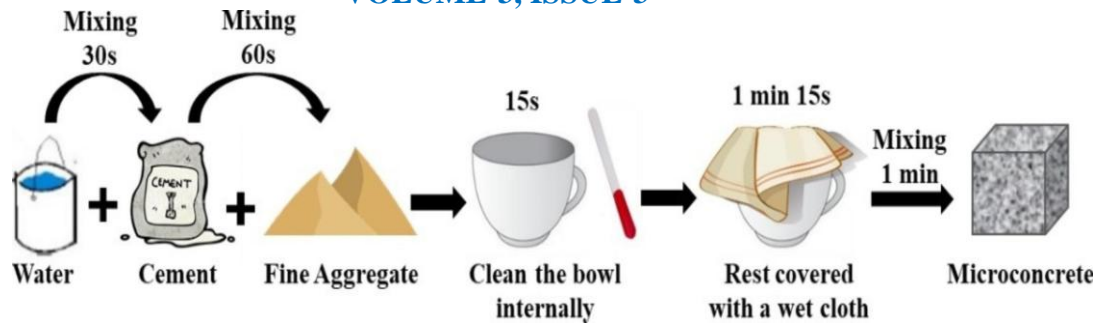


Figure-1. Mixing sequence scheme [9].

The water-reducing admixture contents were not the same in all researches, with variation from 1% to 1.5%, by the cement weight. Therefore, improvements in studies about the effects of these chemical admixtures in concretes with FRA are necessary[9].

2. Experimental part

As a result of experiments, it was found that sulfonaphthalene-formaldehyde type superplasticizers have a less plasticizing and water-reducing effect on concrete mixtures than polycarboxylate hyperplasticizers. In the study, NSF superplasticizer was created using local raw materials. Special attention is paid to the process of neutralization of the obtained superplasticizer, because the increase in the amount of added alkali or diethanolamine has a negative effect on the expansion and strength of the superplasticizer when it is added to concrete. Neutralization of the superplasticizer was carried out in 2 ways. In the first method, it was neutralized with NaOH solution. In the second method, it was neutralized with diethanolamine. The neutralization process is stopped when the pH of the environment is 7-8. The resulting product was dried in a drying cabinet at a temperature of 1050C until the mass did not change. As a result, a light brown hard brittle product was formed. The dried solid product was ground to powder using a rotor mill. This powder dissolves well in water, retains its plasticizing properties[10].

3. Results and Discussion

The process of neutralization of the synthesized superplasticizer was carried out using a 20% aqueous solution of sodium hydroxide. The purpose of treatment of synthesized superplasticizers with an alkaline solution is to neutralize sulfogroups in the structure of the superplasticizer. During our scientific research, we were convinced that the amount of alkali in the neutralization process affects the plasticizing properties of the superplasticizer. The effect of the alkali content of superplasticizers on the plasticizing properties of superplasticizers is shown in the graph in Figure 1 below.

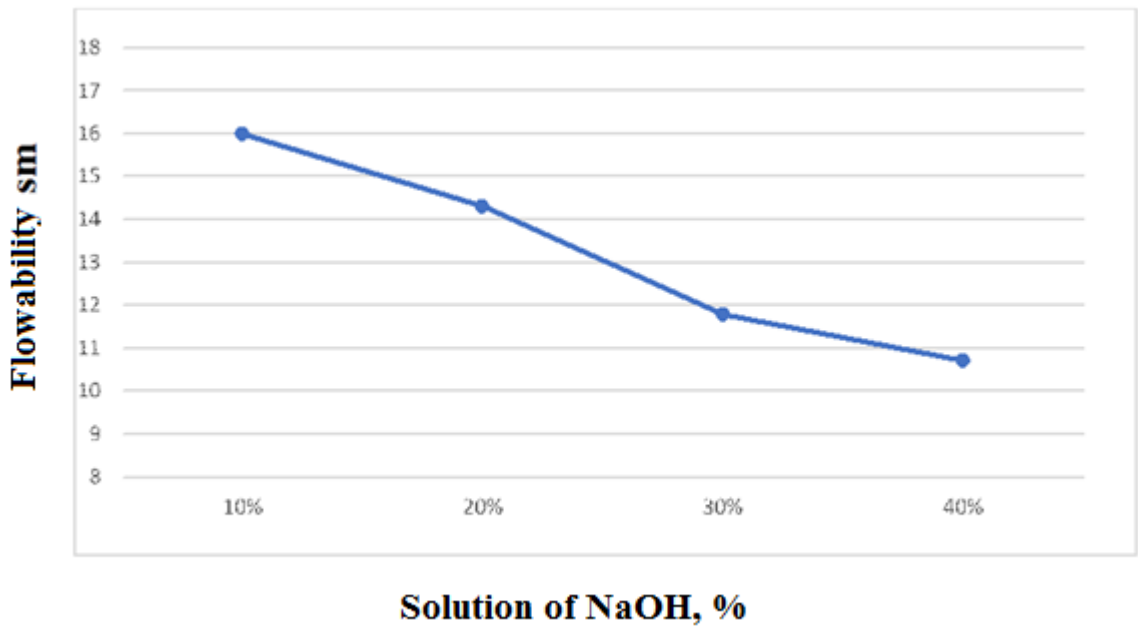


Figure 1. The effect of NaOH concentration on the fluidity of the cement mixture when neutralizing the resulting plasticizer

As can be seen from the diagram in Figure 1, when processing the resulting superplasticizer with NaOH solution, its amount significantly affects the fluidity of the cement mixture. In the neutralization process, superplasticizer was used in an amount from 10% to 40% by mass. The obtained results showed that when the alkali solution was used in an amount of 10% compared to the mass of the superplasticizer, the plasticizing property showed the highest result, and the expansion of the cement mixture was 16 cm. The flowability of 20% alkali solution was 14, when 30% was 12 and when 40% alkali solution was used, the superplasticizer showed the lowest plasticizing property when applied to the cement mixture and was 10.8 cm. It can be seen that in the process of neutralizing the superplasticizer, when 10% of the 20% sodium hydroxide solution is used in relation to the mass of the superplasticizer, the superplasticizer with the highest plasticizing properties is obtained[11].

The effect of diethanolamine concentration on the fluidity of the cement composition during neutralization of the synthesized superplasticizer is presented in Figure 2:

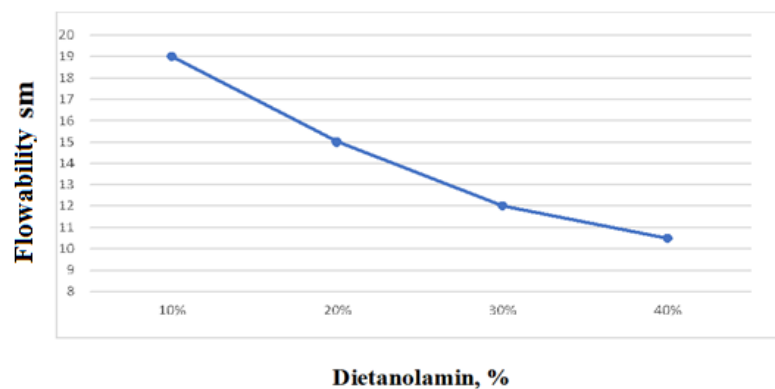


Figure 2. The effect of diethanolamine concentration on the fluidity of the cement mixture during neutralization of the obtained plasticizer

As can be seen from Figure 2, when processing the resulting superplasticizer with NaOH solution, its amount significantly affected the fluidity of the cement mixture. However, NaOH-neutralized superplasticizer has a requirement for Na ion. Therefore, we found it necessary to neutralize the synthesized superplasticizer with diethanolamine instead of NaOH. In the neutralization process, diethanolamine was used in an amount from 5% to 30% relative to the superplasticizer mass.

The obtained results showed that when diethanolamine was used in an amount of 10% compared to the mass of superplasticizer, the plasticizing property showed the highest result, and the elasticity of the cement mixture was 20 cm. When diethanolamine is used in an amount of 20%, the flowability is 16%, when 25% is used, it is 14cm, and when diethanolamine is used at 30%, the superplasticizer obtained when applied to the cement mixture shows the lowest plasticizing property and is 11cm.

Conclusion

It can be seen that in the process of neutralizing the superplasticizer with diethanolamine, a superplasticizer with the highest plasticizing properties was obtained when 5% of the 20% diethanolamine solution was used in relation to the mass of the superplasticizer. It was found that when adding superplasticizers neutralized with diethanolamine and sodium hydroxide to mixtures based on cement binders, the elasticity and strength increase.

References

1. Kumar, G.D.; Mohiuddin, M.Y.; Haleem, M.: An experimental study on partial replacement of bagasse ash in basalt concrete mix. *Int. J. Res. Sci. Adv. Eng.* **2**, 39–49 (2016).
2. Modani, P.O.; Vyawahare, M.R.: Utilization of bagasse ash as a partial replacement of fine aggregate in concrete. *Proc. Eng.* **51**, 25–29 (2013). <https://doi.org/10.1016/j.proeng.2013.01.007>.
3. Loh, Y.R.; Sujana, D.; Rahman, M.E.; Das, C.A.: Resources, conservation and recycling sugarcane bagasse — the future composite material: a literature review. *Resour. Conserv. Recycl.* **75**, 14–22 (2013).
4. Cordeiro, G.C.; Tavares, L.M.; Toledo Filho, R.D.: Improved pozzolanic activity of sugar cane bagasse ash by selective grinding and classification. *Cem. Concr. Res.* **89**, 269–275 (2016). <https://doi.org/10.1016/j.cemconres.2016.08.020>
5. Rajamma, R.; Ball, R.J.; Tarelho, L.A.C.; Allen, G.C.; Labrincha, J.A.; Ferreira, V.M.: Characterisation and use of biomass fly ash in cement-based materials. *J. Hazard. Mater.* **172**, 1049–1060 (2009). <https://doi.org/10.1016/j.jhazmat.2009.07.109>.
6. Barbudo A et al (2013) Influence of water-reducing admixtures on the mechanical performance of recycled concrete. *J Clean Prod.* <https://doi.org/10.1016/j.jclepro.2013.06.022>.
7. Pereira P, Evangelista L, De Brito J (2012) The effect of superplasticizers on the workability and compressive strength of concrete made with fine recycled concrete aggregates. *Constr Build Mater.* <https://doi.org/10.1016/j.conbuildmat.2011.10.050>
8. García-González J et al (2014) Pre-saturation technique of the recycled aggregates: Solution to the water absorption drawback in the recycled concrete manufacture. *Materials.* <https://doi.org/10.3390/ma7096224>.
9. Etxeberria M, Vegas I (2015) Effect of fine ceramic recycled aggregate (RA) and mixed fine RA on hardened properties of concrete. *Magazine of Concrete Research.* <https://doi.org/10.1680/macr.14.00208>

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

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10. Karimov M.U., G.G. Tukhtaeva, A.A. Kambarova, and A.T. Djalilov A Note on Influence of Na-carboxymethylcellulose on the Physic-Mechanical Properties of Cement Systems// Journal "Analytical Chemistry from Laboratory to Process Line" –Canada. -November. 2015.P

11. Karimov M. U., Vafaev O.Sh., Djalilov A. T. Study of the IR spectra obtained superplasticizer and its influence on the physico-chemical and physico-mechanical properties of the cement compositions// Journal "European applied science" Germany. №8.-2015.-p.77-81.



**THE ROLE OF PSYCHOLOGICAL SERVICE IN PROFESSIONAL
FORMATION OF ADOLESCENT STUDENTS.**

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Abstract: Currently, professional psychology has its own special subject, its own special tasks and its own special examination methods. There are several psychological organizations, educational institutions, and publishing houses related to the field of professional psychology. Scientific associations of professional psychologists, societies of psychologists are working. Conferences and congresses on psychological problems are being held in our republic and internationally. The science of psychology, its scientific and practical importance is now recognized by everyone. This article provides information about the role of psychological services in the professional development of adolescent students.

Key words: Psychological problems, adolescence, motivation, psychological factor, profession.

The next stage after adolescence can be considered as one stage, but it can also be divided into two stages according to the current classification of most psychologists. During this period, the student will be physically strong, able to work independently after graduation, and will have the opportunity to try himself in a higher school. Another characteristic of this period is that work and education are equally important. Active participation in social life, changes in the character of education, scientific worldview in boys and girls, leads to the formation of stable faith, the emergence of a high human feeling, creative approach to the acquisition of knowledge. makes great demands on his psyche. The role of psychological factors is increasing in all areas. Attention is being paid to a person's memory, thinking, perception, temperament characteristics, reaction speed. Because the fact that a person does not make serious mistakes at work and does not spoil the work depends on his mental and personal qualities in many ways. For this reason, the importance of the science of psychology in the correct organization of the "Man - machine" system is increasing. This leads to the strengthening of connections between technical sciences and psychology, to their introduction into each other.

The leading factor in early adolescence is a radical change in the nature, essence and content of the activity of a high school student. First of all, the shift in self-awareness is clearly visible in adolescents. This score doesn't just mean growth. In a teenager, the desire to determine his spiritual world, personal qualities, intelligence, abilities and opportunities increases. Students of this age have characteristics related to self-awareness. First, they will have the opportunity to

more accurately assess their strengths and weaknesses, achievements and shortcomings, appropriate and inappropriate behavior. Although a teenager can fully imagine the features of his spirituality and psyche compared to a teenager, he allows shortcomings in their rational assessment. As a result, he overestimates his own characteristics, becomes arrogant, arrogant, and begins to behave abnormally towards the members of the class and pedagogic teams. Also, some teenagers underestimate their own behavior, mental abilities and interests and try to behave modestly. Another characteristic of a child in adolescence is a tendency to respect, feel and be proud of one's own dignity, duty, conscience, which is reflected in complex interpersonal relationships. For example, a young man and a young girl understand sensitivity as understanding the difference between delicate and elegant situations, realizing the need, organizing help objectively, and doing it without affecting the individual's personality. A teenager evaluates his good intentions from the point of view of determining his place in the team, for example, "Am I suitable for my chosen specialty?" "Can I contribute to the development of society?" looks for answers to the questions. In order to create a clear idea of his own virtue in the student, the teacher should help him very skillfully and intelligently. Only then will the team feel deep respect and gratitude for their teacher and friends.

In the psychology of professional activity, self-observation (introspection) is also used. Often, an experienced psychologist or a highly skilled professional can draw a scientific conclusion through self-observation. For example, by monitoring his thinking, he gets information about emotional changes in himself, as well as about the emergence and passing of internal mechanisms of thinking. As a result, he observes the quality, content, essence of thinking and how, at what speed, in what form: it happens. One of the important aspects of the triangle of guidance for choosing a profession is the presence of certain knowledge about the requirements for the owner of this profession. The second characteristic of it is that knowledge is embodied in the employment opportunities of the society (province, city, district) in relation to this or that specialty. Another unique aspect is that the knowledge about the diligence, ability, and personal characteristics of the one who is directed to the profession is summarized, and all aspects related to the choice of profession are summarized.

Teenagers make more mistakes because they don't have a clear idea about choosing a profession. They do not understand what personal qualities the chosen or required profession requires. Because they are not able to rationally assess their abilities, they do not know how quickly and accurately they can act when acquiring this or that profession, the features of perception and perception, and the coordination of the nervous system. That is why they make the mistakes described

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above. However, in the present era, there are ways to prevent such unfortunate situations. For this, it is appropriate to pay special attention to the following general aspects of pedagogical, psychological and social characteristics. World psychologists who have studied the problem of study motivations find it necessary to divide them into two categories or groups. Motives belonging to the first category are directly combined with the content and essence of educational activities, as well as its processes and conditions. The system of motives belonging to the second category depends on the wide-scale interaction of students with the environment, their desire to interact with strangers, and their personal view of social reality.

One of the ways to guide the choice of a profession and to promote it is to display visual aids, photo booths, book exhibitions, to display the products of the creative work of young artists and naturalists, and to exhibit the works of painters and technicians. In addition, it is possible to arouse interest in this or that profession by organizing excursions to museums. Praxic qualities (enjoyment, enjoyment) formed in adolescents increase their love for the profession and strengthen it. Representatives of labor psychology recommend different methods of choosing a profession. In particular, deepening the polytechnic nature and characteristics of teaching all subjects; use of surrounding production as an object in sciences in the natural-mathematical field; organizing activities using local history materials in the teaching of social sciences, raising students' interest in the profession and morally preparing them for work; providing information about the profession while acquiring the basics of science; is to create conditions for independent familiarization of the profession chooser about the fields of work. It is impossible to solve the problems of professional psychodiagnostics (professional psychological) without analyzing professional activity, that is, it is necessary to pay attention to the essence of professionography and its structure. Only then can an active approach be implemented, and its actions and operations can be evaluated with the help of tests. Because movements and operations make up the content of this activity, their comparative description facilitates the acquisition process, creates a basis for choosing people capable of it. Sorting, justifying tests for diagnosing and evaluating the effectiveness of the activity, allows to determine the criterion of its success. As a result of summarizing the results of professionography, (professionogram), it becomes possible to classify (classify) professions. Professional activity consists of attitudes and motives of a person, includes control and management of movements and operations. To study the dynamic features of the activity, it is necessary to implement a multi-faceted approach to it. It is not possible to describe the essence of professional activity by

taking into account only motivational and regulatory aspects, if this is the case, it is necessary to include its personal, emotional, cognitive and operational, voluntary aspects in the subject of research. The analysis of professional activity allows to determine the criteria that serve to evaluate its success. This is absolutely necessary to check the stability and validity of the tests. . A student with negative motivation will continue to participate in the educational process by choosing a path that is less difficult (difficult situation). Students related to such study motivation will not have the opportunity to achieve high scores and successful learning, because the feeling of participating in the lesson without passion, the lack of knowledge and interest in the subject of study is a moral obstacle to this. serves as As a result of this, the number of non-assimilating, slow assimilating, slow students is expanding, and if this thing becomes a daily habit, it can grow to the level of a stereotype. Independent and successful study requires active, persistent, creative research from a person and puts similar demands on the learner. Due to the fact that the person is not ready for these situations, due to the limitations of his opportunities, he will fill the ranks of those who do not master, study in the same class or course for two years, and with all these difficulties, he will complete his class and course. It is possible to achieve positive results by reconsidering the motivation of students of this category.

References:

1. Umarov B.M., Psychology. Textbook- —Voriz publishing house, Tashkent, 2012. 270 p
2. Karimova V.M., Kholyigitova N. Psychology: Textbook - TDIU, 2014.
3. Goziev E. Psychology. T. 1994.
4. Krutetsky V.A. Psychology obuchenia i vospitaniya shkolnikov. M. 1976

PROFESSIONAL EDUCATION IS THE NEED OF THE TIME

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Abstract: As technology continues to advance in the digital age, the development of media competency in professional education is becoming increasingly important. Media competence can be defined as the ability to effectively access, evaluate, create, and communicate information using various media formats. In today's society, it is important for students to acquire these skills because they will need to navigate and engage with a variety of media throughout their careers. This article examines the development of media competence among students in vocational education, its importance, problems and potential solutions, and equipping students with the necessary skills to thrive in the evolving media landscape.

Keywords: competence, competence, information competence, information and communication technologies, project method, school, media education, media literacy, media competence, media product, information technology, information communication tools.

Enter. The importance of media competency in professional education cannot be overstated. In today's digital age, the ability to effectively manage and use various forms of media has become a necessary skill for success in the professional world. Media competence encompasses a range of skills, including the ability to critically evaluate and analyze media messages, create and produce high-quality content, and communicate and collaborate effectively through digital platforms.

Without these skills, professionals can find themselves at a disadvantage, as they may struggle to communicate effectively with clients, colleagues, and other stakeholders. Additionally, the ability to skillfully manage and understand the media is critical to staying abreast of current events and trends in one's field, ensuring professionals remain competitive and relevant.

In general, media competence is important in professional education because it equips students with the skills necessary to excel in today's fast-paced and technology-driven society.

The importance of media competence in professional education

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One of the important problems in the development of media competence among students is the rapid development of technology. With the constant evolution of media platforms, devices, and digital tools, students are challenged to stay abreast of the latest trends and acquire the skills necessary to navigate these complex systems. In addition, the sheer volume of information available in various media presents a challenge in itself.

Students should be able to critically evaluate the credibility and reliability of the information they encounter, and know the difference between authentic sources and false information. In addition, there is a growing concern about online privacy and digital security, further exacerbating the challenges of developing media competence.

Students should be educated about the potential risks associated with digital media, such as privacy and risk, and be equipped with the knowledge and skills to protect themselves. . In general, these problems highlight the importance of prioritizing the development of media competence among students in professional education.

vocational education has long recognized the importance of preparing students for the demands of a rapidly changing society. In recent years, this training has increasingly focused on media competency, which refers to the ability to critically analyze, evaluate, and create media content in a variety of forms and platforms. Media competence has become especially relevant in the digital age, when information and communication technologies have fundamentally changed the way knowledge is produced, distributed and consumed.

As technology continues to evolve and play an integral role in our lives, educators must prioritize the development of media competency in their curricula. Research has shown that media literacy not only enhances students' analytical and critical thinking skills, but also enables them to effectively navigate the vast array of information available today, thereby enabling them to make informed decisions. and provides an opportunity to actively participate in the digital society.

In addition, media competence is an important tool for improving media literacy, developing digital citizenship, and countering misinformation and fake news. Ultimately, developing media competency is critical to preparing students for success in their careers and equipping them with the skills necessary to thrive in a complex and interconnected world.

Media competency plays an important role in professional education, enabling individuals to effectively access and use the wide range of media platforms and tools available in today's digital age. One study noted that media competence encompasses a range of skills, including the ability to critically analyze and evaluate

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media content, as well as the ability to thoughtfully and responsibly produce and share media content.

Media competence in professional education enables students to engage in meaningful and informed discussions, contribute to knowledge creation, and develop innovative solutions to complex problems. In addition, media competency equips future professionals with the necessary skills to communicate effectively with diverse audiences, adapt to rapidly evolving media landscapes, and take advantage of the potential of technological advances in their fields.

Thus, developing media competency in professional education is critical to preparing individuals for success in an increasingly interconnected and media-saturated world.

Media literacy plays a crucial role in enhancing professional education by providing various benefits to students. First, in the age of digital technologies where media platforms are ubiquitous, media competence equips students with the necessary skills to manage and critically evaluate the vast amount of information available.

As Swan and Biderman (2019) noted, media competence enables students to determine the credibility and trustworthiness of sources, thereby promoting informed decision-making and evidence-based practices.

In addition, media competence develops creativity and innovative thinking, which enables students to effectively use media for problem solving and communication (Kohtala, 2019).

According to Rill and Childress (2020), the ability to use media platforms not only increases collaboration and engagement among students, but also prepares them for greater use of technology in the workplace.

In addition, media competence promotes digital citizenship as students learn to behave responsibly and ethically in online communities (Lanham, 2018).

By understanding the implications of their digital actions, students are better equipped to deal with issues related to privacy, authenticity, and intellectual property rights (Mifsud & Bartolo, 2019).

In general, media competency serves as a core skill set for students entering the professional field, equipping them with the tools necessary to thrive in a media-saturated world.

One of the important challenges in developing media competence in professional education is the rapid evolution of technology and its impact on media practice. As technology continues to advance at an unprecedented rate, the way media is produced, shared, and consumed is constantly changing. This creates a

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challenge for teachers to keep up with the latest trends and technologies to effectively teach media literacy to their students.

If we look at the origin of the concept of "medical retention", they by chance that it did not occur understanding possible

"Media Comprehension" common in appearance of the person different appearance, genre and in forms media text choose use, critical analysis to do assessment, create and transmission, in society of the media activity complicated processes analysis to do in readiness manifest integrative in the manner of quality understood.

Media competence-media literacy (media comretence/media literacy – different the ability to apply, analyze, evaluate and transmit messages (messages) in forms. A certain one media competence mastered person when you say own to the field worthy knowledge and qualification formed, positive thought and efficient movement do it will receive person understood. If we take a deep look at the essence of these concepts, "media literacy" is a person's knowledge, skills and a set of interrelated qualities of skills and actions, "media-comprehensiveness" your person to the movement appropriate compliance appropriation.

For a person with a high level of media competence, the following features characterized by:

- new information get for movement to do (aspiration);
- his personal competence in different areas of his life and of all kinds to the world of media culture aspiration;
- finding necessary scientific materials for study;
- media products with "permanent" in communication to be
- media in the world independent respectively media texts formation and distribution (independent or group together with preparation) qualification have to be
- media (playful, artistic, research, etc.) are bright take

Thus, the pedagogue is media competence for self-improvement spiritual, motivational, intellectual and practical self-development, volitional and focused on emotional self-control. In the process of qualification general education schools of teachers qualification increase media competence development participation in the process doer behavior of subjects, behavior, handling, spiritual and moral appearance, social activity, interpersonal relationship and information of means professional to develop showing effect and participation in consideration get

Problems in the development of media competence among students

In addition to incorporating media literacy into the curriculum, vocational education institutions can use a variety of strategies to improve students' media

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literacy. One strategy is to provide hands-on activities with media tools and technologies that allow students to gain hands-on experience in using different tools effectively. This can be achieved through workshops, internships or labs that give students the opportunity to experience and engage with different media platforms.

Another effective strategy is to encourage critical thinking and analysis of media messages. By promoting a critical understanding of media content, students can develop the skills necessary to detect biased or manipulative information and become more informed media consumers.

In addition, teaching students to recognize and evaluate the ethical implications of media use can contribute to their overall media competence. By encouraging discussions about responsible media practices and ethical considerations, educators can equip students with the tools to navigate the potential pitfalls of media use in their professional practice.

By implementing these strategies, vocational education institutions can enhance students' media competence, enabling them to communicate effectively with various forms of media and contribute to their chosen fields.

In recent years, the proliferation and accessibility of mass media, particularly digital media, has significantly changed the way people consume information and entertainment. This rapid change has also highlighted the importance of media competence, defined as the ability to critically analyze, evaluate and effectively use media (Buckingham, 2006).

As more and more students rely on the media as their primary source of information and communication, the development of media literacy skills is becoming increasingly important. However, despite the increasing recognition of media competence as an important skill in the digital age, problems in its development among students remain. This essay aims to study the problems that hinder the development of media competence among students and identify potential ways of improvement.

One of the main problems leading to lack of media literacy among students is the lack of media literacy education in schools. In today's digital age, where students are constantly bombarded with multiple media messages, it is imperative that they acquire the necessary skills to critically evaluate and analyze these messages.

However, many schools fail to prioritize media literacy education in their curricula. Without proper guidance and education in media literacy, students are vulnerable to manipulative tactics used by various media platforms, including advertising, social media, and the news media. Therefore, the integration of media literacy education into schools is essential to increase students' ability to effectively decode and interpret media messages.

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Additionally, research has shown that media literacy education can increase students' critical thinking skills, promote diversity and inclusion, and foster a sense of media responsibility. Thus, it is imperative that educational institutions recognize the importance of media literacy education and incorporate it into their curricula.

The impact of social media on students' media competence has become an important issue in today's digital age. Social media platforms such as Facebook, Instagram, and Twitter have changed the way students interact with information and media. These platforms provide students with many opportunities to engage with different forms of media and interact and exchange ideas with their peers (Buckingham, 2017).

However, this increased exposure to and reliance on social media may also hinder the development of students' media competence. The constant flow of information and the ease with which content can be shared can lead to a lack of critical thinking skills and an inability to distinguish reliable sources from false information (Krebs, 2018).

Additionally, the emphasis on popularity and the need for constant validation through likes and comments may discourage students from using diverse perspectives and instead encourage them to follow trends or engage in superficial debates (Boyd, 2016).

Therefore, it is important to recognize the impact of social media on students' media competence and develop strategies that promote critical thinking, information literacy, and responsible media consumption among students in this digital age.

Specialists media competence develop, qualification increase among j their professional and personal maturity provide for necessary pedagogical condition conditions Create, experts qualification increase content and structure modernization, determination of psychological and pedagogical conditions and its quality control to do and evaluation mechanism work exit through expert media competence development main purpose defines.

Table 1

Professional comretency	Ideological comretency	Management competence	Media competence
Professional comretency certain science according to deep	Ideological comprehensibility - ideological clearly has a purpose, own	Management competence - of the teacher	teacher (pedagogue) media competence - powers of the press, its causes,

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knowledge, skill and to qualification ownership (eg physics, chemistry, history, mathematics and another sciences)	will, faith faith, conscience, to his views possession, lie to ideologies fight against take	the lesson manage, class the team manage for didactic psychological, methodical, technological preparation have to be	knowledge, skills and qualifications (indicators: motivational, informative, practical-quick, methodical activity, creative). of all ages education to recipients media education knowledge promote to do
Education giver pedagogue			

Teacher 's c o m r etency types

The impact of social networks on students' media competence

One of the serious consequences of fake news on students' media competence is the erosion of critical thinking skills. In an age of information overload, readers are constantly bombarded with multiple news sources, making it difficult to distinguish between what's real and what's not. Due to the abundance and availability of fake news, students may be critical of media content, accept false or misleading information, and not question its authenticity (Mihailidis, 2017).

A lack of critical evaluation can lead to a misunderstanding of the world and hinder students' ability to think analytically and determine the accuracy of news or sources. Consequently, exposure to fake news poses a serious threat to students' media literacy and their ability to participate in civic discourse.

In addition, parents and guardians play a crucial role in the development of students' media competence. They are able to shape their children's attitudes and behavior towards media use.

Research has concluded that parents who actively engage and guide their children in media content are more likely to have children with higher levels of media literacy. more.

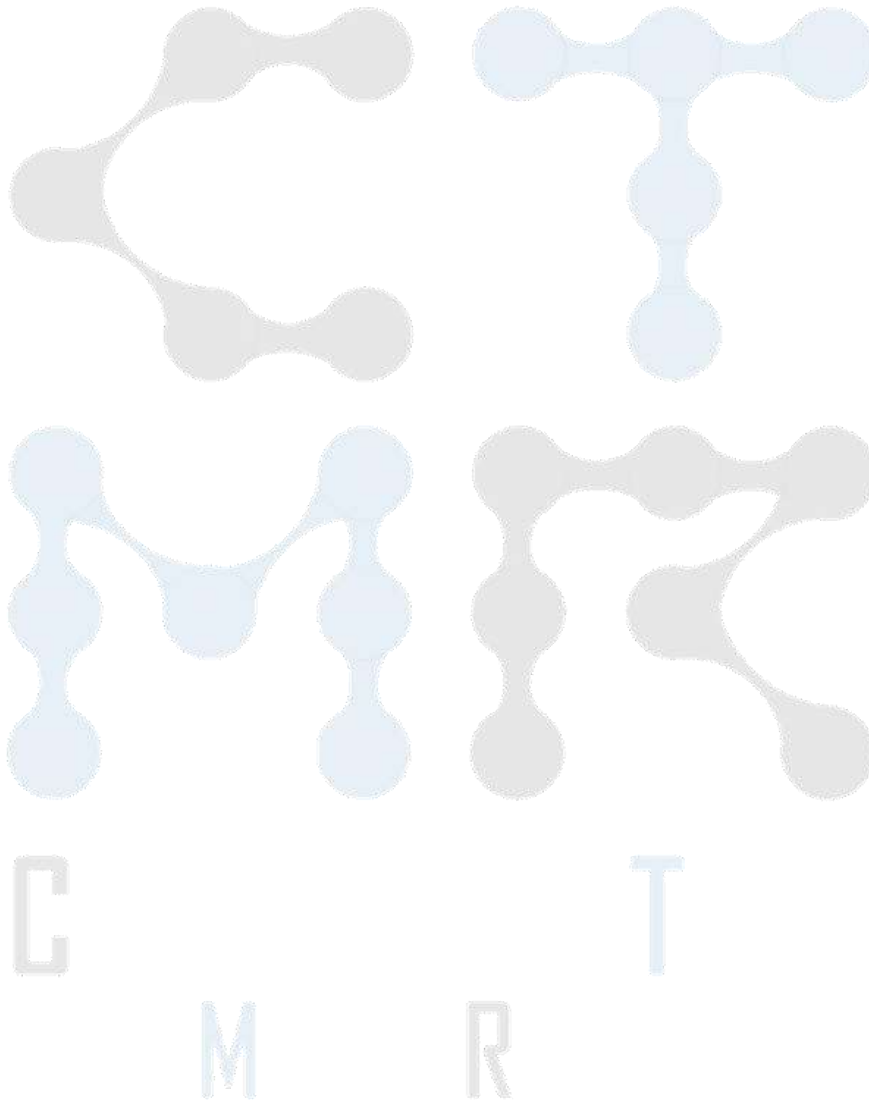
References:

1. Babadzhanov S. Technology of media literacy development of students of higher educational institution of pedagogy. Abstract. - T., 2018.
2. Mamatova Ya., Sulaymanova S. Uzbekistan on the way to development of media education. - T.: "Extremum-ress", 2015.
3. Media education. Russian pedagogical encyclopedia. - M., 1993.
4. Fedorov AV Razvitiye mediakomretentnosti i kriticheskogo myshleniya studentov pedagogicheskogo vouza. M.: Information for all, 2007.

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-3, ISSUE-3

5. Rotter WJ Media Literacy. Thousand Oaks. London: Sage Publishing, 2001
6. Henry Jenkins. "Confronting the Challenges of Participatory Culture." Media Education for the 21st Century, MIT Press, 6/5/2009
7. Funk, Stephen S.. "Promoting Global Competencies Through Media Literacy." Yildiz, Melda N., IGI Global, 30.11.2017



NEW INNOVATIVE TECHNOLOGIES IN TEACHING FOREIGN
LANGUAGES

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Abstract. The need to modernize Uzbek education, integration into the pan-European educational space, preservation and development of the best traditions of the national school makes significant adjustments to the education system for schoolchildren. Modern society needs educated, qualified specialists, distinguished by mobility, dynamism, constructiveness, true patriots of their homeland, respecting the culture, scientific achievements, traditions of other countries and peoples. In this regard, the concept of humanization of socio-economic relations was adopted, where the main role is given to the modernization of Uzbek education. Orientation towards humanistic ideals presupposes the priority of the interests of the individual, the creation of a creative atmosphere in learning and ensuring the general cultural development of students. The most important part of the educational process is the personality-oriented interaction between the teacher and the student, which requires changing the main trends and improving educational technologies. It is the study of foreign languages that can be considered as one of the most important means of humanizing and humanitarizing education.

Key words: society, innovative, technologies, educational

In the information society, knowledge and qualifications become of primary importance in human life. To keep abreast of the development of world science, it is necessary to study primary sources in the language of the authors. Therefore, the increasing importance of a foreign language and its demand have influenced the content, objectives and dynamics of learning. In the 21st century, the intensification and modernization of education requires the introduction of innovative technologies that pursue the goal of creative education of the individual in the intellectual and emotional dimensions. Such innovative technologies are: developmental learning, design, problem-based learning, level differentiation, test system, game learning, immersion in a foreign language culture, collaborative learning, self-education and autonomy, integration, as well as health-preserving, research, information and communication and personal development. oriented technologies. With such a target setting, cognitive universal actions are one of the leading components of the educational standard. This is explained by the fact that one of the components of a child's mental development is his cognition, which implies the formation of a scientific picture of the world, the ability to manage his intellectual activity, mastery of methodology, strategies and methods of learning, the development of

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representative, symbolic, logical, creative thinking, productive imagination, memory, attention, reflection. In this regard, cognitive universal actions include:

- actions to extract information;
- the ability to navigate the knowledge system and realize the need for new knowledge;
- the ability to make a preliminary selection of information sources to search for new knowledge.

Problem-based learning technology involves independent solving cognitive and creative problems through critical rethinking and augmentation of knowledge and skills; and allows for the implementation of the conditions for the formation of cognitive universal actions in students: creating an atmosphere of co-creation in communication, inclusion of the child's emotional sphere, personal interest of the student, joint search for truth, self-assessment, self-correction, self-sufficiency.

One of the ways to activate students in the process of teaching foreign languages is design (project method), when the student independently plans, creates, and defends his project, i.e. actively involved in the process of communicative activity. An educational project is a complex of search, research, calculation, graphic and other types of work performed by students independently for the purpose of practical or theoretical solution to a significant problem.

The main goals of the project methodology are:

- 1) self-expression and self-improvement of students, increasing learning motivation, developing cognitive interest;
- 2) implementation in practice of acquired skills and abilities, speech development, the ability to competently and reasonably present the research material, and conduct debate;
- 3) demonstrate the level of culture, education, social maturity.

Types of projects:

- 1) role-playing games, dramatizations, dramatizations (fairy tales, TV shows, holidays, musical performances, etc.)
- 2) research (country studies, generalization of scientific knowledge, historical, environmental, etc.)
- 3) creative (essays) , translation, scripts, wall newspapers, etc.)
- 4) multimedia presentations.

What sources of information are usually used when preparing a project?

- a) Books; b) Periodicals; in Internet; d) Teacher; e) Others

The project method helps to develop linguistic and intellectual abilities, a sustainable interest in learning a language, and the need for self-education.

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Ultimately, it is expected to achieve communicative competence, i.e., a certain level of linguistic, regional, sociocultural knowledge, communication skills and speech skills that allow foreign language communication.

The implementation of project and research methods in practice leads to a change in the teacher's position. From a carrier of ready-made knowledge, he turns into an organizer of cognitive activity, as shown in the diagram. From an authoritative source of information, the teacher becomes an accomplice in the research, creative cognitive process, a mentor, a consultant, and an organizer of students' independent activities. Analyzing the use of the project method in a modern school, I believe that this is one of the most powerful incentives for motivating the study of foreign languages, the most creative type of activity, since all students are involved in working on the project, regardless of abilities and level of language training. They put into practice the acquired knowledge and developed speech skills and abilities, creatively rethinking and multiplying. In addition, the problematic nature and variety of forms and types of this technology presupposes the presence of interdisciplinary connections, which allows the student to give a vivid idea of the world in which he lives, the relationship of phenomena and objects, mutual assistance, and the diversity of material and artistic culture. The main emphasis is on the development of imaginative thinking, on understanding cause-and-effect relationships and the logic of events, on self-realization and self-expression not only of students, but also of teachers. The project methodology requires careful preparation, professional skill, and erudition from the teacher. One of the main conditions for the effectiveness of educational activities is an atmosphere of goodwill, mutual understanding, trust, creativity, and encouraging the cognitive activity of schoolchildren.

In the modern understanding, an educational project is an integrated didactic means of development, training and education, which allows you to develop and develop specific skills:

- 1) problematization,
- 2) planning,
- 3) self-analysis and reflection,
- 4) presentation,
- 5) research work.

The use of project methodology is one of the components of the humanization of the educational process, since students with different levels of language training participate in work in accordance with their capabilities. In my opinion, along with group projects, it is necessary to use individual assignments, especially when preparing final lessons - this is a unique opportunity for truly communicative

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teaching of a foreign language. Such lessons relieve stress and fatigue of students, sharply increase cognitive interest, develop students' imagination, thinking, speech, memory, and can be taught on almost any topic within the framework of the program material.

Using the design methodology, the following tasks are solved:

- students' horizons are expanded,
- lexical and grammatical material is consolidated,
- and the teacher creates a methodological collection on various topics with presentations and video projects.

Thus, the project method makes it possible to implement not only educational tasks, but also sociocultural, educational, tasks of humanization and humanitarization of the educational process.

The results are obvious: this technique makes it possible to study the topic in depth, develop the creative abilities of students, teaches communication, the ability to use grammatical structures, and the fear of conducting a conversation in a foreign language disappears. In addition, project technology is effective and exciting for teachers, as it helps them to reveal themselves as creative individuals who participate in research work along with their students. Of course, the project is not a panacea for all problems, but it is a step forward in teaching a foreign language.

Information and communication technologies are a powerful tool for teaching, monitoring and managing the educational process, as it is the most important parameter of the modern sociocultural system. Internet resources are a familiar and convenient means of getting to know the culture of other countries and peoples, communicating, obtaining information, and an inexhaustible source of the educational process. That is why, the basis of a systematic approach to reforming methods of teaching a foreign language using new information technologies is the concept of an information and learning environment, which is considered in close connection with the system of developmental education. The information-learning environment is a set of conditions that not only allow the formation and development of language knowledge, abilities and skills, but also contribute to the development of the student's personality. The educational situation is designed in such an environment as a dynamic process of subjective interaction of all participants in the educational process, mediated by computer technology. The learner, with more and more active, deep and comprehensive participation in the process of independent learning activities for mastering a foreign language, turns from a passive object of the teacher's influence into a full participant in the educational process. The pedagogical relevance of the system of linguistic knowledge and skills formed in the information-learning environment is that the learner should be offered for mastering

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exactly the system of knowledge that he needs at this stage of his development, which subsequently makes it possible to solve problems of increasing complexity.

The tasks of IOS for learning a foreign language:

- providing conditions for the creative development of writing, as well as speech skills;
- integration of various forms and strategies aimed at developing independent cognitive learning activities in the process of individual and group work of students;
- increasing the motivational richness of the educational process
- organizing cognitive communication activities with native speakers and members of the online community learning a foreign language;
- formation on the basis of linguistic knowledge of a modern information culture that allows working in a computer and telecommunications environment.

This innovative technology is based on principles that reflect the specifics of the subject being studied and the learning environment itself: openness, integrativeness, systematicity and consistency, interactivity, clarity of presentation of the material, multidimensionality and redundancy of all components of the environment.

The effective functioning of IES depends on: the level of development of the information and telecommunications infrastructure of education and the interaction of this infrastructure with students; from a whole complex of psychological and pedagogical conditions; from control of the motivational background and its development; taking into account the individual characteristics of students; from the linguistic co-creation of all participants in the educational process.

Structurally, IOS is organized in the form of a model, which is a set of subjects participating in the learning process, the connections between which are realized using information flows, organized in accordance with the goals and objectives of the educational process into functional blocks. Each of the blocks (program-training, information-methodological, communication, instrumental, sociocultural, motivational and identification-controlling) is aimed at implementing strategies for mastering a foreign language, as well as monitoring the progress of the educational process. The environment is in constant development, which is determined by the dynamics of the inclusion of new forms and pedagogical technologies of teaching a foreign language, as well as the development of the participants in the process themselves.

Participation in information and communication pedagogical activities contributes to the comprehensive formation of all aspects of communicative competence: linguistic, sociocultural, cognitive, linguistic and cultural studies; as well as related communicative and cognitive skills of students (search and selection

of relevant information, its analysis, generalization and classification). Modeling a real authentic environment through the use of Internet resources not only serves to more successfully master the language, but also allows one to comprehend the deep law of the unity and diversity of culture.

Thus, the innovative technologies that we have considered today significantly enrich and diversify the teaching of foreign languages. Monotonous work is replaced by intellectual creative search, during which a new type of personality is formed, active and purposeful, focused on constant self-education and development.

References:

1. Bim I.L. Personality-oriented approach is the main strategy for school renewal / I.L. Bim // Foreign languages at school.-2002-№2-p.11-15
2. Velikanova A.V. Competency-based approach to education / issue 2, Samara: Profi-2007-92p.
3. New pedagogical and information technologies in the education system: a textbook for students of pedagogical universities and teacher training systems. personnel / E.S. Polat, M.Yu. Bukharkina, M.V. Moiseeva, A.E.Petrov.-M.: Academy, 2004-272p.
4. Katayev Salaxiddin Valiql o'g'li. (2023). INTERNATIONAL RECOGNITION OF YOUTH POLICY OF NEW UZBEKISTAN. *International Journal of Formal Education*, 2(6), 228–233. <http://journals.academiczone.net/index.php/ijfe/article/view/990>
5. Katayev Salaxiddin Valiql o'g'li. [Creating Programms for Teachers](#). *Gospodarka i Innowacje*. 19, 17-20. 2022
6. Katayev Salaxiddin Valiql o'g'li. (2023). THE ROLE OF A PROFESSIONAL FOREIGN LANGUAGE FOR WORKERS IN THE AGRICULTURAL SECTOR. *Miasto Przyszłości*, 36, 286–288. <http://miastoprzyszlosci.com.pl/index.php/mp/article/view/1525>
7. Katayev S.V [The Role Of Foreign Languages In Agriculture](#). *Science and innovation* 1 (B7), 638-640. 2022
8. Katayev S.V., B.Rakhmonov [On the Vocabulary of Surkhandarya Livestock](#). *International Journal on Integrated Education* 4 (12), 48-52. 2021
9. S., K. . (2022). THE ROLE OF FOREIGN LANGUAGES IN AGRICULTURE. *IJTIMOY FANLARDA INNOVASIYA ONLAYN ILMIY JURNALI*, 2(1), 211–213. <http://www.sciencebox.uz/index.php/jis/article/view/1039>
10. Babanazarovna, K. D. . (2022). SYSTEM OF ENGLISH WORDS IN UZBEK LANGUAGE. *Евразийский журнал академических исследований*, 2(2),

11. Bazarov, S. (2023). SO ‘G ‘D YOZUVI. *Академические исследования в современной науке*, 2(15), 57-59.
12. Xudaybergan, K. (2023). METHODS OF LANGUAGE TEACHING TO AGRICULTURAL STUDENTS. *Ustozlar uchun*, 17(2), 136-139.
13. Mengliev, B. N. (2022). Problems of formation of pedagogical competence of physical education teachers. *Eurasian Journal of Sport Science*, 2(1), 79-86.
14. Tangirkulova Karomat Saitovna. (2023). CREATION OF DRUGS AND THEIR NAMES. *Journal of Universal Science Research*, 1(5), 1555–1560. Retrieved from <https://universalpublishings.com/index.php/jusr/article/view/1013>



Pedagogical model of improving physical education teachers' professional competence

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Abstract. The modernization of physical education content provokes its refocusing not only on the subject competences, but also metasubject, personal, social, communicative, gnostic, projecting, informational and others competences. This contributes the increase in requirements to the system of professional development of physical education teachers who need to successfully meet the educational objectives, showing the completeness and effectiveness of their personal and professional characteristics, the activity of pedagogical thinking and possession of an integrated system of professional skills with a high level of professional competence. Organizational and pedagogical predictive model of the educational process serves as a condition for constructing the educational space initiating the improvement and self-improvement of physical education teachers' professional competence in the process of professional development. Creating the motivational space, initiating individual work of students and assisting them in developing their individual trajectory of selfimprovement were the basis of the developed model.

Keywords: professional competence of physical education teachers, organizational and pedagogical predictive model, the components of activity, the diagnostic tool.

In the context of modernization of Uzbek education, there is an increasing need for teachers who are able to take a personal and humane position, organize the educational process based on modern educational paradigms, and educate a person of culture. We are talking about the cultural aspect of the content of education, which consists in the development of the individual in all spheres of his activity through mastering the achievements of world and domestic culture, mastering the system of knowledge about nature, society and man. In this context, the process of development of society and personality cannot be complete without the progress of physical culture. This type of activity promotes the spiritual and physical development of a person and forms values that have general cultural significance. Improving educational paradigms leads to a change in the status of physical education as a humanitarian educational subject. This necessitates updating the content of physical education education and thereby significantly changes the view on the quality of a teacher's professional and personal positions, requiring a rethinking and restructuring of the nature of his professional activity. The physical education teacher becomes the bearer of the updated content of education, the organizer of pedagogical conditions that ensure the effectiveness of activities. In this regard, among the pressing problems of modern additional professional education, the problem of its modernization comes to the fore by strengthening the humanistic contexts of the pedagogical activity of a specialist in physical culture and sports, who is called upon to build his individual pedagogical activity on value-semantic foundations, i.e. to have professional -personal competence. At the same time, no more than 20% of physical education teachers rely on the idea of democratization and humanization, 5–10% implement an activity-based approach, and up to 10% of teachers use psychological-pedagogical and psychological-physiological theories. New approaches to assessing student performance, focused on quality criteria, carry out from 10 to 20%, use a variety of creative methods and forms of teaching, with an emphasis on motivation of classes, up to 20% of teachers, use computers and other new technical teaching aids in classes no more 5% of teachers [1]. Until recently, in the

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system of advanced training of physical education specialists, there was a training model that reflected the realities of the traditional educational paradigm of higher professional physical education. Innovative directions associated with updating the professional education of specialists in the field of physical culture and sports on a humanistic, value-semantic, personality-oriented basis are reflected in the works of a number of authors (I. P. Andriadi, V. K. Balsevich, S. N. Begidova, V. V. Belyaeva, M. Ya. Vilensky, Z. N. Vyatkina, V. D. Gorbatov, Yu. D. Zheleznyak, A. F. Kulikov, L. M. Kustov, A. V. Lotonenko, L. I. Lubysheva, V. A. Magin, A. Ya. Nain, R. A. Piloyan, G. N. Ponomarev, F. I. Sobyenin, G. M. Solovyov, etc.). Recently, many studies have appeared devoted to the problem of improving the qualifications of specialists in physical culture and sports in the context of updating the content of education (V. U. Ageevets, E. R. Akhmedzyanov, A. N. Bleer, O. B. Dmitriev, S. P. Evseev, Yu. A. Kashirtsev, N. N. Kiseleva, etc.). At the same time, research related to the search and development of professional development systems based on humanistic foundations and aimed at improving the professional competence of physical education teachers, in our opinion, is still insufficient. Among the many contradictions, we highlight one related to the increased need of modern schools for a professionally competent personality of a physical education teacher and the insufficient development of pedagogical models for organizing the process of advanced training, built on competence-based, activity-based principles. A study devoted to the theoretical justification and development of a model for advanced training aimed at improving the professional competence of physical education teachers was carried out from 2001 to 2006 on the basis of the Rostov Regional Institute for Advanced Training and Retraining of Education Workers. 527 physical education teachers of secondary schools in the Rostov region took part in the testing. Solving one of the research tasks, we examined the essence of modeling, which scientists call the leading category of the theory of knowledge, as well as a method of scientific research [2], which has two aspects: theoretically and experimentally. In general, a model is considered in science as a system of elements and objects that reproduces certain aspects, connections, and functions of the subject of research [2]. The model development strategy can be represented as a system of step-by-step action-elements: – analytical understanding of the content, facts and factors of the functioning of the educational system; – identification of contradictions that make it difficult to achieve a high-quality result in the system of advanced training; – selection of methodological foundations for the model; – building a system of goals for improving the professional competence of physical education teachers in the process of advanced training; – building a holistic educational space for a professional development system that initiates the improvement of professional competence of physical education teachers; – determination of criteria and levels of professional competence of physical education teachers. Developing the logic of the above, we chose the following as a methodological basis: – provisions on the integrity of the pedagogical process, considered in a sequence of interrelated stages (N. G. Abramova, I. Ya. Lerner, M. N. Skatkin, etc.); – provisions on a systematic approach to organizing learning processes in the context of its integrity (V. G. Afanasyev, G. I. Gerasimov, A. Ya. Danilyuk, V. S. Ilyin, etc.); – the theory of the gradual formation of mental actions (P. Ya. Galperin, N. F. Talyzina), which assumes the need to create conditions that ensure a certain system of actions for students, in the context of the commonality of internal and external human activity; – provisions on pedagogical synergetics, which involves changing the mode of operation of students' consciousness and transferring it from the mode of reflection to the mode of creative production of personal meanings and experience, which allows

us to perceive the professional image as a living, complexly organized integrity (S. V. Kulnevich, R. A. Kurenkova) ; – the concept of personality-oriented education, aimed at initiating the subjective properties and potentials of students, as well as at developing their personal universal functions in the mode of integration of procedural and psychological interaction plans (E. V. Bondarevskaya, V. V. Serikov, I. S. Yakimanskaya and etc.). Thus, the problem was determined - to organize a holistic pedagogical process of improving the professional competence of physical education teachers. At the same time, we followed the provisions developed by V. S. Ilyin about the holistic properties of the process and its influence not only on individual functions and properties of the individual, but also on the individual as a whole [3]. When developing a pedagogical model for organizing the process of improving the professional competence of physical education teachers on a competency-based basis, we chose the system of personality-oriented components of professional pedagogical education proposed by M. M. Levina as the substantive basis for design [4].

1. Personal-motivational component, which presupposes the motivation of educational activities: the formation of personal meaning of educational and professional activities; development of professional orientation of the individual, personal and professional self-determination and self-realization; development of self-organization in educational activities and self-regulation of behavior; development of self-assessment of one's professional readiness.

2. Personal-activity (communicative component), which involves the development of the personality of the subject of activity: the implementation of the value-target function of humanistic training through personal orientation of learning; development and formation of independence, arbitrariness of actions, selectivity of educational actions based on personal meaning formation and awareness of the value of the teaching profession; mastering contact methods of regulating the educational activities of students; systematic application of personally oriented learning technologies; the use of individualized methods of pedagogical communication based on a focus on the age, typological and personal characteristics of the individual; pedagogical communication based on the general patterns of interpersonal and professional pedagogical communication for the purpose of informational substantive influence and psychological regulation of educational activities.

3. Cognitive-creative (cultural) component, which involves the implementation of a cultural approach: the formation of a scientific worldview based on the systematic nature of scientific knowledge and professional practice; subordination of the subjectively perceived target function of the educational process with the value-target function of advanced training; understanding educational goals in terms of developing personal and professional self-determination; students' mastery of areas of subject-specific professional and psychological-pedagogical education; students' awareness of the importance of personal information readiness for professional activities, free selectivity of professional actions, improvement of professional knowledge and skills; development of professional systematic thinking, flexibility, criticality, creative activity, development of creative individuality; formation of professional reflexivity and self-correction; the formation of self-organization based on the motivation of goals and conditions of activity, self-regulation of the individual in conditions associated with overcoming educational and professional difficulties, based on the adequacy of self-esteem.

4. Professional and social component (civic orientation), which involves the development of a normative, ethical, legal and ethical culture: the education of moral and political beliefs and

feelings that determine professional and personal behavior. Formation of professional role function based on personal and professional goals and social values, social adequacy of the teacher's personality; development of ethical standards of behavior in the performance of professional functions; fostering personal and professional responsibility for the implementation of value-oriented interactions and regulation of self-development of students; formation of civil, legal and moral responsibility in the process of professional activity. We have identified the stages and components of the structure of organizational and pedagogical support of the pedagogical model for improving the professional competence of physical education teachers in the process of advanced training.

References:

1. Lyakh V. I. Fizicheskoe vospitanie uchashchikhsya 8–9 klassov: Posobie dlya uchitelya [Physical Education of Pupils Grades 8–9: A Handbook for Teachers], M., 2004.
2. Kraevskiy V. V. Modeling in Educational Research [Modelirovanie v pedagogicheskom issledovanii] Vvedenie v nauchnoe issledovanie po pedagogike [Introduction to the Scientific Research in Pedagogy], M., 1988.
3. Il'in V. S. Formirovanie lichnosti shkol'nikov (tselostnyy protsess) [Forming Pupils' Personality (Holistic Process)], M., 1984.
4. Levina M. M. Value-target Functions of Personality-Oriented Professional Pedagogical Education [Tsennostno-tselevye funktsii lichnostno orientirovannogo professional'nogo pedagogicheskogo obrazovaniya] Pedagogicheskoe obrazovanie i nauka [Pedagogical Education and Science], 2005, No 1, pp. 35–38.
5. Mengliyev B. PEDAGOGICAL COMPETENCE OF A MODERN PHYSICAL EDUCATION TEACHER //Science and innovation. – 2022. – T.1.– №.B7.–C.554-556
6. Bobur MENGLIEV Application of the concepts of competence and competencies in modern science (using the example of professional and pedagogical competence) 2023, [1/6/1]
7. Mengliyev Bobur Normamatovich. International Journal of Research. Games as a Motivation in Teaching Foreign Language January 2020 32-37
8. Katayev Salaxiddin Valiquil o'g'li. (2023). INTERNATIONAL RECOGNITION OF YOUTH POLICY OF NEW UZBEKISTAN. *International Journal of Formal Education*, 2(6), 228–233. <http://journals.academiczone.net/index.php/ijfe/article/view/990>
9. Katayev Salaxiddin Valiquil o'g'li. [Creating Presentation Programms for Teachers](#). *Gospodarka i Innowacje*. 19, 17-20. 2022
10. Katayev Salaxiddin Valiquil o'g'li. (2023). THE ROLE OF A PROFESSIONAL FOREIGN LANGUAGE FOR WORKERS IN THE AGRICULTURAL SECTOR. *Miasto Przyszłości*, 36, 286–288. <http://miastoprzyszlosci.com.pl/index.php/mp/article/view/1525>
11. Katayev S.V [The Role Of Foreign Languages In Agriculture](#). *Science and innovation* 1 (B7), 638-640. 2022
12. Babanazarovna, K. D. . (2022). SYSTEM OF ENGLISH WORDS IN UZBEK LANGUAGE. *Евразийский журнал академических исследований*, 2(2), 272–275. извлечено от <https://in-academy.uz/index.php/ejar/article/view/1102>
13. Bazarov, S. (2023). SO 'G 'D YOZUVI. *Академические исследования в современной науке*, 2(15), 57-59.
14. Xudaybergan, K. (2023). METHODS OF LANGUAGE TEACHING TO AGRICULTURAL STUDENTS. *Ustozlar uchun*, 17(2), 136-139.
15. Mengliyev, B. N. (2022). Problems of formation of pedagogical competence of physical education teachers. *Eurasian Journal of Sport Science*, 2(1), 79-86.
16. Tangirkulova Karomat Saitovna. (2023). CREATION OF DRUGS AND THEIR NAMES. *Journal of Universal Science Research*, 1(5), 1555–1560. Retrieved from <https://universalpublishings.com/index.php/jusr/article/view/1013>

INNOVATIVE TECHNOLOGIES IN TEACHING ENGLISH GRAMMAR IN
SECONDARY SCHOOL

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Abstract: Issues of using Internet resources in teaching grammar of English language with application of communicative approach are described in the article. In the course of the work three sources were distinguished as the most diverse and qualitative, which were further examined with the possibility of using them in an online English lesson and lesson at school.

Key words: English language, grammar, communicative approach, Internet resources

Learning English grammar is always a difficult process to most of the English as Foreign Language (EFL) learners at secondary school level. Innovative ideas, interesting teaching materials, practicing and drilling learners for learning the English grammar should be done through fun and joyful ways. The main aim of this library study was to identify and describe examples of practical grammar instruction methods in an EFL which employed innovative methodologies. The process of the library-based research involves identifying and locating relevant information, analyzing what has been found, and then developing and expressing the ideas. The results revealed that songs and poems, music, games, and tasks can be employed as tools in the classroom. Using innovative methodologies in teaching English grammar in the classroom at the secondary schools has paved a positive way to students to learn the language meaningfully.

The most common and widely accepted technologies in second language teaching are computers and the internet. Some separate the internet and computers into two separate categories, but oftentimes the internet will be accessed in class through a computer.

Immersion and repetition are the basic tools of effective foreign language teaching. Immersion keeps you thinking in the language and focused on learning it. Repetition is vital to memorization and learning each word or phrase along with its place in speech.

Nowadays, the educational process is increasingly modernized, most schools are equipped with interactive whiteboards, teachers record grades in an electronic journal, and even in 2020, schools are faced with transition to distance learning due to the pandemic. Moreover, such scientists as David Crystal, M. Warschauer, E.V. spoke about the relevance and feasibility of using Internet technologies. Voevoda, E.Ya. Sokolova. Consequently, at present there is an increasing need to move from the traditional teaching system to the “blended learning” or “blended learning” system, i.e. an educational concept that combines traditional learning with distance and online methods. lessons. The use of Internet technologies has not only an entertaining purpose, but also contributes to the development of communication skills, independence, creativity, increasing student motivation, developing students’ basic competencies, taking into account their individual characteristics, helping to implement an activity-based approach to learning, attracting passive students to active activities in the classroom, and also contributes to the modernization of general education. Educational Internet resources contain text, graphic, audio, photo and video material on various educational topics. However, when using Internet technologies should have a developed lesson plan with the purpose, time of using the Internet (Web-based lesson) and an algorithm of actions with clear instructions [4]. It is also especially important to select in advance proven, effective websites that will meet the objectives of the lesson. In full-time schooling, in our opinion, Internet

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technologies should not be used for the entire lesson, as this may cause organizational risk, but doing a few exercises or introducing a new topic using Internet sites will help both students and teachers get used to the new space. Summarizing everything that has been said, Innovative technologies play an important role in learning, but care must be taken in selecting the correct and useful resources. We would like to draw attention to the use of some Internet technologies in teaching English grammar within the framework of a communicative approach.

It should be noted that all exercises from Internet resources should be used as part of a lesson script, and not as complete teaching units. We will consider the following resources: "National Corpus of the Russian Language" and "British National Corpus", "Wordwall", "LearningApps.org", "Superteachertools.com", "Baamboozle", "Quizizz", "Triventy", "English Media Lab", "Padlet.com", "Pixton Edu", "Printdiscuss.com", "Brainyquote.com". It is these resources that were selected because they contain completely diverse methods in teaching English grammar and are proven and effective in achieving educational goals.

With the advent of computer technology, corpus linguistics has developed greatly, resulting in the emergence of Internet sites with corpora of different languages, for example, the National Corpus of the Russian Language (NCRL) [2], with a volume of more than 600 million words, and the British National Corpus (BNC), with a volume of 100 million words. These resources can be used as search work, for example, to determine the meaning of a prefix based on examples or to find different words with the same root. You can also do comparative analysis of languages using Russian and English corpora, for example, to compare the order of words in a sentence, because in English, unlike Russian, there is a stricter word order, and a language corpus containing thousands of examples from texts of different genres, will demonstrate this perfectly. At the end of each mini-research paper, students or groups of students need to draw a conclusion or express their assumptions in English. The teacher can also use the corpus to create exercises, for example replacing affixes with ellipses and ask students to guess the word based on the text. Thus, the use of a corpus helps to interest students, present the topic in a non-standard way, and also represents one of the methods of problem-based learning.

On the Baamboozle website, the game features a variety of visual task cards and is great for reinforcing grammar topics and communication practice. Cards typically contain a graphic or animated image and a question or task at the bottom. You must answer the task or question orally, and after answering, click on the card to check. Based on this, the site can be used in a lesson as a frontal survey or by dividing the class into teams, but control student responses

Only the teacher can do this, it is not displayed on the website. You can find the grammar games you need using the search bar. When creating your own games on this resource, you can hide cards with questions under numbers for playing with teams. Students on one team choose a question and answer it. For the correct answer, points are awarded, which are calculated automatically. The site has free and paid versions. The free version includes creating your own games, four teams per game, uploading 1 MB of images, and a game with 24 questions. The advantages of the paid version include a larger number of commands and loading images, creating several games in one game, creating multiple-choice exercises, the number of questions increases to 48, and advertising is removed. This site was created by an American organization specifically for use in lessons as a warm-up before a lesson, reinforcing a topic or monitoring the mastery of a grammatical topic. This resource is completely different from the previous ones, but is not inferior in entertaining and educational forms.

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The Padlet.com service is a virtual board for collecting and storing information. As part of school English grammar teaching, the site can be used to gather information on a specific grammar topic, as a method for brainstorming on a specific topic, or for a class project assignment. The site has the following types of boards: “wall”, “canvas”, “tape”, “storyboard”, “columns”, “conversations”, “map”, “chronology”. The design of the board can be changed, the materials can be placed in different sequences, the finished board can be saved as a picture or a pdf file, which allows students to repeat the collected and covered material on a grammar topic at home. Materials for the board can serve as texts, videos, tests, documents, quizzes and other sites. Students can also comment on pinned content. The created board can be public or assigned to a specific group persons The site is available in thirty-four languages, including Russian and English, and has free and paid versions. In the free version you can create only three boards. In general, the resource “Padlet.com” has not so much an entertaining, but an educational task, it activates students to solve a problem, forms innovative thinking, and also helps students who missed a lesson to remain participants in the project or watch and try to understand the topic covered on the virtual board .

Thus, the above educational Internet resources contribute to the formation and development of language and ICT competencies, expand the possibilities of the lesson in the context of the implementation of the Federal State Educational Standard, developing various types of meta-subject educational learning for students, help create motivation and interest students in learning English, develop communication skills in working in Internet. However, undoubtedly, the Internet is an endless repository of information, and even educational sites are not always correct and suitable for conducting school lessons. Therefore, before the lesson, it is recommended to check and select the necessary material for a successful lesson.

References:

1. Wilkins, D. A. Notional Syllabuses / D. A. Wilkins. Oxford: Oxford University Press, 1976. - P.79.
2. Национальный корпус русского языка. [Электронный ресурс]. Режим доступа:
3. Пассов, Е.И. Коммуникативный метод обучения иноязычному говорению / Е.И. Пассов. - М.: Просвещение, 2007. - С.101-107.
4. Katayev Salaxiddin Valiquil o'g'li. (2023). INTERNATIONAL RECOGNITION OF YOUTH POLICY OF NEW UZBEKISTAN. *International Journal of Formal Education*, 2(6), 228–233. <http://journals.academiczone.net/index.php/ijfe/article/view/990>
5. Katayev Salaxiddin Valiquil o'g'li. [Creating Presentation Programms for Teachers](#). *Gospodarka i Innowacje*. 19, 17-20. 2022
6. Katayev Salaxiddin Valiquil o'g'li. (2023). THE ROLE OF A PROFESSIONAL FOREIGN LANGUAGE FOR WORKERS IN THE AGRICULTURAL SECTOR. *Miasto Przyszłości*, 36, 286–288. <http://miastoprzyszlosci.com.pl/index.php/mp/article/view/1525>
7. Katayev S.V [The Role Of Foreign Languages In Agriculture](#). *Science and innovation 1 (B7)*, 638-640. 2022
8. Babanazarovna, K. D. . (2022). SYSTEM OF ENGLISH WORDS IN UZBEK LANGUAGE. *Евразийский журнал академических исследований*, 2(2), 272–275. извлечено от <https://in-academy.uz/index.php/ejar/article/view/1102>

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-3, ISSUE-3

9. Abdinazarovich, B. S. (2022). YOZUV VA UNING KELIB CHIQISH TARIXI. *TA'LIM VA RIVOJLANISH TAHLILI ONLAYN ILMIY JURNALI*, 2(4), 116-119.
10. Xudaybergan, K. (2023). METHODS OF LANGUAGE TEACHING TO AGRICULTURAL STUDENTS. *Ustozlar uchun*, 17(2), 136-139.
11. Mengliev, B. N. (2022). Problems of formation of pedagogical competence of physical education teachers. *Eurasian Journal of Sport Science*, 2(1), 79-86.
12. Kuchkinov Xudaybergan. (2023). LANGUAGE TEACHING TO AGRICULTURAL STUDENTS BASED ON THE TERM OF SPECIALIZATION. *Proceedings of International Educators Conference*, 2(4), 131–134.
<https://econferenceseries.com/index.php/iec/article/view/1869>
13. Babanazarovna, K. D. (2023). USE OF DIDACTIC GAMES IN THE TRANSITION TO ENGLISH IN ELEMENTARY CLASS. *PEDAGOGIKA, PSIXOLOGIYA VA IJTIMOIIY TADQIQOTLAR*, 2(3), 9-13.
14. Tangirkulova, K. . (2023). A CROSS-SECTIONAL STUDY OF DRUG NAMES USED IN THERAPEUTIC DISEASES IN ENGLISH AND UZBEK LANGUAGES. *Евразийский журнал академических исследований*, 3(6), 180–184. извлечено

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**CREATING CONDITIONS FOR EFFECTIVE LEARNING OF STUDENTS
THROUGH THE USE OF DISTANCE LEARNING TECHNOLOGIES**

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Annotation. In the article, the author tries to determine effective methods of working with students in the context of the pedagogical process.

Key words: educational process, ICT technologies, students.

The Federal State Educational Standard focuses on the use of innovative teaching methods. One such solution is technical training in guardianship.

To effectively support the educational process, it is necessary to create an educational organization of a group of like-minded people - those most prepared to use DOT and owners of ICT technologies and an information educational environment (ISE).

IOS is a software and telecommunications environment that implements uniform technologies and content, high-quality information support for participants in relations training and the public.

The IOS of the gymnasium includes 3 main blocks:

- first block - organizational, pedagogical, didactic conditions for the formation and development of a rich IES;
- second block - IOS components: administrative, educational, methodological, research, extracurricular, monitoring and assessment of learning outcomes, technological support of IOS;
- third block - tools for designing and building IOS (software and hardware, organizational and methodological, communication); using the idea of a practice-oriented orientation of the educational process; software, hardware, organizational, methodological and communication tools.

Thus, an educational organization must create conditions for the functioning of an electronic information and educational environment, which includes electronic information resources, electronic educational resources, a set of information technologies, telecommunication technologies, and appropriate technological means. It is necessary to gain sufficient experience in using COR and DOT in the classroom. Today it is important to use DOT in extracurricular activities.

Tasks:

- create conditions for involving teachers in the process of producing and applying various forms of achieving educational results in extracurricular activities based on DET;
- create conditions for involving students in higher education by realizing their needs through the use of the advantages of preschool education;
- update technologies for organizing educational institutions, improving active educational practices on a remote technological basis;
- create a system for monitoring the quality of education and the effectiveness of the implementation of DET in the practice of high school education through diagnostics of the results.

Extracurricular activities (ECAs), like classroom activities, are aimed at achieving by students the planned results of mastering OEP, but first of all - at achieving personal and meta-

subject results. Today, distance learning technologies are developing very actively, and if in the recent past the teacher had only e-mail at his disposal, now special educational environments make it possible to organize an educational process that is in no way inferior in its didactic capabilities to the traditional one, and in many ways superior to it.

Distance learning is one of the forms of lifelong education, which is designed to realize the human rights to education and information.

DET is a way of organizing the educational process, based on the use of modern information and telecommunication technologies that allow learning at a distance without direct contact between teacher and student. Distance learning is an ideal aid in creating an educational space, developing students' cognitive independence and activity, and developing critical thinking.

DOT provides the opportunity to conduct remote, online Olympiads and intellectual competitions; participation in international and all-Russian educational network projects. Subject distance competitions and games are one of the forms of VUD; They contribute to the development of students' interest in the subject and expand the students' worldview.

The advantages of DOT include the following:

- accessibility,
- individualization,
- obtaining education regardless of place of residence, health status,
- creative self-expression.

The Federal State Educational Standard provides for the implementation of state policy in education, ensuring equality and accessibility of education at various starting opportunities. The requirements for the results of mastering the main educational programs, the conditions for implementation and the structure of the main educational program have changed, which are impossible without the presence of an information educational environment, the widespread use of information technologies and electronic educational resources.

Both classroom and extracurricular activities involve the introduction of new forms of work and provide for new roles: the student, as an active researcher, creatively and independently working to solve an educational problem, widely using information and communication technologies to obtain the necessary information; and the teacher as a consultant who must have the ability and skills to use computer technology. The widespread use of training using DET will help solve the problems of ensuring equal opportunities to receive high-quality general education, significantly supplement and expand the traditional forms of organizing secondary general education.

DOT becomes indispensable for children with disabilities, or those who are absent from school for a long time (under treatment, at sports camps or competitions, etc.); for students in grades 10–11 preparing to enter universities, attending preparatory courses, the schedule of which is not always coordinated with the school one.

Each student can study according to a personal schedule, varying the pace and time of study to master the material being studied. Project activities occupy a special place in extracurricular activities. It can be included in each of the areas, in any program, or can be highlighted as an independent program. Project activities are very important for further understanding the fundamentals of research activities. Distance learning also implements models of joint learning activities among students.

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VUD is a good opportunity for organizing interpersonal relationships in the classroom, between students and the teacher, with the aim of developing creative abilities, cognitive activity, and general cultural interests of high school students. The part-time form of VUD classes (using DOT) allows you to master part of the course via e-mail and other electronic resources.

The need to use DOT in extracurricular activities of high school students is due to various factors, among which are:

- the impossibility of constant personal presence at high school classes;
- the need for interactive interaction between students and teachers;
- work with gifted children;
- broadening one's horizons through exciting tasks (quizzes, crosswords, problems, intellectual games and game situations, virtual excursions to museums and scientific laboratories, virtual professional tests);
- display of presentations and video clips, demonstration of experiments;
- testing, laboratory and practical work;
- participation in distance competitions, competitions, projects;
- participation in online Olympiads, seminars, conferences;
- creation of creative works;
- implementation of an individual project;
- career guidance testing;
- formation of sustainable cognitive interest of students in intellectual and creative activities implemented with the help of ICT tools;
- development of the ability of free cultural communication of students with the teacher and among themselves using modern distance technologies.

In the process of conducting classes remotely, the teacher must use:

- e-mail (with its help, communication between the teacher and the student is established: sending assignments and materials; receiving notifications by the teacher about the completion of the task, individual consultations, etc.);
- Internet resources (can be used as rich illustrative or reference material for mastering VUD programs; uploading your own developments of tasks or classes).
- social networks, messengers (VKontakte, telegram).

These resources can be used as a means of communication between teachers, both with one student and with a group. Web 2.0 services: - <https://readymag.com> (creation of interactive instructions);

- <https://roundme.com> (creation of virtual panoramas);
- <https://h5p.org> (creation of an interactive dialogue simulator);
- <https://learningapps.org/> (creation of interactive content (games, puzzles, timelines, etc.)) - <http://ru.wix.com/> and [http://www.tilda.cc/ru /](http://www.tilda.cc/ru/) (creation of a Web site (page) for a teacher or student);
- Yandex Disk, RuTube
- for storing various types of files, etc.;
- Sferum
- organizing and conducting online classes. The use of DET makes it possible to improve the quality of education by increasing the share of independent mastery of the material,

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which ensures the development of such qualities as responsibility, organization and the ability to realistically assess one's strengths and make informed decisions.

References:

1. Kiseleva, A. A. Technology for creating an open environment for a teacher using social media: first steps: textbook [Text] / A. A. Kiseleva. - Novokuznetsk: MOU DPO IPK, 2013.
2. Leontovich, A. V. Research and design work of schoolchildren. 5–11 grades / A. V. Leontovich, A. S. Savvichev. - Moscow: VAKO, 2014. - 160 p. — (Modern school: management and education). — ISBN 978–5-408–01419–4.
3. Potashnik, M. M. Mastering the Federal State Educational Standard: methodological materials for teachers: a manual for teachers and school leaders / M. M. Potashnik, M. V. Levit. - Moscow: Pedagogical Society of Russia, 2016. - 208 p. — (Education of the XXI century). — ISBN 978-5–93134–467–6.
4. Katayev Salaxiddin Valiquil o'g'li. (2023). INTERNATIONAL RECOGNITION OF YOUTH POLICY OF NEW UZBEKISTAN. *International Journal of Formal Education*, 2(6), 228–233. <http://journals.academiczone.net/index.php/ijfe/article/view/990>
5. Katayev Salaxiddin Valiquil o'g'li. [Creating Presentation Programms for Teachers](#). *Gospodarka i Innowacje*. 19, 17-20. 2022
6. Katayev Salaxiddin Valiquil o'g'li. (2023). THE ROLE OF A PROFESSIONAL FOREIGN LANGUAGE FOR WORKERS IN THE AGRICULTURAL SECTOR. *Miasto Przyszłości*, 36, 286–288. <http://miastoprzyszlosci.com.pl/index.php/mp/article/view/1525>
7. Katayev S.V [The Role Of Foreign Languages In Agriculture](#). *Science and innovation* 1 (B7), 638-640. 2022
8. Abdinazarovich, B. S. (2022). YOZUV VA UNING KELIB CHIQISH TARIXI. *TA'LIM VA RIVOJLANISH TAHLILI ONLAYN ILMIY JURNALI*, 2(4), 116-119.
9. Xudaybergan, K. (2023). METHODS OF LANGUAGE TEACHING TO AGRICULTURAL STUDENTS. *Ustozlar uchun*, 17(2), 136-139.
10. Mengliev, B. N. (2022). Problems of formation of pedagogical competence of physical education teachers. *Eurasian Journal of Sport Science*, 2(1), 79-86.
11. Kuchkinov Xudaybergan. (2023). LANGUAGE TEACHING TO AGRICULTURAL STUDENTS BASED ON THE TERM OF SPECIALIZATION. *Proceedings of International Educators Conference*, 2(4), 131–134. <https://econferenceseries.com/index.php/iec/article/view/1869>
12. Babanazarovna, K. D. (2023). USE OF DIDACTIC GAMES IN THE TRANSITION TO ENGLISH IN ELEMENTARY CLASS. *PEDAGOGIKA, PSIXOLOGIYA VA IJTIMOYIY TADQIQOTLAR*, 2(3), 9-13.
13. Tangirkulova, K. . (2023). A CROSS-SECTIONAL STUDY OF DRUG NAMES USED IN THERAPEUTIC DISEASES IN ENGLISH AND UZBEK LANGUAGES. *Евразийский журнал академических исследований*, 3(6), 180–184. извлечено от <https://in-academy.uz/index.php/ejar/article/view/16809>
14. Tangirkulova Karomat Saitovna. (2023). CREATION OF DRUGS AND THEIR NAMES. *Journal of Universal Science Research*, 1(5), 1555–1560. Retrieved from <https://universalpublishings.com/index.php/jusr/article/view/1013>

**APPROACHES TO TEACHING AGRICULTURAL UNIVERSITY STUDENTS A
FOREIGN LANGUAGE FOR PROFESSIONAL COMMUNICATION**

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Abstract. Currently, there are three methodical approaches in the methods of teaching a professional foreign language: 1) a foreign language for specific purposes, 2) teaching specialized disciplines in a foreign language, and 3) an integrated approach. Each of them is focused on achieving specific learning objectives. Content and language integrated learning has a significant professional and linguodidactic potential. Its distinguishing feature lies in the fact that within the framework of one integrated course, students simultaneously develop a professional foreign language communicative competence and professional competencies. The purpose of the research is to compare these three methodical approaches to learning and determine which of them are used in teaching students of agricultural universities. The study showed that at the moment the subject-thematic content of integrated courses has been developed for students of such areas of study as “Agrochemistry and Agrosoil Science”, “Gardening”, “Agroengineering” and “Technology of Production and Processing of Livestock Products”. The methodical dominant in the context of the implementation of integrated learning is the system of problematic foreign language professional tasks. Typologies of such tasks and professional cases were developed for students of the areas of study “Agroengineering” and “Technology of Production and Processing of Livestock Products”. As for students of other areas of training of an agricultural university, at the moment they are studying a foreign language for specific purposes.

Keywords: professional foreign language, foreign language for specific purposes, content and language integrated learning, agricultural university

Currently, three methodological approaches are used in teaching a foreign language for professional communication in non-linguistic universities, including agricultural universities: a foreign language for specific purposes (LSP – Language for Specific Purposes), teaching specialized disciplines in a foreign language (LMI – Language as a Medium of Instruction) and integrated approach (CLIL - Content and Language Integrated Learning). As V.V. rightly testifies in his works. Zavyalov, P.V. Sysoev, N.V. Popova, E.K. Vdovina, M.S. Kogan, each of the three methodological approaches is aimed at solving specific methodological problems and can be implemented in practice, taking into account a number of psychological, pedagogical and methodological conditions [1–3]. Many Russian scientists in their works compared these approaches and identified the conditions for their implementation [4–6]. Let us conduct a brief review of research on teaching a foreign language for professional communication among students at non-linguistic universities and consider which of these approaches is used when teaching in different areas of training at an agricultural university.

FOREIGN LANGUAGE FOR SPECIAL PURPOSES According to N.V. Popova, M.S. Kogan, E.K. Vdovina, a foreign language for special purposes is the most common methodological approach to teaching students of non-linguistic universities professional communication in a foreign language. Scientists claim that it is used in about 90% of cases of teaching a foreign language for professional communication in our country [3]. The theoretical and methodological foundations of a foreign language for special purposes were originally developed by English scientists T. Hutchinson and A. Waters in the mid-1970s. At that time, the United States was developing as a world power, trade volumes between America, Europe and

Asia were gradually increasing, and international cooperation in the field of science, culture, and education was expanding. All these reasons served as the impetus for the development of a new methodological approach, the key objectives of which were to equip students with professional vocabulary, grammar and teach the use of some common speech phrases. At that time, this was the necessary minimum with which to begin learning foreign language professional communication. In parallel with the development of a foreign language for special purposes as an approach, there was a transition from audiolingual and grammar-translation methods of teaching a foreign language to a communicative method. The focus of the communicative teaching method is the formation of foreign language communicative competence - the ability to use the foreign language being studied for communication. Despite the fact that scientists have not come to a unified model of foreign language communicative competence, and representatives of different scientific methodological schools include different components in this model, it is undeniable that for full-fledged foreign language communication, students need to master both vocabulary, grammar and phonetics, and and develop types of speech activities (listening, speaking, reading and writing). In this regard, as communicative techniques developed, so did the development of a foreign language for special purposes as an approach. At the present stage, language teaching for special purposes includes teaching aspects of language and all types of speech activity to the full extent necessary for communication in the professional sphere. The subject content of training generally reflects the specifics of the professional field of knowledge and can vary to meet the needs of students. In this case, the purpose of training and the object of control is exclusively a foreign language for special purposes.

TEACHING PROFILE DISCIPLINES IN A FOREIGN LANGUAGE Teaching specialized disciplines in a foreign language is another methodological approach to teaching foreign language professional communication to students. In accordance with this approach, classes in specialized disciplines are conducted in a foreign language. The goal of the training is for students to master professional competencies in the field of future professional activity. A foreign language is not a goal, but a means of mastering a specialty. Exercises and assignments for the development of types of foreign language speech activity and aspects of a foreign language are not provided within the training courses. This approach is widely used in contexts where Basic Vocational Education Program (VEP) students are native speakers of different languages and the specific language in which instruction takes place is the only common language. The basis for monitoring progress and mastering educational material is exclusively professional material. Of course, using this approach is possible if students have a foreign language proficiency at level B2 and above. Otherwise, they will not be able to take part in discussions of professional issues in a foreign language and will not be able to perform authentic professional tasks.

INTEGRATED APPROACH The integrated approach is one of the methodological approaches to teaching professional foreign language communication, which has significant linguodidactic potential, and which is becoming increasingly popular in Russia and abroad. The founder of this approach is considered to be D. Marsh, who outlined the goals of his approach. In the process of studying an integrated course, students master both a foreign language and a specialized discipline. An analysis of a number of works in recent years devoted to the use of integrated subject-language teaching in non-linguistic universities allows us to draw the following conclusions. Firstly, during the integrated course, students develop professional

foreign language communicative competence and a number of professional competencies. Secondly, as evidenced by the research of E.G. Krylova, P.V. Sysoeva and V.V. Zavyalov, one of the key elements of the integrated approach is integration. Moreover, integration occurs at different levels and in different planes. Integration can be at the personal level: intrapersonal and interpersonal. Intrapersonal integration is the readiness of students to carry out professional interaction in their native and foreign languages. Interpersonal integration is the readiness of students to jointly solve assigned professional tasks. Integration can also be implemented at the subject and interdisciplinary levels. Subject integration means the development of types of foreign language speech activity and the formation of aspects of a foreign language on professionally oriented material. Interdisciplinary integration means the use of knowledge and skills developed during the study of other specialized disciplines during an integrated course. Thirdly, as P.V. states in his works. Sysoev, the main points in the development of an integrated course are: the subject-thematic content of the course and teaching technology [2]. In terms of subject and thematic content, the integrated course can be of two types. The first one contains separate thematic modules, related to different specialized disciplines in terms of subject content. The second one represents one autonomous professional course or specialized discipline in its subject content. Detailed algorithms for developing two types of courses are presented in the work of P.V. Sysoev. With regard to educational technology, an integrated course should include foreign language communicative tasks that reflect the specifics of the future professional work of graduates of the chosen profile of study or area of training. In the methodological literature of recent years, works have appeared in which the authors developed and proposed for discussion systems and sets of foreign language tasks that reflect the specifics of the professional work of graduates of training profiles in engineering, law, management and service, areas of training agricultural universities. At the same time, it is of particular importance, as stated by E.K. Vdovina et al., acquires the development of critical thinking in students through asking questions. This will contribute to the predominance of authentic speech-oriented tasks. Fourthly, the implementation of an integrated approach is possible subject to a number of pedagogical conditions, to which V.V. Zavyalov considers the following: a) an integrated course can be taught by a teacher who has competence both in the relevant specialty and in the methodology of teaching a foreign language at a university; b) the subject-thematic content of the integrated course must correspond to the content of one specialized discipline or deepen the content of several specialized disciplines previously studied by students; c) the selection of the subject-thematic content of training should be based on the core specialization of students; d) to carry out integrated training, students must speak a foreign language at level B1-B2 and above; e) the basis of training is a system of problem-based foreign language tasks with a professional orientation [4, p. 63]. As research shows, the key aspects of developing an integrated course and corresponding educational materials are the subject-thematic content of training and teaching technology. Let's consider research on the implementation of an integrated approach at an agricultural university.

Subject-Themic Content And Technology Of Teaching Integrated Courses In Agricultural Universities Over the past few years, several studies have been conducted on the development of subject-thematic content of teaching integrated courses for students of agricultural universities. In particular, in his study K.V. Kapranchikova proposed the subject content of teaching a professional foreign language to students of two profiles "Agrochemistry

and agro-soil science” and “Agroecology” of the training direction “Agrochemistry and agro-soil science” [6]. Moreover, one block of subject content is invariant, related to two profiles, and the second block is variable. Examples of topics in a variable block can be: “Chemical composition, soil colloids, absorption capacity”, “Agricultural use of soils”, “Qualitative assessment and protection of soils, soil cartography”, etc. [6, p. 52]. Another study devoted to the development of subject content for teaching students of an agricultural university during an integrated course was conducted by A.G. Solomatina [5]. The focus of the work was training students in two areas of training in “Gardening”: “Ornamental Horticulture and Landscape Design” and “Horticulture and Viticulture.” Unlike K.V. Kapranchikova, A.G. Solomatina proposed different subject content for the two profiles, without dividing it into invariant and variable components. This is due to more significant differences in the areas of professional activity of graduates of the “Gardiculture” training profile compared to “Agrochemistry and Agro-Soil Science”. Dissertation research by T.V. Baidikova is also devoted to the development of theoretical foundations and practical methods of integrated subject-language training for students in the field of training “Agroengineering”. The scientist developed the subject-thematic content for training students in four profiles: “Technological equipment for storage and processing of agricultural products”, “Technical systems in agribusiness”, “Technical service in the agro-industrial complex” and “Electrical equipment and electrical technologies in the agro-industrial complex”. The subject content of the integrated course in each profile reflects its specifics and contains exclusively topics related to the professional work of graduates. Examples of topics in the profile “Technical service in the agro-industrial complex” can be the following: “Technical condition of the machine and its changes during operation”, “Technical diagnostics of machines”, “Repair and maintenance base”, etc. Yu.V. Tokmakova in her work also turned to the development of the subject-thematic content of teaching an integrated course for students of an agricultural university. The subject of the study was the development of a methodology for teaching a professional foreign language to students in the field of training “Technology of production and processing of agricultural products” in three training profiles: “Examination of the quality and safety of agricultural products”, “Technology of production and processing of crop products” and “Technology of production and processing of livestock products” ”.

Taking into account the relationship between learning profiles, the scientist identified invariant and variable content of learning. Examples of topics within the profile “Technology of production and processing of livestock products” are the following: “Basic technological operations in milk processing”, “Composition and properties of raw meat”, “General scheme of cheese production”, etc. It should be noted that this is the end of the research devoted to the development of the subject-thematic content of teaching a professional foreign language within the framework of an integrated course. The second aspect to analyze is the development of teaching technology. A review of research on this issue showed that only for two areas of training, “Agroengineering” and “Technology of production and processing of agricultural products,” scientists have developed systems or complexes of professional foreign language tasks. In particular, P.V. Sysoev and T.V. Baidikov developed a typology of problematic foreign language professionally oriented tasks, including: a) tasks for mastering factual material; b) training tasks; c) productive tasks; d) professional projects and e) professional cases. The last type of tasks - professional cases - is the most difficult from the point of view of foreign language and professional training of students, however, it can be considered truly authentic,

since the cases are taken from real professional situations. The authors give the following case as an example: “The plant received new technological equipment for processing livestock products. Study the description of the operating rules for this new technological equipment for the processing and processing of milk, the production of butter, cottage cheese, cheese and ice cream. Select the optimal operating modes of this equipment for processing and processing each type of product. Give reasons for your actions” [21, p. 296]. In another work devoted to the development of a methodology for integrated training of students “Technology of production and processing of livestock products” of the training direction “Technology of production and processing of agricultural products” P.V. Sysoev and Yu.V. Tokmakov developed a set of integrated tasks aimed at the simultaneous development of professional foreign language communicative competence of students, as well as the formation of their professional competencies. Examples of such tasks include: Topic: “Sugar and sugary substances” Integrative task: “Working at a beet sugar factory, technologists identified defects in sugar. You need to identify the main causes of defects in granulated sugar and refined sugar. Properly organize the stages of sugar production and ensure long-term storage by creating the necessary temperature and air humidity”. Analysis of the above studies indicates that the subject content of training and teaching technology are focused on the internal specialization of students and reflect the characteristics of their future professional work. As scientists show, the development of subject-thematic content of teaching integrated courses and teaching technology is based on interdepartmental interaction. Through joint work with representatives of specialized departments, foreign language teachers develop integrated courses. **CONCLUSION** In the methodology of teaching professional foreign languages, three methodological approaches are distinguished: 1) a foreign language for special purposes, 2) teaching specialized disciplines in a foreign language and 3) an integrated approach. In agricultural universities, as in many other non-linguistic universities in the country, teaching a foreign language for special purposes dominates. The use of an integrated approach, which has significant linguodidactic potential, is the exception rather than the general rule. An analysis of scientific works shows that at the moment, subject-thematic content of integrated courses has been developed for students in such areas of training as “Agrochemistry and agro-soil science”, “Horticulture”, “Agroengineering” and “Technology of production and processing of livestock products”. The methodological dominant in the implementation of integrated training is the system of problematic foreign language professional tasks. Typologies of such tasks and professional cases have been developed for students in the areas of training “Agroengineering” and “Technology of production and processing of livestock products”.

References

1. Zavyalov V.V. Modeli obucheniya inostrannomu yazyku dlya professional'nykh tseley studentov nelingvisticheskikh napravleniy podgotovki [Models of teaching a foreign language for professional purposes of students of non-linguistic areas of training]. Derzhavinskiy forum – Derzhavin Forum, 2018, no. 6, pp. 175-184. (In Russian).
2. Sysoev P.V. Diskussionnyye voprosy vnedreniya predmetno-yazykovogo integrirovannogo obucheniya studentov professional'nomu obshcheniyu v Rossii [Controversial issues of the introduction of content and language integrated learning approach to teaching foreign language professional communication in Russia]. Yazyk i kul'tura – Language and Culture, 2019, no. 48, pp. 349-371. <https://doi.org/10.17223/19996195/48/22>. (In Russian).

3. Popova N.V., Kogan M.S., Vdovina E.K. Predmetno-yazykovoe integrirovannoe obuchenie (CLIL) kak metodologiya aktualizatsii mezhdistsiplinarykh svyazey v tekhnicheskoy vuzе [Content and Language Integrated Learning (CLIL) as actualization methodology of interdisciplinary links in technical university]. Vestnik Tambovskogo universiteta. Seriya: Gumanitarnye nauki – Tambov University Review. Series: Humanities, 2018, vol. 23, no. 173, pp. 29-42. <https://doi.org/10.20310/1810-0201-2018-23-173-29-42>. (In Russian).

4. Zavyalov V.V. Pedagogicheskiye usloviya predmetno-yazykovogo integrirovannogo obucheniya studentov nelingvisticheskikh napravleniy podgotovki (na primere napravleniya podgotovki «Yurisprudentsiya») [Pedagogical conditions of content and language integrated learning of students of non-linguistic directions of training (on the example of the direction of training “Law”)]. Obshchestvo. Kommunikatsiya. Obrazovaniye – Society. Communication. Education, 2021, no. 2, pp. 63-74. <https://doi.org/10.18721/JHSS.12205>. (In Russian).

5. Solomatina A.G. Obuchenie inostrannomu yazyku dlya professional'nykh tsey na osnove modeli integrirovannogo predmetno-yazykovogo obucheniya v agrarnom vuzе [Teaching a foreign language for professional purposes course on the basis of the model of content and language integrated learning in an agricultural institution]. Vestnik Tambovskogo universiteta. Seriya: Gumanitarnye nauki – Tambov University Review. Series: Humanities, 2018, vol. 23, no. 173, pp. 49-57. <https://doi.org/10.20310/1810-0201-2018-23-173-49-57>. (In Russian)

6. Katayev Salaxiddin Valiquil o'g'li. (2023). INTERNATIONAL RECOGNITION OF YOUTH POLICY OF NEW UZBEKISTAN. *International Journal of Formal Education*, 2(6), 228–233. <http://journals.academiczone.net/index.php/ijfe/article/view/990>

7. Katayev Salaxiddin Valiquil o'g'li. [Creating Presentation Programms for Teachers](#). *Gospodarka i Innowacje*. 19, 17-20. 2022

8. Katayev Salaxiddin Valiquil o'g'li. (2023). THE ROLE OF A PROFESSIONAL FOREIGN LANGUAGE FOR WORKERS IN THE AGRICULTURAL SECTOR. *Miasto Przyszłości*, 36, 286–288. <http://miastoprzyszlosci.com.pl/index.php/mp/article/view/1525>

9. Katayev S.V [The Role Of Foreign Languages In Agriculture](#). *Science and innovation* 1 (B7), 638-640. 2022

10. Babanazarovna, K. D. . (2022). SYSTEM OF ENGLISH WORDS IN UZBEK LANGUAGE. *Евразийский журнал академических исследований*, 2(2), 272–275. извлечено от <https://in-academy.uz/index.php/ejar/article/view/1102>

11. Abdinazarovich, B. S. (2022). YOZUV VA UNING KELIB CHIQISH TARIXI. *TA'LIM VA RIVOJLANISH TAHLILI ONLAYN ILMIY JURNALI*, 2(4), 116-119.

12. Xudaybergan, K. (2023). METHODS OF LANGUAGE TEACHING TO AGRICULTURAL STUDENTS. *Ustozlar uchun*, 17(2), 136-139.

13. Mengliev, B. N. (2022). Problems of formation of pedagogical competence of physical education teachers. *Eurasian Journal of Sport Science*, 2(1), 79-86.

14. Kuchkinov Xudaybergan. (2023). LANGUAGE TEACHING TO AGRICULTURAL STUDENTS BASED ON THE TERM OF SPECIALIZATION. *Proceedings of International Educators Conference*, 2(4), 131–134. <https://econferenceseries.com/index.php/iec/article/view/1869>

15. Babanazarovna, K. D. (2023). USE OF DIDACTIC GAMES IN THE TRANSITION TO ENGLISH IN ELEMENTARY CLASS. *PEDAGOGIKA, PSIXOLOGIYA VA IJTIMOYIY TADQIQOTLAR*, 2(3), 9-13.

16. Tangirkulova, K. . (2023). A CROSS-SECTIONAL STUDY OF DRUG NAMES USED IN THERAPEUTIC DISEASES IN ENGLISH AND UZBEK LANGUAGES. *Евразийский журнал академических исследований*, 3(6), 180–184. извлечено от <https://in-academy.uz/index.php/ejar/article/view/16809>

ORGANIZING ACTIVITIES IN HIGHER EDUCATION AND SOME ASPECTS OF
THEIR TRANSFER

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Abstract: In the article higher in education mobile o ' yins organize and some aspects of their implementation are covered in detail.

Key words: Higher education, physical education, active game, activity, emotion, physical exercise, health improvement, national value, physical education.

ОРГАНИЗАЦИЯ АКТИВНЫХ ИГР В ВЫСШЕМ ОБРАЗОВАНИИ И НЕКОТОРЫЕ АСПЕКТЫ ИХ ПОВЕДЕНИЯ

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Аннотация: Организация подвижных игр в высшей школе в статье подробно освещены некоторые аспекты их реализации.

Ключевые слова: Высшее образование, физическое воспитание, активная игра, деятельность, эмоция, физические упражнения, оздоровление, национальная ценность, физическое воспитание.

Introduction. The teacher's mastery of the method of leading the game process is the main condition for successful games. Selection and planning of action games is carried out according to the program. This takes into account the working conditions of each age group, such as the general level of physical and mental development of children, the development of motor skills, the health status of each child, its own characteristics, the season, daily routine, and the arrangement of the house. place, as well as the specific characteristics of children's interests. Action games are gradually becoming more complicated in accordance with the requirements of the program, they are changed taking into account the growth of children's minds, the movement experience they have gained, and the need to prepare them for school.

In terms of content and rules, are organized. In these games, all children perform the same role or task with the direct participation of the teacher (all children are birds, the teacher is the mother bird...).

3-year-old children are gradually taught to play roles independently (all children are birds, one or two children are cars).

The middle group, the simplest competitive games can be played both individually and as a team.

Games for children in a large group are complicated according to their content, rules, number of roles, introduction of submission to team competition.

Children of the school preparatory group play some complex movement games, as well as team games consisting of team competitions, game relays, sports games. All this helps to develop agility, quickness, endurance, improve movement skills, and educate moral and willful qualities.

Children to a new game. Explaining its content and rules requires thorough preparation from the teacher. It is possible to clarify children's knowledge on the basis of conversations that take place in advance of the content of some games. Their imagination determines, the attitude towards the game images is formed, the basic imagination grows.

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The Games Can Vary Depending On Their Type, But The Activity Is Always Emotionally interesting, prepares children for fun play activities, makes them want to start playing faster, and makes them enthusiastic about the game tasks. should be motivated to perform with.

The game without content should be short, clear and expressive. The teacher explains the sequence of game actions, shows the location of children and game attributes (targeting objects in small and medium groups, and non-targeting in large groups) using spatial expressions and rules clarifies. After that, the teacher asks the children some questions.

The game are understandable to children, the game will be fun and organized.

Games with elements of competition, the educator explains the rules, methods of the game, conditions of the competition, and encourages children to try and do the tasks well, giving confidence in doing them well. Taking into account the physical maturity and individual characteristics of the children, the educator unites equal groups - teams, competing forces; pairs insecure, shy children with bold, active children in order to activate them.

Sometimes team captains, the referee and his assistants can be chosen to give the game a sporting appearance.

Meaningful games. The teacher's task is to create a visual picture of the game situation before the children's eyes , to vividly describe the game images, to influence the children's imagination and feelings, and to activate their creative initiative. For this, small groups can use toys and stories.

Middle groups, it is enough to limit yourself to offering a familiar game and mentioning its rules.

In large groups, it is advisable to invite the children themselves to remember the content of the game . One of them describes the course of game actions, the other lists the rules . Later, the children themselves start to organize the game without the help of the teacher.

Distribution of roles in the game. The educator follows pedagogical tasks (encouraging the newcomer child or, on the contrary, proving how important it is to be a hero in the case of an active child, or rejecting the request of a confident child and giving this role to a shy child who is afraid handover) appoints a leader or takes the role of a leader or ordinary participant by entering the game himself, making the children happy.

Also, the presenter can refer the children to him and ask them to explain why they assigned this role to this child.

The role of leader in a small group is performed by the teacher himself . During the game, the educator monitors children's actions and interactions, compliance with the rules, gives brief instructions, manages children's emotional states. He will talk about the violation of the rule by some children before restarting the game.

The game. The active game is completed with a general walk, which reduces the physical load. Walking can also be replaced with low-motion play of equal importance .

It is over, the child's slow transition from fast movement to rest will have an unpleasant effect on the heart and the whole body. When evaluating the game , the educator emphasizes its positive aspects, names the children who successfully fulfilled their roles, showed courage, endurance, mutual support, and complains about the violation of the rules and the children's actions related to this. shows.

In large groups, the educator prepares children to independently organize active games, while monitoring the progress of the games and especially the fulfillment of the rules, as well as

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the relationships between the children . He gives children tasks such as inventing variants of mobile games by changing their content, rules, game actions, and then finding a new game of their own .

In order to educate the children of the large group of independence and organizational skills, the educator offers them to organize a game with the children of the small group. The game is played under the supervision of a small group educator.

Active games are important in the comprehensive education of children. No matter how the game activity is expressed, it pleases the child and evokes positive feelings in them . Active games expand the child's worldview, are a unique tool for learning about the environment.

of action games determine the course of the game, guide children's movement activities, mutual relations, and help to educate moral and willful qualities.

It is important for every child to understand the rules of the game and to be guided by adults. Moral qualities such as honesty, justice, friendship, bravery, self-control, determination are brought up in children through games .

Game activities, favorable conditions are created for the development of attention, perception, thinking, understanding and targeting, games help to develop creative imagination, memory, ingenuity, thinking activity. Thus, active games help the child's mental development.

The game activity, the child practically assimilates the reality of space and objects, and at the same time, he himself greatly improves the mechanism of space perception.

Direction of movement by the child and the execution of the movement in the direction strictly defined by the rules of the game, on the one hand, the immediate assessment of the game situation (directly perceived) and visual-motor reaction (game actions) , on the other hand, requires understanding and imagining their actions in a space-game environment.

Action games form a simple time frame in children. They are expressed in the following: in understanding the sequence of game actions, first, then, next, before, all at the same time, it is seen in the rapid performance of game tasks according to the signal, within the time limit set for children. In these games, children practice aiming in space, consistency of actions and following them over time.

The games, the entire game situation, its rules, the movement of the characters, showing the location of the children, game attributes and directions of movement using spatial expressions, evaluating the played game serves the mental development of children.

Action games facilitate the development of creativity in older children. In this case, children can invent small games based on the content of the stories they have heard. Movement games are aesthetic activities based on their content and form . The variety of game actions is expressed in the fact that children perform them with clear agility and unique expression. The use of music in action games has great aesthetic value.

Action games, one should not forget the beauty and culture of actions: it is necessary to pay attention to children whose actions are somewhat expressive, to encourage those who are able to give expressive and successful images.

It is a complex activity consisting of various emotional movements. This activity is performed on the basis of established rules in conditions and situations that change suddenly . Action games differ in the features of organizing and managing the activities of the participants.

During the game, physical qualities such as movement and quickness, agility (distraction, avoiding "traps") are demonstrated in situations that suddenly change.

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During the game, children's activities are organized on the basis of a figurative plot or game tasks, and this creates positive feelings for the child to perform physical exercises with enthusiasm and for a long time. This, in turn, strengthens their effect on the body, helps to develop endurance.

Games, especially in work with children of preschool age, gives good results.

Action games are an important complex educational process. Children's movement activity, which is the basis of this process, has a positive effect on physical development, the formation of movement skills and physical qualities, and strengthening of health by increasing the functional activity of the body and enhancing feelings of emotional joy. Action games as one of the main means and methods of physical education help to effectively solve the tasks listed above.

Active games is inextricably linked with the positive emotions that arise during children's game activities and have a positive effect on the child's psyche. Emotional upliftment awakens children's desire to achieve a goal common to all, and it is expressed in a clear understanding of tasks, mutual compatibility of actions, accurate targeting in space and game conditions, and accelerated execution of tasks. Due to children's strong desire to achieve the goal and enjoyable pursuit, the role of willpower, which helps to overcome various obstacles, increases.

Movement games serve as a method of improving movement skills acquired by children and training physical qualities. During the game, the child focuses on achieving the goal, not on the method of performing the action. He acts according to the conditions of the game, showing agility and thus improving the movements. Therefore, for example, the game "Wolf in the ravine" is given after children learn to run and long jump.

As a movement activity, movement play has certain special features: it requires the child to quickly respond to signals and sudden changes in the game. Different situations and actions that occur in the game require changes in the level of muscle tension. For example, in the game "Trap", each child should carefully follow the leader's actions: when the leader approaches him, he quickly runs away in the opposite direction; when he feels safe, he moves slowly and stops; accelerates again when the starter approaches.

Almost every action game has actions and cues for children's movements. Such active movement activities train the child's nervous system, improving and balancing the processes of excitation and inhibition, as well as observation, ingenuity, the ability to aim in a changing environment, find a way out of a difficult situation, quickly educates decision-making and its implementation, bravery, initiative, choosing an independent way to achieve the goal.

The origin of action games goes back to ancient folk pedagogy. Children of the first age are brought up in families with the help of toys and fun games related to the child's initial movements. In the lives of children older than that, folk games with colorful action content (including game beginnings that frame children, khyrgyi, counting) have a great place. All of these still retain their artistic appeal, educational value and constitute valuable game folklore.

Selection and planning of action games is carried out according to the program. It takes into account the working conditions of each age group, such as the general level of physical and mental development of children, the development of movement skills, the health status of each child, its own characteristics, the season, daily routine, and the arrangement of the house. place, as well as the specific characteristics of children's interests. Action games are gradually becoming more complicated in accordance with the requirements of the program, they are changed taking into account the growth of children's minds, the movement experience they have gained, and the need to prepare them for school.

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Games for children in a large group are complicated according to their content, rules, number of roles, introduction of submission to team competition.

It was concluded from this study that the children of the preparatory group at the school play some complex movement games , as well as team games consisting of team competitions, game relay, and sports games. All this helps to develop agility, quickness, endurance, improve movement skills, and educate moral and willful qualities .

Children to a new game . Explanation of its content and rules requires thorough preparation from the educator. It is possible to clarify children's knowledge on the basis of conversations that take place in advance of the content of some games . Their imagination determines, the attitude towards the game images is formed, the basic imagination grows.

References:

1. TS Usmonkho' jaev "Action games" Study guide T.: Teacher 1992
Methodology of organizing and holding sports holidays" Textbook T.: 2008
3. Khojayev P, Rakhimkulov KD, Nigmanov BB "Action games and their teaching methodology" Cholpon publishing house T.: 2010.
4. R.I.Azizova " Methodology of teaching sports and action games" Manual T.: 2010
5. K. D. Rakhimkulov "National Movement Games" Study guide T.: 2012
6. Zhukov M.N. - M.: Podvizhnye igry: Ucheb. for stud. ped. Vuzov. Izdatelsky center "Academy" 2000. - 160 p.
7. Khojaev F, Murodov M, Mirsolikhov.S. "People's National Games Part 1. Toshken - 2001.

МУЗЫКА КАК ОРУДИЯ ВОСПИТАНИЯ ДЕТЕЙ РАННЕГО ВОЗРАСТА

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Аннотация: *Ранний возраст является вариативным компонентом программы и может быть изменен, дополнен в связи с календарными событиями и планом реализации коллективных и индивидуально музыкально-игровой особенности. Данный учебно-методический комплекс разработан для студентов 3 курса очной формы обучения по специальности Музыкальное образование.*

Дисциплина «музыка в дошкольном образовательном учреждении» входит в национально - региональный (вузовский) компонент цикла квалификация выпускника - учитель музыки.

Ключевые слова: *педагогическая психология, преподавание вокальной музыки, мотивация обучения, психология, развитие юных певцов.*

Методическая работа в образовательном учреждении дополнительного образования детей наиболее эффективна, если она организована как целостная система. Ее успех зависит от заинтересованности преподавателей в профессиональном развитии, от удовлетворенности коллектива организацией образовательного процесса в школе.

Целью методической и инновационной работы является повышение профессиональной компетентности педагогического мастерства преподавателей.

Задачи:

1. Совершенствование структуры и содержания учебных дисциплин образовательных областей.
2. Совершенствование методики преподавания учебных занятий.
3. Повышение научно – педагогической квалификации преподавателей.
4. Совершенствование учебно-методического обеспечения учебных занятий.
5. Отработка способов формирования готовности к творческой самореализации личности ребенка (в рамках развития школы).

Наиболее приоритетными направлениями методической работы школы являются:

- обеспечение управления образовательным процессом в школе;
- информационное обеспечение образовательного процесса, издательская деятельность;
- обеспечение условий для изучения, обобщения и распространения передового опыта;
- обеспечение аналитической экспертизы;
- обеспечение условий для непрерывного совершенствования профессионального мастерства преподавателей.

Чтобы содержание методической работы отвечало запросам преподавателей и способствовало их саморазвитию, работа школы планируется в соответствии с учетом профессиональных затруднений школьного коллектива. Планированию методической

работы предшествует глубокий анализ каждого из методических отделений с точки зрения влияния их деятельности на рост педагогического и профессионального мастерства.

Анализ методической работы проводится по следующим направлениям:

- статистика педагогических кадров по образованию, стажу, возрасту, квалификационным категориям;
- анализ работы методического совета;
- анализ работы методических отделений;
- актуальность тем педагогического совета, семинаров, мастер – классов;
- работа с молодыми специалистами;
- аттестация педагогических кадров, ее итоги, результат;
- использование новых учебных и авторских программ;
- основные недостатки, проблемы и пути их решения.

Невозможно говорить о перспективах развития, о реализации программы модернизации образования, о внедрении в педагогическую практику новых форм и методов организации учебного процесса без системной работы по обучению преподавателей. Система повышения квалификации педагогических кадров включает в себя следующие этапы:

- изучение теории: новых педагогических технологий, форм и методов организации образовательного процесса;
- апробация на практике тех или иных инноваций, практическое применение теоретического материала;
- демонстрация практических умений в использовании современных педагогических технологий;
- обобщение опыта, анализ проблем достигнутых результатов, пути решения данных проблем, деятельность школы по повышению профессионального мастерства преподавателей.

Для полноты реализации планов методической и инновационной работ преподаватели и концертмейстеры принимают активное участие в работе специалистов культуры и искусства «Бухарский областной учебно – методический центр».

Преподаватели школы освоили и осваивают новые образовательные технологии и методики, так как сегодня возросла потребность в преподавателе, способном модернизировать содержание своей деятельности посредством творческого ее обновления за счет применения современных образовательных технологий.

В целом в работе с преподавателями можно считать следующие результаты:

- стабильность и результативность прохождения аттестации на основе современных педагогической технологий;
- совершенствование теоретической и практической подготовки преподавателей и вопросов, связанных с совершенствованием педагогических технологий;
- разработка по современным педагогическим технологиям практических материалов и творческих отчетов;
- хорошие показатели качества и эффективность проведения уроков, более 75% уроков оценены на «отлично» и «хорошо»;
- результаты инновационной деятельности методических объединений и отдельных преподавателей.

Использование икт-технологий в развитии музыкально-творческих способностей дошкольников музыкальный руководитель. Современный мир непрерывно меняется, а с ним меняются и наши дети. Соответственно, система образования предъявляет новые требования к воспитанию и обучению детей дошкольного возраста. На сегодняшний день одним из путей модернизации в образовании, является информатизация. Компьютеры уже давно стали неотъемлемой частью нашей жизни. Даже в детском саду уже невозможно представить себе работу без них. Никого не удивляет, что многие дети с дошкольного возраста свободно владеют компьютером, для них это еще один источник информации и развития. Поэтому для нас педагогов важно с помощью информатизации создать условия для ребенка по адаптации в современной жизни, важно помочь ему войти в мир новых технологий, научить работать с информацией, организовать процесс обучения так, чтобы на музыкальных занятиях ребенок занимался активно и с увлечением, то есть создавать такие условия, в которых ребенок будет развивать воображение и творческие способности, проявлять познавательную инициативу, удовлетворит свою потребность к самореализации. Помочь музыкальному руководителю в решении этих задач может сочетание традиционных методов обучения и современных информационных технологий, в том числе и компьютерных. Использование мультимедийных технологий на музыкальных занятиях дает ряд преимуществ: - детьми лучше воспринимается материал, возрастает заинтересованность, - осуществляется индивидуализация обучения, развитие творческих способностей. ИКТ в музыкальном образовании детей дошкольного возраста можно применить как средство представленные на слайде. При этом использование ИКТ позволяет эффективно развивать все виды восприятия у дошкольников и школьников (слуховое, зрительное, чувственное), а также задействовать все виды памяти (зрительную, образную, слуховую и др.). При проведении исследования в школе № 30 учитель факультета искусствознаний, кафедры «Музыкальное образование» наставники - старшими преподавателями Нуруллаев Ф.Г. и Холиков К.Б. использование ИКТ эффект в школе №30 г. Бухары зрительную, образную, слуховую и др. Использование различных аудиовизуальных средств (музыка, графика, анимация) обогащает обучающий материал. Так как мультимедийные технологии характеризуются соединением различных видов представленной информации (речь, музыка, рисунок), следовательно, они оказывают наибольшее влияние на формирование личности ребёнка. Но при этом необходимо учитывать возрастные особенности детей дошкольников, каждый элемент мультимедийных технологий должен быть продуман и осмыслен с точки зрения восприятия детей, материал должен содержать в себе элементы необычного, удивительного, неожиданного и вызывать у детей интерес к учебному процессу, важным моментом является и смена видов музыкальной деятельности.

Преобладающей формой мышления детей дошкольного возраста является наглядно-образное мышление. Поэтому в своей работе с детьми я часто использую показ обучающих фильмов, сказок, мультфильмов, в которых звучат шедевры мировой классики, актуальные для определённой темы занятия, показ презентаций, видео-иллюстрации для сопровождения музыкальных произведений при слушании музыки, музыкально-дидактические игры, викторины, тестовые задания, конкурсы. Таким образом, организуется единый процесс образного восприятия и активной мыслительной деятельности детей. Включившись в работу по использованию ИКТ, я пришла к выводу: что средства новых

информационных технологий необходимо включать во все виды музыкальной деятельности в детском саду: слушание музыки, пение, музыкально-ритмические движения, музыкально-дидактические игры, детское музыкальное творчество.

При восприятии музыки это может быть демонстрация портретов композиторов, иллюстраций, репродукций к музыкальному произведению, подборка слайдов или видео. С помощью ИКТ дети могут виртуально попасть в концертный зал, изучать творчество композиторов, познакомиться с разными музыкальными жанрами, музыкальными инструментами. Интересно, ярко и доступно можно познакомить дошкольников с разными видами искусства, такими как театр, балет, опера, продемонстрировав не только иллюстрации, но и видеоролики. Мультимедиа презентации позволяют обогатить процесс эмоционально-образного познания, вызывают желание неоднократно слушать музыкальное произведение, помогают надолго запомнить предложенное для слушания музыкальное произведение, зрительное восприятие изучаемых объектов позволяет быстрее и глубже воспринимать излагаемый материал, разнообразят впечатления детей. (просмотр видео) Пение занимает ведущее место в системе музыкально-эстетического воспитания детей дошкольного возраста.

Но при этом очень важно соблюдать требования Государственного Стандарта Узбекистана, представленные на экране. При создании мультимедийных пособий могут использоваться компьютерные программы. Таким образом, использование компьютерных технологий в музыкальном образовании способствует повышению интереса к обучению, его эффективности, развивает ребенка всесторонне, активизирует родителей в вопросах музыкального воспитания и развития детей. Для педагога, интернет - ресурсы значительно расширяют информационную базу при подготовке к занятиям, связанную не только с миром музыки, но и с миром искусства в целом. А умение пользоваться компьютером позволяет разрабатывать современные дидактические материалы и эффективно их применять. Но не стоит забывать, что использование ИКТ в музыкальном воспитании дошкольников это только средство для реализации целей и задач, поставленных перед педагогом. Каким бы положительным, огромным потенциалом не обладали информационно-коммуникационные технологии, заменить живое общение педагога с ребенком они не могут и не должны. Главенствующая роль в музыкальном воспитании всегда остаётся за музыкальным руководителем.

СПИСОК ЛИТЕРАТУРЫ

1. Nurullaev F.G. The role of folklore in the raising of children. European Journal of Research and Reflection in Educational Sciences Vol. 8 No. 12, 2020 Part III ISSN 2056-5852.
2. Нуруллаев Ф.Г., Композиционный и исполнительский процесс в музыке // «SCIENTIFIC PROGRESS» Scientific Journal ISSN: 2181-1601, 2021.- pp. 576-581.
3. Нуруллаев Ф.Г. Импровизаторское творчество в XX веке по сфере музыке// «SCIENTIFIC PROGRESS» Scientific Journal ISSN: 2181-1601, 2021.- pp. 582-587.
4. Nurullayev F.G. [FORMATION OF AESTHETIC EDUCATION OF CHILDREN ON THE EXAMPLE OF BUKHARA FOLKLORE SONGS](#). Euro-Asia Conferences 1 (1), 34-36.
5. Nurullayev F.G. [METHODOLOGICAL REQUIREMENTS FOR THE SELECTION OF BUKHARA FOLK SONGS IN MUSIC EDUCATION](#). Web of Scientist: International Scientific Research Journal 1 (01), 83-88.

6. Нуруллаев Ф.Г. Обряды и обычи связанные с рождением и воспитанием ребенка. Музыкальное искусство и образование: традиции и инновации: сборник материалов международного научного конференции. Бухара, 2019. 317– 320 стр.
7. Нуруллаев Ф.Г., Нуруллаева Н.К. Музыкально-историческое наследие центральной Азии (психологический настрой армии Темура). Психология XXI столетия, 18-20 марта 2020 года С. 115-118.
8. Нуруллаев Ф.Г. Мусика таълимида Бухоро фольклор кўшиқларига кўйиладиган методик талаблар. Pedagogik mahorat, Ilmiy-nazariy va metodik jurnal 2020, 3-son. Vuxoro. Б.175-180.
9. Нуруллаев Ф.Г., Нуруллаева Н.К. Роль фольклорных песен в воспитании учащихся. Научно– методический журнал «Проблемы педагогики» №3(48). Москва 2020. С.15-17.
10. Нуруллаев Ф.Г., Нуруллаева Н.К. Формирование эстетического воспитания детей на примере Бухарских фольклорных песен. «MODERN SCIENTIFIC CHALLENGES AND TRENDS» collection of scientific works of the international scientific conference Issue 4(260 Warsaw, Poland 2020. P. 139-141.
11. Nurullayev F.G., Madrimov B.K., Rajabov T.I. Teaching Bukhara Children Folk Songs in Music Lessons as an Actual Problem. International Journal of Psychosocial Rehabilitation, Vol.24, Issue 04, 2020 P. 6049.
12. Нуруллаев Ф.Г., Случайный выбор качественных характеристик материала по музыки или порядок его изложения в процессе создания музыки или исполнения опуса//«SCIENTIFIC PROGRESS» Scientific Journal. ISSN: 2181-1601, 2021.- pp. 588-593.
13. Нуруллаев Ф.Г. Мусика таълимида Бухоро фольклор кўшиқларини ўргатиш жараёнини лойихалаш. Бухоро мусика фольклорининг тарихий-назарий ва амалий масалалари. Республика илмий-назарий анжуман материаллари. 2020 йил, 6 ноябрь. Бухоро, 2020- Б. 107-111.
14. Апраксина О.А. Методика музыкального воспитания. М.: Просвещение, 1983. - 222с.
15. Нуруллаев Ф.Г. Особенности и условия развития творческих музыкальных способностей детей. Вестник интергративной психологии. Журнал для психологов. г. Ярославль, Выпуск №17, 2018. – С.125-128.
16. Nurullayeva N.G., Nurullaeva N.K., Nurullaev B.G. Role and significance of folkler music in the upbringing of children of preschool age. Academicia An International Multidisciplinary Research Journal. Vol.10, Issue 10, October 2020.
17. Ананьев Б.Г. Психология чувственного познания - М.: 1960. -277с.
18. Нуруллаев Ф.Г., Музыкальный процесс в западной музыке// «SCIENTIFIC PROGRESS» Scientific Journal ISSN: 2181-1601, 2021. - pp.570-575.
19. Нуруллаев Ф.Г., Нуруллаева Н.К. Роль фольклорных песен в воспитании учащихся// Научно – методический журнал «Проблемы педагогики». №3 (48). - Москва 2020.- С.15-17.
20. Nurullayev F.G The Role and Significance of Folk Music in Raising Children. European Journal of Innovation in Nonformal Education(EJINE) Volume 2| Issue 5| ISSN:2795-8612 Accepted-14 May2022.

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

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21. Нозима Кудратовна Нуруллаева. Подготовка будущих учителей музыки к методически грамотной профессиональной деятельности. Science and education scientific journal, issn 2181-0842, volume 3, issue 1, january 2022.975-981.
22. Асафьев Б.В. О музыкально-творческих навыках у детей //Избранные статьи о музыкальном просвещении и образовании. Л., 1973. - С. 91-95.
23. Нуруллаев Ф.Г. [Содержание обучения бухарским народным песням в музыкальном образовании](#)// Academy, № 3 (66), 48-50, ООО «Олимп».
24. Фаррух Гайбуллоевич Нуруллаев. Моделирования педагогических с музыкальным уклоном действие объектов через математический аппарат в педагогике// SCIENCE AND EDUCATION SCIENTIFIC JOURNAL, ISSN 2181-0842, VOLUME 3, ISSUE 1, JANUARY 2022.589-595.
25. Фаррух Гайбуллоевич Нуруллаев. Интерактивные уроки музыки по программы STEAM// SCIENCE AND EDUCATION SCIENTIFIC JOURNAL, ISSN 2181-0842, VOLUME 3, ISSUE 1, JANUARY 2022.595-602.
26. Нодира Каримовна Нуруллаева. Методические аспекты музыкального образования, особенности обучения народных песен в 5-7 классах// SCIENCE AND EDUCATION SCIENTIFIC JOURNAL, ISSN 2181-0842, VOLUME 3, ISSUE 1, JANUARY 2022.957-963.
27. Бобиршоҳ Ғайбуллоевич Нуруллаев. Музыкальный ракурс изучаемого объекта в особенности обучения фольклора// SCIENCE AND EDUCATION SCIENTIFIC JOURNAL, ISSN 2181-0842, VOLUME 3, ISSUE 1, JANUARY 2022.963-969.
28. Нигора Каримовна Нуруллаева. Теории музыки основа - основ музыкального формирующих принципов и правил произведения// SCIENCE AND EDUCATION SCIENTIFIC JOURNAL, ISSN 2181-0842, VOLUME 3, ISSUE 1, JANUARY 2022.969-975.
29. **Nurillaev Farrukh Gaybullaevich-** The technology of organizing the aesthetic education of students by means of folk songs. European Chemical Bulletin (Scopus-Q3) ISSN2063-5346. 2023, 12 (Special Issue7), 1987-1996
30. Nurillaev Farrukh Gaybullaevich-Results of Experimental Work on Teaching Bukhara Folk Songs in Music Education and their Effectiveness. International Journal of Trend in Scientific Research and Development (IJTSRD) Special Issue on Modern Trends in Science, Technology and Economy Available Online:www.ijtsrd.com e-ISSN: Page 106-109.

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MAIN ERRORS IN TRANSLATION

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ABSTRACT

This article addresses some of the common problems that arise in translation studies. It also highlights the current demand for translation studies and its place in society.

Keywords: text, translation, vocabulary, terminology, translation problems, transformation, information.

INTRODUCTION

Today, the pace of modern globalization and intercultural relations development, the expansion of international relations, the development of trade-economic and financial relations between countries, the strengthening of the process of integration of European countries and the whole world, the development of science and technology, and the continuous exchange of scientific and technical information as effective factors the importance of foreign languages deserves great attention. Also, at the stage of economic, scientific, technical and cultural development, a foreign language is used as a means of oral and written communication between representatives of different peoples of the world.

As a result of the rapid development of knowledge and technologies, translators-specialists who have practical skills in translating scientific and technical texts related to various fields are special today, covering all aspects of modern society and modern economy. worthy of the need. Therefore, the need for highly skilled translators is increasing day by day.

Due to the development of modern technologies, today scientists from different countries of the world have the opportunity to quickly exchange information and conduct joint research, and thanks to these means of communication, unprecedented results are being achieved in modern science. In such conditions, the need for high-quality translation of scientific literature is significantly increasing in many production organizations. Translators must constantly add translations of scientific literature to their vocabulary, increase their ability to understand terms and know their meaning.

Therefore, the translator is the first to translate scientific and technical terms it is necessary to pay great attention to the meaning from the scientific and technical point of view, and then to have the ability to compare with narrow scientific and technical terms.

LITERATURE ANALYSIS AND METHODOLOGY

In the process of translation of scientific and technical texts, the following requirements should be followed: translation equivalence, translation accuracy, quality of translation data, logicity of translation and quality of its coverage. In order for a scientific and technical text to have a quality translation, the translator must have the following knowledge and skills:

- Must have knowledge of foreign language theory, phonetics, lexicon and grammatical structure;
- The translation of scientific and technical texts to the practice of special skills;

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-Linguistic practical knowledge (translation methods, transformation, the ability to replace the equivalent of words, the ability to add words, the ability to describe with terms, etc.);

-In the process of translating the text, it is necessary to have extralinguistic knowledge and the ability to use the content of sentences and sentences (in this case, it was required to have sufficient information in translating a special scientific-technical text)

One of the main unknown problems in translation is that the translator does not have a complete understanding of what "scientific translation" is. In order to successfully perform scientific translation, the translator must have an idea of how it differs from other types of translation. In general, the translation of the scientific method includes many texts related to the research topic - starting from theses, it includes abstracts and article reviews, diplomas, dissertations and monograph manuscripts.

When translating the above types of work, attention should be paid to the following factors: the purpose of translation, the method of translation, the organization of the text in the translation and the interrelationships between its parts. In addition to the external structure of academic texts (chapters, sections, paragraphs), there is also its internal structure. The translation of scientific texts has its own characteristics - it is a method of identifying material problems from general information and presenting their solutions. For example, in English, there are a number of words and phrases that are used for different purposes, to connect parts of the text, as well as to move from the meaning of one phrase to another. For example:

-shunga qaramsdan (although, however, despite, in spite of, nevertheless...);

-boshqa so'zlar bilan ifodalaganda (in other words);

-misol uchun (for example, for instance...)

-shuningdek (in addition, moreover, furthermore...);

DISCUSSION AND RESULTS

Terminological problems in translation.

One of the leading forms of scientific thinking is understanding and perception is related to the concepts of achievement. Almost every term in a scientific text is a lexical unit, and it expresses one of the meanings of special lexical units. These lexical units belong to the category of terms.

In general, a term is a word or phrase that is specific to a certain field in the field of science and technology. The term has clear semantic boundaries in linguistics. It follows that terms are a system of concepts reinforced by verbal expressions related to a particular subject. If a word in common language (except for a term) has many meanings, but it falls into the category of terms, this word will have a specific meaning, and its meaning in the term is used in the translation.

Therefore, one of the main mistakes that a translator makes when translating a scientific text is that he does not have enough skills to use scientific dictionaries or does not have a clear knowledge of the subject specific to the term - this situation is even his own. can also be observed in the mother tongue. In terms of application and quantity, special dictionaries of terms are more widely used in scientific method texts than other types of dictionaries. They are: nomenclature names, professional vocabulary and terms, professional jargon, etc. This lexicon is widely used in all areas of scientific text (that is, text classification, text structure and its function, text components and factors are also taken into account). On average, terminological or terminological vocabulary makes up 20 percent of the total vocabulary of scientific texts.

Grammatical errors in translation.

The style of scientific communication has its own grammatical features. For example, when some texts are translated from English to Uzbek, in some cases the lexical meaning is lost and the verbs have an abstract meaning. For example:

- It seems very interesting –Bu juda qiziq ko'rinadi.
- He probably got a cold –Balki u shamollab qolgan.
- Ali feels himself strange –Ali o'zini g'alati his qilayapti.

In these cases, the semantic load falls on verbs instead of noun phrases we can see. In other words, verbs perform an important grammatical function in these sentences.

Also, abstract verbs are often used in English scientific method texts.

- Many houses were built in short term –Ko'pgina uylar qisqa mudatda qurilgan
- Some new planets were discovered in mid of 2000's –2000-yillarda bir qancha sayyoralar kashf qilingan.

As can be seen in the above examples, the abstract nouns are English is also widely used in the language and the main burden is focused on verbs, i.e. passive relative verbs.

Another interesting aspect of the research is that in today's linguistics, English in the language, the percentage of the use of present tense verbs is equal to past tense verbs, which of course depends on the context of the scientific text.

In general, a scientific text must have a clear statement of logic, and this is its correct and high-quality translation of logic is one of the most important tasks of a translator. Texts in the scientific style often have a uniform appearance, and these texts have expressive features. Interrogative sentences are rarely used in such texts, and even if they are used, they are aimed at drawing the attention of the reader who is familiar with the text. One of the characteristics of scientific texts is that they do not use emotional expressions.

General theory of translation.

The general theory of translation is derived from the concrete experience of translation systematizes conclusions and creates a basis for it. In the process of translation, the results of the translation and their ideas are summarized, and the conditions and factors specific to the translation are taken into account in the translation activity.

The concept of the general theory of translation was developed by the Russian linguist and linguist A.V. Fedorov's works are widely and fully covered. According to this concept, any quality translation text should begin with a philological analysis of its linguistic basis and end with an artistic creation or scientific editing.

A special theory of translation.

A special theory of translation (or, in linguistics, focuses on a pair research on translation) equivalents, variants of correspondence between two languages, as well as factors and criteria for their selection in a specific situation should be taken into account. Within this theory, the main method of studying translation phenomena is the comparison of two languages. For example: Uzbek and Russian, or Russian and English, or English and German.

Transformational theory of translation.

Transformational theory (model) of translation, during translation activity is represented by making changes to the translation text. The reason is that in some cases the meaning of the text cannot be translated completely or it is difficult to translate.

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SUMMARY

Not long-ago computers were considered an amazing invention. Today they form part of our everyday lives. The latest thing today is Virtual Reality. A Virtual Reality system can transport the user to exotic locations such as a beach in Hawaii or the inside of human body.

Translation in Uzbek.

O'tgan davrda kompyuterlar ajoyib ixtiro deb hisoblanar edi. Bugungi kunda ular bizning kundalik hayotimizning bir qismini tashkil qiladi. Oxirgi ixtrolardan biri -bu Virtual haqiqat. Virtual haqiqat tizimi foydalanuvchilarni Gavayidagi plyaj yoki inson tanasining ichki qismi kabi ekzotik joylarga olib borish imkoniyatiga ega.

As we can see in the example, the translation from English to Uzbek was not completely translated, but instead underwent a transformation. That is, the meaning of the original text in Uzbek language is clarified with other words.

American linguist N. Chomsky's transformational model of translation related to the ideas of "transformational or generative grammar". Within this theory, the process of creating a translation text is considered as a syntactic transformation of the units and structures of the source language into the units and structures of the translated language, where great attention is paid to the stages and methods of the translation process.

Also, this theory is supported by American translators K. Naide, B.O. It is also mentioned in the works of Kads and V. Koller. In general, the ideas of transformational theory are one of the important enabling methods in translation studies to identify the structures and units that are related to translation and interrelated in the process of translating a pair of languages.

REFERENCES

1. Rasulov R. General Linguistics. -Tashkent, 2013.
2. Salomov F., Language and translation. - T.: Science, 1966.
3. Salomov. F. Literary tradition and artistic translation. - T.: Science, 1980.
4. Salomov F. Translation concerns. - Toshknet: Literature and Art Publishing House, 1983.
5. Khdmidov H., Prose translation problems from Uzbek to Turkish, Tashkent, ToshDShI, 2014.
6. Hamidov H.Kh. Translation problems of proverbs and idioms. -Tashkent: ToshDSHI, 2017.
7. Vlahov S., Florin S. Untranslatable in translation. - M.: International relations, 1980.

СОДЕРЖАНИЕ ПРИНЦИПОВ МЕЖЛИЧНОСТНОГО ОБЩЕНИЯ КАК ЗАЛОГ
ЭФФЕКТИВНОЙ КОММУНИКАЦИИ

(на материале англоязычного парламентского дискурса)

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Данная работа исследует важность соблюдения принципов межличностного общения в контексте англоязычного парламентского дискурса с целью обеспечения эффективной коммуникации. В статье анализируются ключевые принципы общения между участниками парламентских обсуждений, исследуется их роль в достижении консенсуса, управлении конфликтами и эффективной передаче информации. Авторы рассматривают практические примеры и стратегии, используемые в парламентской среде для соблюдения данных принципов. Результаты исследования подчеркивают значимость соблюдения принципов межличностного общения как неотъемлемой части успешного парламентского обмена мнениями и принятия решений.

Ключевые слова: межличностное общение, эффективная коммуникация, парламентский дискурс, принципы общения, консенсус, управление конфликтами, информационная передача, парламентский обмен мнениями, принятие решений, стратегии общения.

THE CONTENT OF INTERPERSONAL COMMUNICATION PRINCIPLES AS A KEY TO EFFECTIVE COMMUNICATION (based on English-language parliamentary discourse)

This study explores the significance of adhering to the principles of interpersonal communication in the context of English-language parliamentary discourse to ensure effective communication. The article analyzes key principles of communication among participants in parliamentary discussions, examining their role in achieving consensus, managing conflicts, and facilitating efficient information transmission. The authors investigate practical examples and strategies employed within the parliamentary environment to uphold these principles. The research findings underscore the importance of adhering to interpersonal communication principles as an integral component of successful parliamentary deliberation and decision-making.

Keywords: interpersonal communication, effective communication, parliamentary discourse, principles of communication, consensus, conflict management, information transmission, parliamentary exchange of opinions, decision making, communication strategies.

Принципам межличностного общения посвящен ряд трудов отечественных и зарубежных ученых с позиций понимания речевой коммуникации и дипломатии как формы человеческой деятельности, изучения средств выражения адресованности, взаимодействия адресанта и адресата [Алпатов 1973, 1; Богданов 1990, 4; Борисова 1990, 5; Вежбицкая 1996, 6; Ларина 2009, 7; Шамьенова 2007, 10; Штерн 1998, 11; Fraser 2001, 15; Johnson 1996, 17; Stembrouk 2000, 19], однако этот вопрос требует дальнейшего изучения.

Актуальность статьи определяется не исследованностью реализации принципа вежливости и принципа кооперации в коммуникативных событиях парламентского

дискурса Великобритании, разновидностью профессионального дискурса, социально-направленным типом коммуникативной деятельности, регулируется стратегиями и тактиками; является синтезом когнитивных, лингвистических и экстралингвистических факторов, имеет своим результатом формирование речевых жанров. Во время такого взаимодействия происходит не только восприятие и понимание партнера по коммуникации, но и значимое влияние одного собеседника на другого с целью достижения определенного результата [Яшенкова 2010, 13].

Цель статьи – выявить особенности действия принципов межличностного общения в англоязычном парламентском дискурсе.

Объектом исследования статьи являются речевые интеракции в рамках парламентского дискурса Великобритании. предметом исследования – соблюдение максим принципов кооперации и вежливости парламентариями. Материалом для исследования послужили пятьдесят коммуникативных событий парламентских дебатов.

Для эффективной, успешной коммуникации важным условием является соблюдение принципов кооперации (сотрудничества) и вежливости (этикетности). Принцип кооперации – это единство максим (правил), которые определяют вклад участников коммуникативного процесса в объединяющую речевую ситуацию [Бацевич 2011, 2]. Принцип вежливости, в свою очередь, определяет манеру поведения коммуниканцев и регулирует форму и содержание сообщений.

Сущность принципа кооперации заключается в предоставлении коммуникативного вклада в речевое общение в соответствии с принятой целью в направлении разговора и регулирует форму и содержание сообщений, что в значительной степени влияет на успешность коммуникативных интеракций [Яшенкова 2002, 12]. Принцип кооперации сформулировал американский логик Г. П. Грайс, рассмотрев его как единство четырех максимов: 1) максима кол-ти: «Высказывание должно иметь не меньше информации, чем нужно; высказывание должно иметь не больше информации, чем нужно»; 2) максима качества: «Не говори того, что считаешь ложным; не говори того, для чего нет достаточных оснований»; 3) максима отношение: «Не отклоняйся от темы»; 4) максима манеры: «Избегай непонятных изречений; избегай неоднозначности; избегай ненужного многословия; избегай неупорядоченных изречений» [Grice 1975, 16].

Под вежливостью понимают вежливость, соблюдение правил приличия в поступках и в речи, проявление воспитанности [Радевич-Винницкий 2001, 8]. В широком смысле вежливость определяют как принцип социального взаимодействия, базирующийся на уважении партнера, учете его интересов, готовности оказать помощь [Беляева 1992, 3]. Кроме того, принцип вежливости рассматривают как стратегию речевого поведения, направленную на предотвращение конфликтных ситуаций [Leech 1983, 18] с целью сохранения лица (достоинства, самоуважения, престижа и т.д.) в ситуациях, когда существует угроза потери лица [Brown, Levinson, 1978, 14]. Такой стратегический принцип, подобно принципу кооперации, реализуется в речи с помощью разных максимов.

Дж. Лич выделяет шесть максим: 1) максима такта: «Нанеси минимум неудобств другим; обеспечивай максимум выгоды для других»; 2) максима великодушия: «Делай минимум выгоды для себя; сведи к максимуму неудобства для себя»; 3) максима одобрения: «Меньше осуждай других; больше всего одобряй других»; 4) максима скромности: «Меньше хвали себя; больше всего осуждай себя»; 5) максима согласия: «Сведи к минимуму

разногласия между собой и другими; старайся достичь максимального согласия между собой и другими»; 6) максима сострадания: «Сведи к минимуму антипатию между собой и другими; проявляй максимум приверженности другим» [Leech 1983, 18].

Соблюдение принципа кооперации предполагает соблюдение в коммуникативном акте принципа вежливости. Оба принципа являются взаимодополняющими элементами интеракции. В своем взаимодействии принцип вежливости часто приходит на помощь там, где недостаточно эффективен второй. Он даже в большей степени отвечает требованиям кооперативности участников разговора [Сусов 2006, 9].

Отметим, что степень соблюдения максим принципов кооперации и вежливости в парламентских дебатах Великобритании варьируется от абсолютного (соблюдение всех максим) до конфликтного (соблюдение одной или никакой максимы). В нашей статье мы рассматриваем коммуникативные взаимодействия двух типов: 1) успешная коммуникация с соблюдением всех максим (полное соблюдение принципов общения); 2) успешная коммуникация с нарушением отдельных максим (неполное соблюдение принципов общения).

Исследовав пятьдесят фрагментов коммуникативных взаимодействий, мы пришли к выводу, что успешная коммуникация с соблюдением всех максим является идеальной, она имеется в шести случаях из пятидесяти.

Рассмотрим следующий пример:

Q217 Mr Hayes: Martin, you've discussed the concerns related to funding, budget allocations, and the flexibility of colleges to manage their finances. In fact, the Bill grants them the ability to both borrow and invest. How significant will this flexibility be in addressing the upcoming challenges that colleges are expected to encounter?

Martin Doel: The supplementary payments will play a crucial role for colleges as they strive to adjust to the challenging financial situation they currently face. Operating with flexibility within an overarching budget empowers the individuals closest to the frontlines of service delivery, allowing them to implement practical cost-saving measures to achieve desired outcomes. Hence, I believe this approach is a sound solution perfectly suited to our present circumstances. Consequently, it is imperative to maintain these freedoms. [Parliamentary Debates, 20].

В вышеприведенном примере коммуникативного взаимодействия соблюдены максимы: количества, качества, отношения и манеры. Коммуниканты хорошо знают, о чем говорят, не отклоняются от темы, не говорят больше, чем нужно, четко формулируют свое мнение. В то же время говорящие положительно настроены на взаимодействие. Они тактичны, доброжелательны по отношению друг к другу, солидарны в теме разговора, не акцентируют внимание на своих достижениях, то есть придерживаются максим: такта, великодушия, одобрения, скромности, согласия и сострадания. Следовательно, соблюдение всех максим принципа вежливости и принципа кооперации в данном примере свидетельствует об эффективной коммуникации и высокой языковой культуре участников взаимодействия.

Неполные коммуникативные взаимодействия в парламентском дискурсе Великобритании и формируют его национальную специфику.

Рассмотрим следующий пример:

Q173 Mark Durkan: Do you oversee vocational qualifications in Northern Ireland?

Sandra Burslem: Indeed we do.

Q174 Mark Durkan: If I understand correctly, the Assembly will need a legislative consent motion for the clauses in the Bill. Are there any concerns or potential complications that might lead people to be hesitant about this? Could there be suggestions for additional changes to be included in the Bill, resulting in supplementary amendments? Have you heard of any such possibilities?

Sandra Burslem: No, I am not aware of any such issues. Last week, two colleagues and I had the opportunity to address the Committee for Employment and Learning and discuss our responsibilities in Northern Ireland. Additionally, we maintain a Northern Ireland committee, led by our Northern Ireland member. Tomorrow, I am scheduled to travel to Belfast once again to oversee our routine Northern Ireland committee meeting.

During our previous board meeting, we had the privilege of hosting the Minister for Education and Learning, Danny Kennedy. We engaged in a conversation with him regarding the significance of vocational qualifications, not only for learners but also for the economic revitalization of Northern Ireland. We fully recognize and appreciate the importance of our efforts in Northern Ireland. Clearly, the manner in which these efforts are carried out in the future is a matter for the Northern Ireland Assembly to decide. [Parliamentary Debates, 21].

В вышеприведенном примере коммуникативного взаимодействия соблюдены не все максимы принципа кооперации и принципа вежливости. Коммуниканты знают о чем говорят, четко выражают свое мнение (придерживаются максим качества и манеры), однако предоставляют слишком много информации, отклоняясь от темы дискуссии (не соблюдают максимум количества и отношения). При этом партнеры по коммуникации относятся друг к другу с уважением, положительно настроены на взаимодействие, пытаются достичь согласия между собой (придерживаются максим такта, великодушия и согласия), хотя отмечают собственные достижения, проявляют приверженность третьим лицам (не придерживаются максим одобрения, и сочувствие). Однако, коммуникативное взаимодействие парламентариев остается успешным, несмотря на некоторые нарушения максим принципов межличностного общения.

Принцип кооперации и принцип вежливости являются важнейшими принципами регуляции межличностного общения, соблюдение которых является залогом достижения согласия между коммуникантами и эффективного коммуникативного взаимодействия. Парламентарии преимущественно придерживаются принципов вежливости и кооперации, что вполне закономерно, поскольку они должны достигать положительного результата в процессе обсуждения и решении определенных вопросов на государственном уровне. При этом нарушение отдельных максимов может не повлиять на эффективность коммуникации.

В дальнейшем целесообразным считаем исследовать случаи негармоничного общения участников англоязычного парламентского дискурса, причиной которого является нарушение принципов вежливости и кооперации.

ЛИТЕРАТУРА

1. Байрон А., Льюис Р., Пуселик Ф. NLP – магия нейролингвистического программирования без тайн. – М.: Речь, 2012. – 144 с.
2. Бэндлер Р., Гриндер Д. Большая энциклопедия НЛП. Структура магии. – М.: АСТ, 2015. – 448 с.

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-3, ISSUE-2

3. Вайсбурд М. Л., Рубинская Б. И. Деятельностный подход при отборе коммуникативного минимума для среднего этапа обучения // Иностранные языки в школе. – 1990. – № 1. – С. 23-29.
4. Выготский Л. С. Педагогическая психология. – М.: Педагогика, 2008. – 480 с.
5. Гриндер М., Ллойд Л. НЛП в педагогике: исправление школьного конвейера / пер. С. Коледа. – М.: Ин-т общегуманитарных исследований, 2001. – 307 с. – (Сер. «Нейролингвистическое программирование»; вып. 4).
6. Дилтс Р. Стратегии гениев. – М.: Класс, 1998. – 195 с.
7. Дилтс Р. Изменение убеждений с помощью НЛП. – М.: Класс, 1999. – 192 с.
8. Дилтс Р. Моделирование с помощью НЛП. – СПб.: Питер, 2000. – 288 с.
9. Леонтьев А. А. Основы психолингвистики. – М.: Смысл, 2003. – 288 с.
10. Brown, P. & Levinson, S.C. Politeness Phenomena // Questions and Politeness Strategies in Social Interaction / E. M. Goody (ed). – Cambridge: CUP, 1978. – 323 p.
11. Fraser B. Форма и функция политического анализа / B. Fraser // Text- und Gesprächslinguistik. Ein internationales Handbuch zeitgenössischer Forschung. – Berlin: Walter de Gruyter, 2001. – Bd. 2. – S. 1406-1425.
12. Grice H. P. Logic and Conversation / H. P. Grice // Syntax and Semantics / P. Cole, J. Morgan (eds.). – N.Y.: Academic Press, 1975. – Vol. №3. – Pp. 41-58.
13. Johnson, H. Let's Restore Politeness at Work, Home [Электронный ресурс] / H Johnson. – Режим доступа: <http://www.athensnewspapers.com/1996/12196/1201.johnson.html>.
14. Leech G. Principles of Pragmatics/G. Leech. – L., N.Y.: Longman Linguistic Library, 1983. – 250 p.
15. Stembrouk, S. The Principle of Politeness and Its Attendant Maxims [Электронный ресурс] / S. Stembrouk. – Режим доступа: <http://bank.rug.ac.be/da/pp.htm>

Источники иллюстративного материала

1. Parliamentary Debates (Hansard) [Электронный ресурс]. – Режим доступа: <http://www.publications.parliament.uk/pa/cm201011/cmpublic/education/110301/pm/110301s01.pdf>.

DEVELOPMENT OF INCLUSIVE EDUCATION SYSTEM IN PRESCHOOL
EDUCATION

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Abstract: In this article, the new educational system introduced in our country, i.e. the improvement of the inclusive education system, and the introduction of this educational system in pre-school educational organizations, new decisions and decrees have been adopted in order to develop the inclusive education system. , it is said that tasks have been assigned.

Key words: education, education, inclusive, development, improvement, action.

In our country, attention is paid to the education system at the level of state policy. During the past period, on the organization of an effective system of preschool education aimed at bringing the growing generation in our country to a healthy and comprehensively mature adult, introducing effective forms and methods of education and upbringing into the educational process. extensive work has been done. At the same time, the analysis carried out, ensuring children's coverage of preschool education, filling preschool educational institutions with modern educational and methodological materials and fiction, solving the issues of attracting qualified pedagogues and management personnel to the field shows the need. In order to further improve the preschool education system, ensure children's equal use of high-quality preschool education, develop the non-state sector of preschool education services, as well as the President of the Republic of Uzbekistan on September 30, 2018 "Management of the Preschool Education System" "On improvement measures" was adopted. In this decision, the concept of developing the preschool education system of the Republic of Uzbekistan until 2030 was developed. To further improve the normative legal framework in the field of preschool education, to create conditions for the all-round intellectual, moral, aesthetic and physical development of preschool children, to increase the coverage of children with quality preschool education, to ensure equal access to it was held in accordance with the decree of the President of the Republic of Uzbekistan dated April 29, 2019 "On approval of the concept of development of the public education system of the Republic of Uzbekistan until 2030", the development of inclusive education in Uzbekistan, special educational needs In order to improve the system of education and upbringing of children with special needs and to improve the quality of educational services provided to them, the concept of development of inclusive education in the public education system was developed in 2020-2025.

In 2020-2025, a "road map" was developed for the implementation of the concept of development of inclusive education in the public education system in 2020-2021. The target indicators (indicators) for the development of the education of children with special educational needs until 2025 have been approved. It was determined that the concept will be implemented step by step on the basis of a separate "Roadmap" approved annually starting from 2022, based on the achieved results, target indicators and the main directions for the relevant period. The concept will be implemented in two stages, including: during 2020-2022: improvement of the normative base in the field of inclusive education system; training, retraining and retraining of qualified pedagogues for the inclusive education system; strengthening the material and technical base of

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institutions where inclusive education is introduced, providing them with special devices (lifting devices, ramps, handrails, etc.), necessary literature, methodical manuals, equipment and supplies for training in various professions ; introduction of modern information and communication technologies and innovative projects in the field of inclusive education; creating a positive social environment among the population by explaining the right to education of children with special educational needs, the essence of inclusive education; implementation of measures aimed at preventing discrimination of children with special educational needs, negative treatment of them; introduction of the inclusive education system into the activities of individual educational institutions as an experiment; During 2023 — 2025: gradual introduction of the inclusive education system in other general secondary education institutions; implementation of measures aimed at ensuring the right to inclusive education of every child with special educational needs; teaching methods in inclusive education are improved and the principles of individualization are gradually introduced into the educational process; In the process of inclusive education, it is aimed at the spiritual and moral education of students, and their physical, healthy and energetic formation, teaching methods in inclusive education are improved and the principles of individualization are gradually introduced into the educational process; in the process of inclusive education, taking measures aimed at the spiritual and moral upbringing of students, their physical healthy and energetic formation; optimization of the number of specialized state educational institutions for children with special educational needs was determined based on the physical and mental needs of students and the geographical location of educational institutions.

OUTCOME. The mission of inclusive education is to provide quality education to all children, regardless of their abilities and status. At the same time, the principle of inclusion implies that children with limited opportunities should live in a family and receive education in a normal school together with their peers in order to have a positive mental and social development. The inclusive education system means that a child in a wheelchair can study in any nearby school, if he/she has learning difficulties, he/she has special help to learn to read and write, and a child who does not attend classes ensures that appropriate support is provided to return to school.

CONCLUSION. The importance of inclusive education in the pre-school education system is the development of mental and physical emotions and movements of the child, ensuring that children with disabilities are included in the ranks of healthy children from an early age and receive quality education. What does inclusive education provide to children with disabilities? - allows one to discover one's own opportunities for oneself - independent movement occurs through the opportunity to work together, in cooperation; -worldview expands, life experience increases; - the need and interest in studying increases; -He begins to feel the same as everyone else; - Unexpected opportunities will open up; -Features such as bed rest and isolation will disappear. How does inclusive education affect the lives of healthy children? - They feel their peers who are not like them and their life and needs; - The feeling of caring for peers is awakened; - To support them, to try to help them - a sense of humanity is cultivated; -Students develop a positive attitude and mutual respect towards people around them, people with disabilities -They become people who do not neglect people in need.

REFERENCES:

1. Decision of the President of the Republic of Uzbekistan on approval of the concept of development of the preschool education system of the Republic of Uzbekistan until 2030 PQ-4312 08.05.2019
2. Decision on measures to further improve the education and training system for children -4860 13.10.2020
3. D.Z. Akhmetova, Z.G. Nigmatov, T.A. Chelnokova, G.V. Yusupova and dr. Pedagogy and psychology of inclusive education: uchebnoe posobie. - Kazan, 2013
4. Butorina, O. G. Ob opyte vospitaniya i obucheniya detey s ogranichennymi vozmojnostyami zdorovya / O. G. Butorina // Vospitanie shkolnikov, 2010
5. Inclusive practice and early childhood education. Contemporary educational standard / T. V. Volosovets, A. M. Kazmin, V. N. Yarygin. - M.: Mozaika-Sintez, 2011. - 144 p.
6. D.S. Kaharova "Technology of inclusive education" educational and methodical manual 2014

STUDY OF DETERMINATION OF STATIC EXCHANGE CAPACITY OF COMPLEX DERIVATIVE IONITES BY TITRIMETRIC METHOD

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Abstract. This article presents the determination of the static exchange capacity of complex forming ions using the method of titrimetric analysis. Based on the data obtained as a result of the study of the dependence of the sorption of some metal ions on various factors in the tested anionites, the optimal indicators of the sorption process were selected. It was also shown that in the process of sorption of copper ions, in addition to the industrial anionite AN-31, the anionite DMT+GIPAN obtained on the basis of local raw materials can be used.

Keywords. Local crude, ionite, metal ion, sorption, titrimetric, exchange, capacity.

Introduction

As industries expand and develop worldwide, the demand for ionites is increasing. Phenol, formaldehyde, epichlorohydrin, styrene, divinylbenzene, amino compounds and amides of various acids are used as the main raw materials in the production of ionites. In particular, thermopolymers based on salicylic acid, melamine and formaldehyde were obtained by the sopolycondensation method. Their ability to form complexes with Cu^{2+} , Ni^{2+} , Co^{2+} , Fe^{3+} , Cd^{2+} , Pb^{2+} ions was studied. The degree of sorption of Fe^{3+} , Cu^{2+} , Ni^{2+} ions in a wide range of pH is indicated [1].

As a result of the use of benzoyl peroxide initiator in the presence of glycidyl methacrylate and cellulose etching agent N,N'-methylenebisacrylamide, graft copolymerization of -NHR₂CI functional group (AN) was obtained. Characterized by anion scavenger- IR-spectroscopy, scanning electron microscope, PV comparative analysis, TGA and potentiometric titration methods. It was concluded that it is a promising sorbent for separating vanadium from aqueous solutions [3].

Peat humic acids with an aromatic structure were modified with formaldehyde or paraform and then treated with hydrogen chloride or concentrated HCl in the presence of ZnCl₂. The sorption capacity of the obtained humic preparations (GP) was tested under static conditions at room temperature, in model solutions containing 0.001 M Pb^{2+} , Cd^{2+} , Cu^{2+} , Mn^{2+} , Zn^{2+} cations, as well as in real effluents of the chemical industry. The degree of separation of metal cations of the modified GP was 12-78% higher than that of the original GP, and it was 25-100% [4].

Resins were obtained on the basis of 8-hydroxyquinoline-5-sulfo-acid-thiourea-formaldehyde copolymer formed by the condensation of 8-hydroxyquinoline-5-sulfo-acid and thiourea with formaldehyde in the presence of hydrochloric acid in different mole ratios of reacting monomers. Resins are selective to some metals. The chelating properties of these copolymers were studied for Cu^{2+} , Ni^{2+} , Co^{2+} , Pb^{2+} and Fe^{3+} ions. Studies were performed in media of different ionic strength and over a wide range of pH. Copolymers have been shown to be more selective for Fe^{3+} ion than for Cu^{2+} , Ni^{2+} , Co^{2+} and Pb^{2+} ions [5,6].

Tertiary copolymers were obtained from the condensation of 2,4-dihydroxybenzophenone, oxamine and formaldehyde in different proportions in the presence of different amounts of acidic catalyst. The ion exchange properties of the obtained copolymers were studied and it was shown that compounds containing Cu^{2+} , Hg^{2+} , Cd^{2+} , Co^{2+} , Zn^{2+} , Ni^{2+} , Pb^{2+} and Fe^{3+} metal ions can be effectively separated. Hydrochloric acid was used as a catalyst in

the polycondensation of the tertiary copolymer [7].

Material and Methods

Materials. To study the sorption ability of the synthesized mesh polymers to some metal ions, "k.t." aqueous solutions of branded salts were used.

Individual masses of ionites were transferred to the OH^- form, and the exchange capacity of ionites was determined using the potentiometric titration method at room temperature at a mass ratio of 1:100 of ionite:solution under static conditions. Different amounts (0-12 mg-eq/g) of solutions of copper sulfate, cobalt and nickel nitrate salts in 0.1 N sulfuric and nitric acids were poured into the sample of OH^- form ions weighing 0.2 g. Dry sodium nitrate or sulfate was added to bring the solution to an ionic strength of 1. After the formation of equilibrium (7-10 hours), the pH of the solution was determined in the meter "pH - 340" and the concentration of metal ions was determined by the trilonometric (atomic-absorption) method.

Methods. The concentration of the complex-forming metal in the equilibrium solution, the total amount of free, protonated amino groups bound to the complex, their degree of ionization, as well as Beerum's formation function were determined according to the method presented in [8]. The composition and stability of complex compounds formed by anionites with metals were calculated based on the following equation according to Beerum's modified method [9]:

$$\lg\beta_n = \lg K_{ycm} + \lg K_\alpha$$

The static exchange capacity was determined from the potentiometric titration curve according to the following formula:

$$COE_{nom} = \frac{B \cdot H}{\Gamma}$$

H - normality of acid solution, V - volume of acid solution, ml. G - ionite gravity, g.

Research of physico-chemical and mechanical properties of ion-exchange polymers allows to determine the fields of application of synthesized anionites. On the other hand, the physico-chemical study of ionizers allows to determine some properties of anionites by means of modification. For this purpose, the physico-chemical and mechanical properties of the received ion-machine polymers were studied.

Experimental part.

Special laws of ionization, which serve to justify the physicochemical properties of anionites obtained as a result of interactions of dimethylolthiourea with polyethylene polyamine, melamine, GIPAN and orthophosphoric acid, were studied. One of the main chemical properties of ionites of important practical importance is the ability to ionize, which allows to evaluate their operational properties. The size of the ion exchange capacity mainly depends on the amount of -ionite ionogenic groups, their degree of dissociation, their nature, and the concentration of exchangeable ions. The static exchange capacity is usually determined mainly in the presence of mineral acids (chloride, sulfate, nitrate) in the solution.

The kinetic equilibrium constants of the synthesized ionites were compared with the kinetic equilibrium constants of industrially used polycondensation ionites such as EDE-10P, AN-2F, AV-16 and AN-31 (Table 1).

Table-1

The main properties of tested ionites

Indicators, Ionites	Flexible weight	OH is the specific volume of the crushed ionite in the form	SAS, 0.1N HCl solution	CAC, 0,1N HNO ₃ solution	CAC, 0,1 N H ₂ SO ₄ solution	Mechanical strength
Unit of measure	g/ml	g/ml	mg-eq/g	mg-eq/g	mg-eq/g	%
DMT+PEPA	0,60	2,2	4,3-4,5	4,0	4,1	99,7
DMT+M	0,65	3,6	6,0-6,5	5,4	5,8	99,7
DMT+HYPAN E	0,75	4,0	6,5-7	6,0	5,0	99,8
DMT+FK	0,40	2,0	4,2-4,4	3,9	4,2	97,9
EDE-10P	0,60	4-4,5	7,5	-	8,5	97,7
AN-31	0,55	3,2	3,7	-	7,5	99,8
AN-2F	0,55	4,5-5	6,2	-	6	-
AV-16	0,65	4,5	3,4	-	-	-

The dependence of the sorption capacity of the obtained ionites on the environment pH and the initial form of ionogenic groups was studied by potentiometric titration. The results are presented in Table 2 below.

The data presented in this table confirm that most of the tested ionites belong to the group of weak bases.

According to the potentiometric titration curves of ionites obtained on the basis of DGT+PEPA and DGT+M, absorption of metal ions into ionites occurs in weakly acidic environments. (Figure 1).

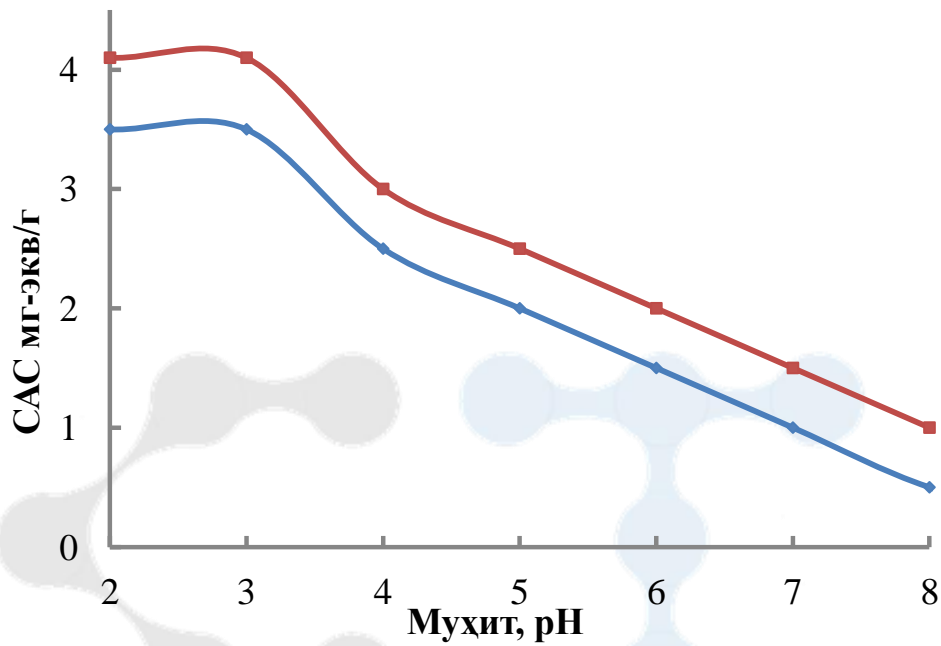
As can be seen from Figure 1, the characteristics of changes in the titration curves of OH⁻ and SO₄⁻² ionites indicate that they are weakly basic.

The indicator of the dissociation constant of ionogenic groups was found from the titration curve according to the method [10].

Table-2.

The results of the potentiometric study of the obtained ionites

Ionites	CAC, 0,1 N HCl mg-eq/g in solution	AS by potentiometric titration curve, mg-eq/g		pK _{OH}
		OH – form	SO ₄ – form	
DMT+PEPA	4,3	4,0	4,3	9,0
DMT+M	6,0	5,6	3,1	8,2
DMT+HYPANE	6,5	6,1	2,8	8,0
DMT+FK	4,2	4,1	2,2	7,0
EDE-10P	5,5	4,2	4,5	-
AN-31	3,7	3,2	4,2	-
AN-2F	6	2,1	3,9	-
AV-16	3,4	3,2	4,0	-

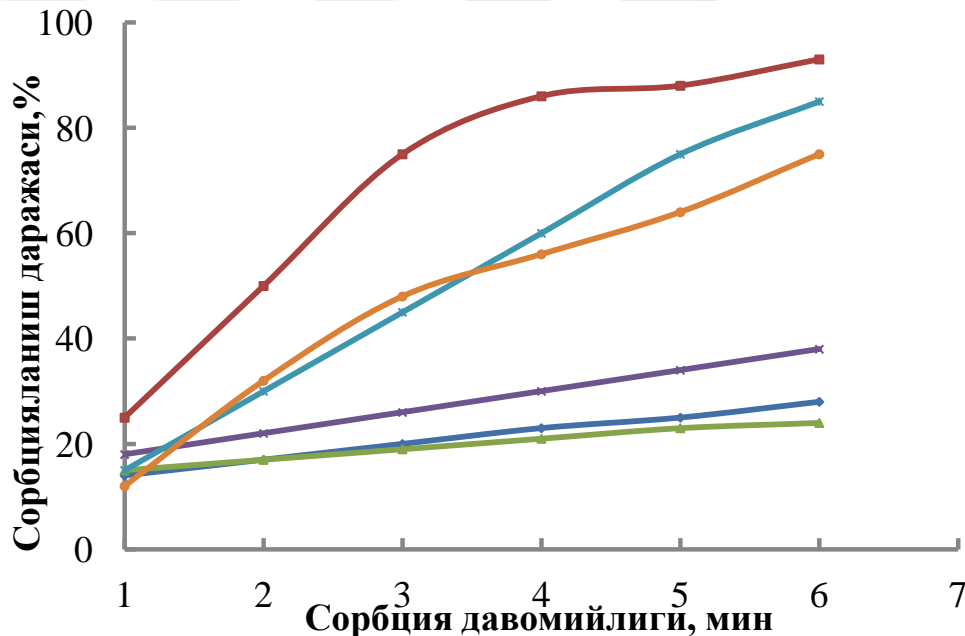


1) DMT+PEPA – OH⁻ (—◆—); 2) DMT+PEPA SO₄²⁻ (—■—).

Figure 1. Dependence of ion exchange capacity on medium Ph

As shown in Fig. 1, according to the characteristic of the curve, the exchange capacity of ions increases from a small value of rN, and the mutual comparison of the curves at rN 2.0-3.5 showed that the nature of the ionite saturated metal ion affects the characteristic of the titration curve. As the total exchange capacity decreases, it approaches the ordinate axis. The points obtained in the experiment are close to each other on the curve.

The ionogenic groups in the obtained anionites were studied using IR spectra and their structure was determined.



1. АВ-16- SO₄²⁻ (—◆—); 2) АВ-16 NO₃⁻ (—■—); 3) АВ-16 Cl⁻ (—▲—); 4) ДГТ+ПЭПА SO₄²⁻ (—×—); 5) ДМТ+ПЭПА NO₃⁻ (—*—); 6) ДМТ+ПЭПА Cl⁻ (—○—).

Figure 2. The rate of ion sorption in ionites

In addition to ionization capacity of ionites, the rate of ionization - the kinetics of the process is also of great practical importance. The rate of sorption of acid ions in the resulting ions is 0.1 n. from solutions of sulfuric, nitric and hydrochloric acids were studied under static

conditions. The obtained results were compared with the properties of AV-16 ionite. Figure 4.2 shows the experimental results in F-t coordinates. F is the level of reaching equilibrium; %, t – duration of sorption, hours [11].

Figure 2 shows that the DMT+PEPA ionite absorbs the tested ions faster. AV-16 shows a slightly lower kinetic property under these conditions.

Ion-exchange polymers undergo rapid changes in industrial conditions: air, water, aqueous solutions of acids, alkalis and thermal effects. A comprehensive study of the thermal stability of ionites allows to determine a comfortable temperature limit in the state of thermal stability, which is satisfactory for use at high temperatures. Almost all anions are more or less thermally unstable.

Ionites	Indicators					
	CAC mg-eq/g		ДAC mg-eq/g		Water solubility, ml/g	Soluble weight, g/ml
	0,1 H H ₂ SO ₄	0,1 H HCl	0,001 H NaCl	0,1 H NaOH		
DMT+PEPA	4 -4,5	4-4,5	200-250	250-280	1,73-2	0,6 - 0,7
DMT+M	5,8-6	6,5-7	200-220	230-260	1,5-1,7	0,6 - 0,7
DMT+HYPANE	4,5-5	7-7,5	300-350	330-370	3,2	0,6 - 0,7
EDE-10P	8,5	7,5	200-220	220-250	4-4,5	0,6 - 0,7

Table 3 lists the main ionization characteristics of the polyfunctional ionites synthesized on the basis of DMT, as well as the industrial ionite EDE-10P.

Based on the obtained results, there was interest in comparing the synthesized DMT+PEPA anionite and AN-2F, EDE-10P industrial anionite in terms of thermal stability. The ON-form of anionites was used in this. Thermal stability was determined by changes in anionite exchange capacity, mass, and specific volume.

Conclusion.

Thus, based on the data obtained as a result of the study of the dependence of the sorption of certain metal ions on various factors in the tested anionites, the optimal parameters for conducting the sorption process were selected. It was also shown that in the process of sorption of some metal ions, along with the industrial anionite AN-31, the anionite DMT+PEPA obtained on the basis of local raw materials can be used. In addition, the sorption rate was tested on DMT+GIPAN ionite in addition to DMT+PEPA ionite. These polymer ions were obtained by modifying the hydrophilic molecules of GIPAN with various binders. The macromolecules of these polymer ionites consist of polar links, and the solubility of the synthesized ionite depends on the solution ionic strength.

References

1. Gurnule Wasudeo B., Juneja H. D., Paliwal L.J. Ion-exchange properties of a salicylic acid-melamine-formaldehyde terpolymer resin // *React. and Funct. Polym.* 2002. №2. Т.50. – С.95-100.
2. Benke Grzegorz, Anyszkiewicz Krystyna, Leszczynska-Sejda Katarzyna. The use of sorption in the production of pure-grade noble metals // *Przem. chem.* 2003. №8-9. Т.82. –С.808-811.
3. Anirudhan T. S., Jalajamony S., Divya L. Efficiency of amine-modified poly(glycidyl methacrylate)grafted cellulose in the removal and recovery of vanadium(V) from aqueous solutions // *Ind. and Eng. Chem. Res.* 2009. №4. Т.48, - С. 2118-2124.
4. Яркова Т. П., Лебедева Г. Ф. Оригинальное заглавие: Торфяные гуминовые кислоты - сырье для получения сорбентов // Российская научная конференция (с международным участием) "Глубокая переработка твердого ископаемого топлива - стратегия России в 21 веке". – Звенигород. 21-24 ноябрь 2007. – С.96.
5. Mane V.D., Wahane N.J., Gurnule W.B. Ионнообменная смола на основе сополимера. VII. Смолы на основе сополимера 8-гидроксихинолин -5-сульфо кислота-тиомочевина-формальдегид и их ионообменные свойства // *Copolymer resin. US. J. Appl. Polym. Sci.* 2009. №1. Т.111, - С.3039-3049.
6. Stefanava Roska Y. Metal ion removal by modified polyacrylonitrile sorbent preliminarily converted into an inner salt // *Separ. Sci. and Technol.* 2001. №15. Т.36. – С.3411-3426.
7. Masram Dhanraj T., Bhave Narayan S., Kariya Kiran P. Синтез полимера. IV. Тройной сополимер салициловой кислоты, диаминафталина и формальдегида и его ионообменные свойства // *J. Appl. Polym. Sci.* 2010. №11. Т.117. – С. 315-321.
8. Бьеррум Я. Образование аминов металлов в водном растворе. // Теория обратимых ступенчатых реакций. – М.: ИЛ, - 1961 – 308 с.
9. Копылова В.Д., Салдадзе К.М., Асамбадзе Г.Д. Комплексы меди (II) с анионитами на основе полиэтиленполиаминов. – *Журн. аналит.хим.* – М.: -1970, т.25, вып.6, с 1069-1075.
10. Петрова Н. И., Потапова М. А. Термостойкость анионитов. Сб. «Синтез и свойства ионообменных материалов» – М.: Наука, 1968. С. 120–125.
11. Тураев Х.Х., Джалилов А.Т., Эшкурбонов Ф.Б., Касимов Ш.А. Изучение кинетических свойств полученного комплексообразующего анионита//Всероссийская научно-практическая конференция с международным участием “Инновационные технологии в промышленности: Образование, наука и производство”. – Уфа. - 2016. – том I. - С. 76.

**ПЕДАГОГИЧЕСКИЕ УСЛОВИЯ И ТЕХНОЛОГИЯ УПРАВЛЕНИЯ СИСТЕМОЙ
ВОСПИТАТЕЛЬНОЙ РАБОТЫ В ОБЩЕОБРАЗОВАТЕЛЬНОЙ ОРГАНИЗАЦИИ**

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Аннотация: В современных исследованиях рассматриваются педагогические условия, направленные на разрешение проблем, возникающих при выполнении монолитного педагогического процесса, они подразделяются на организационно-педагогические, психолого-педагогические условия.

Ключевые слова: педагогические условия, образовательный процесс, организационно-педагогические условия, психолого-педагогические условия.

Abstract: In modern research, pedagogical conditions aimed at permission problems that arise when performing a monolithic pedagogical process are considered, they are divided into organizational-pedagogical, psychological-pedagogical conditions.

Keywords: pedagogical conditions, the educational process, organizational-pedagogical conditions, psychological-pedagogical conditions.

В педагогических исследованиях, которые связаны с проблемами совершенствования функционирования педагогических систем, повышения эффективности образовательного процесса, одним из аспектов, представляющих наибольший интерес, является выявление, обоснование и верификация педагогических условий, обеспечивающих успешность деятельности.

Изложенные ниже условия предназначены для решения проблем, возникающих при осуществлении целостной педагогической деятельности. Среди различных педагогических условий реализации системы воспитательной деятельности в общеобразовательных организациях наиболее распространенными в теории и практике педагогики называются организационно-педагогические, психолого-педагогические условия.

Давайте перейдем к более подробному описанию каждой группы условий. По словам Н.В.Ипполитовой, организационные условия - это совокупность целесообразно созданных возможностей, содержания, форм, методов целостного педагогического процесса, основанных на управлении функционированием, формировании процессуальной позиции педагогического процесса и формировании процессуального подхода к педагогическому процессу[5].

Напротив, Н.М.Борытко рассматривает психологические условия как совокупность целенаправленно созданных взаимосвязанных, взаимозависимых образовательных и материальных условий, направленных на развитие отдельных аспектов педагогической системы (то есть связанных с трансформацией конкретных личностных характеристик) [3].

В.А. Ширяева характеризует педагогические условия: концептуальные, организационные и общедидактические [6. с.16-30].

Для нас важно, что ученый понимает педагогические условия как сложное явление, что обусловлено качеством их взаимодополняемости и взаимосвязанности.

Организационно-педагогические условия обучения основаны на том, что учащиеся должны не заучивать истину, а заниматься поиском, исследованием.

Организационно-педагогические условия воспитания младших школьников по системе Л.С. Выготского предусматривают, прежде всего, стройную систему методов: устных - собрания, сборники, линейки, лекции, конференции, слеты, устные газеты, радиожурналы; практических - походы, экскурсии, спортивные состязания, олимпиады, конкурсы, субботники, тимуровские работы и т.д.; визуальные - музеи, выставки, витрины, стенды, стенгазеты и т.д. [4].

Оптимальные условия для внедрения системы создаются на основе качественно нового содержания обучения в образовательной системе, предполагают качественно новые формы усвоения материала. Начальной формой освоения любого культурного контента является сотрудничество.

Л.В. Байбородова сформулировала соотношение формы и содержания сотрудничества следующим образом: "Новый тип обобщения требует нового типа коммуникации" [1].

Педагогические условия создают возможность приобрести навыки коллективизма, сотрудничества, взаимопомощи, самостоятельности и, как следствие, ускоряют процесс развития учащихся.

Развитие прямых зон образования позволяет мобилизовать всю научную систему на доминирующие позиции творческих принципов, при которых все этапы связаны с развитием знаний и образованием на фоне творчества.

Л.А. Байкова считает, что целостность педагогического образования обеспечивается прежде всего единой идеей педагогического образования - максимальной успешностью всех форм и методов, а также педагогическими условиями их реализации [2].

Исходя из вышеизложенного, можно сформулировать несколько условий воспитания, например:

- обучение школьников должно быть организовано в соответствии с возрастными и психологическими особенностями учащихся;
- поддержание способности преподавателей и учащихся к самопознанию, самовыражению, способности быть субъектами системы образовательной деятельности;
- разработка модели системы воспитательной работы;
- формирование условий, способствующих эмоционально-ценностному, социально-личностному, когнитивному, эстетическому развитию учащегося и сохранению его индивидуальности.

Основной целью педагогического сопровождения реализации системы образовательной деятельности в общеобразовательном учреждении является создание атмосферы открытости и доверия, позволяющей всем участникам органично адаптироваться к особенностям социокультурной среды того времени.

РЕКОМЕНДАЦИИ:

1. Байбородова, Л.В. Теория и методика образования учебное пособие для студентов. выше. исследования. учреждения. - М.: ВЛАДОС-ПРЕСС, 2004.
2. Байкова, Л.А. Методика воспитательной работы учебное пособие / Л.А. Байкова. учебное пособие для студентов. высшее образование. исследования. институты / Л.А. Байкова, Л.К. Гребенкина, О.В. Еремкина и др.; под ред. В.А. Слостенина. – М.: Издательский центр "Академия", 2004.
3. Борытко, Н.М. . Образовательная деятельность педагога: учебное пособие / Н.М. Борытко. учебное пособие для студентов. выше. исследования. Институты / Н.М. Борытко, И.А. Колесникова, С.Д. Поляков, Н.Л. Селиванова. - М.: Академия, 2005.
4. Выготский Л.С. Педагогическая психология / Под ред. В.В. Давыдова. - М.: Педагогика-Пресс, 2006.
5. Ипполитова Н.В. Теория и практика подготовки будущих учителей к патриотическому воспитанию учащихся: дис.... канд. пед. наук. ...Доктор педагогических наук / Н.В. Ипполитова. – Челябинск: Меритель, 2000.
6. Ширяева, В.А. К вопросу о вхождении инженерных методов изобретательства и ТРИЗ в психолого-педагогические исследования // ТРИЗ-педагогика в системе непрерывного образования / Под ред. Н.В. Акинфиевой, В.А. Ширяевой. Саратов: Околица, 2005.

The history of project management and the project managers

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Annotation. Project management is the use of specific knowledge, skills, tools and techniques to deliver something of value to people. The development of software for an improved business process, the construction of a building, the relief effort after a natural disaster, the expansion of sales into a new geographic market—these are all examples of projects.

Keywords.

To understand project management, we must look deeper into what constitutes a project. Essentially, projects are temporary efforts to create value through unique products, services, and processes. Some projects are engineered to quickly resolve problems. Others require extended timelines to produce outcomes that will not need major improvements outside of projected maintenance like public highways. Of course, some projects will be a mixture of both these things. This applies to everything from developing new software to planning disaster relief efforts. Still, this is all very general information concerning what a project is. When we break them down more specifically, we see that projects are amalgamations of tasks, activities, and deliverables that must be structured and executed carefully to achieve a desired outcome.

Before an outcome is achieved, each aspect of a project must go through phases of initiation, planning, and execution. This process is known as the project management lifecycle, and it is the lifeblood of successful projects. Moreover, this cycle allows project managers to plan each task and activity meticulously to ensure the highest chances of success. Overall, a project is a well-planned endeavor that follows a lifecycle with a definite beginning and end.

After months of conversations between Jim Snyder and Gordon Davis, a 1969 dinner in Philadelphia resulted in the decision that a new organization should be formed to provide a means for project managers to associate, share information and discuss common problems. This led to the first formal meeting at Georgia Institute of Technology in Atlanta, Georgia, USA, on 9 October 1969. From this meeting came the birth of the Project Management Institute. Shortly thereafter, articles of incorporation were filed in Pennsylvania, signed by five persons, who are officially recognized as the founders of PMI - James Snyder, Eric Jenett, Gordon Davis, E.A. "Ned" Engman and Susan C. Gallagher.

While Apollo was making project history, PMI was starting to build the foundations of project management. The first PMI leaders volunteered their time because they believed in the need to share project planning and scheduling practices. In fact, the organization was almost named The American Planning and Scheduling Society. But the founders realized it was bigger than that—it was about project management. PMI was founded and held its first Seminars & Symposium, “Advanced Project Management Concepts,” in Atlanta, Georgia, USA. The First PMI Chapter is started in Houston, TX. PMI quickly became global, holding another Seminars & Symposium in Toronto, Ontario, Canada. PMI also hired its first part-time employee, and leased office space.

Motorola invents the world’s first mobile phone, PMI calls on awards and certifications. It weighed 2.5 pounds (1.1 kilograms). It was 10 inches (25 centimeters) long. And it only lasted 20 minutes before the battery died. But Martin Cooper and his team at Motorola had done it:

invented the world's first working prototype of a mobile phone. PMI continued building its strong volunteer core, chartering 24 new chapters in the United States and establishing its first non-North American footholds in West Germany and South Africa. PMI hired Bradley Stanton as its first paid executive director.

Project Managers Lead Project Management

All projects are a temporary effort to create value through a unique product, service or result. All projects have a beginning and an end. They have a team, a budget, a schedule and a set of expectations the team needs to meet. Each project is unique and differs from routine operations-the ongoing activities of an organization-because projects reach a conclusion once the goal is achieved.

The changing nature of work due to technological advances, globalization and other factors means that, increasingly, work is organized around projects with teams being brought together based on the skills needed for specific tasks.

Leading these projects are Project Professionals-people who either intentionally or by circumstance are asked to ensure that a project team meets its goals. Project professionals use many different tools, techniques and approaches to meet the needs of a project.

Some projects are needed to quickly resolve problems, with an understanding that improvements will be made over a period of time. Other projects have a longer duration and/or produce a product or other outcome that will not need major improvements outside of projected maintenance, such as a highway.

Still others will be a mix of both of these types of projects. Project professionals use a variety of skills and knowledge to engage and motivate others to reach a project's goals. Project professionals are critical to the success of projects and are highly sought after to help organizations achieve their goals.

Project managers initiate, execute, and complete projects across various industries using their project management expertise. From mobile apps to the grandiose architecture of international cities, they are the innovators behind some of the most brilliant products, services, and processes that exist today.

Project managers have diverse skill sets that allow them to approach each assignment in a unique and strategic way. Most importantly, they understand how to leverage their project management skills to foster an organization's ability to learn, succeed, and evolve with a project.

Project Management Drives Change

Throughout human history, project management has always been practiced informally, but it began to emerge as a distinct profession in the mid-20th century when a group of forward-thinking individuals from the aerospace, engineering, pharmaceutical, and telecommunications fields realized a changing world needed new tools. Motivated by the need to address the scheduling and resource issues associated with increasingly complex projects, they met to begin to set down and standardize the tools for a new profession. And in 1969, the Project Management Institute (PMI) was born.

Today, we live in The Project Economy, where projects are the driving force behind how work is done, change is realized and value is delivered. In The Project Economy, the worldwide growth of project management proves its value as a:

- as a recognized and strategic organizational competence
- as a subject for training and education

- as a career path

It is now widely acknowledged that a basic knowledge of project management can provide value to people with a variety of roles in a vast range of endeavors. Project management skills can help a young student working on a science project realize success, or a corporate executive settle personality disputes. These skills can help a nurse streamline shift changes to improve patient response times on their ward. They can help an IT professional deliver innovative software in record time or help a government agency improve the services they provide in a more economical manner.

Qualified and experienced project managers are aptly skilled in the following areas:

1. Leadership and Effective Communication-project managers must effectively lead and communicate with their teams as well as stakeholders throughout the entire lifecycle of a project.
2. Organization and Time Management-project managers must handle the organization and delegation of tasks. They must also ensure that all project materials and deliverables are completed on time.
3. Creative Problem Solving and Adaptability-project managers must understand how to resolve issues and adapt their projects creatively to avoid mishaps and losses.
4. Motivation and Team Management-project managers must ensure their stakeholders and team members stay motivated throughout a project's lifecycle. Moreover, they must be able to manage their team to ensure top-quality results and on-time completion of project deliverables.

Cultivating expertise in these areas is a learning process that requires time, devotion, and practice. But it's necessary to build the skill set a career in project management requires.

References

1. Gower handbook of people in project management. Lock, Dennis., Scott, Lindsay, 1974-. Farnham, Surrey: Gower Publishing. 2013. p. 398.
2. www.theprojectmanager.co.za. Retrieved March 1, 2018.
3. Commission, Australian Public Service. "APS framework for optimal management structures". Retrieved March 1, 2018.
4. Morcov, Stefan; Pintelon, Liliane; Kusters, Rob J. (2020). "IT Project Complexity Management Based on Sources and Effects: Positive, Appropriate and Negative" (PDF). *Proceedings of the Romanian Academy - Series A*. **21** (4): 329–336.
5. Daniel, Pierre A.; Daniel, Carole (January 2018). "Complexity, uncertainty and mental models: From a paradigm of regulation to a paradigm of emergence in project management". *International Journal of Project Management*. **36** (1): 184–197.
6. Pinto, Jeffrey K.; Winch, Graham (February 1, 2016). "The unsettling of 'settled science:' The past and future of the management of projects". *International Journal of Project Management*. **34** (2): 237–245.
7. Morcov, Stefan (April 6, 2021). "Project success vs. project management performance".

IMPORTANCE OF DRYING AND PRE-PROCESSING METHOD IN DRYING
APRICOT FRUITS

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Abstract. This article describes the results of the research conducted on the drying of different types of apricots. Experiments were conducted to study the chemical composition of apricots, the quality of the finished product after drying in three different ways, and the duration of drying. As a result of the research, scientifically based conclusions were made.

Keywords. Apricots, temperature, regime, dry matter, organoleptic assessment, drying method, quality

Enter. More than 4 million tons of apricots are grown every year around the world. In terms of apricot production, Uzbekistan ranks second after Turkey (730 thousand tons) and more than 660 thousand tons are grown. Iran (306,000 tons), Algeria (256,000 tons), Italy (237,000 tons), Pakistan (178,000 tons) and Spain (125,000 tons) are on the next places in production. Apricots contain 87% water, 11% carbohydrates, about 1% proteins and less than 1% lipids. Various micronutrients and vitamins are abundant in plums.

The purpose and specific issues of the research. Various methods of drying apricots and their properties have been studied. The purpose of this study was to study the optimal method and duration of drying of dried plum fruits.

Material and methods. Researches were conducted on the following plum varieties: Yubileynny Navoi (control), Kursadyk, Arzami, Subkhoni.

The following were studied for the selected varieties: Biochemical composition of the selected varieties was analyzed; Apricots were dried and analyzed in three ways: whole, split into two, and seedless.

According to the method of conducting research:

1. To determine the duration and organoleptic evaluation of apricot fruits by natural method of drying apricot fruits whole, divided into two parts, and in seedless state without cracking.
2. To determine the duration and organoleptic assessment of drying apricots in whole, bisected, and seedless condition in a solar battery ventilator system (QBVT) equipment.
3. To determine the length of drying and organoleptic assessment of apricots in whole, divided into two halves, and in the state without seeds in an artificial drying device.

RESEARCH RESULT AND DISCUSSION

For research, 4 varieties of apricots were selected from fruit trees. Before the drying process, the fruits characteristic of these varieties were analyzed for their biochemical composition. During the analysis, the dry matter content, sugar content and vitamin C content calculated from the important indicators for drying were studied (Table 1).

Yubileynny Navoi, Kursadyk, Arzami, Subkhoni varieties selected for experiments are regionalized in Uzbekistan and are grown mainly in the central zones of our country (see Table 1).

Biochemical composition of dry fruits of dried apricot varieties

Apricot varieties	Years	The amount of water,%	Dry matter, %	sugar,%	Acidity,%
Anniversary Navoi (control)	2019	74,0±0,5	26,0±0,5	19,8±0,4	0,9±0,06
	2020	72,5±0,5	27,5±0,5	20,9±0,4	0,9±0,06
	2021	75,6±0,5	24,4±0,5	18,5±0,4	1,0±0,06
	average	74,0±0,5	26,0±0,5	19,7±0,4	0,9±0,06
Kursadyk	2019	78,1±0,5	21,9±0,5	16,6±0,4	1,0±0,06
	2020	76,2±0,5	23,8±0,5	18,1±0,4	1,0±0,06
	2021	77,3±0,5	22,7±0,5	17,3±0,4	1,0±0,06
	average	77,2±0,5	22,8±0,5	17,3±0,4	1,0±0,06
Arzami	2019	82,3±0,5	17,7±0,5	13,5±0,4	1,1±0,06
	2020	84,2±0,5	15,8±0,5	12,0±0,4	1,1±0,06
	2021	84,2±0,5	15,8±0,5	12,0±0,4	1,1±0,06
	average	83,6±0,5	16,4±0,5	12,5±0,4	1,1±0,06
Subkhani	2019	75,3±0,5	24,7±0,5	18,8±0,4	1,0±0,06
	2020	78,2±0,5	21,8±0,5	16,6±0,4	1,0±0,06
	2021	77,3±0,5	22,7±0,5	17,3±0,4	1,0±0,06
	average	76,9±0,5	23,1±0,5	17,5±0,4	1,0±0,06

During the research period, the biochemical composition of fruits selected as raw materials was regularly analyzed. The highest indicator of dry matter content was observed in the Yubileynny Navoi variety, the three-year average of which was 26.0%, while the lowest indicator was shown in the Arzami variety and was 16.4%. It was also 22.8 and 23.1% in Kursadyk and Subkhoni varieties, respectively. Sugar is the main part of the dry matter content of apricots. Also, the content of sugar is an important indicator of the organoleptic properties of fresh and dried apricots. During the experiments, the sugar content of the Yubileynny Navoi variety, which was selected as a control, was 19.8% in 2019, 20.9% in 2020, and 18.5% in 2021, while the three-year average sugar content was 19.7%.

The lowest level of sugar content was observed in the Arzami variety, the three-year average was 12.5.3%. Also, a three-year average of 17.3% was recorded in the Kursadyk variety.

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Experiments were carried out on drying apricot fruit in three different ways - natural, solar battery fan system (QBVT) equipment and artificial drying device. Apricots for drying were placed in three types - with seeds and without seeds. Initially, experiments were conducted to determine the optimal duration of drying when whole dried apricots (see Table 2). During experiments, Yubileynny Navoi variety, selected as a control, was dried in a natural way. On average, 27.6 kg of finished dried product was obtained from 100 kg of raw materials when dried in grain form. 28.7 kg of dry product with grains was obtained when dried in the QBVT equipment. Also, 29.8 kg of finished product was obtained when dried in an artificial drying device.

Subkhoni variety had the highest yield of dried apricots, and an average of 28.1 kg of dried apricots was obtained from 100 kg of raw material in the natural method, 28.7 in the QBVT equipment, and 31.0 kg in the artificial drying equipment. In particular, when dried naturally, Yubileynny Navoi (control) yielded 27.5 kg in 2019 research, 29.7 kg in 2020 research, 25.6 kg in 2021 research, three-year average of 27.6 kg. During natural drying, an average of 28.4 kg of Kursadyk variety and 26.0 kg of Arzami variety were produced in three years. Also, the duration of the drying process when whole apricots are dried varies by variety. That is, the process lasted for 244 hours in Yubileynny Navoi, which was selected as a control when dried naturally, and was recorded as the shortest duration. The Kursadyk variety took the longest time and was 288 hours. On the other hand, the drying process of Arzami variety lasted 260 hours, and Subkhani variety lasted 252 hours. During natural drying, the air temperature during the day was 30-35°C.

When dried in a solar powered fan tunnel dryer, the process for all varieties was almost 3 times faster. For example, it took 288 hours for the Kursadyk variety to dry naturally, and 96 hours for the QBVT equipment. The reason for this is that the equipment has been adapted to make maximum use of the sun's rays effectively. At the same time, the duration of artificial drying for all varieties was 6-8 hours. When the finished product was assessed by organoleptic method, a significantly higher index was noted in artificially dried products compared to other drying methods.

Table 2
 Process duration and output of finished product in drying whole apricots by different methods (2019-2021)

Varieties	Drying method	Product output from 100 kg of raw materials, kg				Duration of drying, (h)	Tasting grade, maximum 100 points
		2019 y	2020 y	2021 y	Average		
Anniversary Navoi (control)	In a natural way	27,5±0,5	29,7±0,5	25,6±0,5	27,6±0,5	244,0	75,4
	in QBVT equipment	28,6±0,5	30,9±0,5	26,6±0,5	28,7±0,5	81,3	81,1
	In an	29,7±0,5	32,1±0,5	27,6±0,5	29,8±0,5	6,8	88,1

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	artificial drying device						
Kursadyk	In a natural way	28,3±0,5	30,6±0,5	26,3±0,5	28,4±0,5	288,0	76,1
	in QBVT equipment	29,4±0,5	31,8±0,5	27,4±0,5	29,5±0,5	96,0	81,8
	In an artificial drying device	30,6±0,5	33,0±0,5	28,4±0,5	30,7±0,5	8,0	88,9
Arzami	In a natural way	25,9±0,5	28,0±0,5	24,1±0,5	26,0±0,5	260,0	72,0
	in QBVT equipment	26,9±0,5	29,1±0,5	25,1±0,5	27,0±0,5	86,7	77,4
	In an artificial drying device	28,0±0,5	30,2±0,5	26,0±0,5	28,1±0,5	7,2	84,1
Subkhani	In a natural way	28,6±0,5	30,9±0,5	26,6±0,5	28,7±0,5	252,0	76,9
	in QBVT equipment	29,7±0,5	32,1±0,5	27,7±0,5	29,8±0,5	84,0	65,8
	In an artificial drying device	30,9±0,5	33,4±0,5	28,7±0,5	31,0±0,5	7,0	89,9
	ЭКФ ₀₅	0,8	0,8	0,8	0,8	0,7	0,8
	Sx	4,8	4,8	4,8	4,8	4,8	4,8

Prior to drying, the process parameters were unique when the apricots were split into two stages and dried in the seedless state (see Table 3).

The duration was somewhat shorter when raw apricots were split into two halves and dried pitted. Yubileyniy Navoi variety, which was selected as a control for research, was naturally

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divided into two phases and dried in the seedless state, an average of 22.6 kg of ready-dried product was prepared from 100 kg of raw material. The highest productivity was reflected in the Subhoni variety when three-year indicators were analyzed when dried naturally, and 23.5 kg of dried product was obtained. The lowest productivity was recorded in the Arzami variety, the three-year average of which was 21.3 kg.

Dry product yield was slightly higher when dried in the QBVT equipment compared to natural drying. This situation is explained by the short duration of drying. Because the longer the duration of drying, the less amount of dried product due to decomposition as a result of biochemical processes in addition to dehydration. The highest productivity was reflected in the Subhoni variety when three-year indicators were analyzed when dried naturally, and 23.5 kg of dried product was obtained. The lowest productivity was recorded in the Arzami variety, the three-year average of which was 21.3 kg.

Dry product yield was slightly higher when dried in the QBVT equipment compared to natural drying. This situation is explained by the short duration of drying. Because the longer the duration of drying, the less amount of dried product due to decomposition as a result of biochemical processes in addition to dehydration. The organoleptic parameters of apricots were evaluated very well when they were dried without cracking and without seeds. In the QBVT equipment, slightly lower values of dried products were recorded.

As a result of research on drying apricots, it can be concluded as follows:

- The content of dried apricots and the high organoleptic indicators depend on the amount of sugar contained in plum fruits as raw materials.
- The duration of drying in the grainless state is 25-30% less than that in the grain state. The time spent drying apricots in the QBVT equipment is 3 times less and the organoleptic value is higher.
- When apricots are dried artificially, all the parameters of the finished product are the highest, and the process takes the shortest time.

LIST OF REFERENCES

1. Abdullaev R., Djalilov N.L. Technology of drying fruit products. Agriculture of Uzbekistan. No. 6, 2016.
2. Shirokov E.P. Khranenie i pererabotka plodov i ovoshchey. - M.: Agropromizdat, 1985. - 191 p.

АКТУАЛЬНОСТЬ КОММУНИКАТИВНОГО МЕТОДА ОБУЧЕНИЯ ЯЗЫКУ

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Аннотация

В данной статье рассматривается современный этап развития методики преподавания иностранных языков в национальной аудитории. Основное внимание при его использовании уделяется усвоению системы языка, в вузовской практике процесс обучения отождествляется с изучением грамматики, порой с механическим заучиванием грамматических правил, определений, парадигм.

Ключевые слова: метод, коммуникация, принцип сознательности, обучение, формирование, иностранные языки.

RELEVANCE OF THE COMMUNICATIVE METHOD OF LANGUAGE TEACHING

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Annotation

This article examines the current stage of development of methods of teaching foreign languages in the national audience. When using it, the main attention is paid to the assimilation of the language system; in university practice, the learning process is identified with the study of grammar, sometimes with the mechanical memorization of grammatical rules, definitions, paradigms.

Key words: Method, communication, principle of consciousness, teaching, formation, foreign languages.

Введение. Каждый этап развития методики преподавания языков характеризует своя система, или метод обучения. Многие годы в преподавании иностранных языков господствовал грамматико-переводной метод, который до сих пор дает себя знать в национальной аудитории. Основное внимание при его использовании уделяется усвоению системы языка, в вузовской практике процесс обучения отождествляется с изучением грамматики, порой с механическим заучиванием грамматических правил, определений, парадигм. На смену грамматико-переводному методу пришел коммуникативный, в значительной мере ориентирующий студентов на усвоение готовых образцов для выражения коммуникативных потребностей. Правила даются для сведения обычно после того, как усвоены речевые образцы. Современный этап развития методики преподавания иностранных языков в национальной аудитории характеризует сознательно-коммуникативный метод. Возникает вопрос, может ли быть коммуникация, или общение бессознательной. Конечно, нет. В названии сознательно-коммуникативного метода подчеркивается его основная характеристика: обучение общению сочетается с сознательным усвоением системы сведений о языке. Сознательно –коммуникативный метод обучения русскому языку в национальной аудитории реализует совокупность лингводидактических принципов: сознательность, коммуникативности, учета родного

(узбекского) языка. Не следует думать, что названные принципы отрицались в других методах. Так, например, в любом методе не отрицается принцип сознательности. Также универсальны и принципы коммуникативности, учета родного языка обучаемых студентов. Как отмечают методисты, методы отличаются друг от друга несколько различными наборами принципов, сколько тем, как они понимаются и реализуются в учебном процессе. Рассмотрим, содержание вышеназванных принципов при сознательно – коммуникативном обучении языку в национальной аудитории. Отметим при этом, что в методической науке нет общепризнанного их определения. Названные принципы определяют цели, содержание и методику преподавания. Принцип коммуникативности определяет основную цель обучения языку – формирование умений и навыков осуществлять речевое общение, или коммуникацию (коммуникация –лат. communicatio, от communico – связываю, общаюсь), в типичных сферах и ситуациях. Реализация коммуникативной цели обучения в национальной аудитории предполагает, что речевая деятельность формируется во всех ее видах. В методике разграничивают продуктивный и рецептивные виды речевой деятельности, устные и письменные формы речи. К продуктивным видам относят говорение (в двух формах –монологической и диалогической) и письмо, к рецептивным –чтение и аудирование. Выделяют эти направления в зависимости от характера владения иностранной речью. Так, владея продуктивной речью, студенты могут в процессе общения выражать свои мысли. Овладев рецептивными видами деятельности, они воспринимают на слух или зрительно иностранную речь. При существенных различиях комплексное овладение всеми видами речевой деятельности обеспечивает общение на изучаемом иностранном языке. Важным условием успешного обучения общению является разграничение языковых явлений трех групп –системы, нормы, узуса (употребление языковых единиц). Под системой языка понимается совокупность элементов языка, связанных устойчивыми отношениями. Правила языковой системы охватывают широкий круг явлений: согласование, управление, парадигмы имени, глагола и т.д. нарушения системы порождают наиболее грубые ошибки («так нельзя сказать»), например: «моя карандаш», «не надо делать с муха слона» и т.д. Языковая форма включает в себя конкретную реализацию языковой системы, обусловленной сложившимся традициями, закрепленной общественной языковой практикой. Правила языковой нормы носят избирательный характер. Поясним это на примере изучения русского языка. С точки зрения системы русского языка на вопрос: Когда у вас будет суббота? –можно ответить: У нас суббота будет завтра. В таком ответе нет нарушений системы языка, но его построение противоречит разговорным нормам. Наконец, узус –это такая реализация языковой системы, которая соответствует данной речевой ситуации. Например, с точки зрения системы, возможно: Мы с братом говорили на высоком уровне. Так сказать можно, но не в данной речевой ситуации: фразеологизм на высоком уровне, как правило, не употребляется в разговорной речи, он является принадлежностью официального стиля. Процесс формирования навыков речевого общения начинается с усвоения системы. Для формирования навыков общения необходимо создание в процессе обучения иностранным языкам условий для речевого общения. Коммуникативно-ориентированная система преподавания характеризуется сближением деятельности обучения деятельностью реального общения. В чем это выражается? Прежде всего, в отборе учебного материала и его особой организации, при которой обеспечивается формирование речевой деятельности.

Коммуникативность, указывают методисты, предполагает речевую направленность учебного процесса, которая заключается в том, что преследуется практическая речевая цель (в сущности, все направления методики прошлого и настоящего ставят такую цель), в том, что путь к этой цели есть само практическое пользование языком. Практическая речевая направленность не только цель, но и средство. Такой организацией учебного материала в настоящее время признается ситуативно-тематическая, при которой процесс обучения строится на основе определенных профессиональных тем и ситуаций. Мы уже говорили о темах для развития речи, на основе которых усваиваются языковые явления, формируются не только навыки общения, но и личность студента. Общение всегда связано с той или иной конкретной ситуацией, поэтому коммуникативная направленность обучения включает тематическую организацию материала вокруг ситуаций. Коммуникативность предполагает широкое использование в процессе обучения наряду с ситуациями связных текстов. На их основе, как правило, студенты наблюдают факты языка, усваивают и закрепляют языковые взаимодействия, связанные непосредственно с развитием речи. На базе текста осуществляется комплексное развитие речевых умений и навыков, а также навыков порождения текста. Таким образом, в соответствии с принципом коммуникативности процесс обучения строится вокруг тем для развития речи, речевых ситуаций, а также связных текстов, которые в единстве составляют базу для формирования навыков общения на иностранном языке. В соответствии с принципом коммуникативности необходимо не только особая организация учебного материала. Вся система работы должна вызывать необходимость общения и потребность в нем. На каждом занятии, независимо от его типа преподаватель должен создавать возможности для общения и учить общению. «Учиться общению, общаясь» – вот основная характеристика коммуникативности. Принцип коммуникативности требует иного характера деятельности и обучаемого, и преподавателя. Далее мы осветим ее более подробно и остановимся на тех особенностях, в которых наиболее отчетливо выявляется коммуникативность обучения. Она состоит, прежде всего, в том, что в учебной деятельности важную роль играет общение обучаемого и преподавателя, речевая активность студентов на каждом уроке. Большое значение имеют такие целевые установки преподавателя, как: приготовьтесь слушать, сосредоточьтесь, обратите внимание и др. Умелое использование охарактеризованных выше установок предопределяет общение обучаемого и преподавателя, обеспечивает вовлечение обучающихся в коммуникацию. Коммуникативные установки, используемые на занятиях, помогут вовлечь обучающихся в общение, так как сами по себе они еще не могут это общение обеспечить. Главным средством создания возможностей общения на уроке в настоящее время признается специальная система упражнений, заданий, которые получили название условно-речевых, коммуникативных, ситуативных.

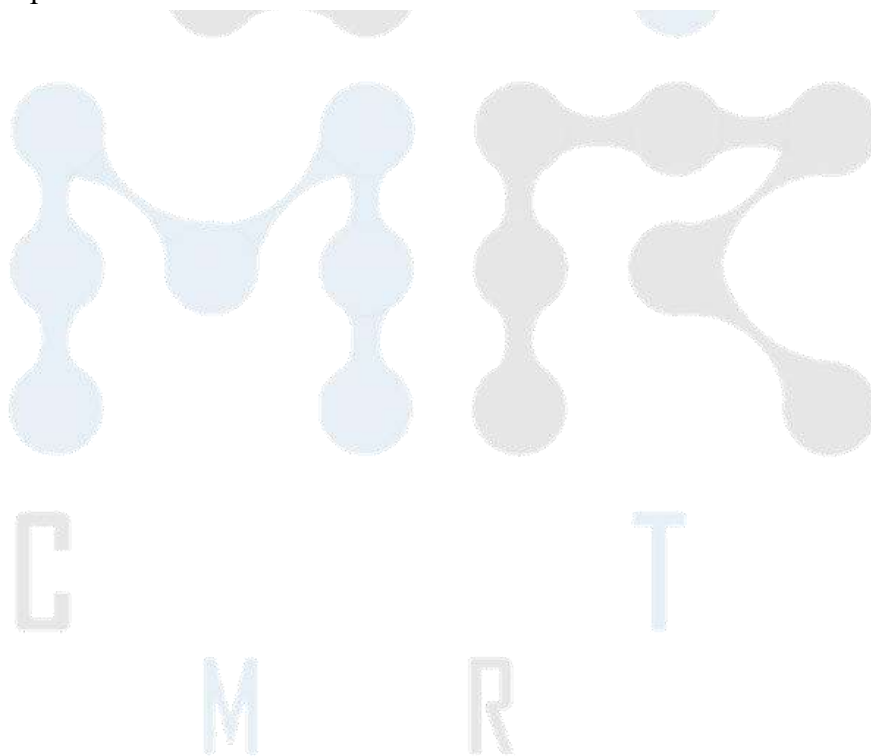
Каковы основные характеристики этих упражнений? Это, прежде всего, названные выше целевые установки. Далее, коммуникативные упражнения моделируют ситуации речевого общения, стимулируют речевую деятельность студентов, вызывают желание вступить в общение. При этом предпочтение отдается ситуациям, близким студентам, связанным с их личным опытом. Следует заметить, что мы неслучайно говорим о системе коммуникативных упражнений. Дело в том, что учителя уже довольно широко используют их, однако часто вводят их эпизодически. Коммуникативные упражнения в

этом случае не являются органической частью учебного процесса, и поэтому не дают ожидаемых результатов. Система упражнений, реализующих принцип коммуникативности, предусматривает последовательное формирование речевых умений и навыков, постепенный переход от воспроизведения (репродукции), имитации образцов к самостоятельной продуктивной и далее к неподготовленной речи в различных ситуациях и сферах общения. Например, от вопросно-ответных диалогических единств, содержащих вопросы, ответы на которые определены самими вопросами, к диалогическим единствам, в которых обучаемые отвечают на вопросы, исходя из своего жизненного опыта и знаний, или от кратких высказываний на основе текста к монологу-описанию, к монологу-сообщению и, наконец, к монологу-рассуждению. Принципы сознательности и коммуникативности лежат в основе всей системы обучения иностранным языкам в национальной аудитории. Однако на разных этапах обучения они реализуются по-разному. На начальных этапах обучения у обучающихся недостаточно развита способность к абстрактному мышлению, поэтому усвоение сведений о языке, в частности правил-инструкций, следует после речевых действий. В условиях реализации сознательно-коммуникативного метода иное содержание приобретает принцип учета родного языка (узбекского) студентов. В методике обучения иностранным языкам раскрывается важность опоры на родной язык обучающихся студентов. В преподавании иностранных языков в национальной аудитории необходима координация двух предметов, «близкородственных, тесно и непосредственно связанных между собой в социальном и дидактическом отношении» (Н.М. Шанский). Эти предметы решают единую задачу формирования лингвистического кругозора и речевого развития обучающихся студентов. Полезны переводы с родного языка на иностранный язык небольших текстов, включающих конструкции, вызывающие интерференцию, при этом только как средство контроля; при соответствующей подготовительной работе такие переводы, способствуя преодолению влияния родного языка учащихся, в то же время обеспечивают сознательность и прочность усвоения материала. В заключение следует сказать, что учет родного языка является одним из важнейших резервов повышения эффективности процесса обучения иностранным языкам. Для реализации постоянной связи и согласованности предметов «иностраный язык» и «родной язык» очень важно знание программ названных предметов, обсуждение методических вопросов, согласованное планирование уроков, выявление и учет связей между двумя предметами, обеспечивающими в целом формирование лингвистических знаний и речевого развития обучающихся студентов.

Список использованных литератур:

1. Цой Е.А. Ролевая игра как средство интенсификации обучения групповому общению.
2. Холматова Ш.М. Ахмаджонов Х.Э. Развитие креативного мышления студентов в процессе обучения –Материалы конференции «Государственный язык -проблемы и пути их решения». Сборник статей. ТГЮИ. –Т.-2017.
3. Успенский М.Б. Совершенствование методов и приемов обучения языков в национальной школе. –М., Педагогика, 1990г.

4. Пассов, Е. И. Коммуникативное иноязычное образование: готовим к диалогу культур [Текст]: Пособие для учителей учреждений, обеспечивающих получение общего среднего образования / Е. И. Пассов; Мн.: Лексис, 2003. — 184с.
5. Batstone, Rob. Grammar. / C. N. Candlin, H. G. Widdowson. — Oxford: Oxford University Press, — 2000. — 149 p. Hymes D. H. Sociolinguistics. Selected Readings. Harmondsworth: Penguin Education, 1972 pp. 269–293.
6. Finocchiaro M. The Functional-Notional Approach: From Theory to Practice. / M. Finocchiaro, C. Brumfit. — New York: Oxford University Press, 1983. — 180 p.
7. Lucantoni, Peter. Teaching and assessing skills in English as a second language / Peter Lucantoni. — Cambridge: Cambridge University Press, 2002. — 82 p. McDonough, J. & Shaw, C. Materials and Methods in ELT: A teacher's guide. 2nd edition. Malden: Blackwell, 2003. — 280 p.
8. Richards, J. C. and Rodgers, T. S. Approaches and Methods in Language Teaching. Cambridge: Cambridge University Press, 2001–171 p.
9. Savignon, Sandra J. «Communicative language teaching». In Byram, Michael. Routledge Encyclopedia of Language Teaching and Learning. [Книга]. — London: Routledge, 2000. — стр. 125–129.



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TRANSLATION OF CLINICAL TERMS IN LATIN AND BASIC MEDICAL TERMINOLOGY CLASSES

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ABSTRACT. The article is devoted to the issues of teaching the Latin language and the basics of medical terminology at a medical institute. The author believes that the training of highly qualified specialists who speak special terminology requires knowledge of a certain number of words of Latin and Greek origin. Based on practical lessons in Latin, he examines the features of the translation of complex and derived clinical terms.

KEY WORDS: medical terminology, Latin language, clinical terminology, term element, Latin and Greek term elements, prefix-suffix derivatives

INTRODUCTION

One of the important tasks of training at a medical institute is the training of highly qualified specialists who are proficient in special terminology. Terminology is a set of terms used in a certain field of knowledge. A term (terminus "limit, boundary") is a word or phrase that serves to unambiguously and accurately designate (name) a special, scientific concept in a certain system of special concepts (in science, technology, production). Like any common noun, a term has content, or meaning (semantics, from the Greek *semantikos* - meaning), and a form, or sound complex (pronunciation, spelling).

While studying at a medical institute, a student encounters a variety of private terminologies of various biomedical and clinical disciplines, which are designed to help him master the modern scientific language of his profession. In a doctor's speech, from 50 to 80% of words of Latin and Greek origin are used.

MAIN PART

The study of clinical terminology in Latin classes is based on the analysis of individual components, called term elements.

A term element is a word-forming element (root, stem, prefix, suffix), which, having a constant meaning, forms a term of one semantic series. The division of a term-word into term elements does not always coincide with its division into morphemes, since some term elements represent a whole block - a combination of two or three morphemes into one whole: prefix + root, root + suffix, prefix + root + suffix. For example, in the term *asthenopia* we isolate the "block" term element *astheno-* (*astheno-*), from the Greek. weak (*a-* - not, without + *sthenos* strength).

Knowledge of term elements allows students to understand many medical terms, for example, 150 terms are formed from the term element *blood haemo-*, *haemato-*, *-aemia*.

Among the term elements we distinguish:

- 1) Greek root term elements that are equivalent to Latin anatomical names, for example, *vertebra* - *spondylos* - *vertebra*, *ae f*, *mouth* - *stoma* - *os, oris n*;
- 2) final term elements that denote pathological changes in organs and tissues, surgical intervention, methods of diagnostic examination or treatment, for example, *-tomia* - operation of dissection, opening of an organ, *-ptosis* - prolapse, displacement of an organ;

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3) affixes (prefixes, suffixes), which also carry some information, for example, syn-, sym- together with something, connection, interaction, -itis - inflammation.

There are initial term elements: stetho- (breast), osteo- (bone), melo- (cheek), noso- (disease) and final term elements: -malacia (abnormal softness), -plastica (reconstructive plastic surgery), -stomia (surgical operation of making a hole), -schisis (splitting of an organ), -centesis (puncture, puncture), but some of them are found at the beginning and at the end of the term: gnathalgia (neuralgia of the jaw), prognathia (protrusion of the upper jaw forward). Some final term elements can be used as an independent term, for example, ptosis, is f - ptosis, drooping of the upper eyelid, gastroptosis, is f - gastroptosis, drooping of the stomach.

One of the tasks of teaching the Latin language and the basics of medical terminology is to master the skills of isolating individual term elements and ways of constructing derivatives and complex terms, since most of the clinical terminology is derivative and complex words.

Derived words consist of a prefix and a root; prefix, root and suffix or root and suffix: arthrititis - inflammation of the joint, pan-arthritis - inflammation of all tissues of the joint or all joints, arthrosis - a chronic disease of the joint of a dystrophic nature with damage to the articular cartilage. Words formed by simultaneously adding a prefix and a suffix to the root are called prefix-suffix derivatives. Thus, in ancient Greek terminology, the terms hypogastrium lower abdomen arose. It should be taken into account that Latin prefixes are attached to Latin roots, Greek prefixes are added to Greek roots.

Prefixation does not change the meaning of the term, but only adds to the meaning some component indicating localization (above, below, in front, behind), direction, passage in time, the absence or negation of something. For example, exoglossia is an enlargement of the tongue when it protrudes significantly from the mouth, dysergia is a disorder of the body's reactivity, aphonia is a lack of sonority of the voice.

Suffixes have an important classifying function. Thanks to them, words are correlated with the corresponding classes of concepts: for example, nouns with the suffixes -ul-, -cul- belong to the class of so-called deminutives - words with a diminutive meaning: tuberculum, lobulus. A suffix always exists only in a bound form, i.e. as part of a derivative. For example, the suffix -itis (inflammation) only in combination with a productive base acquires the above meaning. When suffixing, the stems of different parts of speech - nouns, adjectives, verbs - are used as generators. Certain suffixes are combined with the stems of certain parts of speech, for example, the suffix -al(-ar) with the stems of nouns, the suffixes -io, -or with verbal stems.

Compound words are formed by adding two or more roots. Greek roots of words are connected using an interfix (connecting vowel) -o- or can be without it, for example, proctopexia - fixation of the rectum when it prolapses, pneumonectomy - complete removal of the lung, phlebogramma - x-ray image of the venous network.

Clinical terminology contains, along with words of Greek origin, terms of Latin origin, for example, resection, onicectomy - removal of part of an organ, ulcer, etc. There are also hybrid terms consisting of Latin and Greek term elements, for example, dysfunction, tonsillitis, itiditis - inflammation of the palatine tonsils.

CONCLUSION

To correctly compose terms, it is necessary to learn both the initial and final term elements and their meaning. You also need to know the rules for placing stress. In clinical terms of Greek origin ending in -ia, the stress is most often placed on the penultimate syllable, for example,

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nephrectomía, hemiplegía, etc. On the third syllable from the end of the word, the stress is placed in the final term element –logia: biológia, ophthalmológia, etc. Term elements – pathia, -graphia, -phonia in medical terminology have the stress on the penultimate syllable, and in the terminology of other disciplines they keep it on the third syllable from the end of the word, for example, roentgenographía, but photography, mastopathía, but sympáthia, etc.

LITERATURES:

1. Mukhamadiyeva, M., & Sharipov, B. (2022). LATIN AS THE MAIN LANGUAGE OF MEDICINE. *Theoretical aspects in the formation of pedagogical sciences*, 1(7), 337-339.
2. Sharipov, B. (2023). SOME CONSIDERATIONS ON THE FORMATION OF CLINICAL TERMS IN LATIN. *International Bulletin of Applied Science and Technology*, 3(6), 477-479.
3. Sharipov, B. (2022). RETSIPROKLIK XUSUSIDA MULOHAZALAR. *Общественные науки в современном мире: теоретические и практические исследования*, 1(19), 63-66.
4. Salimovich, S. B. (2022). RECIPROCAL SYMMETRY AND ITS GRAMMATICAL INDICATIONS. *EPRA International Journal of Research and Development (IJRD)*, 7(12), 129-131.
5. Salimovich, S. B. (2022). Studies of Reciprocity in Linguistics. *Eurasian Scientific Herald*, 8, 221-224.
6. Isroilova, M., & Sharipov, B. (2023). SOME OBSERVATIONS ON LATIN PRONUNCIATION AND SPELLING. *Science and innovation in the education system*, 2(7), 127-129.
7. Шарипов, Б. С. (2022). TIL BIRLIKLARINING NUTQDA FAOLLASHUVI HAQIDA. *МЕЖДУНАРОДНЫЙ ЖУРНАЛ ИСКУССТВО СЛОВА*, 5(1).
8. Nasimjanovna, K. F., & Salimovich, S. B. (2023). NAMES OF DISEASES AND THEIR USE IN CLINICAL TERMINOLOGY. *Journal of Universal Science Research*, 1(6), 469-474.
9. Salimovich, S. B. (2022, January). FUNCTIONS OF LANGUAGE UNITS. In *Conference Zone* (pp. 62-63).
10. Mardanovich, M. Z., Aliaskarovna, S. U., Kenjaevna, B. M., Genjebaevna, A. P., & Salimovich, S. B. (2021). Some Considerations about Legal Solutions and Practices of Certain Problems Writing Recipes. *Annals of the Romanian Society for Cell Biology*, 5341-5352.
11. ZAFAR, M., BOBUR, S., & DILMUROD, B. R. (2021). Scientific and pedagogical basis of teaching the theory of decisions in school chemistry. *International Journal of Philosophical Studies and Social Sciences*, 1(3), 192-196.
12. Sharipov, B., Makhmudov, Z., & Buriyev, D. (2023). The role of teaching latin in the course of subject training of future foreign language teachers. *Science and innovation in the education system*, 2(1), 11-14.
13. Sharipov, B., Makhmudov, Z., & Buriyev, D. (2023). Features of teaching latin to students medical universities studying in english. *Theoretical aspects in the formation of pedagogical sciences*, 2(1), 21-25.

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-3, ISSUE-2

14. Sharipov, B., Makhmudov, Z., & Buriyev, D. (2023). Influence of the latin language on the formation of medical terminology. *Theoretical aspects in the formation of pedagogical sciences*, 2(1), 16-20.
15. Maxmudov, Z., Sharipov, B., & Bo'riyev, D. (2023). Tibbiyot universitetlarida lotin tili va tibbiy terminologiya fanini o'qitishning o'ziga xos xususiyatlari. *Science and innovation in the education system*, 2(1), 5-10.
16. Maxmudov, Z. M., & Sharipov, B. S. (2021). LOTIN TILI VA TIBBIY TERMINOLOGIYA FANINI O'QITISHDA INNOVATSION TEXNOLOGIYALARDAN FOYDALANISHNING DIDAKTIK TAMOYILLARI VA UNING ASOSI HAQIDA FIKRLAR. *Academic research in educational sciences*, 2(6), 1028-1033.
17. Maxmudov, Z. M., & Sharipov, B. S. LOTIN TILI VA TIBBIY TERMINOLOGIYA FANINI O'QITISHDA INNOVATSION TEXNOLOGIYALARDAN FOYDALANISHNING DIDAKTIK TAMOYILLARI VA UNING ASOSI HAQIDA FIKRLAR.
18. Mardanovich, M. Z., Salimovich, S. B., & Arzimurodovich, B. D. (2021). Developing Students Attitudes Towards the Environment When Teaching a Foreign Languages. *Texas Journal of Multidisciplinary Studies*, 1(1), 199-201.
19. Mardanovich, M. Z., Salimovich, S. B., & Arzimurodovich, B. D. (2021). Reviews of effective use of educational methods in teaching latin and medical terminology. *ACADEMICIA: An International Multidisciplinary Research Journal*, 11(4), 381-386.
20. Mardanovich, M. Z., & Salimovich, S. B. Auditoriyadan tashqari ta'lim-tarbiyaga maqsadli, tizimli yondashish. In *Конференция состоялась 5 марта 2022 года на базе Ташкентского государственного стоматологического института по адресу: Республика Узбекистан, 100047, г. Ташкент, ул. Махтумкули, 103. Цель конференции—знакомство и обмен опытом в обучении и в работе с цифровыми данными, технологиями их применения в гуманитарных* (p. 455).
21. Mardanovich, M. Z., & Salimovich, S. B. (2022, August). AUDITORIYADAN TASHQARI TA'LIM-TARBIYAGA MAQSADLI, TIZIMLI YONDASHISH: Mahmudov Zafar Mardanovich Samarqand davlat tibbiyot instituti, Tillar kafedrası, assistent, e-mail: maxmudovzafar4510@ gmail. com Sharipov Bobur Salimovich Samarqand davlat tibbiyot instituti, Tillar kafedrası, assistent, e-mail: sharipovbobur9689@ gmail. com Bo'riyev Dilmurod Arzimurodovich Samarqand davlat tibbiyot instituti, Tillar kafedrası, stajyor-assistent buriyev. d0905@ gmail. com. In *Научно-практическая конференция*.
22. Maxmudov, Z. M. (2021). Bobur Salimovich Sharipov Lotin tili va tibbiy terminologiya fanini o'qitishda innovatsion texnologiyalardan foydalanishning didaktik tamoyillari va uning asosi haqida fikrlar. *Academic research in educational sciences*, 6.

Analysis of N26 bank and its innovative services

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Abstract: This article provides detailed information about N26 Bank, one of the international digital banks, and analyzes its main financial indicators in detail.

Keywords: N26, innovative services.

Introduction. An effective way to quickly and efficiently develop the banking system is, first of all, to analyze the experience of developed countries and take the necessary aspects from them and apply them to our own banking system. The reason is that, considering that they have already moved forward, there is no point in creating the techniques and technologies that were developed in them. Therefore, our task is to study the foreign experience, get the aspects that we need, and then continue to create new innovations. It is for this reason that we analyze below the international digital bank of a developed country with many years of experience.

Methodology. Statistical tables in this study, logical and comparative analysis, grouping methods, as well as research works and statistical data of the bank's official website were widely used.

Analysis and results. N26 (Germany). N26 is building the world's leading mobile bank. Valentin Stalf and Maximilian Tayenthal founded N26 in 2013 and launched the first product in early 2015. Today, N26 has received more than 8 million customers in 24 markets. N26 has a team of 1,500 people from 80 nationalities located around the world. Its teams are located in 10 locations: Amsterdam, Berlin, Barcelona, Belgrade, Madrid, Milan, Paris, Vienna, New York and São Paulo. With a full German banking license, the latest technology and no branch network, N26 has reimagined banking for the 21st century and is available on Android, iOS. Valued at more than US\$9 billion, N26 has raised nearly US\$1.8 billion from some of the world's most prominent investors, including Third Point Ventures, Coatue Management LLC, Dragoneer Investment Group, Insight Venture Partners, GIC, Tencent, Allianz X, Peter. N26 currently operates in Austria, Belgium, Denmark, Estonia, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Latvia, Liechtenstein, Lithuania, Luxembourg, Netherlands, Norway, Poland, Portugal, Slovakia, Slovenia, Spain, Sweden and Switzerland .

N26 Group ("N26" or "Group") has announced its financial results for the year ended 31 December 2021, which showed significant growth in net interest and commission income, as well as strengthening and expanding its platform, organizational systems and structures. continued focus.. Beyond 2020, N26 continued to focus on increasing daily account activity across its customer base and expanding its position as a leading digital bank in key European markets. This strategy has driven deposit growth and increased customer retention in 2021, while additional investment in product development and bank subscription expansion has also fueled top-line and customer-driven growth. Total gross income increased by 50.3% to 182.4 million euros (2020: 121.3 million euros). Net income from commissions increased almost 60% compared to FY20, while treasury activity led to a doubling of net interest income compared to last year. The company also grew its user base by more than 1 million customers over the past year to 8 million customers

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and increased revenue customers to more than 3.7 million. N26 additionally invested heavily in strengthening regulatory frameworks, including systems and personnel to strengthen the organization's core business functions, which led to higher administrative costs compared to last year. By year's end, N26 strengthened its market leadership position with a €700 million Series E funding round, valuing the company at €7.7 billion.

N26 provides the following services:

- Cards (Standard, smart, you, metal) and accounts, account numbers;
- Budgeting;
- Credit card;
- Personal finance;
- Online banking;
- Monthly budget calculator;
- Cryptocurrency;
- Insurance;
- Payment systems;
- Privileges;
- For business.

N26 Insurance: Customers can protect their favorite items with on-demand insurance coverage. They can get premium, on-demand insurance that protects what's important and pay only for the coverage they need.

Electronics insurance on demand with N26. Laptops, tablets, smartwatches and smartphones can be protected against theft, breakdowns, liquid damage and accidental damage with N26 insurance. Sign up with zero paperwork on the N26 app, choose a flexible monthly plan or a discounted annual plan, and cancel anytime. Now you can get insurance from only 4.00 euros per month.

Bike, home, pet insurance and more. Whether it's a customer's home, pet or favorite bike, N26 Insurance protects what matters most, and soon customers will be able to purchase this coverage from the N26 app, along with personal liability and fraud insurance, for added peace of mind. will be

Valentin Stalf, CEO and co-founder of N26, expressed the following thoughts about the results of 2021: "In 2021, we strengthened our position as a leader in the European digital banking market. We have made additional investments in our product, our team and the scalability of our platform. On average, customers access their N26 app 3 times a week, making us the mobile bank with the most active customer base in Europe. This is reflected in the significant increase in the volume of transactions by almost 60%, exceeding 80 billion euros.

In 2021, the net interest income of N26 increased by 100.7% compared to 2020, while the gross income also showed a positive result of 50.3% (Table 1).

Table 1

Main financial indicators, (in millions of euros)

Financial indicators	2020	2021	Change
Gross profit	121.3	182.4	50.3%
Net income	72.1	120.3	66.9%
Net interest income	14.8	29.7	100.7%
Net commission income	57.3	90.6	58.1%

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Cryptocurrency trading product launched in Austria in 2022. Austrian customers of N26 Cryptobank are the first to be able to buy and sell cryptocurrencies directly in their N26 app.

In November 2022, the bank announced a new supervisory board and a German stock corporation (AG), an important step to develop governance structures in preparation for the next stages of N26's development.

Thus, when we analyze digital banks with international high rating, each of them is distinguished by its own characteristics. They differ not only in the design of the bank's brand, platform or mobile applications, but also in the types of services and goals they provide to customers. In addition, they prefer to work on individual products rather than creating standard products that are common to all customers. Also, international digital banks are very open and flexible to innovation, use of innovative technologies. And finally, they work not just for profit, but to make people's lives even a little better, and they are true to their values.

Conclusion. Thus, when we analyze a digital bank with an international high rating, it is distinguished by its originality. It is different not only in the design of the bank's brand, platform or mobile applications, but also in the types of services and goals it provides to customers. In addition, he prefers to work on individual products rather than creating standard products that are common to all customers. Also, the international digital bank is very open and flexible to innovation, use of innovative technologies. And finally, he works not only for profit, but for the purpose of improving people's lives even a little, and he is loyal to his values.

List of used literature:

1. <https://n26.com/en-eu> – the official website of N26 bank open data.
2. <https://en.wikipedia.org/wiki/N26>

Comparative analysis of articles written in the analytical genre in the press of Uzbekistan and abroad

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Abstract: The style of writing an article in the analytical genre differs depending on which country and for which people it is being written. For example, Western and American audiences are receptive to material consisting of only facts, and consider it biased to refer to the journalist's additional opinion and conclusion. The Russian audience cannot accept the material without emotion and evaluation, and considers it imperfect. Not only the audience, but also Russian theorists argue that journalistic investigation of a dry investigative article should be different from law enforcement investigation.

Keywords : Analytical writing, article , summary , excellent , reference , journalism

Differs depending on which country and for which people it is being written. For example, the Western and American audience accepts the material consisting of only facts, and considers it biased to refer to the additional opinion and conclusion of the journalist. And the Russian audience cannot accept the material without emotion and evaluation, and considers it imperfect. Not only the audience, but also Russian theorists argue that journalistic investigation of a dry investigative article should be different from law enforcement investigation. Based on this, it is justified for a Russian journalist to analyze the facts and assess the situation. Everyone knows the difference between the printed editions of Uzbekistan and European countries. In some sense, it is closely related to the values and customs of nations. In the West, views such as modesty and hypocrisy have existed for a long time, and this, in turn, has caused us to lag behind Western countries in the field of journalism.

The ability to clearly state one's opinion, to justify it, to consider events and events from different perspectives is an important component of analytical skills, which can be used in preparing articles for various media channels, publishing video material, preparing social advertisements on important issues, or discussing debates. can be used in the organization. Freedom of expression should not be allowed to be restricted. In order to study the issue objectively and present its results regardless of what they are, it is necessary to fully open the space of creativity to the journalist. Only then, journalism will develop and this, in turn, will serve the development of the state ¹.

In the 90s of the 20th century, journalistic investigations required by the theory of journalism were "Khalk sozi", "Hurriyat", "Mohiyat", "Huquq", "Voice of Uzbekistan", "Trust", "XXI Asr", "Pravda Vostoka", "ZerkaloXXI". , began appearing in "Novosti Uzbekistana", "Adolat", "Inson va Kanon" newspapers. They mainly highlighted the shortcomings of socio-economic reforms. Also, violations of human rights and freedoms, violations of the law in the activities of the court and prosecutor's office were discussed.

Journalistic psychology of the Lomonosov Moscow State University, answered the question of "Can a journalist lie in necessary situations in his work?" asked by students at an online conference, "No, it should never be allowed. "But you can change your profession," he answered. But in the modern mass media, the use of false information and methods of obtaining information has increased in order to gain false popularity. The soon-to-be-popular Wikileaks website, specialized in disclosing classified information, made a big splash around the world. The site began to publish secret correspondence of American diplomats. Before that, he disclosed many secret documents related to Iraq and Afghanistan. About 90,000 official documents containing hitherto

¹Irnozardov K.T., Mamatova Ya.M. Information and printing (Introductory course lecture). - T.: NUUz, 2000. - S. 6.

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undisclosed details of the war in Afghanistan have been released to public attention on the website. The document published in the British "Guardian", American "New York Times" and German "Spiegel" publications at the same time as "Wikileaks" is called "Afghan War Diary". These are secret documents covering the war in Afghanistan, and someone secretly delivered them to Wikileaks. The WikiLeaks group has made it a practice to disclose information secretly supplied by sources among the military, security forces, government agencies and businessmen. Many countries, especially the United States, consider this an attack and a threat to the country's national security. The documents were suspected to have been provided by one of the American military analysts, and the analyst was brought to court. The founder of the site, Julian Assange, was arrested, but after some time, he was released on a large bail. A number of American companies serving the web page stopped cooperation with "Wikileaks". Internet domain companies in America stopped serving Wikileaks, resulting in the site moving its address to a Swiss domain. US senators have called on all companies and organizations that provide services to the website to cut ties with them.

American print media is considered a "cold" language. Sometimes you can find insulting words in it. The article expresses opinions not only against the virus, but also against the country's president and his policies. So, is the journalist right? Of course, only a journalist who knows politics and economy can work with such crude analyses. That is why writing analytical articles in America is divided into a separate section. Only journalists with special expertise will be able to write articles in analytical genres.

Most of the analytical articles in America are focused on the topic of corruption. The growth of interest in this direction of journalistic activity by both journalists and the mass media audience is explained by the fact that journalism is viewed as one of the powerful means of social control over the activities of state institutions, as an effective means of fighting against the arbitrariness of officials and the expansion of corruption.

"However, these tasks are standard methods of journalism it is not always possible to do it using. It is not written on his forehead that the official is corrupt and bribe-taking. His press secretary does not have such words in his vocabulary. It is for this reason that journalists who are able to independently find information began to appear in newspaper editorial offices and on television, and the materials they write began to be submitted under the column "Journalist inquiry"³. The opinion of many experts working in the field of journalism in the USA regarding the journalistic inquiry goes back to the fact that this phenomenon is characteristic only of the press of developed, democratic countries, where freedom of speech and diversity of opinions are widely allowed. However, this does not mean that this line of research is impossible in the conditions of a developing democracy. It is in such countries that it is necessary to learn and develop the best traditions and style of democratic journalism. This becomes a guarantee of the success of fundamental changes and reforms carried out by the state. Journalistic inquiry is considered as one of the indicators of the state of democracy in the society and a means of building a strong civil society and achieving the principle of balance between all branches of government. Analytical journalism has already taken a leading position in advanced Western countries. Such journalism is interested in the fact that the mass media audience knows the truth about the hidden aspects of important events, events, and processes. "Only the information obtained as a result of careful and careful analysis can reveal the true essence of the event, explain the actions of people related to it, and also show the reader that journalists really serve the interests of people and that they are representatives of "people's power"⁴.

² www.bbcuzbek.com

³ Journalistic research: Istoriya metoda i sovremennaya praktika./ Pod obshch. ed. A.D. Konstantinova. – SPb.: ID "Neva", 2001. – C.12.

⁴ Nesterenko F.P., Irnazarov K.T., Mamatova Ya.M. Working journalist: professionalism, creativity, mastery. Flying pos. Chast1. - T.: Zar Kalam, 2002. - C. 135.

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Annotation. The United Nations Universal Declaration of Human Rights was declared by the UN General Assembly with its resolution No. 217 (A) dated 10 December 1948. The importance of the declaration in terms of hate crimes is that all states have the obligation to protect together in order to prevent the violation of rights such as "life, personal security, freedom of thought and conscience" stipulated in the declaration through hate crimes. In this respect, states have to take some measures to protect these rights, one of the most effective of which is to prescribe a certain method of punishment. It should be noted that the Declaration is not binding. This article comprehensively organizes the list of human rights and plays a criterion role in terms of other binding international and regional agreements in the example of UN discourse.

Key words: hate speech, freedom of expression, UN discourse, human rights, declaration.

Before including the concept of hate speech, it should be noted that freedom of expression regulated in Article 10 of the ECHR is not an absolute right. It is possible that some restrictions may be imposed on this right.

The most important of the restrictions imposed on expressions is hate speech. We can say that there are two reasons behind the restrictions placed on hate speech within the scope of freedom of expression. The first of these is the interests of human rights. The other is the protection of minority groups. First, people's rights must be protected and conflicts must be eliminated. Since minorities cannot protect their rights and are at a disadvantage in society, states must take the necessary measures in this regard. In an environment where different identities exist, the state is obliged to ensure that everyone's identity is respected and some of the freedoms can be limited.¹

In a democratic society it is necessary to sanction or prevent any expression that encourages, spreads, defends or excuses intolerance, insofar as it is proportionate to that legitimate aim.²

At the basis of hate speech, there are other issues such as prejudices, racism, fear or hostility towards foreigners, attitudes towards any party, discriminatory behavior towards people in society, creating fearful thoughts about a religion or denigrating it.³ For example, the feeling of homophobia against homosexuals will help us understand the issue.

Homophobia began to be used in the early 1970s to show hatred, unrealistic fear and intolerance against homosexuals and homosexuality. This is intended to create certain prejudices

¹ Ulaş Karan, "Nefret İçerikli İfadeler, İfade Özgürlüğü ve Uluslararası Hukuk", Nefret Söylemi ve Nefret Suçları, Ed. Yasemin İnceoğlu, İstanbul, Ayrıntı Yayınları, 2012, s. 82-83

² Sürek v. Turkey, App. No: 26682/95, No 1, Grand Chamber, Judgment of 08 July 1998, par. 62

³ Cengiz Alğan, Levent Şansever, Ulusal Basında Nefret Suçları: 10 yıl 10 örnek, İstanbul, Sosyal Değişim Derneği, 2010, s. 15

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in society about bisexuals, homosexuals, gays and lesbians and to keep them away from social issues.⁴ As we will consider here, we see that there is a certain prejudice underlying hate speech.

By the expression of hate, we can generally understand hurtful, aggressive and hurtful expressions in society. These expressions can be expressed with words as well as symbols. Many states limit hate speech in their regulations.

Hate speech or expressions can generally be directed at any race, gender, religious affiliation or sexual orientation. When we look at the ECHR jurisprudence, we see that fighting against all forms of race-based discrimination is a vital issue.⁵

There is no generally accepted definition of hate speech. This is because freedom of expression covers a wide range of areas, including scientific, artistic, political, critical, and personal and many others.⁶

So far, only national and regional regulations on hate speech and hate crime have been adopted. Among these, we can mention the Recommendation 97(20) of the European Committee of Ministers. In this resolution, hate speech is defined as follows:

"It covers any form of expression that spreads, incites, encourages or legitimizes racial hatred, xenophobia, anti-Semitism or any form of hatred based on intolerance, including religious intolerance, which manifests itself in the form of aggressive nationalism and ethnocentrism, discrimination and hostility towards minorities, migrants and people of migrant origin".⁷

As the recommendation suggests, all forms of offensive expression should be prevented by states. The aim is to protect people from a particular group, migrants or minorities and to prevent them from being discriminated against in society.

The Recommendation recommends that the governments of member states:

1. Take appropriate measures to combat hate speech based on the principles contained in this recommendation
2. Ensure that such measures form part of a comprehensive approach to the phenomenon that also targets social, economic, political, cultural and other root causes
3. Where they have not already done so, to sign, ratify and effectively implement in domestic law the United Nations Convention on the Elimination of All Forms of Racial Discrimination, in accordance with Resolution (68) 30 of the Committee of Ministers on measures to be taken against incitement to racial, national and religious hatred
4. Review domestic legislation and practice to ensure that it complies with the principles set out in the annex to this recommendation⁸

⁴ Pınar Öztürk, Yeliz Kındap, "Lezbiyenlerde İçselleştirilmiş Homofobi Ölçeğinin ve Psikometri Özelliklerinin İncelenmesi", Türk Psikoloji Yazıları, Aralık 2011, 14(28), s. 25, (Çevrimiçi), <http://www.turkpsikolojiyazilari.com/PDF/TPY/28/03.pdf> , 05.10.2014

⁵ Jersild v. Denmark, App. No. 15890/89, Grand Chamber, Judgment of 23 April 1994, par. 30

⁶ Elif Çelik, "İfade Özgürlüğü Nefret Söyleminin Neresinde?", İnönü Üniversitesi Hukuk Fakültesi Dergisi, C. IV, S. 2, Malatya, İnönü Üniversitesi, 2013, s. 206

⁷ Of the Committee of Ministers to Member States on "Hate Speech", Recommendation R(97) 20, (Çevrimiçi), [http://www.coe.int/t/dghl/standardsetting/media/doc/cm/rec\(1997\)020&expmem_EN.asp](http://www.coe.int/t/dghl/standardsetting/media/doc/cm/rec(1997)020&expmem_EN.asp) , 15.07.2015

⁸ Cinsel Yönelim veya Cinsiyet Kimliği Temelli Ayrımcılıkla Mücadele, Avrupa Konseyi standartları, (Çevrimiçi),

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When we try to give a short definition, hate speech means the use of abusive, insulting and offensive expressions against people of a certain race, religion or ethnic origin.

As a result of today's developments and the new case law of the ECtHR, hate speech is being addressed in a way that goes beyond this definition, and concepts such as sexual orientation, asylum-seeking, refugeeism, disability, and expressions on the internet are beginning to be included in the concept of hate speech.⁹

Some expressions developed in the ECHR jurisprudence and accepted as expressions of hate may not be accepted as expressions of hate in the laws of the states themselves. In this respect, the Court's classification of hate speech is not binding on the national classification.¹⁰

The framework of the concept of hate speech is related to which expressions are within this scope or against whom these expressions can be directed.

We can demonstrate the necessity of determining the concept of hate speech as follows:

- a. In terms of the area, person or specific groups that hate speech targets and needs to be protected
- b. In order to protect freedom of expression from restrictions based on the argument of hate speech.¹¹

We can show the framework of the concept of hate speech as follows:

- a. Hate speech is directed against a specific group, for example minorities or immigrant groups. In such cases, people of this group are not treated like other people and always face discrimination. This causes unpleasant feelings towards them.

- b. Directing hate speech towards a specific religious group, for example, any hatred towards Muslims in a Christian society, any provocative situation, or discrimination between believers and non-believers. Such situations are generally common in European countries. Muslims, especially those living in European countries, are psychologically shaken and harmed because of their religious beliefs.

- c. Hate speech is asserted in terms of "ethnic nationalism and centrism" and leads to discrimination among people.¹²

With the use of hate speech, the issue of alienation of people in a certain society arises. When we say the other, it should be understood that one social unity oppresses the other and takes control of it. In this case, the others are either a certain group of minorities or a certain group of marginals.¹³

In the annex to the decision numbered R (97) 20 of the European Committee of Ministers, the responsibilities of the states in terms of hate speech are determined as follows:

http://www.kaosgildernegei.org/resim/yayin/dl/avrupa_konseyi_ayrimcilikla_mucadele_standartlari.pdf , s. 66, 10.07.2015

⁹ Henry Steiner, Philip Alston, *International Human Rights in Context*, Oxford University Press, 2. Edition, 2000, s. 749

¹⁰ Çelik, Elif İ f a d e Özgürlüğü Nefret Söyleminin Neresinde? İnönü Üniversitesi Hukuk Fakültesi Dergisi, C. IV, S. 2, Malatya, İnönü Üniversitesi Matbaası, 2013, s. 205-240

¹¹ Çelik, Elif İ f a d e Özgürlüğü Nefret Söyleminin Neresinde? İnönü Üniversitesi Hukuk Fakültesi Dergisi, C. IV, S. 2, Malatya, İnönü Üniversitesi Matbaası, 2013, s. 205-240

¹² Waldron, Jeremy *The Harm In Hate Speech*, Harvard University Press, 2012.

¹³ Tezcan Durna, "Azınlıklar, Ötekiler ve Medya Üzerine", İLEF Dergisi, 1(1), Bahar, 2014, s. 151, (Çevrimiçi), <http://ilef.ankara.edu.tr/wp-content/uploads/Tezcan-Durna.pdf> , 24.10.2014

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“Governments of the member states, official authorities and public institutions at national, regional and local levels, as well as officials, shall not be responsible for the use of racist hatred, xenophobia, anti-Semitism, as hate speech, They have a special responsibility to refrain from statements, particularly to the media, that could reasonably be understood as speech likely to have the effect of legitimizing, propagating or encouraging hatred based on intolerance or other forms of discrimination. Such statements should be prohibited and publicly repudiated whenever they occur.”¹⁴”

In our opinion, it is not right to place such an obligation solely on states. Citizens of the state, as well as states, should have a role in preventing hate speech. However, if the state prohibits hate speech and citizens are not tolerant in return, the regulation will remain dysfunctional.

We said that prejudice lies at the basis of hate speech. Prejudice can be expressed as thinking negatively about others. These negative thoughts can occur without any justification. As a result of prejudices, targeted people suffer losses. The most important of these harms is psychological pressure. Although this pressure does not directly cause violence, it activates people's feelings of fear and makes them feel anxious and insecure.¹⁵

We can consider the prejudiced actions that cause hate crimes in five different categories:

a. Anti-foreignerism – In this case, a person can only think positively about the people of his own country and be prejudiced against the people of other countries. For example, the people of today's Russian Federation always have anti-foreign sentiment towards people from other nations, especially Azerbaijani people.

b. To avoid, to stay away from - To stay away from a certain group of people or individuals due to the group or society to which they belong. Although the bias here is very strong, it does not have a directly damaging effect.

c. Discrimination – The inability to enjoy one's political, housing, and educational rights due to strong existing prejudice.

d. Physical attack - Person's color, religion, national origin, etc. It may be attacked for various reasons. Today, white people feel hatred towards black people because their color is black. We encounter this situation especially on football fields.

e. Destruction – People commit lynchings and genocide. What Nazi Germany did against the Jews is an example of this.¹⁶

This Convention of the United Nations rejects all forms of racism and shows that all states have a responsibility to prevent hate speech. There are some decisions made by the committee within the scope of freedom of expression.

¹⁴ Avrupa Konseyi Standartları.

¹⁵ Andrew Altman, “Liberalism and Campus Hate Speech, A Philopischal Examination”, Ethics. Vol. 103, No. 2, 1993, p. 306, (Çevrimiçi), <http://www.jstor.org/stable/2381524?seq=5> , 27.11.2014

¹⁶ Hakan Ataman, “Nefret Suçlarını Farklı Yaklaşımlar Çerçevesinden Ele Almak: Etik, Sosyo-Politik ve Bir İnsan Hakları Problemi Olarak Nefret Suçları”, Nefret Söylemi ve Nefret Suçları, Ed. Yasemin İnceoğlu, İstanbul, Ayrıntı Yayınları, 2012, s. 63.

Lexicological Analysis of Tourism idioms and their translation in Uzbek language

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Abstract: This article is based on the lexical and contextual semantics of various essential **idioms** which is widely spread out the tourism communication. And examines its connections with cultural contexts.

Keywords: Tourism, terms, idioms, analysis of words, culture

I. INTRODUCTION

Tourism and culture are closely related as tourism often involves the exploration and appreciation of different cultures. Tourists are often drawn to destinations that have unique cultural experiences and attractions such as museums, historical landmarks, festivals, traditional cuisine, music and dance performances. The cultural offerings of a particular destination can be a major factor in attracting tourists and generating revenue for the local economy. In turn, tourism can also help to preserve and promote cultural heritage sites and traditions. Additionally, tourism can facilitate cultural exchange by exposing visitors to new ideas, customs, and perspectives while also allowing locals to share their own culture with visitors. Thus, tourism plays an important role in promoting cross-cultural understanding and appreciation.

Nowadays the necessity of tourism industry is being approved by not only tourists but also travel agencies which offer travel arrangements for people. Tourism industry is the best approach to increase the state budget and propagandize the culture and lifestyle of the main country to another continents and regions of the world. This demonstrates that, the more there is a demand for a tourism, the more requirement of enlarging the extend of communicative accomplishments for the better correspondence between the visitors and native people will become. Using idioms, phrases and collocations while you are explaining any information or expressing your thoughts gives you a great chance to show your lexical resource.

Understanding, using and translating idioms requires serious analysis of the structure and content of linguistic units. Idioms and phraseological units are an integral part of the culture of English speaking country, therefore you need to know and understand their structure, semantic and essence in order to comprehend national mentality of native speakers.[1]

In this article we tried to give some examples for idioms, their lexical semantic analysis and illustrate the analogy between Uzbek and English language.

II. RELATED WORK

In this article we tried to give some examples for idioms, their lexical semantic analysis using variety of renowned dictionaries and articles related to the tourism and travelling so as to substantiate the analogy between Uzbek and English language. Also separating phrases, expressions, idioms into several contextual and linguistic groups confers us a great chance to learn and find them both easily and efficiently. We hope that, this article can be available and advantageous manual which serves to anyone who wants to approach problems with idioms.

Idioms which have exact equivalent

1. *To travel light* – *ortiqcha buyumlarsiz yo'lga o'tlanish*
(English) I always try *to travel light* while my sister disagree with me.

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(Uzbek) Men har doim ortiqcha buyumlarsiz sayohat qilishni afzal ko'raman , garchi bu borada singlim fikrimga qarshi bo'lsada.

To make a journey without taking a lot of heavy things with you

You can also use it's equivalent - **to pack light**.

The literal use of this idiom dates from the 1920s, the figurative from the mid-1900s. [2]

2. *To hit the road- sayohatga o'tlanish, jo'nab ketish*

(English) Hurry up! It's really time **to hit the road**.

(Uzbek) Shoshilish kerak! Jo'nab ketishning ayni vaqti.

To set out, as on a trip (late 1800s)

You can also use it's equivalent -**to take the road**

hit the trail [2]

3. *To drive (somebody) up the wall- (kimnidir) jaxlini chiqarib yuborish*

(English) Our car had broken down during the trip, this **drove me up the wall**.

(Uzbek) Mashinamiz sayohat davomida buzilib qilgan edi, bu meni haddan ziyod jahlim chiqishiga sabab bo'ldi.

To make someone extremely angry.

You can also use it's equivalent - **get on somebody's wick**

drive sb mad/crazy [3]

4. *To take (somebody) for a ride- qulog'iga lag'mon ilib ketish (ko'pincha pulini olib qo'yish maqsadida)*

(English) I'd just begun to realize he was **taking me for a ride**.

(Uzbek) U mening qulog'imga lag'mon ilib yurganini endigina anglab yetayotgandim.

To cheat or deliberately mislead someone. It dates back to the 1920.

You can also use it's equivalent - **put one over on somebody** [3]

5. *Have a thirst for adventure- sayohatga ishtiyoqi baland bo'lmoq.*

(English) I **had a thirst for adventure**, when I was a child.

(Uzbek) Bola chog'imda menda sayohatga bo'lgan ishtiyoq baland edi.

To feel very strongly that you want and need a particular thing such as travel or adventure

You can also use it's equivalent - **have a adventurous spirit** [4]

6. *Cool your jets- hovuridan tushmoq.*

(English) **Cool your jets**, dear! It's no point being angry.

(Uzbek) Hovuringizdan tushing, qadrligim! Jahl qilishga holat yo'q.

To become calm and not so exited or worried. This idiom appeared around the 1970s. It's likely comes from the literal practice of cooling jets. After a flight, a jets engines are hot from use and literally need to cool down.

You can also use it's equivalent - **keep a cool head**

cool down [5]

7. *On the home stretch- bajarib bo'lmoq, uddalamoq, oxiriga yetmoq.*

(English) It has taken about 3 months, but we're **on the home stretch now**.

(Uzbek) 3 oylik mashaqqatlardan keyin nihoyat, biz buni uddaladik.

In the midst of the final portion of and activity, project, competition. This refers to the last part of a horse race when the horses are approaching the finishing line.

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You can also use it's equivalent - **on the home straight** [4]

8. *Right up my alley* – *kishida qiziqish uyg'ota oladigan, zavq bera oluvchi*
(English) Tennis is **right up my alley**.

(Uzbek) tennis bu menga zavq bag'ishlovchi o'yin.

If something is right up your alley, it suits you perfectly.

You can also use it's equivalent - **be up your street** [3]

9. *In the driver's seat* – *vaziyatni o'z qo'liga olmoq, nazorat qilmoq*

(English) This time next year, I'll be **in the driver's seat** of travel agency.

(Uzbek) Keyingi yil shu payt men sayohat agentligini o'z qo'limga olaman.

Be in a position in which one is able to control what happens. The analogy here is obvious, but the actual expression didn't become common until the nineteenth century. Lord Beaverbrook is quoted (New Statesman, 1963) as saying of David Lloyd George, "he didn't care in which direction the car was travelling, so long

as he remained in the driver's seat". It dates from 1800s.

You can also use it's equivalent - **in the saddle** [4]

10. *On the right track* – *maqsadga erishishda tog'ri yo'lda bo'lmoq*

(English) I think, we are **on the right track**. Let's keep up!

(Uzbek) Menimcha biz tog'ri yo'ldan ketyapmiz. Keling shunday davom etamiz!

Acting or progressing in a way that is likely to result in success. To take or be on the correct course of action or reasoning. The first expression refers to the tack of a sailing ship- that is, it's course when it is tacking. The term **track** dates from about 1880, alludes to the direction of path. So this idiom is talking about following the right direction – the path that will lead you in the right direction to the place you want to arrive (success).

You can also use it's equivalent - **be on the right tack** [4]

Idioms which is antonymous with each other

11. *At the crack of dawn* – *ertaroq bajarib qo'yish*

(English) I have plenty of time, so let's do this **at the crack of dawn**.

(Uzbek) Menda yetarlicha vaqt vaqt bor, keling buni ertaroq bajarib qo'yaylik.

Very early morning, daybreak. The *crack* in this term alludes either to the suddenness of sunrise or to the small wedge of light appearing as the sun rises over the horizon. Originally the term was usually put as *crack of the day*.

(late 1800s) [4]

12. *To call it a day/night* - *bajarilayotgan ishni to'xtatib qo'yish*

(English) Because of her laziness, **she called it a day**.

(Uzbek) Dangasaligi tufayli u ishlarini to'xtatib qo'ydi.

Stop a particular activity for the rest of the day. Similarly, call it a night means to stop something for the rest of the night. The original phrase was *call it half a day*, first recorded in 1838, which referred to leaving one's place of employment before the work day was over. The first recorded use of call it a day was in 1919, call it a night in 1938. [6]

As you can see, this two idioms express contrasting ideas that one of them indicates an opportunity to do something earlier than recommended time while the second one shows the action which is adjourned because of particular reason. So they are antonym idioms.

Idioms which are connected with theories related to history and facts

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13. *In the same boat – kemaga tushganning joni bir*

(English) Don't worry! We are all **in the same boat**.

(Uzbek) Xavotir olma! Kemaga tushganning joni birdir.

To face the same challenges with others, having the same problems.

This idiom originated in the mid – 1800s and was used mainly by the Greeks to refer to the risks faced by the passengers in a small boat at sea. another interesting but probably incorrect theory about the origin of the idiom refers to the sinking of the ship **Titanic** in 1912 when people from all classes were stuck in the same situation when the ship was sinking. [6]

14. *On a shoestring – arzonga tushmoq, qulay kelish*

(English) I purchased this book **on a shoestring** from the old bookshop.

(Uzbek) Men bu kitobni eski kitob do'konidan arzonga sotib oldim.

With very limited financial means, as in *The newlyweds were living on a shoestring*. The precise allusion in this term is unclear. One fanciful theory is that debtors in British prisons would a lower **shoe** by its laces from a window so as to collect funds from visitors or passers-by. A more theory is that it alludes to the slender shape of a shoelace likening it to slender resources.

(late 1800s) [4]

15. *Clear the decks- ortiqcha yukdan xalos bo'lish (biron natijaga erishish uchun)*

(English) Let's **clear the decks** and then we can start travelling.

(Uzbek) Ortiqcha narsalardan xalos bo'lgach, sayohatga otlansak bo'ladi.

Prepare for action; this expression originated in naval warfare, when it described preparing for battle by removing and fastening down all loose objects on the ship's decks. (second half of 1800s) [4]

16. *Put the cart before the horse – tartibsiz ravishda bajarmoq*

(English) People are **putting the cart before the horse** by making plans on how to spend the money.

(Uzbek) Odamlarda pullarini sarflash borasida tartibga rioya qilmaydilar.

To do something in the wrong order or sequence. The medieval wording of the phrase was put the oxen before the yoke. the phrase was a popular figure of speech in the 16th century. people travelled by horse and cart, there was a predetermined order in which they travelled. you could not put a horse before a cart as the horse was necessary to pull the cart. The phrase was first recorded in English in 1589 in George Puttenham's "The arte of English Poesie" [6]

17. *Fork in the road – muhim qaror qabul qilish ostonasida turish.*

(English) I think we reached a **fork in the road**. What do you think?

(Uzbek) O'ylashimcha, biz muhim qaror qilish ostonasiga yetib keldik. Shunaqa fikrdamisiz?

This idiom based on a literal expression, for a deciding moment in life or history when a choice between presented options is required and once made, the choice cannot be reversed. [7]

18. *My way or the high way- "yoki fikrimni qo'llab quvvatlang yoki katta ko'cha" ma'nosida.*

(English) There is only one choice right now: **It's my way or high way**.

(Uzbek) Hozir sizda faqatgina bitta tanlov bor : Yoki meni qo'llang yoki katta ko'cha".

This American idiom suggests an ultimatum like "take it or leave it", which indicates that the listener must totally accept the speaker's decision or suffer negative consequences. The idiom

literally tells the listener that if they don't wish to follow the speaker's demand, they will have to leave. It dates back to the 1970s. [7]

Idioms which has polysemous structure among several parts of sentences

19. *To catch the sun – issiq urmoq, quyoshda kuymoq*

(English) Be careful! It's too hot outside, you may **catch the sun** easily.

(Uzbek) Ehtiyot bo'ling! Tashqari jazirama issiq, sizni issiq urishi mumkin.

If you have caught the sun, the sun has made your skin a slightly darker brown or red colour.

Synonyms: catch a few rays-phrase

sunbathe- verb

tan-noun

swarthy-adjective

Antonym: as white as sheet

20. *To live it up- vaqtni chog' va maroqli o'tkazish*

(English) The party was really enjoyable and we **lived it up**.

(Uzbek) Bazm haqiqatdanam maroqli edi va biz vaqtimizni chog' o'tkazdik.

Enjoy yourself, often extravagantly (mid-1900s)

Synonyms: to take pleasure in- collocation

to revel (in) –verb

pleasurable – adjective

relish - noun

III. CONCLUSION

In summary, in our modern life tourism industry has a great role not only in our country but also in the whole world. Tourism is a basic source of finance which supports the country economically, moreover we can call it a "bridge" which provides hospitality, traditions and customs, formed from past till now, between a great variety of nations. It is natural that, a huge amount of demand for tourism and travel causes a requirement developing in order to supply the communication among the society. So our main purpose to write this article is giving much more information about phrases, idioms and their etymology with examples related to the tourism and travelling. It is hoped that, this article will be both useful and valuable to improve your lexicology and shows how you can explain your imagination. Tourism expressions and idioms are an essential part of culture as they reflect the unique language, customs, and traditions of a particular region or country. They provide travelers with insight into the local way of life and help them better understand the cultural nuances of the places they visit.

Expressions and idioms related to tourism also play a significant role in promoting cultural exchange and communication between people from different backgrounds. By learning these phrases, tourists can show respect for the local culture, build rapport with locals, and gain a deeper appreciation for their experiences.

Moreover, tourism expressions and idioms can also be used to promote a destination's tourism industry by creating an emotional connection with potential visitors. For example, slogans such as "I Love New York" or "Amazing Thailand" evoke a sense of excitement and curiosity in travelers, encouraging them to explore the destination further. In conclusion, tourism expressions and idioms are crucial in promoting cultural understanding, facilitating communication between

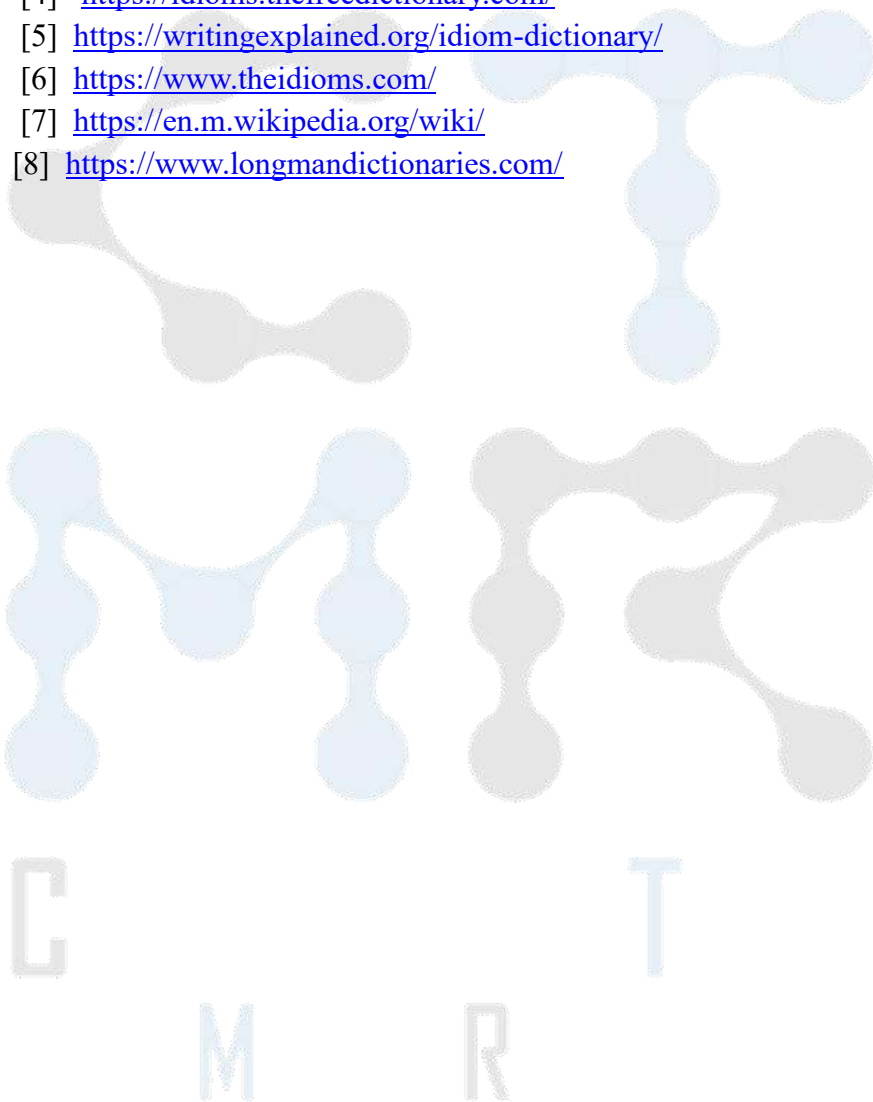
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people from different backgrounds, and promoting destinations to potential travelers. As such, it is important for travelers to learn these phrases as part of their preparation for visiting new places.

REFERENCES

- [1] Bobur Togaev. Tourism and travel idioms in English and Uzbek languages. International Journal of Innovative Research. Volume 9, Issue 11, November 2020
- [2] <https://www.dictionary.com/>
- [3] CALD3- Cambridge Advanced Learner's Dictionary. Third edition.
- [4] <https://idioms.thefreedictionary.com/>
- [5] <https://writingexplained.org/idiom-dictionary/>
- [6] <https://www.theidioms.com/>
- [7] <https://en.m.wikipedia.org/wiki/>
- [8] <https://www.longmandictionaries.com/>



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Annotation : In this article, we have gone through the content and essence of slang, the quality of colloquial language in English. In addition, the topic was discussed with the help of examples.

Key words : teenagers , Colloquial language , social group

This form of non-literary speech is like "slang" in English or "jargon" and "argo" in Uzbek. They will be understandable among teenagers, young people and representatives of a certain group and industry. Thus, slangs are words that live in the modern language and are considered inappropriate for use in literary language. Also, many slang words and phrases are incomprehensible to the general public. Because most slangs are used in a figurative sense and they are often borrowed from foreign languages, their dialects and slangs. The concept of slang has increasingly attracted the attention of modern philology. Currently, there are many definitions of slang, which often conflict with each other. These controversies concern, first of all, the scope of the concept of "slang": the dispute, in particular, is about whether to include in slang only expressive, ironic words that are synonymous with literary equivalents, or all non-standard vocabulary. , its use is frowned upon among educated people. It is worth noting that the term "slang" is more often used in English, although recently it has been actively used in relation to the Russian language. Often the word "slang" is used as a synonym for "slang". Therefore, finally, it makes sense to try, firstly, to give a more precise definition of slang, and secondly, to clarify the difference (or identity) between the concepts of slang and slang. It is known that there are still doubts about the origin of the word "slang" in modern linguistics. According to one version, the slang comes from sling ("throw", "throw"). In such cases, they remember the archaic word for shaking one's jaw - "to speak violent and insulting speeches." As a result of the disappearance of the word thieves, that is, originally the language of thieves was about the language of "thieves". It is not known when the word slang first appeared in colloquial speech in England. 'lum. It was first recorded in writing in England in the 18th century. It then came to mean 'insult.' Around 1850, the term came into wider use as a label for 'illegal' colloquial vocabulary. At the same time, the synonyms of the word slang appear - lingo, used mainly in the lower strata of society, and argot - preferred by the colored population. "shown, for example, the poetic "dithyramb" descriptions of slang as "lewd colloquial speech" or slang as a "beat of the tongue" (D. Galsworthy); or "slang is a language that rolls up your sleeves, spits in your palm and gets to work" Karl. Sandburg) , this "poem is a common man" and so on. It is clear that in the scientific sense, such definitions are not very important, although they still show that jargon is considered a common language of the people and serves as a basis for creating a national dictionary. Check out some of the many scholarly definitions of slang. In Russian linguistics, V.A. Khomyakova : "Slang is a relatively stable, widely used, stylistically defined (abbreviated) lexical layer (nouns, adjectives and verbs denoting everyday events, objects, processes and symbols) for a certain period, a component of expressive folk language is a part of it. Slang is vocabulary that is used between people who belong to the same social group and who know each other well. Slang is very informal language. It can offend

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people if it is used about other people or outside a group of people who know each other well. We usually use slang in speaking rather than writing. Slang normally refers to particular words and meanings but can include longer expressions and idioms . Some current examples:

He's a geek. (someone who is felt to be strange because they spend all their time studying)
[teenager speaking about some elderly people in a park]

Look at those old fogeys on the bench!

It's all gone pear-shaped. (wrong, not as we expected)

While slang may be acceptable in casual speaking situations, it is not appropriate in formal writing. Colloquial language such as clichés, figures of speech, and idioms should also be avoided in academic writing. Colloquialisms are the linguistic style to describe casual communication. Colloquialism is the most commonly used functional way of speech. It is employed in day to day conversation and many informal contexts. Interjections and expressive devices are frequent within colloquialism. A lot of colloquial languages contain 'slang' but some, however, do not. Slang, when used in colloquial language, is usually associated and possibly restricted to particular social groups. Colloquial language and expressions could be things like informal words, phrases, and slang words. They are used by writers to create a sense of community and society. Often, the way an author speaks will translate into their writing.

Writers will also use colloquial language intentionally too, even if it is not common to them. They do this to give their writing a sense of realism and to give it more authenticity. For example, in a fictional story that's set in America, a writer may use colloquial language to give the reader a feeling like they're there with the characters.

There are numerous different informal versions of the standard formal language. We have included some examples below:

'Wanna' -Want to

'Y'all' -You all

Slang is highly informal and is often used in colloquial speech. It is a part of a language that is usually outside of conventional or standard usage and that may consist of both newly coined words and phrases and of new or extended meanings attached to established terms. More often, slang serves social purposes: to identify members of a group, to change the level of discourse in the direction of informality, to oppose established authority. Sharing and maintaining a constantly changing slang vocabulary aids group solidarity and serves to include and exclude members

REFERENCES:

1. PQ 1875 "Chet tillarni o'rganish tizimini yanada takomillashtirish chora-tadbirlari tovgvrisida" gi qaror. " Xalq so'zi" gazetasi, 2-bet. 2012 yil,10-dekabr
2. Boswood, T. (1997). New Ways of Using Computers in Language Teaching (New Ways in Tesol Series II), California: Teachers of English to Speakers of Other Languages.
3. Harmer, J. (2007). How to teach English, Harlow, Essex: Pearson-Longman

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**МЕТОДИКА ИСПОЛЬЗОВАНИЯ ЦИФРОВЫХ ОБРАЗОВАТЕЛЬНЫХ
ТЕХНОЛОГИЙ В ФОРМИРОВАНИИ ПРОФЕССИОНАЛЬНОЙ
КОМПЕТЕНТНОСТИ СТУДЕНТОВ**

Аннотация. Научная статья исследует роль и влияние цифровых образовательных технологий на развитие профессиональных навыков и знаний учащихся. Современные образовательные средства и технологии предоставляют уникальные возможности для улучшения качества образования, персонализации обучения и обогащения учебного опыта.

Статья начинается с обзора литературы, где рассматриваются основные тенденции и исследования в области цифрового образования. Затем она описывает методологию, включая исследования исследователей, как иностранных, так и российских, затрагивающих тему цифровых технологий в образовании.

Статья подробно рассматривает методику использования цифровых образовательных технологий, предоставляя примеры и иллюстрации, включая использование платформы Moodle для обучения иностранному языку. Она также предоставляет практические рекомендации по использованию цифровых технологий в образовании.

В заключении, статья подводит итоги влияния цифровых технологий на профессиональную компетентность студентов, обращая внимание на их позитивное воздействие на учебный процесс и будущую карьеру студентов.

Эта статья представляет собой важный вклад в понимание роли цифровых технологий в образовании и их способности формировать профессиональные навыки студентов, делая образование более доступным, интерактивным и эффективным.

Ключевые слова: цифровые образовательные технологии, профессиональная компетентность, образование, методика обучения, интерактивное обучение, персонализированное обучение, платформа moodle, иностранный язык, влияние технологий на образование, обучение иностранным языкам.

**METHODOLOGY FOR THE USE OF DIGITAL EDUCATIONAL
TECHNOLOGIES IN DEVELOPING STUDENTS' PROFESSIONAL COMPETENCE**

Abstract. The scientific article explores the role and impact of digital educational technologies on the development of students' professional skills and knowledge. Modern educational tools and technologies provide unique opportunities for enhancing the quality of education, personalizing learning, and enriching the learning experience.

The article begins with a literature review, examining key trends and research in the field of digital education. It then describes the methodology, including studies by researchers both foreign and Russian, addressing the topic of digital technologies in education.

The article provides a detailed examination of the methodology for using digital educational technologies, offering examples and illustrations, including the use of the Moodle platform for foreign language instruction. It also offers practical recommendations for integrating digital technologies into education.

In conclusion, the article summarizes the impact of digital technologies on students' professional competence, highlighting their positive influence on the learning process and students' future careers.

This article constitutes a significant contribution to understanding the role of digital technologies in education and their capacity to shape students' professional skills, making education more accessible, interactive, and effective.

Keywords: digital educational technologies, professional competence, education, teaching methods, interactive learning, personalized learning, moodle platform, foreign language, influence of technology on education, teaching foreign languages.

Введение.

Современное образование стоит перед вызовом не только обеспечить студентов академическими знаниями, но и развивать их профессиональные навыки и компетентности, необходимые для успешной карьеры в быстро меняющемся мире. В этом контексте, цифровые образовательные технологии (ЦОТ) становятся все более важными инструментами для формирования профессиональной компетентности студентов.

Цифровые образовательные технологии представляют собой широкий спектр современных инструментов, позволяющих интегрировать информацию и коммуникацию в образовательный процесс. Эти технологии включают в себя разнообразные программы, приложения, онлайн-ресурсы, виртуальные классы и множество других инновационных методов обучения. Их роль в современной образовательной системе нельзя недооценивать, поскольку они предоставляют уникальные возможности для студентов, обогащая их образовательный опыт и способствуя развитию не только академических, но и практических навыков.

Профессиональная компетентность студентов – ключевой аспект современного образования, который включает в себя способность применять полученные знания и умения в реальных профессиональных ситуациях. Это включает в себя адаптацию к новым технологиям, решение сложных задач, коммуникативные навыки и умение работать в коллективе. Цифровые образовательные технологии могут эффективно способствовать формированию этих компетентностей, предоставляя студентам доступ к средам, где они могут практиковать и углублять свои навыки в реалистичных условиях:

А. Определение цифровых образовательных технологий.

Цифровые образовательные технологии представляют собой множество средств, которые используют цифровые и информационные технологии для обогащения и улучшения образовательного процесса. Они включают в себя разнообразные инструменты, такие как компьютеры, смартфоны, планшеты, программы для дистанционного обучения, виртуальные классы и многие другие. Основной чертой ЦОТ является возможность доступа к информации, интерактивности и индивидуализации обучения.

Б. Роль цифровых технологий в современном образовании.

Цифровые образовательные технологии имеют огромное влияние на современную образовательную среду. Они позволяют создавать интерактивные и инновационные методы обучения, а также обогащать учебные материалы разнообразными мультимедийными и интерактивными элементами. Это способствует более глубокому пониманию учебного материала и увеличивает мотивацию студентов.

Цифровые технологии также делают образование более доступным, особенно через дистанционное обучение. Студенты могут получать образование из любой точки мира, общаться с преподавателями и одногруппниками онлайн, что увеличивает гибкость обучения.

С. Профессиональная компетентность студентов: понятие и значение.

Профессиональная компетентность студентов включает в себя навыки, знания и способности, необходимые для успешной карьеры в выбранной области. Это включает в себя как технические знания, так и мягкие навыки, такие как коммуникация, управление временем, решение проблем и критическое мышление.

Сегодня работодатели все больше ценят профессиональную компетентность студентов, и это становится ключевым фактором при найме. Цифровые технологии могут содействовать формированию этих компетентностей, предоставляя студентам доступ к инструментам для практического опыта и обучения в условиях, близких к реальным рабочим ситуациям.

Д. Связь между цифровыми образовательными технологиями и формированием профессиональной компетентности

Существует растущий объем исследований, посвященных роли ЦОТ в формировании профессиональной компетентности студентов. Многие исследования свидетельствуют о том, что правильно интегрированные цифровые технологии могут улучшить процесс обучения и способствовать развитию навыков, востребованных на рынке труда. Однако есть и ограничения и проблемы, такие как доступ к технологиям, необходимость подготовки преподавателей и вопросы качества образования.

В данной научной статье мы предлагаем исследовать методики использования цифровых образовательных технологий в контексте формирования профессиональной компетентности студентов. Мы рассмотрим разнообразные аспекты этой проблемы, включая педагогические методики, примеры успешных практик и анализ результатов исследований. Наша цель - выявить, какие стратегии и инструменты эффективно способствуют развитию профессиональных компетентностей студентов с использованием ЦОТ, и какие вызовы и ограничения могут возникнуть в процессе. Мы надеемся, что результаты данного исследования предоставят полезные рекомендации и вдохновят дальнейшие усовершенствования в области образования с использованием современных цифровых технологий.

Методология исследования.

Для осуществления обзора литературы были использованы разнообразные академические источники, включая научные статьи, книги, отчеты о исследованиях и актуальные публикации в области образования, цифровых технологий и формирования профессиональной компетентности студентов. Была проведена систематизация и анализ существующих исследований и теорий, связанных с использованием цифровых образовательных технологий для формирования профессиональной компетентности студентов.

Критерии включения и исключения.

Для включения в обзор литературы статьи и исследования должны были соответствовать следующим критериям:

- Исследования, которые обсуждают применение цифровых образовательных технологий в образовательном контексте.
- Исследования, которые анализируют влияние цифровых технологий на профессиональную компетентность студентов.
- Исследования, проведенные в академически признанных источниках.

Процесс анализа и синтеза.

Исследовательский процесс включал в себя следующие этапы:

- Поиск и отбор исследований, соответствующих теме обзора литературы.
- Анализ выбранных исследований для выявления ключевых тем и результатов.
- Синтез и систематизация полученных данных с целью выделения общих тенденций и тем, а также выявления противоречий и разногласий между исследованиями.

Ограничения.

Следует отметить, что обзор литературы ограничен доступными исследованиями и данными, а также субъективным выбором авторов. Поэтому статья может не охватывать все существующие исследования и точки зрения по данной теме.

Авторы и исследователи.

В данной статье основное внимание уделено работам таких авторов, как Е.Бонк, А.Борисов, Т.Смирнова, И.Попова, Р. Mishra и М. J. Koehler, R. S. Puentedura, L. Anderson и использованием цифровых образовательных технологий для формирования профессиональной компетентности студентов. Их работы предоставили важные вклады в данную область и помогли определить текущие тенденции и лучшие практики.

Методика использования цифровых образовательных технологий.

А. Основные виды цифровых образовательных технологий

1. Виртуальные и дополненные реальности (VR и AR): Эти технологии предоставляют студентам возможность погрузиться в виртуальное или дополненное пространство, где они могут проводить виртуальные экскурсии, тренировки, исследования и даже выполнение сложных задач в реалистичных средах. Пример: Студенты медицинской школы могут использовать VR для практики хирургических вмешательств в виртуальной среде.

2. Онлайн-платформы для обучения: Платформы, такие как Coursera, edX и Udeemy, предоставляют доступ к множеству онлайн-курсов, что позволяет студентам изучать разнообразные предметы и развивать навыки на практике. Пример: Студенты могут записаться на онлайн-курс по программированию и усваивать необходимые навыки.

3. Интерактивные образовательные приложения: С множеством приложений для мобильных устройств и планшетов студенты могут учиться в интерактивной и игровой форме. Пример: Приложения для изучения языков, такие как Duolingo, помогают студентам улучшать свои языковые навыки.

Б. Педагогические методики и подходы.

4. Обратное обучение (Flipped Classroom): Преподаватель предоставляет учебный материал онлайн до урока, а классическое занятие используется для дискуссий, обсуждений и практических задач. Пример: Преподаватель выкладывает видеолекции в

Интернет, и студенты просматривают их перед уроком, чтобы на уроке активно обсуждать и практиковать материал.

5. Проектное обучение: Студенты работают над проектами, которые имеют практическое применение в их области. Пример: Студенты архитектурного факультета могут использовать специализированные программы для проектирования зданий и создания виртуальных моделей.

6. Индивидуальное обучение: Студенты имеют возможность индивидуально выбирать учебный материал и темп обучения с использованием цифровых платформ. Пример: Студенты могут выбирать курсы и модули, соответствующие их интересам и целям.

В. Примеры успешного применения цифровых образовательных технологий.

7. Медицинская симуляция: Медицинские учебные центры используют VR и AR для обучения студентов медицинских специальностей, позволяя им проводить виртуальные операции и диагностические процедуры.

8. Сетевые проекты: Студенты могут сотрудничать онлайн с учащимися из других стран в рамках проектов, что способствует развитию межкультурных навыков и коммуникации.

9. Электронные портфолио: Студенты могут создавать электронные портфолио, в которых отражают свой профессиональный рост и достижения, что полезно для будущего трудоустройства.

Использование цифровых образовательных технологий в сочетании с современными педагогическими методиками может значительно обогатить образовательный опыт студентов и способствовать формированию их профессиональной компетентности.

Пример: Курс английского языка на платформе Moodle.

Цифровые технологии:

Преподаватель создает курс английского языка на платформе Moodle для группы студентов, изучающих иностранный язык. Курс включает следующие элементы:

Интерактивные учебные материалы: Преподаватель размещает учебные материалы, включая видеуроки, аудиозаписи, учебники и онлайн-грамматические упражнения, которые студенты могут изучать в удобное для них время.

Форум для общения: В рамках курса создается форум, где студенты могут обсуждать языковые темы, обмениваться мнениями и задавать вопросы преподавателю и сверстникам.

Онлайн-тесты и задания: Для проверки знаний и практики студенты выполняют онлайн-тесты и языковые задания. Например, они могут создавать эссе, записывать аудио- и видеответы, и даже участвовать в интерактивных диалогах.

Вебинары: Преподаватель может организовывать виртуальные вебинары, на которых студенты могут общаться и практиковать разговорный язык в реальном времени.

Пример успешного применения:

Студенты, изучающие английский язык на курсе в Moodle, могут изучать и практиковать язык с учетом своего уровня подготовки и темпа обучения. Они могут просматривать уроки, слушать аудиоматериалы, выполнять грамматические упражнения и участвовать в дискуссиях в форуме.

Путем регулярной практики и обратной связи от преподавателя студенты развивают навыки чтения, письма, разговорной речи и понимания на английском языке. Участие в

вебинарах также позволяет им улучшить разговорные навыки, общаясь с преподавателем и сверстниками в реальном времени.

Этот пример показывает, как платформа Moodle может быть эффективно использована для обучения иностранному языку, предоставляя студентам доступ к разнообразным учебным ресурсам и возможности для практики и общения на иностранном языке.

1. **Онлайн-курсы и вебинары:** Преподаватель создает специализированный онлайн-курс для студентов, охватывающий основы веб-разработки. В этом курсе он размещает видеоуроки, текстовые материалы, задания и тесты.

2. **Интерактивные практические задания:** Студенты могут использовать онлайн-среды разработки, такие как Moodle или GitHub, чтобы выполнять практические упражнения, создавая веб-приложения, а также разрабатывая свои проекты.

3. **Онлайн-форум и чат для общения:** Студенты имеют доступ к форуму и чату, где они могут задавать вопросы, обсуждать сложности и обмениваться информацией с преподавателем и другими студентами.

4. **Оценка и обратная связь:** Преподаватель может оценивать выполнение заданий и предоставлять обратную связь онлайн, что позволяет студентам непрерывно совершенствовать свои навыки.

Пример успешного применения:

Студент учится на курсе веб-разработки с использованием вышеописанной методики. Она изучает разработку веб-приложений, включая HTML, CSS и JavaScript. В процессе обучения студент выполнил ряд проектов, начиная с создания простых веб-страниц и заканчивая более сложными приложениями. Он также активно участвует в форуме и обменивается опытом с другими студентами.

В результате обучения студент получил не только теоретические знания, но и практические навыки разработки веб-приложений. Он создал собственный веб-портфолио, в котором разместил свои проекты, что помогло ему найти работу в области веб-разработки уже во время учебы.

Этот пример иллюстрирует, как с использованием цифровых образовательных технологий и интерактивных методов обучения студенты могут приобретать практические навыки, необходимые для успешной карьеры в сфере информационных технологий.

Влияние цифровых образовательных технологий на профессиональную компетентность студентов может быть существенным и многоаспектным. Вот некоторые из ключевых влияний, которые они могут оказывать:

1. **Расширение доступности образования:** Цифровые технологии позволяют студентам из разных частей мира получать образование, что раньше было затруднено. Это расширяет возможности профессиональной подготовки для тех, кто не может физически присутствовать в учебных заведениях.

2. **Интерактивное обучение:** Цифровые технологии создают интерактивные образовательные среды, где студенты могут учиться путем взаимодействия с мультимедийными материалами, веб-приложениями и симуляциями. Это способствует лучшему пониманию и запоминанию материала.

3. **Индивидуализированное обучение:** Персонализация образования с помощью технологий позволяет студентам учиться в собственном темпе, выбирать курсы и модули в

соответствии с интересами и потребностями, что способствует более эффективному формированию профессиональной компетентности.

4. **Практические навыки и симуляции:** Цифровые технологии предоставляют студентам возможность разрабатывать практические навыки в безопасной среде. Например, медицинские студенты могут проводить виртуальные операции, а инженеры - проектировать модели.

5. **Глобальное сотрудничество:** Цифровые технологии облегчают сотрудничество между студентами и преподавателями со всего мира. Это позволяет студентам изучать межкультурные аспекты и развивать международные навыки.

6. **Оценка и отслеживание:** Цифровые платформы позволяют более эффективно оценивать знания и навыки студентов. Отслеживание и анализ данных помогают выявлять слабые места и рост профессиональной компетентности.

7. **Учебные ресурсы:** Интернет и цифровые библиотеки предоставляют доступ к богатым учебным ресурсам, что обогащает образовательный опыт студентов и позволяет им глубже изучать предметы.

8. **Обратная связь и самооценка:** С помощью цифровых средств студенты могут получать более быструю и детальную обратную связь от преподавателей и сверстников, что способствует улучшению их навыков.

9. **Развитие информационной грамотности:** Студенты развивают навыки поиска, анализа и интерпретации информации, что важно в современном информационном обществе.

В целом, цифровые образовательные технологии играют ключевую роль в развитии профессиональной компетентности студентов, предоставляя им доступ к широкому спектру ресурсов и инструментов для обучения и развития. Они также усиливают акцент на практических навыках и индивидуализированном обучении, что соответствует современным потребностям рынка труда.

Практические рекомендации.

А. Для преподавателей:

1. **Интеграция цифровых технологий:** Преподаватели могут активно исследовать и интегрировать современные цифровые образовательные технологии в свои курсы, чтобы сделать обучение более интерактивным и доступным.

2. **Обеспечение доступности:** Уделяйте внимание доступности технологий для всех студентов, включая тех, у кого есть ограниченные ресурсы или специальные потребности.

3. **Поддержка и обратная связь:** Предоставляйте студентам поддержку и регулярную обратную связь в процессе обучения, что поможет им лучше понимать и использовать цифровые инструменты.

Б. Для студентов:

4. **Активное участие:** Используйте цифровые образовательные технологии для активного участия в учебном процессе, принимайте участие в дискуссиях, заданиях и практических проектах.

5. **Самостоятельное изучение:** Используйте онлайн-ресурсы для самостоятельного изучения и практики. Это поможет вам глубже понять материал и развить профессиональные навыки.

6. Сотрудничество: Взаимодействуйте с однокурсниками и учителями через форумы, чаты и онлайн-проекты, чтобы обмениваться знаниями и опытом.

Таким образом использование цифровых образовательных технологий имеет большой потенциал для формирования профессиональной компетентности студентов. Они позволяют создавать более гибкие и доступные образовательные среды, обогащать учебный процесс интерактивными методами и предоставлять студентам возможность развивать навыки, востребованные на рынке труда.

Однако для успешной реализации этого потенциала необходима внимательная интеграция технологий, обеспечение доступности и поддержки для всех студентов, а также участие взаимодействия между преподавателями и студентами. С учетом этих факторов, цифровые образовательные технологии могут значительно обогатить образовательный опыт и способствовать успешному формированию профессиональной компетентности студентов.

Заключение.

Цифровые образовательные технологии играют существенную роль в современном образовании и влияют на формирование профессиональной компетентности студентов. Их воздействие охватывает множество аспектов, начиная от интерактивного обучения и индивидуализации процесса обучения, и заканчивая развитием практических навыков и международного сотрудничества.

Цифровые технологии позволяют создавать образовательные среды, где студенты могут учиться вне стандартных рамок учебных заведений и в удобное для них время. Они также поддерживают активное взаимодействие, обеспечивая студентам доступ к мультимедийным материалам, форумам и вебинарам, что обогащает их образовательный опыт.

Особенно важно, что цифровые образовательные технологии способствуют развитию навыков, востребованных на современном рынке труда, что делает обучение более релевантным и полезным для будущей профессиональной карьеры студентов.

Однако успешная интеграция цифровых технологий в образование требует внимания к вопросам доступности, качественной поддержки, обратной связи и безопасности. Постоянное совершенствование и адаптация технологий необходимы для обеспечения эффективности образования.

В целом, цифровые образовательные технологии предоставляют уникальные возможности для улучшения процесса обучения и формирования профессиональной компетентности студентов, адаптируя образование к потребностям современного мира.

Список использованной литературы.

1. Бережной И. В., Медведев А. А. (2015). "Развитие и использование образовательных ресурсов сети Интернет в процессе обучения". с 300.

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

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2. Галеев Р. Р., Козлова О. Ю. (2020). "Использование цифровых технологий в образовательном процессе: преимущества и риски". с 432.
3. Данильченко Д. П., Кузнецов А. С. (2017). "Эффективное использование электронных образовательных ресурсов в учебном процессе". с 120.
4. Комаров А. В., Митрофанова А. В. (2016). "Применение электронных образовательных ресурсов в образовательном процессе". 7(1), 50-55
5. Радаев В. В., Шарапова Т. В. (2019). "Интернет-технологии в образовании: современное состояние и перспективы развития". 2(1), 3-7.
6. Anderson, T. (2008). *Theory and Practice of Online Learning*. Athabasca University Press.
7. Bates, A. W., & Sangrà, A. (2011). *Managing Technology in Higher Education: Strategies for Transforming Teaching and Learning*. Jossey-Bass.
8. Garrison, D. R., & Anderson, T. (2003). *E-Learning in the 21st Century: A Framework for Research and Practice*. Routledge.
9. Koehler, M. J., & Mishra, P. (2009). What is Technological Pedagogical Content Knowledge? *Contemporary Issues in Technology and Teacher Education*, 9(1), 60-70.
10. Prensky, M. (2001). Digital Natives, Digital Immigrants. *On the Horizon*, 9(5), 1-6.
11. Siemens, G. (2005). Connectivism: A Learning Theory for the Digital Age. *International Journal of Instructional Technology and Distance Learning*, 2(1), 3-10.
12. Siemens, G., & Long, P. (2011). Penetrating the Fog: Analytics in Learning and Education. *EDUCAUSE Review*, 46(5), 30-32.

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Abstract. This article is about violence (aggression) against children, which is becoming the main problem of the 21st century. We have considered this violence in the case of children and given important suggestions and instructions

Keywords: bullying, online bullying, online safety, UNICEF. Sexual violence, cyber security, internet, gender equality.

Introduction:

Bullying negatively affects a child's physical, emotional, mental, and social development. It can have lifelong negative consequences for the health of children and the well-being of families. Healthy and stable socio-spiritual environment in society and family today. Ensuring peace and harmony and organizing targeted assistance to troubled and troubled families, especially women and children in such families, is on the agenda of our state and government. Has become one of the current issues.

What kinds of violence do children face? Physical abuse includes the use of physical force that causes harm or injury, such as hitting, kicking, or shaking. Sexual abuse is any act of sexual exploitation or abuse against a child in any form - acts such as rape, pornography or sexual harassment includes. Emotional abuse Emotional abuse involves behavior that undermines a child's self-esteem and personal development. It takes the form of constant criticism, humiliation or humiliation. Ignoring a child's basic needs, including food, shelter, and health. means not providing education and emotional support. Online Bullying Children around the world are being bullied online today. Get in touch with them virtually, take personal photos. Taking their information and thus intimidation is increasing more and more.

The development of digital technology worldwide, the use of new technologies, web cameras and mobile phones in all sectors, facilitates the online sexual exploitation of children, including the display of videos of child sexual abuse, often for profit.

There is a growing number of children's games on the Internet, some of which support various forms of child sexual exploitation and abuse, and are constantly evolving. Web applications are becoming search, recruitment and enforcement tools. Experts believe that tens of thousands of children around the world are being sexually exploited online and the number is growing. Victims can be boys or girls, very young children and adolescents, representatives of any ethnic and socio-economic groups.

A perpetrator who has access to a potential child victim uses psychological manipulation and coercion to encourage the child to participate in sexual activity. After that, the criminal contacts the client via the Internet and organizes a video broadcast of sexual acts for a certain fee. Thus, the child becomes an object of commercial sexual exploitation and violence.

"In order to solve the problem of violence against children, improving the knowledge and skills of parents, raising children's awareness, and improving the capacity of personnel in the field of social services and child protection, as well as strong legislation and an institutional framework,

including data collection and management requires a system," said the representative of UNICEF in Uzbekistan[1].

Analysis and results.

Violence against children has become a serious problem in society. According to UNICEF data, 6 out of every 10 children between the ages of 2 and 14 in the world experience physical violence every day. Every 5 minutes a child dies from violence. These numbers change regularly.

According to UNICEF, according to global data, the Internet. one third of users are children under 18 years of age. and every half second, a child accesses the Internet for the first time. However, these opportunities can also be associated with serious risks and threats for children in various forms. These include cyber-bullying, cyber-stalking, and cyber-grooming, which is malicious child friendly relations.

There is a lot of useful and interesting information on the Internet, and if it is used properly, it will be beneficial for the child. According to Kaspersky Lab research, parents do not know how to keep their children safe online, and 84 percent of parents may encounter their children online. They worry about threats.

According to statistics, more than 90 percent of children between the ages of 7 and 12 worldwide use smartphones and tablets connected to the Internet. Although parents are concerned about their child's exposure to online threats, they feel it is wrong to deprive them of this. Child psychologist Emma Kenny says parents are often afraid their children will watch violent videos or become addicted to the internet. But exposure to online threats has been proven to have a strong impact on a child's psyche. As a result of a survey conducted, 60 percent of families said that they have witnessed online threats with their children. 13 percent of children were victims of violence. And 14 percent suffer from sharing their personal and other information. Because they easily reveal their personal information online and end up using it to become "online friends" who took advantage of it questionnaire Uzbekistan in the example comb we go out.

Main results of the survey on the causes of gender violence (in Uzbekistan) More than half of the respondents (63) believe that girls are more likely to become victims of violence. In addition, female respondents (65%) stated that they are more likely to be the target of violence than male respondents (50%). More men (10%) than women (5%) believe that boys are more likely to be victims of violence.

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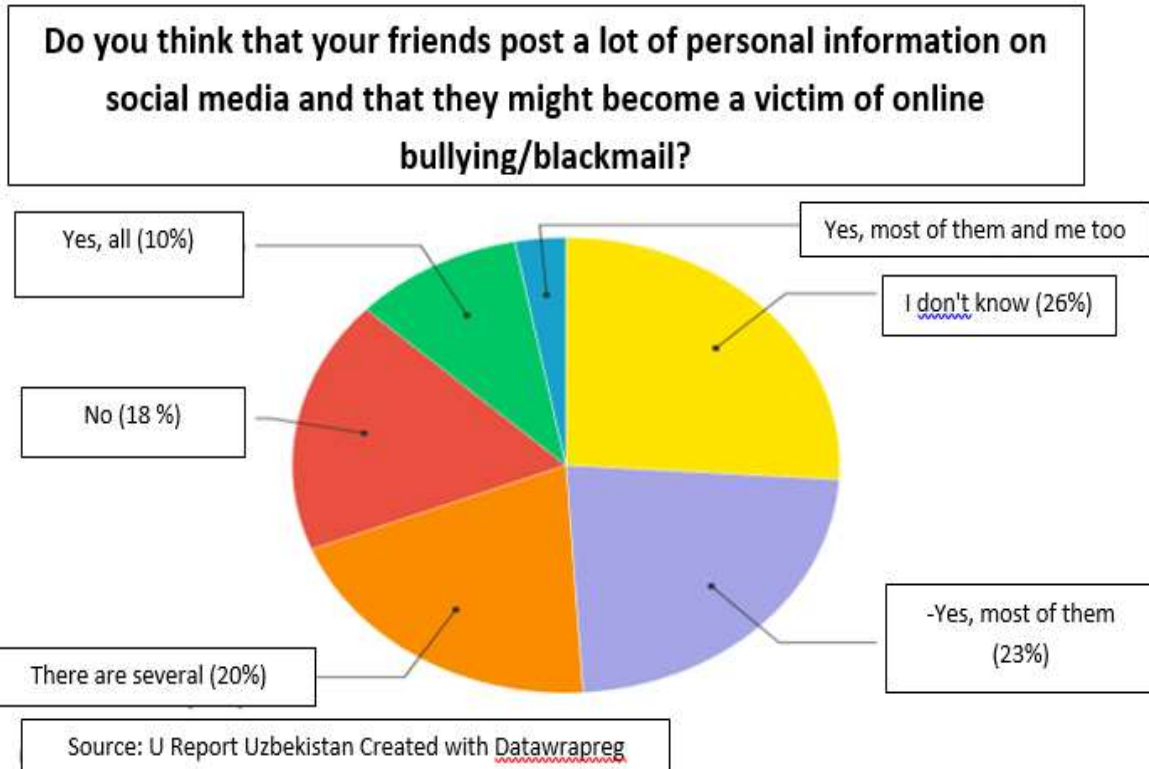


Figure 1

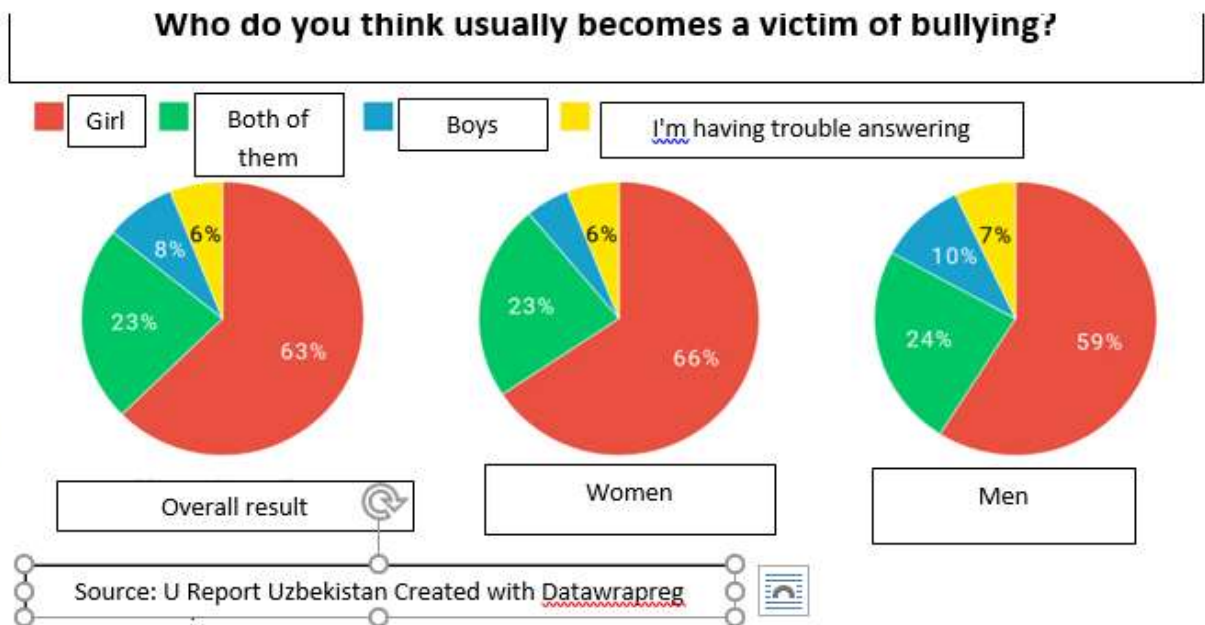


Figure-2

36% of my respondents believe that they or their friends often share personal information on the Internet, which can lead to online violence, insults and blackmail. 23% of my respondents believe that the majority of their friends. 10% all my friends" and 3% answered "most of my friends and me too" 1/5 of the respondents indicated that they have several friends with whom they often share personal information on social networks, and this is because online They stated that it increases the probability of becoming a victim of violence.

Note: Survey data does not reflect the views of UNICEF, is not considered representative, and reflects the views of the more than 8,900 respondents to this U-Report survey.

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Although 41% of respondents believe that girls are more vulnerable to cyberbullying, 40% of respondents believe that both girls and boys are equally vulnerable to online bullying and blackmail. Female respondents (45%) believe that girls are more likely to be bullied online than males (39%) More males (7%) compared to females (3%) believe that it is boys in the online environment they think they are vulnerable

Online sexual exploitation of children challenges law enforcement officers, prosecutors and judges to learn how to respond to new challenges. In most countries of the world, they are not sufficiently prepared to detect this crime, conduct investigations, collect evidence, cooperate with Internet providers and, accordingly, file charges in courts.

Criminals use advanced encryption tools and have networks of technologies and platforms at their disposal that hide ordinary IP addresses. This makes them difficult or impossible to identify. In addition, it is very difficult to persuade family members and other persons who contributed to the commission of the crime to cooperate with the investigation. Lack of special support for affected children, especially boys, remains a widespread problem.

Suggestions.

1. Limit the time of using the Internet. Children need a template for using the Internet Ask them how much time is enough for them to spend on the Internet, set an agreed time and always monitor it.

2. Teaching the child to distinguish between real life and the virtual world. Explaining to children that the information on the Internet should be compared with the situation in real life. They know and understand that they need to be careful in the online world as in real life.

3. Self-confidence helps children develop self-esteem, perseverance and critical thinking skills, allowing them to recognize dangerous situations and respond appropriately.

4. Incorporating digital safety information into the school curriculum and continuing to provide emotional support to children who have had negative online experiences in peer-to-peer support groups at school

5. Making the Internet less important and more useful for children

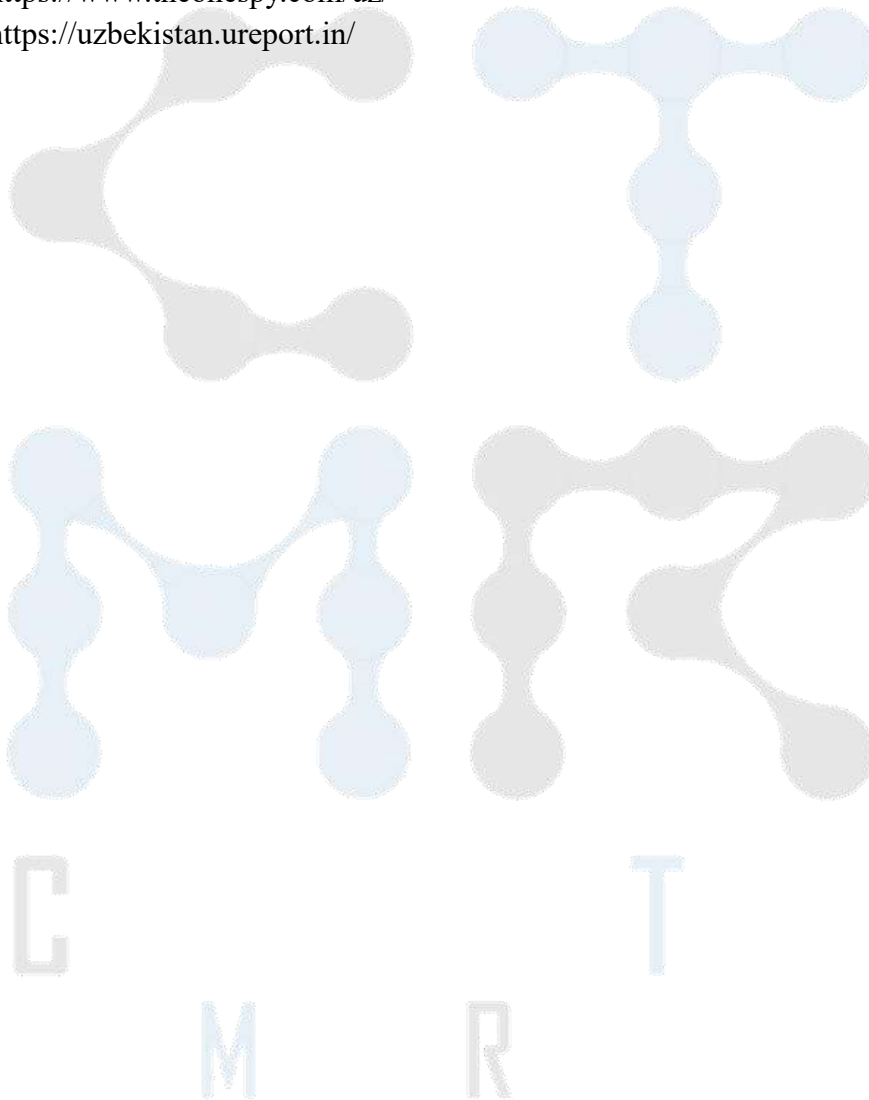
The Internet is a two-pronged technology that offers both risks and dangers. When used successfully, it can help educate children and introduce them to the world safely. may encounter. They may be exposed to sexually explicit material and unedited information or inappropriate content. Makes the Internet kid-friendly with parental controls It also blocks them from accessing adult-oriented and inappropriate websites.

Summary

We must not forget that prevention of violence against children is the responsibility of society. To make our children aware of this, the victims through support, we can create a safer and more secure environment for children. Having a detailed understanding of the virtual world allows us to talk more confidently about it with children. Be a part of the world where the child spends time, and he will be willing to share with you the details of his online life and listen to your advice.

List of used literature

1. Wurtele, S. K. Sexual interest in children among an online sample of men and women prevalence and correlates
2. K.Wurtele, D. A. Simons. T. Moreno // Sexual Abuse A Journal of Research and Treatmentruen-2014-Vol 26, no. 6-P 546-568-
3. <https://zamin.uz/>
4. <https://volontyor.uz>
5. <https://kun.uz/>
6. <https://www.theonespy.com/uz/>
7. <https://uzbekistan.ureport.in/>



MAIN MACROECONOMIC INDICATORS AND THEIR CALCULATION.

Amirova Dilshoda Hasan qizi

Ochildiyeva Naima Mengziya qizi

Eshmirzayeva Qurbonoy Bahromovna

Mamaraimova Hilola Abduqahhor qizi

Termiz agro texnologiyalar va innovatsion rivojlanish instituti

Annotation: Macroeconomic indicators are essential for understanding how a country's economy is performing. It's always useful to keep an eye out on indices as they help us understand the output of an economy and the effectiveness of economic policies. Let's learn more about how we can evaluate performance and growth!

Key words: Macroeconomic ,investor, capital export, authorized capital, dividend.

Macroeconomic indicators are important tools for policymakers that help them understand the performance of the economy. They provide information on the success or failure of the various policies implemented, like fiscal and monetary policies. Macroeconomic indicators are also useful for analysing whether current policies are on track to achieve certain economic objectives which were set before implementing the policy. Macroeconomics is the economy at the level of the national economy, which unites material production and non-material sectors at the country level. Macroeconomics includes tangible and intangible production and service sectors of the national economy. Interdependence and balanced development of all branches and production areas is required for functioning and stable growth of the national economy.

The volume of production, service provision and their growth in the national economy is determined and analyzed at the macro-economic level through a system of indicators. Through macroeconomic indicators, the state of the entire economy is analyzed and a conclusion is drawn. With their help, the state determines its economic policy. The system of macroeconomic indicators allows to display the GDP in a visual form at all stages of its movement, that is, at the stages of production, distribution, redistribution and, as a result, use.

Finally, this system of indicators reflects the state of general economic balance in the country when observing the compatibility (equality) of available resources and their use. Indicators expressing the economic situation of a particular country are called macroeconomic indicators. Macroeconomic indicators are grouped into quantitative and qualitative indicators. Macroeconomic quantitative indicators represent the economy of certain countries, while qualitative indicators reflect the economy of these countries in a relative manner. A macroeconomic model is used to analyze macroeconomic situations and determine the optimal macroeconomic policy. The macroeconomic model varies according to the degree of interdependence of the variables and the methods of exiting the crisis. Macroeconomic models based on neoclassical theory and neo-Keynesian theory mainly describe the methods of achieving economic growth. Examples of macroeconomic models are the AD-AS model, the IS-LM model, and the Solow model.

The state uses fiscal and monetary policy to regulate the economy. Fiscal policy considers the state's budget parameters and tax rates, while monetary policy changes the indicators of the money supply. Most of the major crises in the world occurred as a result of countries' incorrect macroeconomic policies or insufficient control of the economy. Economists Amy Nakamura and Jón Steinsson concluded in 2018 that even after so many crises, the results of various

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macroeconomic policies carried out by countries are not always positive and, therefore, such policies remain under criticism. Since the macroeconomic decisions taken during the COVID-19 pandemic were not effective enough, it did not help the economy or save lives as expected.

Index numbers are important performance indicators to use when evaluating the macroeconomy. They provide a basis for comparison and performance analysis. An index starts in a certain year, which is known as the base year. The base year is given the index number value of 100. The base year is also the starting point of comparison for both future and past years. Setting the base year to 100 is useful because in future years the size of the variable is likely to change (either increase or decrease) and it makes it easier to compare values based on percentages when the starting point is 100. Macroeconomics is a social science. Therefore, the timing of economic events cannot be precisely determined; it is possible to observe the behavior of macroeconomic agents and make approximate forecasts accordingly. In the process of analysis, economic models make the study of the economy much easier and explain the reasons for the main economic changes. However, many economic models have serious flaws and do not take into account important factors.

Fiscal policy (budget-tax policy) is a policy implemented by changing gross expenditures and tax rates in order to stabilize the economy. The government can use stimulatory economic policy by increasing aggregate expenditure and lowering tax rates during a crisis, and restrictive economic policy by reducing aggregate expenditure and increasing tax rates during a growth phase. Fiscal policy is divided into discrete and automatic policies according to the methods of application. Discrete policy is a well-targeted policy that includes government spending, taxes, and changes in the budget balance. Although the discretionary policy is effective, its implementation requires the approval of the legislature first. Because such decisions are not quickly reviewed, late changes may not be as effective as expected. Automatic fiscal policy means the change of budget parameters and tax rate even without government intervention. For example, the state provides benefits for every unemployed person in the economy. If a crisis occurs, the number of unemployed people will increase, and the budget expenses spent on them will also increase. Or, if the economy booms, the income of economic agents increases and they automatically start paying more taxes.

These indicators represent the general state of the economic system and are determined as a result of the activities of all participants in social production (enterprise, industry, region, state). They are used to evaluate the country's economic potential, its socio-economic development prospects. In countries transitioning to a market economy, the expanded concept of social production is followed. In this sense, social production is the production of all income-generating sectors of the economy. Here, in addition to material production, sectors providing paid services (finance, insurance, health care, education, etc.) are also part of social production. Therefore, the social product created in countries that have transitioned to a market economy includes both goods and services, and the income from the sale of goods and services is included in the national income, but the processes of providing free services remain outside of social production. Because income is not generated in networks providing free services, and in any country these networks operate at the expense of the state. As a result of the difference in the concept of social production, countries use different indicators according to their content, different methods of their calculation are used.

References:

1. Karimov I.A. World financial and economic crisis, ways and measures to eliminate it in the conditions of Uzbekistan / I.A. Karimov. - T: Uzbekistan, 2009. - 56 p.
2. Law of the Republic of Uzbekistan "On Foreign Investments". April 30, 1998. Article 3.
3. Dictionary of International Trade. Global Marketing Strategies, 2015, p.82



НЕКОТОРЫЕ ФРАЗЕОЛОГИЗМЫ НЕМЕЦКОГО ЯЗЫКА И ИХ ПЕРЕВОД НА
РУССКИЙ И УЗБЕКСКИЙ ЯЗЫКИ

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Аннотация: в данной статье рассматриваются некоторые фразеологизмы немецкого языка, а также вопросы их перевода на русский и узбекский языки.

Ключевые слова: фразеологизм, перевод на русский язык, перевод на узбекский язык.

Annotation: this article discusses some phraseological units of the German language, as well as the issues of their translation into Russian and Uzbek.

Keywords: phraseological unit, translating to Russian language, translation into Uzbek.

В данной статье рассматриваются некоторые фразеологизмы немецкого языка и вопросы их перевода на русский и узбекский языки.

Рассмотрим выражение „er kann mich am Abend besuchen“. Дословно это фразеологическое выражение означает «он может навестить меня вечером». В словаре Duden (1, С.81) данный фразеологизм толкуется следующим образом: **er usw. kann mich am Abend besuchen** (salopp; *er usw. soll mich in*

Ruhe lassen). В словаре под редакцией Д. О. Добровольского данный фразеологизм отсутствует (2). Мы предлагаем следующий перевод данного выражения на русский язык: *фамильярно*; он должен оставить меня в покое.

На узбекском языке рассматриваемое выражение звучит так: *betakalluf; u meni tinch qo'yishi lozim*.

Проанализируем теперь фразеологизм „bunter Abend“. В словаре Duden (1, С. 81) второе значение слова Abend толкуется следующим образом: [*geselliges*] *Beisammensein am Abend*. В переводе на русский язык это означает: [веселая] встреча вечером, вечеринка. Затем в словаре Duden (1, С.81) приводится выражение **bunter Abend** и его толкование: (veraltend; *Abendveranstaltung mit heiterem, abwechslungsreichem Programm*).

На русский язык данное выражение в словаре под редакцией Д. О. Добровольского (2, С.80) переводится так: **bunter Abend** вечернее эстрадное представление. Мы считаем необходимым в немецко-русском словаре дать выражению **bunter Abend** толкование, близкое толкованию в словаре Duden (1, С.81): **bunter Abend** *устаревшее выражение* вечер с увеселительной, разнообразной программой. На узбекский язык рассматриваемое выражение мы предлагаем перевести следующим образом: *eskirayotgan ibora ko'ngil ochadigan, xilma-xil dasturli kecha*.

Подвергнем анализу фразеологизм „**nicht abendfüllend sein**“. Само слово **abend|füll|lend** в словаре Duden (1, С.81) толкуется таким образом:

(*von Darbietungen*) *den ganzen Abend ausfüllend* – (об исполнении, о представлении) заполняющее, занимающее весь вечер (перевод мой А.Р.). Затем приводятся примеры: *ein abendfüllender Film; ein abendfüllendes Thema*. Интересно отметить, что в словаре Д. О. Добровольского (2, С.80) слово **abendfüllend** приводится в такой форме: „**abendfüllend** *a* полнометражный (*o* фильме); *ein abendfüllendes Programm* большая вечерняя программа“.

В словаре Duden (1, С.81) после вышеуказанных примеров приводится фразеологизм „**nicht abendfüllend sein**“, его толкование - *umgangssprachlich; eher langweilig sein, auf die Dauer wenig Interessantes bieten*, и приводится пример „*die Wiederholung alter Witze ist*

nicht abendfüllend“. В словаре Д. О. Добровольского (2) данный фразеологизм не приводится. Мы считаем необходимым включить данный фразеологизм в словарь немецко-русского словаря в следующем виде: „ **nicht abendfüllend sein** не быть занимающим целый вечер: *разговорное выражение*. быть скорее скучным, предлагать на долгое время мало интересного; пример: повторение старых шуток *не занимает целый вечер*“. В немецко-узбекском словаре мы предлагаем рассматриваемый фразеологизм привести в таком виде: „**nicht abendfüllend sein** bir kechani olmaslik, band qilmaslik: *so'zlashuv nutqida to'g'risi zerikarli bo'lmoq, ko'p vaqt davomida kam qiziqarli narsa taklif qilmoq; misol: eski hazillarni takrorlash bir kechani to'ldirmaydi*“.

Рассмотрим фразеологизм „einen Abflug machen“. Слово Abflug в словаре Duden (1, С.84) имеет два значения: „**Ab|flug**, der; -[e]s, Abflüge: 1. о. Pl. *das Weg-, Davonfliegen*: der weiche Abflug der Eule. 2. *Start eines Flugzeugs*: der Abflug verzögert sich; den Abflug einer Maschine bekannt geben;“. В первом значении слово Abflug не имеет множественного числа, означает „отлёт, вылет прочь“, приводится пример: мягкий отлёт совы. Второе значение слова Abflug переводится на русский язык „старт самолёта“, приведенные примеры переводятся следующим образом: вылет задерживается; объявлять вылет машины, самолёта.

Затем приводится фразеологизм „einen Abflug machen“, его значение *umgangssprachlich*; fortgehen, verschwinden, приводится пример: sei so gut und mach einen Abflug (1, С.84). В словаре Д. О. Добровольского (2) данный фразеологизм отсутствует. Мы предлагаем следующий перевод рассматриваемого фразеологизма на русский язык: *разговорное выражение* уйти прочь, исчезнуть; пример: будь добр, исчезни. Перевод на узбекский язык звучит так: *so'zlashuv nutqida jo'nab ketmoq. g'oyib bo'lmoq, domdaraksiz ketmoq; misol: bir yaxshilik qilib, ko'zdan g'oyib bo'lgin*.

Рассмотрим фразеологизм „sich (Dativ) einen abfrieren“. Глагол „abfrieren“ имеет в немецком языке два значения: „**ab|frie|ren** <st. V.>: 1.<ist> *durch Frost absterben [und abfallen]*: die Knospen froren ab; die Ohren waren [ihm] abgefroren. 2.<a. + sich; hat> (ugs. übertreibend) *an einer Körperstelle Frost bekommen*: wir werden uns hier noch die Füße a.;“ (1, С.84). Первое значение данного глагола значит «отмереть от мороза, отмёрзнуть [и упасть]», приводятся примеры: почки отмёрзли; уши [у него] отмёрзли, замёрзли. Во втором значении глагол abfrieren употребляется с частицей „sich“ в дативе (Dativ) и означает в разговорном языке «(несколько преувеличивая) отморозить себе какую-либо часть тела», приводится пример: мы отморозим себе ещё ноги.

Затем приводится фразеологизм „sich (Dativ) einen abfrieren“. В словаре

Duden (1, С. 84) данное выражение приводится в следующей форме: **sich <Dativ> einen abfrieren** (ugs.; *sehr frieren*: ich habe mir bei der Warterei [ganz schön] einen abgefroren). Данное выражение в немецком языке имеет в разговорной форме значение «очень сильно мёрзнуть», затем следует пример употребления: в ожидании я очень сильно замёрз.

Удачный перевод данного фразеологизма имеется в словаре под руководством Д. О. Добровольского: **sich (D) einen abfrieren** ◇ *разг.* (совсем) заоченеть, продрогнуть (до костей) (2, С.86). После глагола sich (D) einen abfrieren в словаре Д. О. Добровольского стоит знак ромба ◇, его употребление разъясняется в разделе «Условные знаки» (2, С.33): «◇ За р о м б о м приводятся фразеологизмы идиоматического характера, то есть

семантически переинтерпретированные и/или непрозрачные устойчивые выражения, включая речевые формулы различных типов, а также пословицы.

Выражения, помещаемые за ромбом, выделены полужирным шрифтом:

Geige < ... > **die erste Geige spielen** играть первую скрипку».

Мы предлагаем следующий перевод рассматриваемого фразеологизма в немецко-русском словаре: «**sich (D) einen abfrieren** отморозить себе что-л.:

разговорное выражение очень сильно мёрзнуть», затем приводится пример:

при ожидании я очень сильно замёрз/отморозил себе кое-что. В немецко-узбекском словаре предлагается следующий перевод: «**sich (D) einen abfrieren** o'ziniini sovuqqa oldirmoq: *so'zlashuv tili juda ham sovuqtoq, to'ngmoq*», затем приводится пример: *kutayotganda men muzlab qoldim/ o'zinning biroz joylarimni sovuqqa oldirdim.*

Литература:

1. Duden. Deutsches Universalwörterbuch. 8., überarbeit. u. erweit. Auflage. Berlin: Dudenverlag, 2015. - 2128 S.

2. Новый большой немецко-русский словарь. В 3-х т.: около 500 000 лексических единиц / под общим руководством Д. О. Добровольского. -: АСТ: Астрель, 2008. – Т. I: А-Ф. – 1023 [1] с.

3. Фразеологик семантика соҳасига оид лингвистик атамаларни немис тилидан ўзбек ва рус тилларига таржима қилиш масалалари. – ScientificProgress. Volume 2. Issue 2. June 2021. – Page 1668-1672. ISSN: 2181-1601. – www.scientificprogress.uz (2021, июль).

4. Nemis tilida frazeologik birliklar va ularni rus va o'zbek tillariga tarjima qilish tajribasidan. R. R. Allayarova, G. E. Abdullayeva, M. Y. Sapayeva (talaba). // Материалы II международной конференции „Проблемы и Перспективы реализации и внедрения междисциплинарных научных достижений: материалы международной научной конференции“.

27 августа 2021 г. Киев, Украина. – С. 133-135. – <https://doi.org/10.36074/mend-27.08.2021>. ISBN 978-617-79912-49-5.

5. Некоторые вопросы перевода фразеологических единиц немецкого языка на русский и узбекский языки. Р. Р. Аллаярова, Г.Э. Абдуллаева, М. Ю. Сапаева (студентка). //Zu den Materialien der internationalen wissenschaftlich-praktischen Konferenz „Grundlagen der modernen wissenschaftlichen Forschung“. 10. September 2021. Zürich, Schweiz.– С. 156-159.

6. Некоторые вопросы отражения культуры немецкого народа в устойчивых словесных комплексах немецкого языка и вопросы их перевода на русский и узбекский языки. – Special Issue: Hi – Tech Tendencies of Innovative Scientific Research (June 2022): Miasto Przyszłości. Kielce, 2022. Impact Factor: 9,2. – С. 206-208. – [Special_Issue_Hi_Tech_Tendencies_of_Innovative_Scientific_Research_](#)

7. Nemis va o'zbek tillarida maqollarning chog'ishtirma tahlili. R. R. Allayarova, R. S. Gulimmatova, Z. K. Kurbanova, B. K. Kurbanova. Miasto Przyszłości. ISSN-L: 2544-980X. Volume 27 (September 2022). Impact Factor: 9,2. – С. 89-91.

8. Семантическая структура немецких фразеологизмов и вопросы их перевода на русский и узбекский языки. // „Journal of science- Innovative Research in Uzbekistan“ ilmiy-uslubiy jurnali. 2023 yil (may). 1-soni, 1-qismi. - 46-49 bb.

9. Значение некоторых фразеологизмов немецкого языка и их переводна русский и узбекский языки. // Zamonaviy va chog'ishtirma tilshunoslik, qiyosiy adabiyotshunoslik, tarjimashunoslik masalalari. Xalqaro ilmiy-amaliy anjuman materiallari. 2023 yil 19-20 may.

Urganch – 2023. / O'zbekiston Respublikasi Oliy ta'lim, fan va Innovatsiyalar vazirligi, Urganch davlat universiteti, Xorijiy filologiyafakulteti. Urganch: Urganch davlat universiteti, 2023. – 294-297 bb.

DEVELOPMENT OF PROFESSIONAL COMPETENCE OF FUTURE
TECHNOLOGICAL EDUCATION TEACHERS.

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Annotation: This article discusses the measures taken to develop the professional competence of future teachers of technological education.

Key words: pedagogical technology , scientific research , professional ability , pedagogical technologies , modern educational technologies .

Today, a continuous education system aimed at ensuring the effective organization of the process of training competent individuals and qualified specialists has been formed. In order to improve the effectiveness of the continuous education system, it is important to organize the activities of higher education institutions on the basis of the educational process with a new content, based on advanced, democratic and humanitarian ideas. Formation of continuous education system, updating of educational content are the main goals of the reforms in the field of education. Achieving this important goal requires a new approach to the organization of the educational process. After gaining independence, as a leading stage of the continuous education system, it is considered appropriate to search for factors that serve to increase the effectiveness of the pedagogical process in higher education institutions, to accelerate practical efforts to consistently implement the pedagogical technologies found to be acceptable factors. In the educational system, the process of educating a person who is competent, who thinks independently and consciously carries out methodical activities, who can quickly adapt to the profession of a technology teacher, has a unique place. One of the main goals of the comprehensive reforms carried out in the continuous education system in our country today is to fully support young people in acquiring deep knowledge, realizing their talents, and at the same time forming their skills to prepare them for independent life. is one of the priority directions of the education system. It is no secret that we are not able to provide future technological education teachers with life skills, creative thinking and life professional skills. At the same time, it was determined that various approaches to increase the effectiveness of training future technology teachers, the mechanism of ensuring the effectiveness of the "Technology Teaching Methodology" educational subject is insufficient. By looking at the science of "Technological Education" as a vital need for future technological education teachers and youth education, we not only prevent pupils and students from suffering from diseases of impatience and laziness, but also prepare them to become the owner of a certain profession in the future. we need to create the ground. Every year, thousands of students and young people graduate from about ten thousand general secondary schools operating in our country, and 25-30% of them continue to study at higher educational institutions. . 70-75 percent of graduating youth start their work or learn a trade in professional educational institutions. requires radical revision and improvement based on education programs. Many pedagogues are also conducting technology classes today using pedagogical technologies. Because the subject-pedagogical system of pedagogical technology consists of proving its conceptual foundations, clearly setting the goal, formulating the obtained results, choosing and structuring the educational material, choosing the pedagogical model, until their implementation, and designing

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them to evaluate their alternative and efficiency level, and the lesson serves for the effect. Taking into account the long-term scenarios of the country's development, there is a need to develop innovations and introduce them to the construction of the state and society, as well as to develop priority and promising directions of scientific research and advanced technologies that ensure the development of society and the state. Currently, consistent introduction of modern educational technologies in the training of agrarian specialists remains a vital necessity. A number of scientific works have been devoted to the study of the problem of education of the teacher's professional competence. However, the interest of scientists in various aspects and aspects of this problem is not decreasing, which indicates the special importance and relevance of the modernization and development of the continuous pedagogical education system at the current stage. Person-oriented teaching is a process that takes into account the student's personal characteristics, interests, abilities and opportunities, and is aimed at the effective use of advanced pedagogical and information technologies in the development of the student's personality. Therefore, differentiation and individualization of teaching serve as the main principles of introducing person-oriented education. In that case, the professionalism of pedagogical activity, in the opinion of N.V. Kuzmina, is understandable when he says that "the elements of scientific research are included for the purposes of control, the measurement of its productivity." In this case, productivity is defined as a system of pedagogically appropriate actions that ensures the achievement of the desired final result for all or the majority of students within the time allocated to the educational process related to solving pedagogical tasks. In conclusion, improving the professional competence of future technology education teachers, forming their knowledge, skills and qualifications, using new methods, innovative technologies, and interactive methods to fundamentally improve skills is a very urgent issue today. We, teachers of technology education, should not be indifferent to this. I think that we should look for new ways to improve professional knowledge, professional ability and professional skills in the formation of the young generation. In order to ensure the large-scale social and economic development of our country, competitive specialists with high professional skills are of primary importance. For this purpose, in the following years, the education system in our republic will be fundamentally reformed, and activities will be carried out with high efficiency in various sectors of the national economy. Great attention is being paid to the training of specialists who can show. In this regard, the need to use the experiences of developed countries in our country has become a priority issue. The creation of new textbooks using the Finnish educational system is a clear manifestation of this. In this case, the methods are updated, in particular, STEAM, SMART, and international assessment criteria PISA, TIMSS and PIRLS. In order to improve the professional competence of teachers, it is necessary to implement the effective use of STEAM and SMART system methods. Using these methods, textbooks and educational literature will help us to achieve our goals. Also, STEAM PARKS and SMART rooms are being organized in educational institutions. When creating the concept of preparing a teacher for innovative activities, systematic, reflexive-active, individual-creative approaches that ensure the design and implementation of the entire process of teacher personality formation are used as a basis.

For example, in terms of a systematic approach, all links of pedagogical education should maximally stimulate the emergence of all components of innovative activity in their entirety.

The implementation of the reflexive-active approach implies the development of the teacher's ability to enter into an active research position in order to critically analyze, reflect and

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evaluate the effectiveness of the teacher in relation to his own activity and the development of the student's personality as a subject of activity.

The individual-creative approach brings the identification and formation of creative individuality in the teacher, the development of innovative consciousness in him to the personal level, which provides unique technology of activity.

In short, starting the innovative activities of the pedagogue will clarify his views on the perception of objective reality. The problem of preparing a teacher for innovative activities can be expressed as a system that includes several interrelated and functional components that are subject to certain goals.

The innovative readiness of the future teacher is his theoretical, practical and psychological-physiological level of mastering the full essence of pedagogical innovation in the conditions of continuous education. As a result of the pedagogical system, such preparation should help students to form a whole set of knowledge and skills in certain subjects, general professional activities based on ensuring the integrity of theory and practice, educating conscientious attitude to educational work, and developing creative activity.

REFERENCES:

1. O'zbekiston Respublikasi Prezidentining 2017 yil 7 fevral "O'zbekiston Respublikasini yanada rivojlantirish bo'yicha Harakatlar strategiyasi to'g'risida"gi 4947-sonli Farmoni.
2. O'zbekiston Respublikasi Prezidentining 2019 yil 8 oktyabr "O'zbekiston Respublikasi oliy ta'lim tizimini 2030 yilgacha rivojlantirish kontseptsiyasini tasdiqlash to'g'risida"gi PF-5847-sonli Farmoni.
3. O'.Q.Tolipov, M.Usmonxo'jayeva "Pedagogik texnologiyalarning tatbiqiy asoslari" T-"FAN" 2006-yil.
4. J.G'.Yo'ldoshev, F.Yo'ldosheva, G.Yo'ldosheva "Interfaol talim -sifat kafolati" Toshkent-2008-yil.

THE TASK OF MORAL EDUCATION OF CHILDREN OF PRESCHOOL AGE
AND MEANS OF IMPLEMENTATION.

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Abstract: The task and content of the moral education of children of preschool age requires the education and development of the child's spiritual world, his mind, moral feelings, and personal qualities. Education of moral feelings, ideas and behavior in children. Providing moral knowledge fulfills a number of educational tasks, a broad vision and understanding of the moral values of human life and culture is provided.

Key words: morals, manners, educational value, personality, development, environment, humanitarianism, love of country.

Preschool age is a period when the child actively explores the world around him. Preschool children have their own characteristics of psychological development. When he starts walking, the child makes a lot of discoveries, gets acquainted with things in the room, on the street, in the kindergarten. Collecting different things, studying them, listening to the sounds coming from the subject, he knows what qualities and characteristics this object has. Scientists have proven that at this young age, the child remembers this information, after which he will never remember it in life. This is the period when the child is interested in anything that can expand his horizons, and this supports the world around him.

The formation of moral consciousness, emotions and behavior, which are important spiritual qualities of a person, patriotism, love for the country, respect for the coat of arms, flag, anthem of Uzbekistan, humanitarianism, attitude to work, attitude to joint research, conscious discipline and other the development of feelings is the basis of moral education. The task and content of moral education of children of preschool age requires education and development of the child's spiritual world, his mind, moral feelings, and personal qualities. Providing moral education fulfills a number of educational tasks, provides a wide range of ideas about the moral values of human life and culture. Ethical ideas affect the formation of concepts such as vision, reasoning, evaluation and, on this basis, increase moral belief, i.e.: It helps children to observe and enrich their own moral experiences; It creates the ground for moral education of the person. Ethical knowledge is mainly carried out through ethical conversations, lectures, evenings, meetings with various professionals and other means. Moral education in preschool educational institutions is carried out using various means. First of all, it is carried out by introducing children to the work of adults through various activities, by providing education during and outside of training. All kinds of holidays, social life events, children's literature, music, game materials, media! - the world, radio, etc. have a great influence on the moral education of children.

Young children acquire moral imagination and knowledge well only in games. Their conscious understanding of the moral concepts acquired by children is carried out first in training, then in games, work processes, outings, and independent activities. It is important to use various methods and methods in providing moral education to children of preschool age. Moral education methods are a method of activity aimed at acquiring moral imagination and knowledge of children.

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Through all the methods mentioned above, children are taught moral norms and rules, events of social life. Moral ideas and concepts are formed in them. The main requirements for the methods of this group are: Taking into account children's ideas about good and bad; active participation of children in a specially created situation for discussing the norms of moral behavior; to treat each child's feelings with care. It is strictly forbidden to criticize the child inappropriately, laugh at him, ignore him. All methods are used consistently and comprehensively.

In the hadiths of the Prophet PBUH about people living together in society, supporting each other, and the preference of the few over the many; "Two people are better than one, three people are better than two people, four people are better than three people, be with many people. "God unites the ummahs only to follow the right path," it is said. When good days and bad days befall people, the neighborhood and relatives will definitely help. We can see this in our prayers. For example: hashars, coming to the wedding with hooves, etc.

The doctrine of community, which is an important factor of personality formation, occupies an important place in moral education. For this, it is necessary to gradually organize the children in several small groups, and then involve them in doing something together. The goal should be clear to children. It should be organized in such a way that every child participates in the general work, even if only a little. Art, children's holidays, joint work and activities play a big role in the education of such characteristics. It is of particular importance that children's games and work are part of a team. These teach children to act together, to direct their aspirations towards a common goal, to manage their own work and purpose by subordinating the work and movement of management. From a young age, a child feels the need to communicate with others, with a group of children, and to be together. But a small child cannot choose a team by himself. He will come to any team as required by the circumstances. He starts attending pre-school educational institutions in his place of residence or his parents' place of work. The child does not go to these institutions voluntarily. Nevertheless, the child must obey the rules and regulations of this community, follow its procedures. Otherwise, the team will not forgive him. As a result, the child is forced to learn the morals and manners that he lives. That is why the great thinker A. Navoi recommends that the child participate in the community of intelligent and virtuous people and enjoy their conversations from a young age.

Cultivating a sense of humanity. Humanity occupies an important place among the moral characteristics and rules of conduct for preschool children. A sense of humanity develops on the basis of teaching moral norms and rules. For this, it is necessary to teach children to do good deeds. It is necessary to take into account the age of children in the education of humanity. Telling a small child to be good does not make him good, because he lacks the life experience to correctly analyze good and bad. Children of this age are taught to do good deeds; Helping a fallen child up, tucking in his clothes, comforting, caring for plants and animals, giving a toy to a friend, showing a place to a standing person, most importantly to teach others to be happy with the service rendered.

Cultivating the qualities of humility, correctness, honesty and cheerfulness. These characteristics are considered to be the most important factors in raising a healthy person. Humility is one of the most important and noble qualities of every human being. It is mainly brought up from school age. But starting from preschool age, it is necessary to teach children a sense of humility, to lose pride, arrogance and boasting. Preschool children try to put themselves ahead of other children, sometimes they brag about their parents' profession. In this case, it is necessary to work with the parents of the children, to explain the necessity and importance of each profession

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with specific examples. If the children succeed in some tasks and humiliate other children, the educator explains to the child that he should teach something to his friend who does not know something, that it is not appropriate to praise oneself. Cultivating honesty and truthfulness is inextricably linked with the prevention and fight against lying and dishonesty. Some children try to make the fairy tales they have heard from adults look like they saw in their dreams. Even in this case, it is necessary to praise "Ertak" for being able to weave well without fighting. Thus, positive results can be achieved if positive examples of children's character are brought up with all effective methods of moral education, taking into account their age characteristics. Education of patriotism. Patriotism as a social, historical and moral feeling appears during the social development of a person. In the primitive community system, patriotism was a feeling related only to one's relatives, mother's blood, and traditions, but with the emergence of classes, the ideas of patriotism deepened and spread to more and more areas of social life. went deeper. Over time, this feeling has become a great power.

Love of country is one of the deepest social feelings. In our country, the feeling of love for the Motherland is combined with the feeling of internationalism. The feeling of love for the motherland in preschool children is brought up by adults with a certain consistency, taking into account the mental development of children and the clarity and imagery of their thinking. Therefore, the feeling of love for the motherland in children of this age is brought up through clear facts and bright examples that are close and familiar to them. International education. Our republic is international in its essence. That is why it is important to educate children of preschool age about internationalism and friendship between peoples. Education of preschool children in the spirit of internationalism is based on the goal of creating a positive attitude towards other nationalities and peoples, a feeling of interest in the life of different peoples. The development of such feelings is perfected mainly through imitation. Meetings with representatives of each nation living in brotherly republics to form the basis of international feelings for preschool children; reading literature about their traditions, culture, art, and nature in special trainings, holding conversations, showing pictures, showing slides, and telling stories about the lives of the children of the nation it will be useful to read.

In short, children of preschool age morally the task of upbringing and means of implementation are important spiritual qualities of a person formation of moral consciousness, feelings and behavior, patriotism, to the motherland love, respect for the coat of arms, flag, anthem of Uzbekistan, humanitarianism, attitude to work, attitude to joint research, Conscious discipline and development of other emotions is important in moral education .The task is to educate preschool children morally the task and content of the child's spiritual world, the moral feelings of his mind requires training and development of personal qualities and behavior.

References:

1. A. Avloni. Turkish culture and ethics. - T.: Teacher, 1992
2. J. Hasanboev, O. Hasanboeva. Pedagogy. - T.; Science, 2006
3. Important problems of the child's personality development. A collection of theses and articles of the International Scientific and Practical Conference. 2008
4. P. Yusupova. Preschool pedagogy. - T.; Teacher. 1993

THE REFLECTION OF THE IMAGE OF THE HORSE IN THE UZBEK FOLK EPIC
(EXAMPLE OF THE EPICS OF ALPOMISH AND GOROGLI)

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Abstract. This article provides detailed information about the epics "Alpomish" and "Goro'gli" from the Uzbek folk epics. The article describes their meaning, spirituality, and the classification of horse images, and describes their importance in preserving the national spirituality and historical monuments of the Uzbek people.

Key words: Uzbek, epic, hero, warrior, traditions, love, folk epic, image of a horse, rules of etiquette, friendship.

Annotatsiya. Bu maqolada O'zbek xalq dostonlaridan "Alpomish" va "Go'ro'gli" dostonlari haqida batafsil ma'lumot berilgan. Maqolada ularning mazmuni, ma'naviyati, va ot obrazlarining tasnifi bayon qilinib, ularning o'zbek xalqining milliy ma'naviyatini va tarixiy yodgorliklarini saqlashdagi ahamiyati ta'riflangan.

Kalit so'zlar: O'zbek, doston, qahramon, jangchi, urf-odatlar, sevgi, xalq dostoni, ot obrazi, odob-ahloq qoidalari, do'stlik.

Kirish. O'zbek xalq dostonlari, o'zbek milliy adabiyotining asosiy qismi hisoblanadi va o'zbek xalqining mazmunli, o'zgaras ma'naviyatini ifodalaydigan ahamiyatga ega. Dostonlar, o'zbek xalqining tarixiy va madaniy yodgorliklarini saqlashda muhim rol o'ynagan. Bu maqolada, O'zbek xalq dostonlari haqida umumiy ma'lumotlarni ko'rsatib, ularning ahamiyatini ta'riflanadi.

O'zbek xalq dostonlari, O'zbekistonda yuzlab yillik tarixi bor bo'lgan va o'zbek xalqi jamiyatining kelajagi, milliyatining o'ziga xos mazmuni, adabiyoti va san'ati tarixida asosiy o'rni egallaydi. Bu dostonlar, qadimiy xalq madaniyatini, tabiatni, insonning asosiy tajribalarini va milliyatning ruhiyatini ifodalaydigan adabiy asarlar hisoblanadi.

O'zbek xalq dostonlarining bir qismi shu tarixiy muhitda yaratilgan va xalqning urf-odatlarini, tabiatni sevganligi, to'y-chaqchaqlari, ma'naviyatini ifodalayotgan sevgi va do'stlik, hayotning muhim vaqtlarini bayon qiladi. Ularning boshqa qismi esa qahramonlik, sevgi, do'stlik, qo'rquv, sabr, bilim olish, odob-ahloq qoidalari o'rgatadi. O'zbek xalq dostonlarining asosiy qismlari quyidagilar:

"Alpomish" - bu O'zbekistonning eng mashhur dostonlari orasida hisoblanadi va o'zbek xalqining qadimiy tafsilotlarini, jang-chong'ichaklarni, sevgi va tabiatni qiziqarli holatda ifodalaydi. Bu doston "Bobur-Shohning qissalari"ning ichiga kiradi.

"Davlatnama" - bu Navoiyning asarlaridan biri hisoblanadi va o'zbek adabiyoti tarixidagi eng qadimiy asarlardan biri. U bu doston yordamida o'zbek xalqining madaniy, siyosiy, va milliy ma'naviyati haqida gaplashadi.

"Qahramonlar" - Bu doston milliy inqiroz, jang-chong'ichaklar va o'zbek xalqining qahramonlarining hayoti va xarakterlarini aks ettiradi. Bu doston o'zbek xalqining mustaqilligiga erishish yillarida yaratilgan. O'zbek xalq dostonlari, o'zbek xalqining identifikatsiyasi va milliyatini saqlashda muhim vazifalarni bajaradi va o'zbek adabiyoti va madaniyati uchun o'ziga xos o'rin ega. Bu dostonlarning ma'naviyoti, tarixi va o'zgaras o'zbek xalqining milliyatini qo'llab-quvvatlaydi va uning kelajagini o'rgatadi. "Alpomish" O'zbek xalqining eng mashhur dostonlaridan biri hisoblanadi. Bu doston XIX asrning ikkinchi yarmida O'zbekistonda to'qima

da'vochisi sifatida mashhur bo'lgan qahramon Alpomish haqida aytadi. Alpomishni uning sog'lig'ida ajab o'zbek qo'rqinchli yaratiklar bilan urushayotgan qahramon sifatida tasvib qilishadi. Bu doston "Bobur-Shohning qissalari"ning bir qismi sifatida keltirilgan va u O'zbek xalqining tabiatini, urf-odatlarini, tafsilotlarini va milliyatini o'z ichiga olgan qadrlil asar hisoblanadi. Alpomishning xarakteri, uning odobi, do'stlari bilan munosibati va jangchilar qatorida o'ta kelgan to'sqin tajribalari uning milliy ma'naviyatini ifodalaydi.

"Go'ro'g'li" dostoni esa O'zbek xalqining milliy sevgi, odob-ahloq qoidalari va jangchilar qatlamini bayon qiladi. Bu dostonning asar ustidagi avtorlik muammoi mavjud, ammo uning eng mashhur versiyalari Munojot Olimova va Muhammad Yusuf olimlariga nisbatlanadi. "Go'ro'g'li" o'zbek xalqining qadimiy hayoti va uning do'stlarlik an'analari bilan bog'liq turli hikoyalarni o'z ichiga oladi. Bu dostonning muhim ma'naviyati uning odob-ahloq qoidalari, jasorat va muhabbatning aks ettirilishi bilan bog'liqdir. "Go'ro'g'li"ning hikoyasi o'zbek xalqining tarix va madaniyati uchun asosiy ahamiyatga ega bo'lgan dostonlardan biri hisoblanadi. Xalq dostonlarida "ot" (qahramon, junun, qahramonning yomon atrof-muhitini yoki urf-odatlarini tushunar ekan odam) obrazining tasnifi turli qiyosiyatlarga asoslangan. Ot obrazining turli xususiyatlari va funksiyalari:

Alpomish: "Alpomish" dostonida ot obrazini Alpomishning yaratiklar bilan jang qilishi va uning qahramonlik sifatlarini namoyish etishi orqali ifodalangan. Ot obrazining uchun jangchilar qatlamini qayta qurish, sevgi va yaqin do'stlar orqali o'zining qo'lida kerakli bo'lgan muhitni yaratish yordamchi maqsadlardan biri hisoblanadi. Ot Alpomishning muqobilini va uning o'zinga o'xshaganliklarini namoyish etish uchun bir vosita sifatida ishlatilgan.

Go'ro'g'li: "Go'ro'g'li" dostonida ot obrazi shunchaki Go'ro'g'li nomli qahramonning yaxshi do'stlarini ko'rib qolgan bir qutb bo'lib namoyish etilgan. Ot obrazining asosiy funksiyasi bu dostonning odob-ahloq qoidalari va yaxshi do'stlarning qadri-naxri yoritilishini ta'minlashdir. Go'ro'g'li nomi uning aynan ot obrazini aks ettiradi va Go'ro'g'li o'zinga o'xshash, sevimli, va etibor qozon sahablariga qiziqishgan bir qahramon sifatida tasvib qilinadi.

Ushbu dostonlarda ot obrazlari, jangchilar qatlamining roli va ahamiyati, qahramonning xarakterini tushunar ekan. Bu ot obrazlari milliy qadriyat, do'stlarlik, va qahramonlikning o'zbek xalqining odob-ahloq qoidalari va hayotiga ega bo'lgan ahamiyatini namoyish etish uchun ishlatilgan. Dostonlarda ot obrazlarining tasnifi odatda quyidagi turdagi jumlar yoki qismlar orqali amalga oshiriladi:

Alpomishning ot obrazlari: Alpomishning ot obrazlari, odatda u jangchilarning katta guruhi yoki o'z do'stlari orqali ifodalangan. Bu ot obrazlar Alpomishning janglarda ishonch va yordam olish uchun birinchi doimlarini quradilar. Ularning o'rtasida Alpomishning yaxshi do'stlari bor, ularga qo'rqinchli janglarda Alpomishga yordam beryapti.

Go'ro'g'li ot obrazlari: "Go'ro'g'li" dostonida ot obrazlari Go'ro'g'li do'stlarining yanaqqa yanaq keldi va ularga o'z qo'lida oqibat bermasligi uchun o'z faoliyatlarini boshqaradi. Ular Go'ro'g'li do'stlarining qahramonlikka erishishiga yordam beryapti va Go'ro'g'li bilan birga hayotlarini tinch qilishadi. Dostonlardagi ot obrazlar o'zbek xalqining tarixiy ma'naviyatini, adabiyotini va jangchilar qatlamining huquqni namoyish etishda muhim ahamiyatga ega. Ot obrazlari o'zbek dostonlarida muhim vazifalarni bajarish, qahramonning yordamchi va yosh do'stlarining rolini namoyish etish orqali o'zbek xalqining milliyatini va adabiyotini o'zlashtirishda ishlatiladi.

FOYDALANILGAN ADABIYOTLAR:

1. Sharipova M. B., Nizomova S. S. THE ARTISTIC IMAGE OF THE IMAGE OF "WATER" IN THE POEM //УЧЕНЫЙ XXI ВЕКА. – 2018. – №. 11. – С. 75.
2. Uraeva, D. S., Sharipova, M. B., Zaripova, R. I., & Nizomova, S. S. (2020). THE EXPRESSION OF THE NATIONAL TRADITIONS AND BELIEFS IN UZBEK PHRASEOLOGICAL UNITS. Theoretical & Applied Science, (6), 469-472.
3. Рахимов Ф. Б., Шарипова М. Б. МЕСТО ИННОВАЦИЙ В РЕШЕНИИ СОВРЕМЕННЫХ ПРОБЛЕМ НЕПРЕРЫВНОГО ОБРАЗОВАНИЯ //Academy. – 2020. – №. 5 (56).
4. Шарипова М. Б., Муродова Ш. Ш. ХУДОЖЕСТВЕННА ИНТЕРПРЕТАЦИЯ ОБРЯДОВ В ЭПОСЕ «АЛПОМИШ» //Научный журнал. – 2020. – №. 9. – С. 32-34.
5. Шарипова М. Б., Мустакимова Г. А. Наследие мыслителей в эстетическом воспитании учащихся начальной школы //Вестник магистратуры. – 2019. №. 10-5. – С. 48-49.
6. Шарипова М. Б., Садуллоева М. Б. К. ПРОФЕССИЯ «УЧИТЕЛЬ» И ЕЁ РОЛЬ В ОБЩЕСТВЕ //Проблемы педагогики. – 2020. – №. 1 (46)

APPLICATION OF SINGAPOREAN EDUCATIONAL SYSTEM
METHODS IN PRESCHOOL EDUCATION

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Annotation. The article presents the teaching structures of Singapore educational technology, which can be used by specialists (teachers) of preschool education, both in organized educational activities and in critical moments. Singapore technology teaching structures combined with entertaining tasks help pupils to reveal a new side, so as the main thing in the lesson is the preschooler himself and his activities, and the teacher is an assistant.

Key words: teaching structures, teaching technology, independent educational activities, preschool age, culture of thinking.

Education always played an important role in Singapore. The only resource of this country is its people and that is why both Singaporean citizens and the government see education as the key element of developing the prosperous society. So when it comes to childhood education in Singapore, there are a variety of curriculum approaches that are used to achieve the development and education of children in a play-based, child-centered environment.

Since 2000, the pre-school landscape in Singapore has been evolving and changing more rapidly than before. The interest of raising the quality of pre-school education is evident in the introduction of new policies and implementation of new initiatives in the last six years. These policy developments have resulted in significant changes in various aspects of the quality standards of pre-school education in Singapore. This paper presents the context of pre-school education policy and practice in Singapore and highlights recent key reforms introduced by the Ministry of Education (MOE) in order to promote quality kindergarten education.

To the south of Thailand, closer to the equator, on the waterway from China to Europe, India and the Arab countries, on 63 islands there is a small country - Singapore with the capital of the same name. But this small country is known to the world community as having one of the best public education systems in the world, thanks to which Singapore ranks consistently high in world rankings and its young citizens show the best results in the world in mathematics and science.

Preschools in Singapore develop individualized curriculum to follow needs and interests of each child. Even when a school officially claims to be focused on one particular curriculum over another, each of them uses various early childhood approaches to respond each student in the group. In the most cases, when a school makes a decision about the curriculum approach to follow, they take a bit of this and a bit of that and put it together. Preschools in Singapore also put a great emphasis on teachers and methods they use to foster the children's development within the educational framework. Singaporeans believe that the success of a preschool stands on the professionalism of its teachers. Childhood education in this country is not just about the curriculum, but also about the delivery. A lot of attention is paid to team building like-minded people, where everyone knows how listen, hear, solve the proposed problem and support each other. For this purpose, preschool education specialists (educators) have adapted the educational structures proposed by the Singapore company "Educare" International Consultancy". This

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technology does not require changing the course of the entire lesson; it involves the use only one or two elements that. The teacher himself has the right to choose.

In kindergarten, children most often sit four people at a table, opposite each other, which is very suitable for team activities, as provided by Singaporean learning technology. Children work in teams of four, paired with a “shoulder” or “face” partner. When answering questions, all participants express their thoughts orally, help their partners. There are no leaders here, everyone is equal. Along with securing studied, refreshing the memory of forgotten things, developing speech, this type of work promotes the development of a culture of thinking. Singapore has been paying increased attention to pre-school education in recent years. The stepped-up attention to the early years stems from stronger public awareness of the importance of quality early childhood education in children’s learning and development.

While choosing a preschool in Singapore, parents usually have to consider such factors as location, cost, and waiting lists. Nevertheless, there is a larger amount of information to understand, so searching for a preschool can be a rather daunting task. Learning centers in Singapore follow an alarmingly varied number of curricula, so choosing the most suitable one is not an easy thing to do. That is why we provide you with the information about the seven curriculum approaches available in Singaporean preschools. They are Montessori, Waldorf Steiner, the Play-Based curriculum, the Reggio Emilia approach, the High Scope Method, the Theory of Multiple Intelligences, and newer curriculum approach known as “whole brain learning”. If left in side the philosophical meaning of the formula and consider it only in concrete psychological terms, then it becomes It is obvious that this formula clearly brings thinking to the forefront in a person’s mental life, considering thinking sign of human existence. A namely reasoning thinking, verbal-logical thinking. This is thinking and today stands out as one of the main types of thinking, characterized by the use of concepts, logical constructions operating on the basis of language, linguistic means

Historically, the Singapore education system is based on a pragmatic approach whereby economic functionality remains a cornerstone of educational policies. Over the 42 years since independence, the government has actively sought to maximise Singapore’s economic potential by investing heavily in building a first class formal education system catering for all from the age of seven. The aims of Singapore’s education system have undergone three major paradigm shifts from a “survival-driven education” in the 1960s where the focus was on providing school places so that all citizens had access to learning basic numeric and literacy skills, and equipping them with technical skills needed to support industrialization, to an “efficiency-driven system” in the late 1970s where the focus was on reducing attrition and to an “ability-driven system” initiated in 1997 where efforts were made to mass customise programmes catering to the diverse needs and talents of children to allow them to realise their potential as the nation moved into preparing children for a knowledge-based economy.

In Singapore, formal school education begins at Primary One where it is compulsory for all children to start school in January of the year which they would turn seven. Even though pre-school education before the primary years is not compulsory and is provided entirely by the private sector, the majority of Singaporean children are attending pre-school currently. Therefore, instead of mandating pre-school education for all, the government aims to target its efforts in areas which would give the greatest leverage on raising the quality of pre-school education, especially for

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children from less advantaged homes, and in getting the small number who do not attend pre-school to do so.

Pre-school education in Singapore is made up mainly of the child care sector and the kindergarten sector. Child care centres, which are licensed by the Ministry of Community Development, Youth and Sports (MCYS), provide care and education for children from two months to six years old. Kindergartens, on the other hand, provide education for four to six-year-olds and are registered with the Ministry of Education (MOE). All child care centres are regulated under the Child Care Centres Act (1988) while kindergartens are regulated under the Education Act. Singapore has a high pre-school participation rate of more than 95% of children ages four to six years being enrolled in either one of the 488 kindergartens or 721 child care centres. This excludes children who may be home schooled or receiving pre-school education in international schools, special education schools, playgroups and other enrichment centres. Both kindergartens and child care centres, commonly referred to as pre-schools in the Singapore context, provide a formalized three-year pre-school education programme in Nursery classes for four-year-olds, Kindergarten One classes for five-year-olds and Kindergarten Two classes for six-year-olds. All pre-schools in Singapore are run by the private sector, including community foundations, religious bodies, social organizations and business organizations. There is a universal government subsidy for child care fees and needy families are eligible for further financial assistance from the government or nongovernment agencies. Kindergarten fees are generally lower and financial assistance schemes are also available for poor children. Furthermore, families with more than one child can benefit from a government subsidy introduced in 2001, known as the Children Development Co-Savings (Baby Bonus) Scheme, to pay for their children's pre-school fees.

The Reggio Emilia was created by Loris Malaguzzi and the parents of the Reggio Emilia region in Northern Italy. The method is centered on the interests of kids and their relationships with adults, other children, and the environment. The Reggio Emilia is focused on the "pedagogy of listening" that stresses the importance of listening to each other both for parents and their kids. When it comes to parents, listening to their child is considered as an effective way to understand the child's way of thinking, allowing parents to foster the interests of their kids and to turn these interests into projects that facilitate child's education. The approach is primarily based on theories of Jean Piaget and Lev Vygotsky. Nevertheless, it sums up a variety of educational theories based on children's development and learning through play. As it derives from its name, the play-based approach is focused on teaching children in a fun, interesting, playful manner. The classroom environment is one of the essential parts as children learn better when they are interacting with materials and their environment. A teacher is seen as the observer who stimulates children's interest and learning.

References:

1. Regulation on preschool education institution. - Tashkent 1995.
2. "Kindergarten educational program" - Tashkent 1993. Creator authors: L. Mominova, M. Ayupova, S. Karimova.
3. Child development and school preparation base-test program. Tashkent - 1998.
4. Sh. Shodmonova, "Pedagogy of preschool education" Tashkent 2003
5. "Family pedagogy" O. Hasanboyeva, Alokachi Publishing House, 2007
6. "Pedagogy of preschool education" Tashkent, Ilm-ziyo, 2006

APPLICATION OF METHODS OF THE SINGAPOREAN EDUCATIONAL SYSTEM IN
PRIMARY CLASSES.



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Annotation: Primary school is the first and most important step in general educational process. At primary school age there is an intensive development of such personality qualities as thinking, attention, memory and imagination. Already in elementary school children it is necessary to teach: algorithmic thinking in all areas of life, independent task setting, selection of effective tools, assessing the quality of one's own work, the ability to work with literature and self-education skills, ability to work in a team.

Key words: personality, thinking, team, innovation, education system.

The set of outcomes reflects values, dispositions and skills emphasizing the whole development of the child with focus on developing a happy and healthy child who is able to relate to others, communicate with others, and is curious and enthusiastic about learning. The Education Ministry explained that the desired outcomes were deliberately formulated to demonstrate that social and communication skills as well as positive dispositions are of significant importance and that pre-school education should be about preparing children for life-long learning, not just a preparation for the Primary One curriculum. It was reiterated that while basic competencies in reading, writing and arithmetic are important and should not be overlooked, the enduring effects of a child's social and emotional competence are of even greater importance for the holistic development of a life-long learner.

Education always played an important role in Singapore. The only resource of this country is its people and that is why both Singaporean citizens and the government see education as the key element of developing the prosperous society. So when it comes to childhood education in Singapore, there are a variety of curriculum approaches that are used to achieve the development and education of children in a play-based, child-centered environment. Currently, the main principle of teachers' work in primary school is the use of modern advances innovative learning technologies for successful development cognitive, intellectual, creative, physical abilities primary school students, subject to retention and promotion reserves of their physical, mental and sociocultural health.

Proponents of this methodology note that the Singaporean teaching method has a number of positive aspects. So, the whole group is involved in the lesson, the variety of forms and means is increasing, which increase and stimulate any, incl. creative activity of students. Children, whether they want it or not, have to learn to think independently, answer questions posed,

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complement each other, and exchange opinions. They develop oral speech, communication, cooperation, critical thinking, creativity, and increase motivation for the topic being studied, which leads to more effective development of the educational program by preschoolers.

Another plus of the Singapore method is that oral speech develops well. The use of teaching structures allows us to rethink the educational process in a new way, in which the center of the group is the child, and not the teacher. At the same time, the teacher ceases to be the only source of knowledge in the group, dictating to everyone what to do - he only helps the children develop and learn. The Singapore teaching method is a powerful tool in acquiring knowledge for the multifaceted development of their abilities. When answering questions, all participants express their thoughts orally, help their partners. There are no leaders here, everyone is equal. Along with securing studied, refreshing the memory of forgotten things, developing speech, this type of work Innovation in education can be viewed as a process creation, distribution and exchange, use of innovations in the areas educational activities. Innovation in education is inherently is the end result of innovative activity implemented in the form of a new or improved educational process, used in practical activities. New conditions in the system education leads educators to create new ways of delivering information, new technologies and teaching methods, makes you look for creative and creative solutions in teaching methods promotes the development of a culture of thinking.

The use of information technology educates students enhancing visibility and nurturing artistic taste. Work with computer and visualization, makes the lesson spectacular and increases interest and motivation to learn. All teaching methods are formed in children have competencies and knowledge that they can apply in practice and helps them achieve successful results in further studies and gaining life experience that will help them in life. The impressive academic performance of Singapore within a short span of fifty years signifies that it has achieved educational success, with the support of an effective school system, well-run schools, highly qualified teachers and resilient students. It is therefore instructive to understand the evolution, success factors and on-going challenges of the educational system in Singapore. This chapter introduces the education system in Singapore by discussing its educational developments since its independence, its current educational system, its salient features and the key challenges it faces in an age of globalisation. In understanding the educational system in Singapore, it is helpful to note that there were three phases in the education developments in Singapore since its independence. The first phase was 'survival-driven' where the aim was to produce trained workers in the early years of Singapore's independence and industrialisation. Industrialisation in late 1960s demanded that Singapore produce sufficient skilled workers for an export-oriented economy. Responding to this demand, there was a shift in emphasis from academic to technical education, characterised by the development of post-secondary technical and vocational education at the polytechnics.

The word "innovation" comes from the Latin "innovation", which means innovation, change, update. Innovative activity is the creation, development, use and distribution new, with a targeted change introducing into the implementation environment new elements causing a change in the system from one state to other. Innovative methods are new, modern methods of work teachers who are an effective means of development cognitive, communicative, personal activities students.

This section gives a brief overview of the current educational system in Singapore. The majority of the schools from the primary to the pre-university levels are state schools (known

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locally as ‘national schools’) under the Ministry of Education . This means that these schools are administratively controlled and funded by the MOE. Prior to primary school, children may be enrolled in a pre-school institution that is for children aged 4 to 6 years. Parents could choose to enroll their children in a private or government-run kindergarten. Pre-school children in Singapore generally learn basic literacy and numeracy skills as well as bilingualism: English as the first language and a second language such as Chinese, Malay and Tamil.

While choosing a preschool in Singapore, parents usually have to consider such factors as location, cost, and waiting lists. Nevertheless, there is a larger amount of information to understand, so searching for a preschool can be a rather daunting task. Learning centers in Singapore follow an alarmingly varied number of curricula, so choosing the most suitable one is not an easy thing to do. That is why we provide you with the information about the seven curriculum approaches available in Singaporean preschools. The High Scope puts a strong emphasis on children learning through interaction with their environment, including their daily routine. According to a method, a teacher and children have to create a plan for their day. Children are divided into small groups in accordance with their interests and play together. Nevertheless, they have a freedom to move from one group to another. At the end of the day, children come together and review their day. Such “plan-do-review” component is the key element of the High Scope approach.

The impressive academic performance of Singapore within a short span of fifty years signifies that it has achieved educational success, with the support of an effective school system, well-run schools, highly qualified teachers and resilient students. It is therefore instructive to understand the evolution, success factors and on-going challenges of the educational system in Singapore. This chapter introduces the education system in Singapore by discussing its educational developments since its independence, its current educational system, its salient features and the key challenges it faces in an age of globalisation. The impressive academic performance of Singapore within a short span of fifty years signifies that it has achieved educational success, with the support of an effective school system, well-run schools, highly qualified teachers and resilient students. It is therefore instructive to understand the evolution, success factors and on-going challenges of the educational system in Singapore. This chapter introduces the education system in Singapore by discussing its educational developments since its independence, its current educational system, its salient features and the key challenges it faces in an age of globalisation.

It is now widely-recognized that quality early education is important as it helps in forming the abilities of a child for lifelong learning. With increasing challenges and competitions arising from globalization and a knowledge-based economy, the effective use of communications and information technology, and knowledge is the key to economic and social advancements. Education must equip our young with good values and dispositions, relevant knowledge and skills for the new economy and society in this new millennium. As such, now, more and more educators see learners as central to the learning process. They recognize the need to cater to different learners and they know that they must use flexible strategies to promote effective learning. Teachers are seeing themselves as facilitators in this learning process. Following the emphasis on learners, the curriculum has to take into account the needs for knowledge, skills, and dispositions to be developed through different means and strategies to cater to individual differences.

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New material is studied by children independently, each student takes turns playing the role of teacher and student, the teacher carries out the so-called “involved control”, listening in turn to one of the representatives of the microgroup, evaluates them, corrects, helps and guides. Please note that children are taught to work according to a certain algorithm for performing actions on the teacher’s command. The execution of the algorithm has been brought to automaticity.

References:

1. Regulation on preschool education institution. - Tashkent 1995.
2. "Kindergarten educational program" - Tashkent 1993. Creator authors: L. Mominova, M. Ayupova, S. Karimova.
3. Child development and school preparation base-test program. Tashkent - 1998.
4. Sh. Shodmonova, "Pedagogy of preschool education" Tashkent 2003
5. "Family pedagogy" O. Hasanboyeva, Alokachi Publishing House, 2007
6. "Pedagogy of preschool education" Tashkent, Ilm-ziyo, 2006

Automated Logistics Processes Improvement in Logistics Facilities

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Abstract:

Modern trends in the development of the economy lead to a significant increase in the needs of enterprises for warehouses, which provide temporary storage of stocks of material resources, work in progress and finished products. In this paper we analyzed main modern management methods in warehouses, their differences, and advantages. Authors propose their software development for automated system of logistics processes in warehouses. For operating with user requests a special server based on NodeJS was implemented.

Key words: Warehouse system, Robot, Logistics, Automated warehouse systems

Introduction

Automated warehouse systems not only eliminate manual labor, but also allow you to save warehouse space, speed up warehouse operations, and improve inventory control, since the computer monitors the location of each product in the warehouse. These systems are also called automated warehouses.

The object of the study is an automated system for searching for goods in warehouses.

The subject of research is the process of developing functional, mathematical and software automated systems for searching goods in warehouses.

The purpose of the work is to improve and optimize automated logistics processes in logistics facilities.

Tasks that need to be implemented: - analyze the existing logistics systems; – perform a description of the automated system and mathematical modeling of the process; – to develop algorithmic software of an automated system; - study the results of software development. The main results of the work are the development of a method of selecting cars in the warehouse using various software components and information systems.

New requirements are now being put forward for the management of warehouse complexes. This is related to global economic processes, the state of the market, and changes in consumer behavior. Every year, work in warehouses becomes more difficult, acquires new functions [1]-[5]. The Internet of Things, artificial intelligence, big data, blockchain, and other innovative technologies make it possible to effectively solve tasks that are constantly becoming more complicated. Not so long ago, robotic systems were mainly used to process large volumes of cargo. Robots were introduced where it was necessary to carry out repetitive actions with loads of the same size, located in the same place [6]-[10]. With the development of e-commerce, there was a need to automate various actions with heterogeneous goods and orders of small volumes. Warehouse workers are now used not only in receiving and transporting goods, but also in the assembly of orders, in sending goods to the consumer. Robotization of small and medium-sized warehouses was initially considered uneconomical. Now it is proving its effectiveness: in addition to large retailers, industrial giants, transport and logistics companies, more and more small businesses are using automated warehouse management systems.

Related works

Warehouse systems are an integral part of enterprises, especially those that produce a large number of goods.

Ronald Joshua Salvador and others in [11] note, that warehousing is the act of storing goods that will be sold or distributed later. Larger businesses typically own or rent space in a building that is specifically designed for storage.

Moreover, according to some experts, transportation activities spend 44% of the total cost. So, the process of sending and loading finished goods is very important [12]. Warehouse automation often has challenges in design and successful deployment. The effective management of the warehouse and inventory plays a pivotal role in the supply chain and production [13].

Authors [14] propose their own method to plan products allocation in a warehouse. Their model, as developed software, can support the decision and decrease the risk of the inappropriate choice of product location planning.

We must understand necessity of optimal warehouse organization.

Researchers in [15] develop their fulfillment system applicable to small and medium-sized companies performing frequent shipments characterized by low volumes, variable product mix, reduced overall dimensions for products and products. Their proposed solution consists of a series of smart drawers, controlled by a communication architecture designed in 4.0 Logic, equipped with hardware and software interfaces that can be easily integrated with any existing management or departmental system.

We also must remember other problem connected with warehousing. In [16] scientists write that the integration and application of a warehouse system and manufacturing system has become a manufacturing problem for enterprises. The main reason is that the information control system based on automation and stereo warehouse is inconsistent with the production and management information system of the enterprise in terms of business, data, functions, etc. [17]-[29].

And also we must pay special attention to software development for warehouse systems. And in this paper we propose our own software for our warehouse system.

Developed automated system main components

System construction is characterized by structures that describe stable connections between elements.

When describing an automated system, the following types of structures are used, which differ in the types of elements and connections between them:

- functional (elements – functions, tasks, procedures; connections – informational);
- technical (elements – devices, components and complexes; connections – communication lines and channels);
- organizational (elements – collectives of people and individual performers; connections – informational, subordination and interaction);
- documentary (elements – indivisible constituent parts and documents of the automated system; connections – interaction, input and subordination);
- algorithmic (elements – algorithms; connections – informational);
- software (elements – software modules and products; connections – control);

- informational (elements – forms of existence and presentation of information in the system; links – operations of information transformation in the system).

Taking into account the classic system of the automated system, a diagram of the automated system of warehouse logistics processes was drawn up, which will have the following form, shown in Figure 1. In it, precisely those complexes and structures are selected, which collectively realize the main task of the system.

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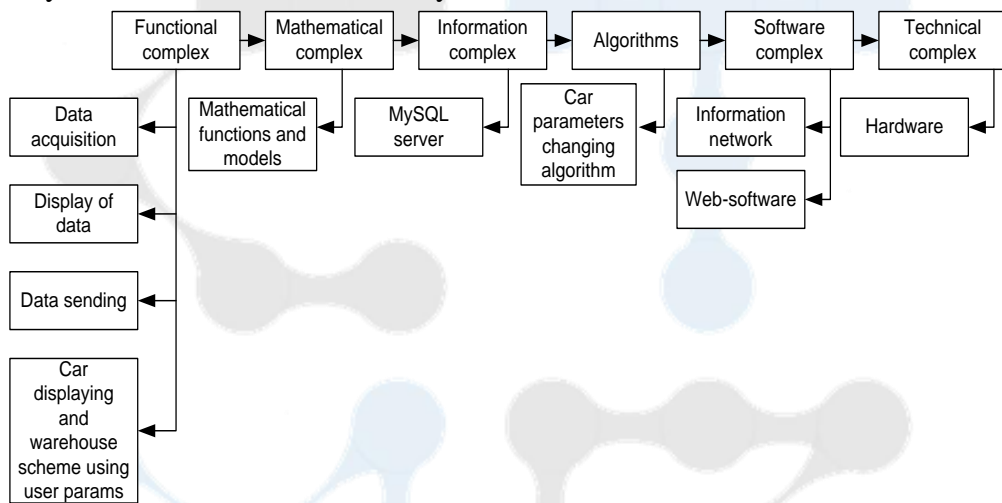


Figure 1: Automated system scheme.

The functional complex is responsible for the main tasks of the web application, namely: receiving, displaying, and sending data, cars, and warehouse schemes according to the relevant user parameters.

The information complex is a repository of data with which the system works. In our case, this is the MySQL server.

The algorithmic block is responsible for the functioning and coordinated operation of the program, the main function of which is to respond to changes in input parameters.

The main structure of the software complex is a developed web application and an information network.

The decision-making sequence is shown in Figure 2.

It is important to justify the problem correctly. For example, the idea of the Japanese professor Ishikawa. The Ishikawa diagram is a graphical method of research and determination of the most significant cause-and-effect relationships between factors (factors) and consequences in the situation or problem under study.

The Ishikawa diagram for the car selection process is shown in Figure 3.

Decision-making under conditions of multicriteria and under conditions of uncertainty according to the analytical hierarchy method (AHM).

The analytical hierarchy method is based on the principles of decomposition and synthesis, the implementation of which makes it possible to reduce the number of possible errors in the process of obtaining information from an expert. With the help of AHM, a structure in the

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form of a hierarchy is obtained, which allows you to avoid complex comparisons by replacing them with pairwise comparisons. This method makes it possible to check the consistency (consistency) of the expert's statements.

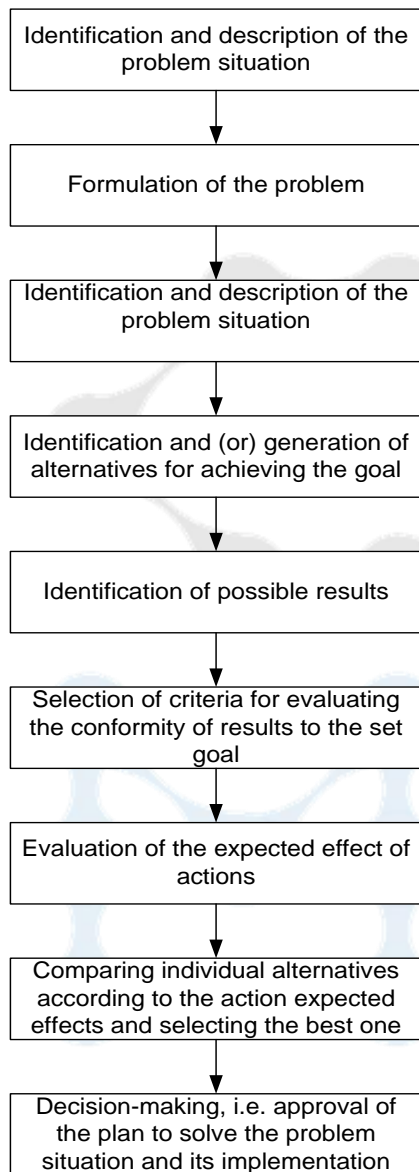


Figure 2: Diagram of decision-making sequence

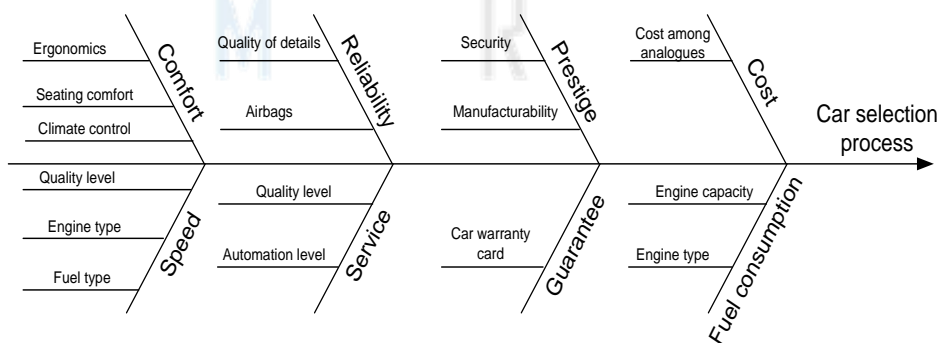


Figure 3: Ishikawa diagram

Analytical hierarchy method (AHM) is a systematic procedure based on a hierarchical representation of the elements that determine the essence of the problem. The problem is subjected to decomposition into simpler components with subsequent assessment by the decision-maker of the relative degree of interaction of the elements of the resulting hierarchical structure. The method is based on the principle of identity and decomposition, according to which the structuring of problems in the form of a hierarchy or network includes procedures for synthesizing multiple statements, evaluating the priority of criteria and finding alternative solutions.

Sequence of AHM stages:

- formulation of the problem to be solved;
- setting the problem in general – including it (if necessary) in a large system in which there are other interested actors (actors), consideration of their ideas and desired results;
- identification of criteria by which the quality of problem solving will be evaluated;
- building a hierarchy of common criteria, individual criteria, properties of alternatives and the alternatives themselves. In a multi-stakeholder problem, levels can refer to the environment of the actors, their goals, policies, and outcomes that will lead to a generalized outcome (the state of the sphere of action). To eliminate ambiguities, each element in the hierarchy should be carefully defined;
- prioritization of primary criteria (forces) regarding their impact on the general goal;
- clear question formulation for pairwise comparisons in each matrix. Pay attention to the orientation of each issue (for example, the cost should decrease and the efficiency should increase);
- setting priorities of partial criteria in relation to general ones. Collection of results of pairwise comparisons;
- processing of collected data according to the AHM algorithm to calculate global priorities and global consistency of results;
- in the case of a choice among alternatives – the choice of the one with the greatest value of global priority. In case of allocation of resources, evaluation of the cost of alternatives, calculation of the efficiency-to-cost ratio and appropriate allocation of resources: fully or proportionally. If it is necessary to determine the priorities of the cost – allocate resources in proportion to the priorities.

In AHM, pairs of problem elements are compared in pairs about their influence (action, weight, intensity) on their common characteristic.

The matrix has the form:

$$A = \begin{pmatrix} 1 & a_{12} & a_{1n} \\ \frac{1}{a_{12}} & 1 & a_{2n} \\ \frac{1}{a_{1n}} & \frac{1}{a_{2n}} & 1 \end{pmatrix},$$

After obtaining quantitative statements about (B_i, B_j) in numerical form is required for

each element of the set $B = \{B_1, B_2, \dots, B_n\}$ to match numerical weights or priorities. In the case of a hierarchical presentation of problems, a matrix is made to compare the relative importance of the criteria of the second level with respect to the general goal of the first level (the root of the hierarchy), and then the same matrices of pairwise comparisons of the next level are built with respect to the elements of the previous one.

Pairwise comparisons are performed in the ratio scale according to the point system, which is given in Table 1.

Table 1: Pairwise comparisons

Mark, k	Definition
1	The same importance
3	Moderate advantage
5	Substantial advantage
7	Significant advantage
9	Very great advantage
2, 4, 6, 8	Intermediate values (used in transitional situations)
1/k	Inverse values

The main task of the AHM is to determine the global priorities of alternatives, that is, their priorities relative to the root of the hierarchy. At the same time, the results of expert surveys in the form of matrices of pair wise comparisons at all nodes of the hierarchy, except for leaves – alternatives, are used as initial data.

For illustration, consider an example. The customer wants to choose a car. As a result of the analysis, the following criteria were identified that should be considered: prestige, cost, specific fuel consumption, comfort, reliability, maximum speed, dimensions, maintenance costs, warranty obligations.

Further consideration makes it possible to choose three models as "candidates" and present the problem in the form of a hierarchy. The initial set of criteria after analysis was narrowed down to such essential ones:

Q_1 – comfort; Q_2 – reliability; Q_3 – speed; Q_4 – cost; Q_5 – prestige; Q_6 – service; Q_7 – guarantees; Q_8 – fuel consumption. With the help of a survey of experts, the following matrix of pairwise comparisons was built for level 2 - criteria.

The hierarchical structure of the task of choosing a car is shown in Figure 4.

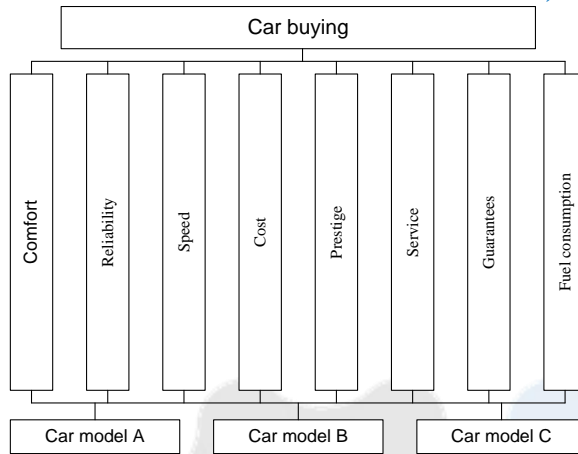


Figure 4: Hierarchical structure of the car selection problem.

Table 2: Matrix of pairwise comparisons of criteria

Criteria	Q ₁	Q ₂	Q ₃	Q ₄	Q ₅	Q ₆	Q ₇	Q ₈
Q ₁	1	5	3	7	6	6	1/3	1/4
Q ₂	1/5	1	1/3	5	3	3	1/5	1/7
Q ₃	1/3	3	1	6	3	4	6	1/5
Q ₄	1/7	1/5	1/6	1	1/3	1/4	1/7	1/8
Q ₅	1/6	1/3	1/3	3	1	1/2	1/5	1/6
Q ₆	1/6	1/3	1/4	4	2	1	1/5	1/6
Q ₇	3	5	1/6	7	5	5	1	1/2
Q ₈	4	7	5	8	6	6	2	1

After that, comparing three cars (A, B, C) in pairs for each of the criteria (level 3), eight matrices (for each of the criteria) of size 3×3 (by the number of alternatives to choose) were obtained.

Let's evaluate the sequence of the expert's statements and the determination of local priorities of the hierarchy.

Let's calculate the local priority vectors, consistency index, and consistency ratio for the matrix of pairwise comparisons of criteria (Table 2) and matrices of pairwise comparisons of alternatives A, B, C according to criteria Q₁–Q₈ (Table 3).

We present below the results of determining the priority vector, consistency index, and consistency ratio for the matrix of pairwise comparisons of criteria (Table 4). The priority vector is obtained because of calculating the main eigenvector followed by its normalization.

The obtained value of the consistency ratio is too high, but we will consider it acceptable. In relatively large matrices ($n = 7, 8, 9$) achieving a high level of consistency is problematic, but in this case the increased risk due to inconsistency should be considered.

Table 3: Matrices of pairwise comparisons of alternatives A, B, C by criteria

	1	2	3	4
1				
2				
3				
4				

						5									
	6			7		8		8		4					
	8	4						6							
5				6				7						8	
										2	2			7	5
	5		3		8		5								
	4				6										3

Table 4: Determination of consistency of criteria matrix.

Criteria	Q ₁	Q ₂	Q ₃	Q ₄	Q ₅	Q ₆	Q ₇	Q ₈	Vector of priorities
Q ₁	1	5	3	7	6	6	1/3	1/4	0,173
Q ₂	1/5	1	1/3	5	3	3	1/5	1/7	0,054
Q ₃	1/3	3	1	6	3	4	6	1/5	0,188
Q ₄	1/7	1/5	1/6	1	1/3	1/4	1/7	1/8	0,018
Q ₅	1/6	1/3	1/3	3	1	1/2	1/5	1/6	0,031
Q ₆	1/6	1/3	1/4	4	2	1	1/5	1/6	0,036
Q ₇	3	5	1/6	7	5	5	1	1/2	0,167
Q ₈	4	7	5	8	6	6	2	1	0,333
								l _u	0,238
								l ₀	0,169

Let's calculate the corresponding characteristics for a set of tables of the next level – evaluation of alternatives.

As for the interpretation of the results, in this example, fuel consumption is the most important factor in choosing a car, comfort is second, and speed is third. In a real situation, based on the results of such an analysis, it would be possible to discard insignificant criteria and repeat the expert's survey, but for illustrative purposes, all were left.

Global priorities are calculated at the next stage of AHM – hierarchical synthesis. For this purpose, to identify the composite, or global, priorities of cars, we will perform a reverse course: from the penultimate level, we move to the root of the hierarchy, collecting vectors of local priorities in a matrix and multiplying them by vectors of local priorities of immediate ancestors, until we reach the root of the hierarchy.

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Table 5: Calculated values of local priorities for alternatives

Q ₁	A	B	C	Vector of priorities	Q ₂	A	B	C	Vector of priorities
A	1	6	8	0,754	A	1	7	1/5	0,233
B	1/6	1	4	0,181	B	1/7	1	1/8	0,005
C	1/8	1/4	1	0,065	C	5	8	1	0,713
			l _u	0,068				l _u	0,124
			l ₀	0,117				l ₀	0,213
Q ₃	A	B	C	Vector of priorities	Q ₄	A	B	C	Vector of priorities
A	1	8	6	0,745	A	1	1	1	0,333
B	1/8	1	1/4	0,065	B	1	1	1	0,333
C	1/6	4	1	0,181	C	1	1	1	0,333
			l _u	0,068				l _u	0
			l ₀	0,117				l ₀	0
Q ₅	A	B	C	Vector of priorities	Q ₆	A	B	C	Vector of priorities
A	1	5	4	0,674	A	1	8	6	0,747
B	1/5	1	1/3	0,101	B	1/8	1	1/5	0,06
C	1/4	3	1	0,226	C	1/6	5	1	0,193
			l _u	0,043				l _u	0,099
			l ₀	0,074				l ₀	0,17
Q ₇	A	B	C	Vector of priorities	Q ₈	A	B	C	Vector of priorities
A	2	1/2	1/2	0,2	A	1	1/7	1/5	0,072
B	2	1	1	0,4	B	7	1	3	0,65
C	2	1	1	0,4	C	5	1/3	1	0,278
			l _u	0				l _u	0,032
			l ₀	0				l ₀	0,056

In the given example, this procedure is reduced to assembling a matrix of vectors of local priorities of alternatives according to the criteria (s = 2):

$$P_1^{(1)} = \begin{pmatrix} 0.754 & 0.233 & 0.745 & 0.333 & 0.674 & 0.747 & 0.200 & 0.072 \\ 0.181 & 0.055 & 0.065 & 0.333 & 0.101 & 0.060 & 0.400 & 0.650 \\ 0.065 & 0.713 & 0.181 & 0.333 & 0.226 & 0.193 & 0.400 & 0.278 \end{pmatrix}$$

A vector of local priorities relative to the root of the tree:

$$x_1^{(1)} = (0.173 \quad 0.054 \quad 0.188 \quad 0.018 \quad 0.031 \quad 0.036 \quad 0.167 \quad 0.333)^T$$

The transport sign is used for the convenience of its recording. Then:

$$p_1^{(1)} = P_1^{(1)} \times x_1^{(1)} = \begin{pmatrix} 0.0396 \\ 0.341 \\ 0.263 \end{pmatrix}.$$

Since the value is updated, the algorithm's work on it is completed. Therefore, according to the overall indicator (despite the worst indicators according to the criterion of fuel consumption), car A is chosen, because other indicators are better compared to competitors.

Practical realization of proposed system

Figure 5 shows the initial view of the web application.

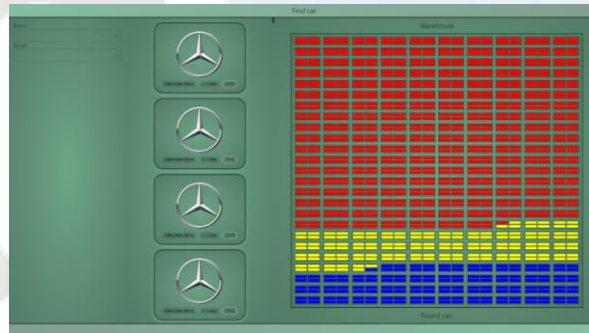


Figure 5: The initial view of the web application

From Figure 5 we can see that the structure of the page is accessible and convenient. It is divided into three sections, namely: brand and model selection (on the left), search results (in the center), the layout of cars in the warehouse (on the right). Each section is a separate software component that performs its role.

The first three stages are the main ones for working with the database. Next will be only the use of data from it. For this we use the keyword SELECT. The first request that will be processed by our server will be as follows – SELECT * from warehouse; – will return us a collection with all the cars in the database. Further, requests may have additional parameters, conditions under which we will select the data we need from the table. For example, to select Volvo cars, we will write the appropriate query – Select * from warehouse where make='Volvo';. We will choose other parameters according to this principle.

Setting up the server is the next step. The server, as described above, allows the user to send requests to the database management system and receive data from it in response. The program file of our application is quite simple and clear.

First, we specify the data of our database, namely the port on which MySQL is based, the name of the database itself, the desired table, and the user's input data – name and password. After a successful connection, we, so to speak, establish a communication channel between the user and the database.

After that database setup, we can run the server and client side. In two separate directories, you need to run the npm i command, which will install all the necessary packages to work. After that, run the npm start command in the same terminals. As soon as the client part is closed, an additional tab with our system will open in the browser.

Suppose that the user wants to find the position of a car with the following parameters:

– brand – Volvo;

- model – V40;
- year of graduation – 2016;
- engine power in horsepower is 245.

Let's perform the following steps and follow the change of the user interface. Select the Volvo brand in the car parameters selection section (Figure 6).

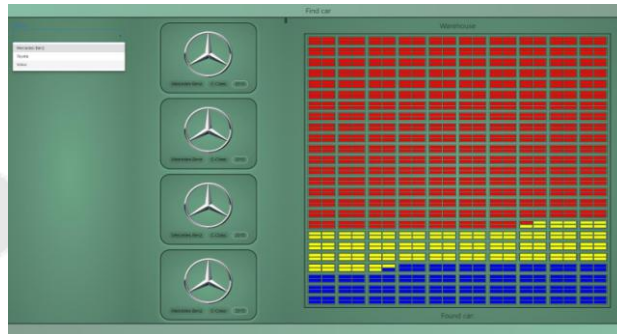


Figure 6: Choosing a Volvo brand car

Select the desired model from the drop-down list (Figure 7).



Figure 7: Selection of the appropriate model of the Volvo brand

As you can see, we received several cars with the specified parameters. Now, to specify a specific car with the required engine power, we select the first car and see its position in the warehouse in the form of a white rectangle. Also, more detailed characteristics of the car are described in the section under the composition scheme (Figure 8).



Figure 8: Selection of the desired car, display of its position in the warehouse and additional characteristics

To find out the position of the car in the warehouse, it is enough to move the mouse cursor over the white rectangle, after which there will be an additional window in which the location is encrypted (Figure 9).



Figure 9: Position of the car in the warehouse and description of additional characteristics

Conclusion

The main modern management methods in warehouses, their differences, and advantages were described. Relevant characteristics, images for each method are given.

In the course of the work, software development of an automated system of logistics processes in warehouses was proposed. A warehouse that can hold up to 1,000 cars was taken into account. The car data was stored in a MySQL database. To work with data, a special server based on NodeJS was implemented, which processed user requests and responded appropriately with the appropriate data.

The visual part of the application, simple and clear, was also implemented.

References:

1. Attar, H., & et al.. (2022). Zoomorphic mobile robot development for vertical movement based on the geometrical family caterpillar. *Computational Intelligence and Neuroscience*, 2022.
2. Matarneh, R., & et al.. (2017). Building robot voice control training methodology using artificial neural net. *International Journal of Civil Engineering and Technology*, 8(10), 523-532.
3. Maksymova, S., & et al.. (2017). Voice Control for an Industrial Robot as a Combination of Various Robotic Assembly Process Models. *Journal of Computer and Communications*, 5, 1-15.
4. Khan, A., & et al.. (2015). Some Effect of Chemical Treatment by Ferric Nitrate Salts on the Structure and Morphology of Coir Fibre Composites. *Advances in Materials Physics and Chemistry*, 5(1), 39-45.
5. Attar, H., & et al.. (2022). Control System Development and Implementation of a CNC Laser Engraver for Environmental Use with Remote Imaging. *Computational Intelligence and Neuroscience*, 2022.
6. Abu-Jassar, A. T., & et al.. (2022). Electronic user authentication key for access to HMI/SCADA via unsecured internet networks. *Computational Intelligence and Neuroscience*, 2022.
7. Nevliudov, I., & et al.. (2020). Development of a cyber design modeling declarative Language for cyber physical production systems. *J. Math. Comput. Sci.*, 11(1), 520-542.
8. Baker, J. H., & et al.. (2021). Some interesting features of semantic model in Robotic Science. *SSRG International Journal of Engineering Trends and Technology*, 69(7), 38-44.

9. Abu-Jassar, A. T., & et al.. (2021). Some Features of Classifiers Implementation for Object Recognition in Specialized Computer systems. TEM Journal: Technology, Education, Management, Informatics, 10(4), 1645-1654.
10. Al-Sharo, Y. M., & et al.. (2021). Neural Networks As A Tool For Pattern Recognition of Fasteners. International Journal of Engineering Trends and Technology, 69(10), 151-160.
11. Ronald Joshua Salvador, & et al.. (2023). Service Allocation for Inbound Logistics using System Generated Software. Ani: Letran Calamba Research Report, 19.1, 1-1.
12. Friska Heriyanti, & Aulia Ishak, (2020). Design of logistics information system in the finished product warehouse with the waterfall method: review literature. In: IOP Conference Series: Materials Science and Engineering. IOP Publishing, 2020, 012100.
13. Muhammad Gufran KHAN, & et al.. (2022). Smart warehouse management system: Architecture, real-time implementation and prototype design. Machines, 10.2, 150.
14. Lorenc, A., & Lerher, T. (2020). PickupSimulo–prototype of intelligent software to support warehouse managers decisions for product allocation problem. Applied Sciences, 10(23), 8683.
15. Lucia, Cassettari, & et al.. (2021). A 4.0 automated warehouse storage and picking system for order fulfillment. In: Lecture Notes in Engineering and Computer Science: Proceedings of The World Congress on Engineering 2021, 7-9.
16. Tong, Q., Ming, X., & Zhang, X. (2023). Construction of Sustainable Digital Factory for Automated Warehouse Based on Integration of ERP and WMS. Sustainability, 15(2), 1022.
17. D. Mozyrska and E. Pawluszewicz. (2012). Controllability of h-difference linear control systems with two fractional orders. Proceedings of the 13th International Carpathian Control Conference (ICCC), 501-506.
18. A. Tsymbal, & A. Bronnikov. (2012). Decision-making in Robotics and adaptive tasks. Proceedings of IEEE East-West Design & Test Symposium (EWDTS'2012), 417-420.
19. Z. Bartosiewicz, & E. Pawluszewicz. (2008). Realizations of Nonlinear Control Systems on Time Scales. IEEE Transactions on Automatic Control, 53(2), 571-575.
20. Igor Nevliudov, & et al.. (2022). The Use of Neural Networks for the Technological Objects Recognition Tasks in Computer-Integrated Manufacturing. 2022 IEEE 4th International Conference on Modern Electrical and Energy System (MEES), Kremenchuk, Ukraine, 1-5.
21. [Rohani, V.A.](#), & et al. (2022). Illustrating scholar–practitioner collaboration for data-driven decision-making in the optimization of logistics facility location and implications for increasing the adoption of AR and VR practices, [The TQM Journal](#), 34(2), 280-302.
22. E. Nielsen, & et al.. (2023). Benefits Realization of Robotic Process Automation (RPA) Initiatives in Supply Chains. In IEEE Access, 11, 37623-37636.
23. Igor Nevliudov, & et al.. (2021). Automation of Mathematical Modeling of Physical and Technological Processes in the Electronic Devices Manufacture. Proceedings of the XII International Scientific Conference «Functional Basis of Nanoelectronics» – Odessa, September 20-24, 74-77.
24. Igor Nevliudov, & et al.. (2019). Mathematical Model of Equivalent Stress Value Dependence from Displacement of RF MEMS Membrane. 2019 IEEE XVth International

Conference on the Perspective Technologies and Methods in MEMS Design (MEMSTECH), Polyana, Ukraine, 2019, 83-86.

25. Невлюдов І.Ш., Демська Н.П., Чала О.О., Демська А.І. (2018). Групове управління гнучкими виробничими системами у виготовленні МЕМС виробів. Міжнародна науково-практична конференція «Математичне моделювання процесів в економіці та управлінні проектами і програмами (ММП2018)», Коблево, 10-14 вересня 2018 р. Харків: ХНУРЕ, 101 -103

26. Igor Nevliudov, & et al.. (2021). Automation of Mathematical Modeling of Physical and Technological Processes in the Electronic Devices Manufacture. Proceedings of the XII International Scientific Conference «Functional Basis of Nanoelectronics» – Odessa, September 20-24, 74-77.

27. Iryna Zharikova, & et al.. (2023). Flexible Printed Structures Quality Models for Mobile Robot Platform. Journal of Natural Sciences and Technologies, 1(1), 77–84.

28. Боцман І., і ін. (2021). Розробка автоматизованої системи контролю друкованих плат із використанням методів машинного навчання. Achievements and prospects of modern scientific research. Abstracts of the 2nd International scientific and practical conference (January 11-13, 2021).–Editorial EDULCP: Buenos Aires, Argentina, 177-184.

29. Невлюдов І. Ш., і ін. (2019) Трансфер технологій у сучасній науці, освіті та виробництві в умовах четвертої промислової революції «ІНДУСТРІЯ 4.0» / Невлюдов І. Ш., Чала О. О., Олександров Ю. М. // Сучасний рух науки: тези доп. VIII міжнародної науково-практичної інтернет-конференції, 3-4 жовтня 2019 р. – Дніпро, 2, 604-608.

Development of a Hardware Module for Programming Microcontrollers Based on the Cortex-M Architecture

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Abstract:

This article analyzes modern programming interfaces of microcontrollers with Cortex-M core architecture. The existing software and hardware tools for programming microcontrollers were reviewed and analyzed. Methods of automating the microcontroller programming process were also analyzed. Based on the analysis, a structural diagram of the layout was developed, hardware and software components were selected, and a number of experiments were conducted to evaluate the execution time of the micro controller programming script and stress test the host server, which showed a good result.

Key words: Industry 4.0, IIoT, Microcontrollers, Cortex-M, JTAG, SWD, Automation, Firmware.

Introduction

The development of a hardware module for microcontrollers automating the programming is one of the most important stages in modern devices production organization within the Industry 4.0 concept [1]. Over the past few decades, there has been a positive trend towards the use of microcontroller control devices. Because of this, more and more devices in a wide range of industries have microcontrollers in them that must be programmed at device production stage. During the production of these devices, the task arises to automate the process of downloading the software to the microcontroller as part of serial or mass production. And this task should be solved not by classical approaches – programming each one separately, but by a synchronous mass approach using Industrial Internet of Things (IIoT) technologies [2], which will save production time and increase economic profitability.

Thus, the topic of this study within the framework of the development of a hardware and software module for programming microcontrollers based on the Cortex-M architecture is relevant and is found in different studies [3]-[14].

Related works

Microcontrollers are used in many everyday devices and will become more common as the Internet of Things (IoT) gains momentum, there are studies and publications related to automating the programming of microcontrollers, let's look at some of them.

Nathanael R. Weidler and others developed Return Oriented Programming (ROP), a technique used to take over the execution of a program by causing the return address of a function to be changed using an exploit vector, and then returning to small segments of innocuous code located in executable memory one after another [15]. Analyzing this method, the following conclusions can be drawn: the proposed solution makes it possible to partially and/or fully control the Tiva TM4C123GH6PM microcontroller, which uses a Cortex-M4F processor.

Per Lindgren and others propose using Real-Time For the Masses (RTFM), a set of languages and tools being developed to facilitate embedded software development and provide highly efficient implementations designed for static verification [16]. It is worth noting that the

RTFM core is an architecture designed to provide highly efficient and predictable scheduling based on stack resource policies targeting bare metal (single-core) platforms, which is not suitable for the solution in this research.

Mohammad Hossein Askari Hemmat et al.'s work redefines the term NuAC to support code generation for ARM Cortex-M processors and introduces an automated SysML activity diagram to an RTX (Keil Real-Time Operating System) code generator that uses the mapping rules expressed in NuAC [17]. This solution is widely used for modeling and analysis of complex systems and has become the de facto standard for software and embedded systems.

The research by Tomáš Jakubík was of particular interest, which described a project for a simulator of Cortex-M microprocessors. This project is based on the Unicorn Engine, which is used to simulate the ARM core. The advantage of this project is the ability to download factory firmware and replace microprocessor peripherals. The same firmware can be executed on a physical board and the same firmware can be simulated. This enables rapid continuous integration and testing in embedded software development [18]. The proposed solution inspired the researchers to develop a hardware and software complex for programming microcontrollers based on the Cortex-M architecture.

Development of a hardware module for programming Cortex-M

Cortex-M is a family of microprocessor cores from the ARM company, which are designed for use in microcontrollers, ASIC (decrypts – "application special integrated circuit"), user-programmable gate arrays (PCVM), and systems on a crystal (SNA) [19]. Cores from the Cortex-M family are used not only as a microcontroller core, but also hidden inside an SNC, such as power management controllers, I/O port controllers, touch screen controllers, smart battery charge controllers, and sensor device controllers [20]. The Cortex-M processor family is optimized for energy-efficient microcontrollers.

In Cortex-M processors, at the system design stage, there is a choice between two protocols, Joint Test Action Group (JTAG) and Serial Wire Debug (SWD) [21]. An example of a JTAG connection is shown in Figure 1.

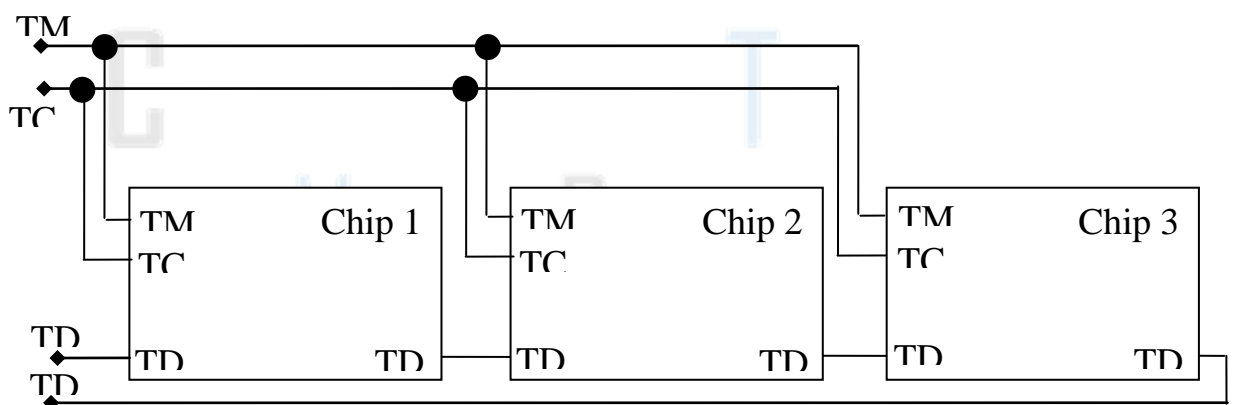


Figure 1: Connecting chips using JTAG

This interface is four or five dedicated pins of the chip:

- TCK (test clock) – a clock signal, the frequency is limited to 40 MHz;
- TDI (test data input) – sequential data input, such as control commands and data;

- TDO (test data output) – output for serial data from the chip;
- TMS (test mode select) – allows switching chips into debugging mode and changing test/debugging modes;
- TRST (test reset) – allows you to reset the target chip to its initial state.

The second interface, SWD, requires only two pins to connect, which is ideal for devices with a limited number of pins. The SWD interface requires only the TMS and TCK pins from the JTAG interface. As a result, it is necessary to develop an experimental prototype with the possibility of universal programming of processors of the Cortex-M family, both with the JTAG and SWD interfaces.

At the first stage, we will develop a structural diagram of the hardware subsystem (Figure 2a) and the software subsystem (Figure 2b) of the layout for programming Cortex-M family processors.

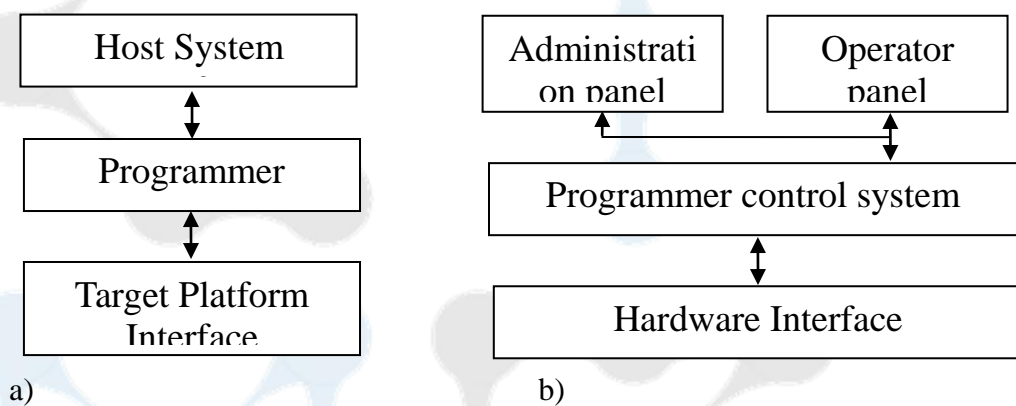


Figure 2: The structure of the hardware and software programming subsystem of Cortex-M family processors

Based on the developed structures of the hardware and software programming subsystem of the Cortex-M family processors, we will select the hardware components. One of the requirements for hardware modules is physical USB and Ethernet interfaces. USB (English Universal Serial Bus) is a serial communication interface that can be roughly placed on the first two levels of the Open Systems Interconnection (OSI) model, that is, the physical and channel levels [22]. At the physical level, USB uses 4 wires, 2 for power (5V and Gnd), and 2 for data transmission – a differential pair. At the channel level, a packet transmission protocol is used to ensure the reliability of data transmission between devices. USB devices are also on the last, seventh, application level of the OSI model, and the support of the Linux distribution OS. As a result, Raspberry Pi Zero W [23], NanoPI NEO [24] and Orange Pi Zero LTS [25] satisfy the requirements. It is worth noting that the NanoPI NEO only has a wired network connection, while the Raspberry Pi Zero W only supports a wireless Wi-Fi connection and the Orange Pi Zero LTS supports both ways to connect to the network, but it costs a lot more more than NanoPI NEO. As a result, we will choose NanoPI NEO (Figure 3.a) and the SEGGER J-Link microcontroller programmer (Figure 3b) as part of the development of the layout, the general of which is presented in Figure 3.

The next step is to calculate the value of the optimal RC circuit for the signal line of the SWD interface. A low-pass filter, also known as an RC filter, is used in data exchange lines to

cut off high-frequency interference, increases resistance to electromagnetic interference and radio interference.



a) b)
Figure 3: General view of the selected hardware modules

Since the RC filter is an aperiodic link of the first order, it is described by the following differential equation:

$$T \frac{dy}{dt} + y(t) = kx(t), \quad 1)$$

where t - time constant.

As a result, the transition function of the link is expressed:

$$h(t) = k(1 - e^{-\frac{t}{T}}) \cdot 1(t). \quad 2)$$

For an RC circuit, the time constant is expressed as

$$T = RC, \quad 3)$$

where R – resistor resistance; C – capacitor capacity.

The time constant is inversely related to the cutoff frequency and is depicted on the logarithmic amplitude-frequency characteristic (LAFC). Cutoff frequency ω_c - characterizes the bandwidth of the filter. When the input signal has a frequency lower than the cut-off frequency, the output signal is not changed, or is not changed significantly, otherwise the filter smooths and changes the amplitude of the signal with a frequency higher than the cut-off frequency. The ratio of the cutoff frequency and the time constant is expressed as:

$$\omega_c = \frac{1}{T} = \frac{1}{RC}. \quad 4)$$

In order to preserve the clarity of the signal at non-ideal real values of the signal frequency, for example, due to the error of the clock signal of the control device, we will add to

the bandwidth a window of 10% of the maximum recommended frequency of the SWD interface, that is, we will add 400 kHz to the maximum 4 MHz and get a cutoff frequency of 4, 4 MHz. Analyzing formula (4), we get that in order for the bandwidth of the first-order aperiodic link to be 4400 kHz, the product of the resistance of the resistor and the capacity of the capacitor must be at least . Taking, for example, a resistor with a resistance of 1.5 kΩ from the available ratings, it will be enough to take a capacitor with a capacity of 15 nF. At the same time, this resistor will have a current limiting function. The connection of the calculated RC filter is presented in Figure 4.

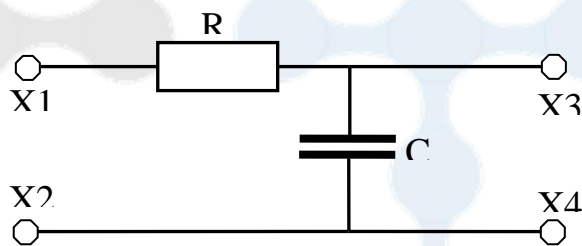


Figure 4: Schematic image of the connection of the calculated RC filter

We connect the GND contacts of the programmer and the target system to X2 and X4. We connect the input signal from the programmer to X1. At the X3 output, we receive a signal that needs to be connected to the target system.

Also, it is necessary to take into account the response delays of the target platform, which are specified in the documentation of the SWD protocol [26]. We assume that the connection to the target platform and the data transfer are error-free. Direct data transfer depends on the amount of data to be transferred. After analyzing the given information, we distinguish the permanent and variable parts of data recording to flash memory. In the permanent part, we take into account all packages of the preparatory stage. The variable part includes the first four points of the data transfer stage, for each page of the storage device. For STM32 microcontrollers, the most common flash memory page size is 2048 bytes, or 2 KB. To calculate the total transmission time, we use the following formula:

$$T_{gen} = T_{peaceful} + T_{var_page} + T_{var_data}, \quad (5)$$

where: $T_{peaceful}$ – constant part time [c]; T_{var_page} – variable part time per page [c]; T_{var_data} – time variable part for data transfer [c].

The time for which each data packet is transmitted is calculated according to the formula:

$$T_{package} = \frac{b_{package}}{v}, \quad (6)$$

where: $b_{package}$ – the number of bits to be transmitted; v – signal frequency.

Using formula (6), we calculate the time it takes to transmit the constant part ($T_{peaceful}$), which is sent at the beginning of each communication session

$$T_{\text{peaceful}} = 3 \cdot T_{\text{package}}. \quad (7)$$

Formula for calculating the time it will take to transfer the variable part of each page ($T_{\text{var_page}}$):

$$T_{\text{var_page}} = 4 \cdot T_{\text{package}} \cdot \left[\frac{n}{B_{\text{page}}} \right], \quad (8)$$

where: n – the total number of bytes in the transfer; B_{page} – number of bytes per page.

To calculate the time it takes to transfer the variable part with data ($T_{\text{var_data}}$) for the target system, we use the following formula

$$T_{\text{var_data}} = \left[\frac{8 \cdot n}{b_{\text{package}}} \right] \cdot \frac{1}{v}, \quad (9)$$

where: n – the total number of bytes in the transfer; b_{package} – the number of payload bits in a packet; v – signal frequency.

Substitute formulas 6-9 into expression 5, simplify 6 and 7 using expression 6, and obtain the total transfer time (T_{gen}):

$$\begin{aligned} T_{\text{gen}} &= 3 \cdot T_{\text{package}} + \left(4 \cdot T_{\text{package}} \cdot \left[\frac{n}{B_{\text{page}}} \right] \right) + \left(\left[\frac{8 \cdot n}{b_{\text{package}}} \right] \cdot \left(\frac{1}{v} \right) \right) = \\ &= \frac{3 \cdot b_{\text{package}}}{v} + \left(4 \cdot \frac{b_{\text{package}}}{v} \cdot \left[\frac{n}{B_{\text{page}}} \right] \right) + \left(\left[\frac{8 \cdot n}{b_{\text{package}}} \right] \cdot \left(\frac{1}{v} \right) \right) = \\ &= \left(\frac{1}{v} \right) \cdot \left(3 \cdot b_{\text{package}} + 4 \cdot b_{\text{package}} \cdot \left[\frac{n}{B_{\text{page}}} \right] + \left[\frac{8 \cdot n}{b_{\text{package}}} \right] \right). \end{aligned} \quad (10)$$

When using the maximum frequency of the SWD signal – 4 MHz, and 2048 bytes per page in the memory of the target system, and also knowing that in each packet we transmit 45 bits, we can simplify formula (10) and obtain:

$$\begin{aligned} T_{\text{gen}} &= \left(\frac{1}{4 \cdot 10^{-6}} \right) \cdot \left(3 \cdot 45 + 4 \cdot 45 \cdot \left[\frac{n}{2048} \right] + \left[\frac{8 \cdot n}{32} \right] \right) = \\ &= 0,25 \cdot 10^{-6} \cdot \left(135 + 180 \left[\frac{n}{2048} \right] + \left[\frac{8 \cdot n}{32} \right] \right). \end{aligned} \quad (11)$$

Using the formula (11), it is possible to calculate the total time of writing to the flash memory of an STM32 microcontroller with a core of the Cortex-M family, a test program with the size of 16724 bytes, which was 1.484 ms.

To check the correctness of the performed calculations, let's assemble a test prototype of the software and hardware module for programming microcontrollers based on the Cortex-M architecture, which is presented in Figure 5.

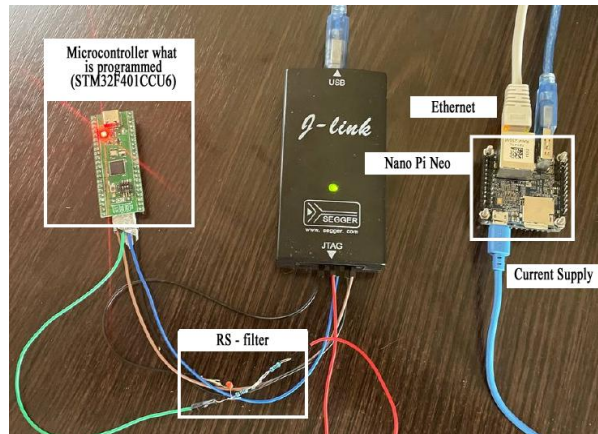


Figure 5: Test prototype of a hardware module for programming microcontrollers based on the Cortex-M architecture

Experimental studies of the developed module for programming microcontrollers based on the Cortex-M architecture

The first test will be a software test of the speed of downloading the program to the STM32F401CCU6 using OpenOCD [27]-[29]. Although we have calculated the approximate programming time, but these were the conditions of an ideal hardware part that has at least 2 processor cores, one for communication with the host platform, the other for communication with the target platform, and the write delays to the flash memory were also not taken into account of the microcontroller itself. Also, the download time depends on the speed of the host platform itself and the control program, in our case OpenOCD. To conduct this experiment, we will use the Linux utility – time, which, when passing another command as an argument to it, calculates the time it takes to execute this command. The test results are shown in Figure 6.

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Open On-Chip Debugger 0.12.0+dev-01154-g91bd43134 (2023-04-30-11:36)
Licensed under GNU GPL v2
For bug reports, read
    http://openocd.org/doc/doxygen/bugs.html
Open On-Chip Debugger 0.12.0+dev-01154-g91bd43134 (2023-04-30-11:36)
Licensed under GNU GPL v2
For bug reports, read
    http://openocd.org/doc/doxygen/bugs.html

swd
adapter speed: 4000 kHz
Info : J-Link V9 compiled May  7 2021 16:26:12
Info : Hardware version: 9.60
Info : VTarget = 3.264 V
Info : clock speed 2000 kHz
Info : SWD DPIDR 0x2ba01477
Info : [stm32f4x.cpu] Cortex-M4 r0pl processor detected
Info : [stm32f4x.cpu] target has 6 breakpoints, 4 watchpoints
Info : starting gdb server for stm32f4x.cpu on 3333
Info : Listening on port 3333 for gdb connections
[stm32f4x.cpu] halted due to debug-request, current mode: Thread
xPSR: 0x01000000 pc: 0x08000324 msp: 0x20010000
Info : device id = 0x00016423
Info : flash size = 256 KiB
auto erase enabled
wrote 16384 bytes from file ./picoLED_1.hex in 0.857928s (18.650 KiB/s)
shutdown command invoked

real    0m4.912s
user    0m0.226s
sys     0m0.186s
```

Figure 6: The result of the microcontroller programming script execution time evaluation

As you can see, the result of STM32F401CCU6 microcontroller programming script execution time evaluating showed the following results: real execution time (the entire, total time when the command was active, from the beginning to the end of its execution) – 4.912s; user (the time the called command was executed outside the OS core, in user space) – 0.226s; sys (the time the called command was executed in the OS kernel, in the system space) – 0.186s.

Also, we will conduct an experiment with a stress load, the purpose of which is to check whether our system will maintain the expected response speed during a significant increase in the load on the host server. Since the system was designed for use in a small company, we will determine that the maximum level of simultaneous requests is 10. The test will be implemented using a script written in Python using the requests, time, concurrent and matplotlib libraries to display the results. We received the response time graph for the total number of 1000 requests, which is shown in Figure 7.

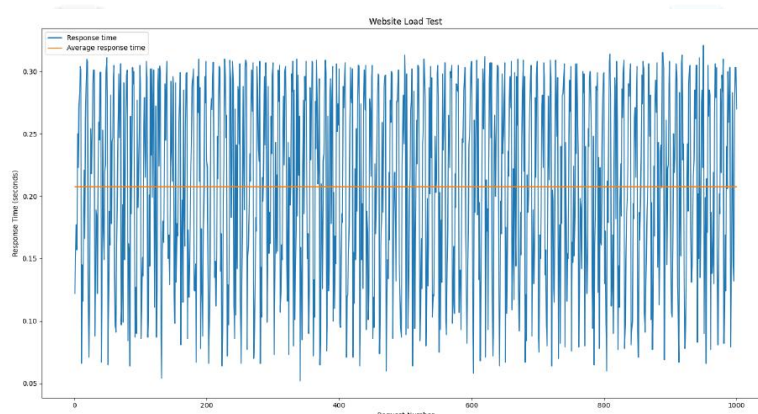


Figure 7: Host-server stress testing result

Analyzing the results of the first experiment, knowing that the complete cycle of script execution: reading the identifier, programming, writing to the history of the unique identification number takes almost 5 s, it is necessary to optimize this process, one of the solutions is to use

multithreading and using 2 more available, but not soldered USB on the NanoPI NEO board to connect two hardware programmers to the host platform. Evaluating the result of the second experiment, it can be confirmed that the system maintains stability and the speed of returning responses to requests.

Conclusion

This article analyzes modern programming interfaces of microcontrollers with Cortex-M core architecture. The existing software and hardware tools for programming microcontrollers were reviewed and analyzed. Methods of automating the microcontroller programming process were also analyzed. Based on the analysis, a structural diagram of the prototype was developed. Also, hardware and software components were selected that correspond to the technical task and have the ability to preserve functionality when the number of users increases, on the basis of which the layout of the microcontroller programming system based on the Cortex-M architecture was assembled. Experimental studies of the speed of programming the microcontroller by the test program and the stability of the host system to an increase in the flow of requests from users were conducted.

As a result, an automated microcontroller programming system based on the ARM Cortex-M family of processors was implemented.

In the future, it is planned to expand the functionality of the software module - implement firmware and user statistics, hardware subsystem - expand the list of supported microcontrollers.

References:

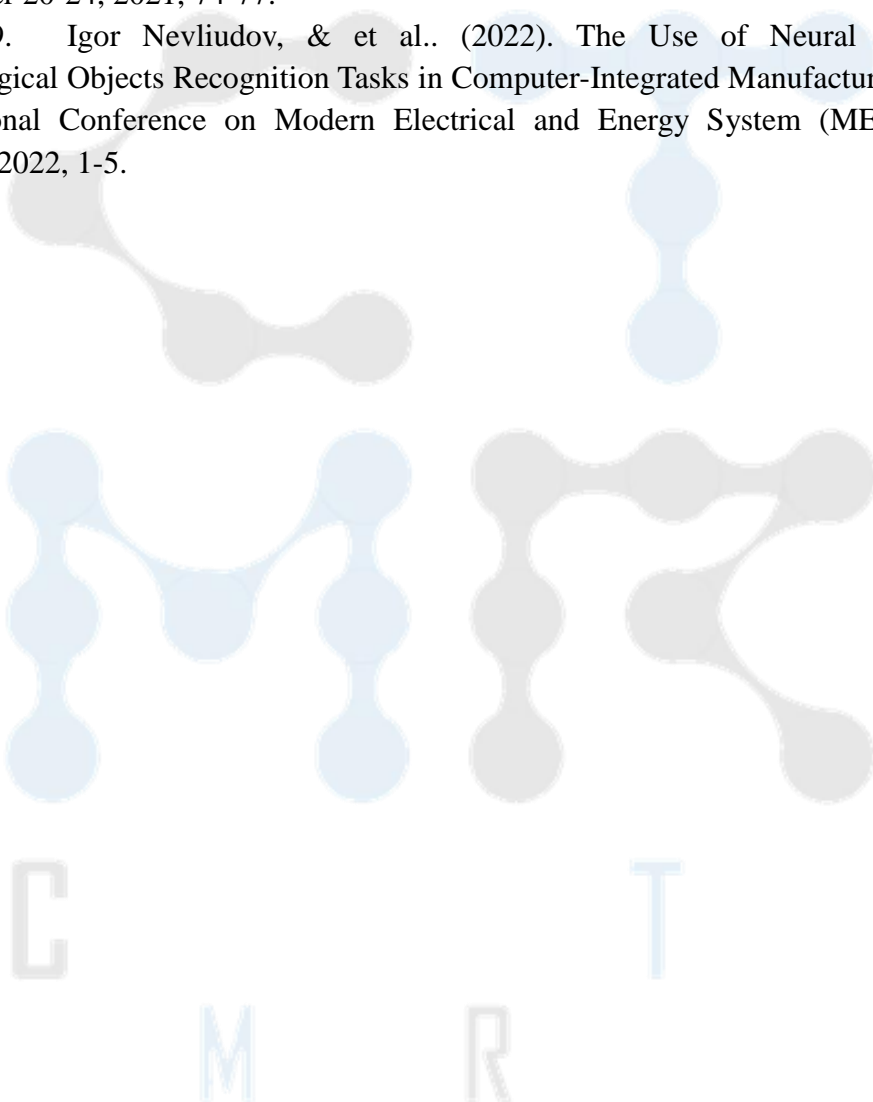
1. Mijailović, Đorđe & et al. (2021). A Cloud-Based with Microcontroller Platforms System Designed to Educate Students within Digitalization and the Industry 4.0 Paradigm. *Sustainability*, 13(22), 12396.
2. Ala-Laurinaho, Riku, & et al. (2020). Open Sensor Manager for IIoT. *Journal of Sensor and Actuator Networks*, 9, 2(30).
3. Attar, H., & et al.. (2022). Zoomorphic mobile robot development for vertical movement based on the geometrical family caterpillar. *Computational Intelligence and Neuroscience*, 2022.
4. Tvoroshenko, I., & et al.. (2020). Modification of models intensive development ontologies by fuzzy logic. *International Journal of Emerging Trends in Engineering Research*, 8(3), 939-944.
5. Al-Sherrawi, M. H., & et al.. (2018). Corrosion as a source of destruction in construction. *International Journal of Civil Engineering and Technology*, 9(5), 306-314.
6. Dadkhah, M., & et al.. (2019). Methodology of wavelet analysis in research of dynamics of phishing attacks. *International Journal of Advanced Intelligence Paradigms*, 12(3-4), 220-238.
7. Attar, H., & et al.. (2022). Control System Development and Implementation of a CNC Laser Engraver for Environmental Use with Remote Imaging. *Computational Intelligence and Neuroscience*, 2022.
8. Abu-Jassar, A. T., & et al.. (2022). Electronic user authentication key for access to HMI/SCADA via unsecured internet networks. *Computational Intelligence and Neuroscience*, 2022.

9. Nevliudov, I., & et al.. (2020). Development of a cyber design modeling declarative Language for cyber physical production systems. *J. Math. Comput. Sci.*, 11(1), 520-542.
10. Baker, J. H., & et al.. (2021). Some interesting features of semantic model in Robotic Science. *SSRG International Journal of Engineering Trends and Technology*, 69(7), 38-44.
11. Abu-Jassar, A. T., & et al.. (2021). Some Features of Classifiers Implementation for Object Recognition in Specialized Computer systems. *TEM Journal: Technology, Education, Management, Informatics*, 10(4), 1645-1654.
12. Nevliudov, I., & et al.. (2020). Method of Algorithms for Cyber-Physical Production Systems Functioning Synthesis. *International Journal of Emerging Trends in Engineering Research*, 8(10), 7465-7473.
13. Al-Sharo, Y. M., & et al.. (2021). Neural Networks As A Tool For Pattern Recognition of Fasteners. *International Journal of Engineering Trends and Technology*, 69(10), 151-160.
14. Sotnik, S., & et al.. (2020). Some features of route planning as the basis in a mobile robot. *International Journal of Emerging Trends in Engineering Research*, 8(5), 2074-2079.
15. Nathanael R. Weidler, & et al.. (2017). Return-Oriented Programming on a Cortex-M Processor. In 2017 IEEE Trustcom/BigDataSE/ICCESS. Sydney, NSW, Australia.
16. Per Lindgren, & et al. (2016). Abstract timers and their implementation onto the ARM Cortex-M family of MCUs. *ACM SIGBED Review*, 13(1), 48-53.
17. Mohammad Hossein Askari Hemmat & et al. (2016). owards code generation for ARM Cortex-M MCUs from SysML activity diagrams. In 2016 IEEE International Symposium on Circuits and Systems (ISCAS). Conference Location: Montreal, QC, Canada.
18. Tomáš Jakubík. (2020). Cortex-M Simulator. In 2020 International Conference on Applied Electronics (AE). Conference Location: Pilsen, Czech Republic.
19. Lucan Orășan, & et al.. (2022). A Brief Review of Deep Neural Network Implementations for ARM Cortex-M Processor. *Electronics*, 11(16), 2545.
20. Amar A. Rasheed, & et al.. (2021). Clock Gating-Assisted Malware (CGAM): Leveraging Clock Gating On ARM Cortex M For Attacking Subsystems Availability. In 2021 9th International Symposium on Digital Forensics and Security (ISDFS), Conference Location: Elazig, Turkey.
21. Trevor Martin (2023). *The Designer's Guide to the Cortex-M Processor Family*. Elsevier Ltd, 604.
22. Amin, M.S., Rahman, S. (2023). An Introduction of Open System Interconnection (OSI) Model and its Architecture. *Preprints 2023*, 2023051858.
23. Gede Bagus Wirawan, & et al.. (2023). IoT based anti covid visitor management system using Raspberry pi zero W. *AIP Conf. Proc.* 2482, 100010.
24. Ortega, Alberto, & et al.. (2023). Design of a Standard and Programmatically Accessible Interface for Smart Meters to Allow Monitoring Automation of the Energy Consumed by the Execution of Computer Software. *Sustainability*, 15(3), 1900.
25. Liu, Jian, & et al.. (2022). Contour Resampling-Based Garlic Clove Bud Orientation Recognition for High-Speed Precision Seeding. *Agriculture*, 12(9), 1334.

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-3, ISSUE-3

26. Banik, S., & Zimmer, V. (2022). System Firmware Debugging. In: Firmware Development. Apress, Berkeley, CA.
27. David Llanio Reyes, & et al.. (2023). Anomaly Detection in Embedded Devices Through Hardware Introspection. In 2023 Silicon Valley Cybersecurity Conference (SVCC). Conference Location: San Jose, CA, USA.
28. Igor Nevliudov, & et al.. (2021). Automation of Mathematical Modeling of Physical and Technological Processes in the Electronic Devices Manufacture. Proceedings of the XII International Scientific Conference «Functional Basis of Nanoelectronics» – Odessa, September 20-24, 2021, 74-77.
29. Igor Nevliudov, & et al.. (2022). The Use of Neural Networks for the Technological Objects Recognition Tasks in Computer-Integrated Manufacturing. 2022 IEEE 4th International Conference on Modern Electrical and Energy System (MEES), Kremenchuk, Ukraine, 2022, 1-5.



Using Mecanum Wheels for Radio Shuttle

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Abstract:

Automation of production is inextricably linked with automation of warehouse systems. This is especially clear when applying the Industry 4.0 concept, since we see a clear development of the Warehouse 4.0 concept. This paper examines in detail the existing designs of the Radio Shuttle, as well as their areas of application. However, there are many limitations associated with the design features of these devices. We consider the main limitation to be low flexibility, as well as the inability to move in different directions. To solve this problem, the authors propose to use Mecanum wheels, which eliminate the problem of the impossibility of moving in the desired, that is, optimal, direction.

Key words: Radio Shuttle, Omnidirectional wheel, Mecanum wheel, Cargo, Warehouse system, Warehouse 4.0

Introduction

In the Industry 4.0 concept, the Warehouse 4.0 approach is becoming increasingly important [1]-[7].

In the modern world, automatic loading and unloading systems increasingly ensure the operation of warehouse complexes [8]-[13]. Such systems are usually called Radio Shuttle. Radio Shuttle is an electrical module that transports pallets. It transports goods inside the racking system.

In this case, the operator's attention/time is practically not required; he can solve other problems. Several of these modules can be controlled using one remote control.

Currently, there are different types of such carriers for different pallets, including those that can transport two different types of pallets. Now the maximum load capacity is 1500 kg.

To work with such devices, you can use any model of stacker or loader.

The main element of the Radio shuttle system is a mobile automatic platform capable of moving pallets within a racking system in a remotely controlled manner.

We can highlight a group of benefits of using the Radio Shuttle [12], [14]. But we also see a set of disadvantages in existing constructions of Radio Shuttles. The main of them is the limited flexibility.

We propose to use omnidirectional wheels (mecanum wheels) in order to eliminate or decrease this constraint. And further in this work we will propose our solution to this problem.

Related works

First of all let us consider what is happening in modern storage systems and in what way their development moves.

In [15] authors note, that storage technology selection is a very important design decision that greatly affects the future performance of a warehouse. In future we plan to change the storage structure in order to use our decision proposed in this paper ore efficiently.

Kansy Dawid devoted plenty of his works to problems connected with storage technology and especially to shuttle racks systems organization [12], [14], [16]. In [16] he pays particular attention to planning storage location.

Scientists in [17] also write about storage organization necessity. But they also highlight an important problem connected with the applied general classification of storage systems and materials handling machines, as well as the clarification of the connections between them.

Paper [18] is considering principles “First In, Last Out” - FILO and “First-In, First-Out” - FIFO in order to optimize storage structure.

But we don't see a lot of publications that propose to optimize a shuttle moving. And we want to make Radio Shuttle more effective by using omnidirectional wheels.

Plenty of scientists propose to use such systems in different fields.

Authors [19] note that the ability to move in any direction without altering even a single wheel makes this type of wheel useful for driving, especially in a narrowed or confined space. And in storage we have the same confined space.

At the same time Cao G. and co-authors remark that mecanum-wheeled mobile robots are widely used because they can easily realize omnidirectional movement and have flexible movement characteristics [20].

Scientists in [21], [22] also write about the superior mobility and maneuverability to move toward any position and attain any orientation simultaneously. They claim that mecanum wheeled omnidirectional mobile robot is playing an increasingly important role in modern transport and industry due to its high flexibility and maneuverability.

Researchers also say about the advisability of using omnidirectional wheels in [23]. Here we can also talk about their use in various robotic systems [24]-[28].

So we see very specific problems associated with limiting the movements of the Radio Shuttle. On the other hand, we see that the use of Mecanum wheels can solve many of the listed problems. Thus, the limitations of existing solutions in the development of the Radio Shuttle will be discussed in detail, as well as the benefits that are planned to be obtained from the introduction of Mecanum wheels will be analyzed in detail.

Mecanum wheels as a way to improve Radio Shuttle

Storage methods are influenced by Radio Shuttle design features, such as:

- limited flexibility of Radio Shuttle design: The disadvantages of LIFO and FIFO methods reinforce the limited flexibility of Radio Shuttle design. For example, if the system is LIFO, it is more difficult to distribute new goods and rearrange the storage of old goods due to fixed rails and racks. Such restrictions can make it difficult to optimize warehouse space and manage the movement of goods;

- difficulties in managing access to goods: If the system uses the LIFO method and the latest goods are stored closer to the exit, this may create restrictions on access to old goods, especially if there is a need for manual access to them. Similarly, in the case of FIFO, it is more difficult to organize quick access to new goods, since old goods may take up more accessible space within the system;

- optimizing space usage: Disadvantages in storage methods can increase the challenges of optimizing space usage within Radio Shuttle structures. Difficulties in efficient space using

may arise due to the system's inability to adapt to different sizes and goods characteristics that require storage using certain methods (LIFO or FIFO);

- difficulties in configuration changes: If LIFO and FIFO methods require changes in goods distribution, this may require major changes in the configuration of the Radio Shuttle system. This, in turn, can be a labor-intensive and costly process, which creates difficulties in System control [16].

Thus, the disadvantages of LIFO and FIFO storage methods may exacerbate limitations and weaknesses in Radio Shuttle design, creating additional challenges in optimizing and controlling warehouse operations. The optimal solution in this situation requires a careful analysis of warehouse requirements and selection of a storage method that best meets the characteristics of the goods and warehouse operations [17], [18]. The main types of Radio Shuttle that are used within Warehouse 4.0 are presented in Figure 1 [19].

The use of Mecanum wheels can significantly improve the efficiency and flexibility of these designs. Here are the conclusions that can be drawn to justify the improvement of these structures through the use of Mecanum wheels:



a) Radio Shuttle; b) Multi-deck Shuttle carrier;
c) Four-way Shuttle system; d) Shuttle Carrier

Figure 1: Main Radio Shuttle Types That Are Used within Warehouse 4.0.

- good flexibility and maneuverability, Mecanum wheels have the ability to move in any direction without the need to turn the entire structure. This adds high agility and flexibility when moving goods in tight spaces. This is a key advantage when working in warehouse environments;

- easy access to goods, thanks to the ability to move sideways and diagonally, Mecanum wheels provide easy access to goods located at various levels and angles, reducing the complexity of moving goods in systems with many levels and complex configurations;

- efficient space using, Mecanum wheels allow optimal space using in the warehouse, as they allow movement in different directions without the need to rebuild the entire system, which is especially useful in systems with limited space;

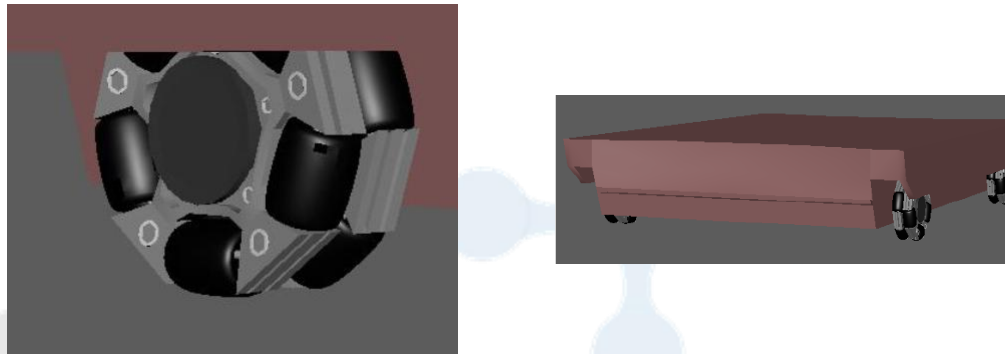
- simplified control, moving in any direction without turning, systems with Mecanum wheels can be controlled more efficiently and accurately. This allows you to avoid collisions and optimize the planning of goods movements;

- easy implementation and integration, Mecanum wheels are easy to install and integrate, making it easy to upgrade existing designs without having to completely replace the system.

Thus, the use of Mecanum wheels improves the flexibility, maneuverability, accessibility and controllability of existing structures, making them more efficient and adaptable to different

working conditions in the warehouse. These advantages justify the decision to improve systems using Mecanum wheels .

Using 3D modeling, let us design a Radio Shuttle robotic platform with built-in Mecanum wheels; an example of implementation is shown in Figure 2.



a)

a) Mecanum Wheels 3D Model;

b)

b) Radio Shuttle Robotic Platform 3D Model General View

Figure 2: Mecanum Wheels 3D Model on 3D Radio Shuttle Robotic Platform

So, it is necessary to improve the supporting structure of the racks in order to realize the benefits of Mecanum wheels on the Radio Shuttle platform. Such researches are planned to be conducted in nearest future.

Conclusion

In proposed paper the authors present an innovative approach to improving the Radio Shuttle design using Mecanum wheels. This improvement significantly increases the system functionality and mobility, allowing the Radio Shuttle to move freely horizontally and vertically in any plane.

The integration of Mecanum wheels into the Radio Shuttle design has led to significant changes in the design of product storage racks. These changes created a more flexible and efficient storage system capable of moving in any direction and vertically, which was not previously possible with the Radio Shuttle system.

The findings highlight the significance of the proposed changes and their potential to optimize warehouse operations and improve overall performance in the logistics and storage of goods within Warehouse 4.0.

References:

1. Tubis, Agnieszka A., & Juni Rohman. (2023). Intelligent Warehouse in Industry 4.0–Systematic Literature Review. *Sensors*, 23(8), 4105.
2. Ahmad, M. A., & et al.. (2019). Computational complexity of the accessory function setting mechanism in fuzzy intellectual systems. *International Journal of Advanced Trends in Computer Science and Engineering*, 8(5), 2370-2377.
3. Albashir A. Youssef1 , Mohamed Atef El Khoreby1 , Hanady Hussein Issa1 , A. Abdellatif. (2022). Brief Survey on Industry 4.0 Warehouse Management Systems. *International Review on Modelling and Simulations*, 15(5).

4. Tutam, M. (2022). Warehousing 4.0 in Logistics 4.0. In: İyigün, İ., Görçün, Ö.F. (eds) Logistics 4.0 and Future of Supply Chains. Accounting, Finance, Sustainability, Governance & Fraud: Theory and Application. Springer, Singapore.
5. Sotnik, S., & et al.. (2017). System model tooling for injection molding. *International Journal of Mechanical Engineering and Technology*, 8(9), 378-390.
6. Michal Zoubek, & Tomáš Broum. (2020). Methodology Proposal for Storage Rationalization by Implementing Principles of Industry 4.0. in a Technology-Driven Warehouse. *Transactions of FAMENA*, 44(4).
7. Igor Nevliudov, & et al. (2021). Evolutions of group management development of mobile robotic platforms in warehousing 4.0. *Innovative Technologies and Scientific Solutions for Industries*, 4 (18), 57–64.
8. Attar, H., & et al.. (2022). Control System Development and Implementation of a CNC Laser Engraver for Environmental Use with Remote Imaging. *Computational Intelligence and Neuroscience*, 2022.
9. Igor Nevliudov, & et al. (2022). Analysis of Software Products for Simulation Modeling of the Operation of the System of Shuttles for Warehousing. *Manufacturing & Mechatronic Systems 2022: Proceedings of VIst International Conference*, Kharkiv, October 20-21, 2022, P. 24-26
10. Abu-Jassar, A. T., & et al.. (2022). Electronic user authentication key for access to HMI/SCADA via unsecured internet networks. *Computational Intelligence and Neuroscience*, 2022.
11. Kansy Dawid, & et al. (2020) Optimization Model for Relocating Items in A Radio-Shuttle Compact Storage System, In: *Education Excellence and Innovation Management: A 2025 Vision to Sustain Economic Development during Global Challenges / International Business Information Management Association (IBIMA)*, 2883-2892
12. Nevliudov, I., & et al.. (2020). Development of a cyber design modeling declarative Language for cyber physical production systems. *J. Math. Comput. Sci.*, 11(1), 520-542.
13. Igor Nevliudov, & et al. (2021). Evolutions of Group Management Development of Mobile Robotic Platforms In Warehousing 4.0. *Innovative Technologies and Scientific Solutions for Industries*, 4(18), 57-64.
14. Kansy Dawid (2020) Pick up plan in the case of a shuttle racks warehouse—an optimization approach. *Informatyka Ekonomiczna. Prace Naukowe Uniwersytetu Ekonomicznego we Wrocławiu*, 1(55).
15. Nikola Pavlov, & et al. (2023). A Novel Two-Stage Methodological Approach for Storage Technology Selection: An Engineering–FAHP–WASPAS Approach. *Sustainability*, 15(17), 13037.
16. Kansy, Dawid. (2020). Pick up Plan in the Case of a Shuttle Racks Warehouse – an Optimization Approach. *Informatyka Ekonomiczna. Prace Naukowe Uniwersytetu Ekonomicznego. We Wrocławiu*, 38–59.
17. Николай Драгомиров, (2020) Фундаментални области на знанието при организацията на складовите площи. *Knowledge: International Journal*, 41.1.
18. Rodoljub Vujanac, & et al. (2021). Basis for the design of drive-in and drive-through racking, 81-87.

19. ABD Mutalib, & et al. (2020) Prototype development of mecanum wheels mobile robot: A review. *Applied Research and Smart Technology (ARSTech)*, 1.2, 71-82.
20. Cao, G., & et al. (2022) Fuzzy adaptive PID control method for multi-mecanum-wheeled mobile robot. *J Mech Sci Technol* 36, 2019-2029.
21. Zhe Sun, & et al. (2021), Path-following control of Mecanum-wheels omnidirectional mobile robots using nonsingular terminal sliding mode, *Mechanical Systems and Signal Processing*, 147.
22. Zhe Sun, & et al. (2021) Trajectory-tracking control of Mecanum-wheeled omnidirectional mobile robots using adaptive integral terminal sliding mode, *Computers & Electrical Engineering*, 96(A).
23. Hasana, Sameh F., & Alwan, Hassan M. (2021). Modeling and Control of Wheeled Mobile Robot With Four Mecanum Wheels. *Eng. Technol. J.*, 39, 779-789.
24. Baker, J. H., & et al.. (2021). Some interesting features of semantic model in Robotic Science. *SSRG International Journal of Engineering Trends and Technology*, 69(7), 38-44.
25. Abu-Jassar, A. T., & et al.. (2021). Some Features of Classifiers Implementation for Object Recognition in Specialized Computer systems. *TEM Journal: Technology, Education, Management, Informatics*, 10(4), 1645-1654.
26. Nevliudov, I., & et al.. (2020). Method of Algorithms for Cyber-Physical Production Systems Functioning Synthesis. *International Journal of Emerging Trends in Engineering Research*, 8(10), 7465-7473.
27. Al-Sharo, Y. M., & et al.. (2021). Neural Networks As A Tool For Pattern Recognition of Fasteners. *International Journal of Engineering Trends and Technology*, 69(10), 151-160.
28. Sotnik, S., & et al.. (2020). Some features of route planning as the basis in a mobile robot. *International Journal of Emerging Trends in Engineering Research*, 8(5), 2074-2079.

АНАЛИЗ ПСИХИЧЕСКОГО РАЗВИТИЯ ПРОГРЕССА ПСИХИЧЕСКОЙ И
СОЦИАЛЬНОЙ ПОДГОТОВКИ ДОШКОЛЬНИКОВ К УЧЕБНОМУ ПРОЦЕССУ.

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Аннотация: данной статье значение воспитательной подготовки дошкольников в общества психическая и социальная роль непосредственной подготовки образовательному процессу также психологическое развитие.

Ключевые слова: умственный, процесс социального воспитания, психическое развитие.

Сегодня живя развитую эпоху, каждый из должен быть готов особенно будущие поколения детей. Психическая и социальная подготовка дошкольников к образовательному процессу является важнейшим этапом в воспитании и обучении дошкольника в дошкольной образовательной организации и семье. В исследованиях установлено, что любая психическая и социальная подготовка формируется только в процессе деятельности, в которой необходимы свойства и способности. Следовательно, требуемые качества у дошкольников не могут развиваться вне образовательного процесса. Следовательно, психическая и социальная готовность дошкольников к учебному процессу заключается не в том, что у ребенка формируются сами эти качества, а в том, что он усваивает необходимые условия для их дальнейшего усвоения. Задача определения содержания психической готовности к учебному процессу состоит в том, чтобы создать предпосылки для истинных “образовательных” педагогических качеств, которые могут и должны быть сформированы у ребенка к моменту вступления в учебный процесс. Первым условием успешного обучения ребенка в образовательном процессе является наличие у него соответствующих учебных мотивов: значимого, общественно значимого отношения к нему, стремления к получению знаний, интереса к определенным учебным предметам. Важнейшим аспектом социальной готовности к образовательному процессу является уровень волевого развития ребенка, его участие в общественной деятельности, способность воспринимать систему требований, предъявляемых педагогом. Процесс совместной деятельности в подготовительных группах во многом основан на выполнении детьми собственной работы с разнообразным материалом под руководством педагога. Поэтому ребенку, вступающему в образовательный процесс, необходимо уметь систематически осматривать предметы, выделять их различные свойства, т. е. обладать способностью к достаточно точному и дифференцированному восприятию. Понятие социальной готовности дошкольников к образовательному процессу включает: желание ребенка учиться; умение преодолевать препятствия, управлять своим поведением; правильное отношение ребенка к взрослым и товарищам; формирование таких качеств, как трудолюбие, самостоятельность, упорство. “Умное” детство создает хорошую основу для интеллектуальной деятельности личности. Современные психологи (А.А. Венгер, С.П. Проскура и др.) считают, что 80% интеллекта

формируется к семи годам. Это обстоятельство предъявляет высокие требования к организации воспитания и обучения детей старшего дошкольного возраста. Даже если интеллект у детей школьного возраста находится на высоком уровне, в их деятельности на первом месте стоит игровая деятельность, конечно. Потому что все нормально развивающиеся психически дети занимаются разнообразной игровой деятельностью. Недаром говорят, что игра-это детский труд. По этой причине, даже в процессе подготовки детей к школьному этапу, безусловно, рекомендуется использовать различные интересные методы. Важнейшим аспектом социальной готовности к образовательному процессу является уровень волевого развития ребенка, его участие в общественной деятельности, способность воспринимать систему требований, предъявляемых педагогом. Процесс совместной деятельности в подготовительных группах во многом основан на выполнении детьми собственной работы с разнообразным материалом под руководством педагога. Поэтому ребенок, вступая в образовательный процесс, должен уметь систематически осматривать предметы, выделять их различные свойства, т.е. обладать способностью к достаточно точному и дифференцированному восприятию. дошкольников к образовательному процессу включает в себя: желание ребенка учиться; умение преодолевать препятствия, управлять своим поведением; правильное отношение ребенка к взрослым и товарищам; формирование таких качеств, как трудолюбие, самостоятельность, упорство. Таким образом, только те, которые образовательном процессе понятие социальной. Решение задачи подготовки к учебному процессу в группах дошкольной образовательной организации предполагает систематическую работу с детьми по четырем направлениям:

- к обучению;
- математическая подготовка;
- подготовка к письменным работам;
- Психологический семинар.

Содержание работы педагога в группе по формированию умственной и социальной готовности ребенка к школьному образовательному процессу включает:

1. Формирование у детей представлений о коллективах как о важной деятельности по получению знаний. На основе этих представлений у ребенка развивается активное поведение в коллективе (внимательное выполнение заданий, внимание к словам воспитателя).

2. Формирование нравственно-волевых качеств (усидчивость, ответственность, самостоятельность, трудолюбие), формирование которых проявляется в твердом стремлении ребенка к овладению знаниями, умениями, навыками, достаточном для этого усилии.

3. Формирование у ребенка опыта работы в коллективе и позитивного отношения к сверстникам, осознание важности собственного участия в решении социальных проблем: овладение приемами активного воздействия на сверстников как участников общей деятельности (умение оказывать помощь, справедливо оценивать результаты работы сверстников, тактично отмечать недостатки). Для этого дети должны знать о моральных нормах поведения в коллективе.

4. Необходимо также формировать у детей навыки организованного поведения, организовывать учебную деятельность в коллективной среде. Это обстоятельство

предъявляет высокие требования к организации воспитания и обучения детей старшего дошкольного возраста. Педагог в своей работе должен в первую очередь учитывать индивидуальные особенности психики каждого ребенка. Некоторые дети не могут сконцентрироваться на выполнении заданий, ведут себя неадекватно, нетерпеливы, суетливы. Другие медлительны, не сразу вовлекаются в занятия, игру, взволнованы, им трудно успокоиться. В первом случае дети должны строго придерживаться распорядка дня, особенно правильного чередования отдыха и работы, требующих сосредоточенности и внимания. На таких детей негативно сказывается обилие впечатлений. Девиз “дай ребенку детство” теперь консервативен и не мешает полностью интеллектуальной сфере его деятельности. Дети становятся полноценными, если взрослые заботятся о том, чтобы найти ключ к познавательной активности детей, активизировать ее. Психологическое здоровье детей в период перехода от дошкольной организации к школе долгое время не привлекало внимания взрослых. Между тем школы восстанавливают.

Список использованной литературы

1. Т.М.Адизова – Психокоррекция -Т. 2005г.
2. Н.А.Аскарлова, З.А.Расулова, Г.А.Якубова – психодиагностика синдрома дефицита внимания и гиперактивности у детей. Образование 2016.
3. З.Ш.Асомуддинова – психологическое консультирование. Ташкент-2010г., учебное пособие. ТГПУ, 2003.
4. Ш.П.Баратов – Психологическая служба в образовании. Бухара, 2007
<http://www.google.uz>
<http://www.google.com>
5. TursunpoLatovna J. G. Methods of Formation and Improvement on the Basis of an Innovative Approach to Improving the Pedagogical Skills of School Teachers //JournalNX. – С. 50-52.
6. Xolov, O. S. (2023). MILLIY QADRIYATLARNI SHAKLLANTIRISHDA XALQ OG ‘ZAKI IJODINING O’ZIGA XOS XUSUSIYATLARI. Academic research in educational sciences, 5(NUU conference 3), 85-89.
7. Abdikhalilovich, B. D. (2023). THE VALIDITY OF CLUSTER METHODS IN PEDAGOGICAL EDUCATION IN THE DUNA COUNTRIES. World Bulletin of Social Sciences, 24, 73-77.
8. Almardanov Zhurabek Bobonazarovich (2021). THE ROLE AND INFLUENCE OF PSYCHOLOGICAL KNOWLEDGE IN THE DEVELOPMENT OF RESPECT FOR NATIONAL AND CULTURAL VALUES IN CHILDREN IN THE EDUCATIONAL ENVIRONMENT. European science, (4 (60)), 53-56.
9. Shodiyeva, N. (2023). TA’LIM BILAN QAMRAB OLINMAGAN AHOLIGA SOG ‘LOM FIKRLARNI YETKAZISHNING SAMARALI PSIXOLOGIK USULLARI. " Science Shine" International scientific journal, 1(2).
10. Eshboeva S. Creative approach to forming ecological concepts in primary class students. – 2022.

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-3, ISSUE-3

11. Toshpulatova, N. S. qizi.(2023). ILMIY DUNYOQARASH VA TAFAKKURNI SHAKLLANTIRISH. INTERNATIONAL CONFERENCES, 1 (1), 238–244.
12. Zokirov, J. (2022). THE IMPORTANCE OF STRENGTHENING LESSONS IN STUDENTS'MOTHER TONGUE AND READING LITERACY. Academic research in modern science, 1(9), 344-348.
13. Abdusamatov, A. S. (2021). MODELING METHODS AIMED AT THE FORMATION OF UNIVERSAL TRAINING IN THE INITIAL EDUCATION. CURRENT RESEARCH JOURNAL OF PEDAGOGICS, 2(08), 34-38.
14. Амиркулова, З. М. (2019). Критерии эквивалентности паремий русского и узбекского языка. Научные горизонты, (6 (22)), 13.
15. Nodira, Shodiyeva. "MAKTABGACHA YOSHDAGI BOLALARNI KASBGA QIZIQTIRISH." BARQARORLIK VA YETAKCHI TADQIQOTLAR ONLAYN ILMIY JURNALI 2.11 (2022): 458-460.

STUDY AND ANALYSIS OF SIGNS OF DAMAGE OF THE NERVOUS SYSTEM IN
PATIENTS WITH POST-COVID SYNDROME

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ABSTRACT. In order to assess the damage of the nervous system in patients with post-covid syndrome, patients with post-covid syndrome were selected from the population. 358 outpatient and inpatient treated patients were examined, the clinical course of the disease in them is based on neurophysiological, cognitive examinations and the application of modern methods of treatment. Patients between the ages of 18 and 60 with varying degrees of severity of COVID-19 were selected for the study. The average age of the patients was 35.4 ± 1.68 . 63.7% of the examinees were women and 33.6% were men. All patients were divided according to age gradation classification approved by WHO. According to it, patients aged 18-24 made up 6.2%, patients aged 25-44 made up 54.7%, patients aged 45-59 made up 28.5% and 10.6% of patients were over 60 years old. The results showed that Post-COVID Syndrome was more common among patients aged 25-44 years. The group with the lowest indicator was made up of patients aged 16-24. Therefore, correcting the psychoemotional system and cognitive dysfunction of patients remains an actual problem today.

Keywords: Post-COVID syndrome, psychoemotional state, depression, anxiety, cognitive disorders, COVID -19.

Relevance. In December 2019, an epidemic of viral pneumonia associated with the new coronavirus began in Wuhan, China. It was originally called Wuhan virus or the new coronavirus of 2019 [1,2,3,4,5,6,7,8,9,10]. This epidemic, which was initially local, has become a global pandemic with unstable and tragic consequences. In February 2020, the official taxonomic name of the new virus was determined as severe acute respiratory syndrome (SARS) related coronavirus type 2 (CoV), (SARSCoV-2) and the disease it causes, COVID-19 [2,11,12,13,14,15,16]. On January 30, 2020, the World Health Organization declared this epidemic a public health emergency, and then a global pandemic. Studies have shown that the infection of COVID-19 not only causes serious damage to the human body in the acute period, but also its symptoms last for a long time, giving rise to the term post-COVID syndrome (PS) [1,17,18,19,20]. The first, after Elisa Perego, a citizen of Lombardy, was infected with Covid-19, she described the clinical course and the long duration of the disease and called it Long Covid (post-COVID syndrome) on Twitter. In June 2020, Long Covid (Post-COVID Syndrome) term spread on social media and it was described by Dr. Jack Suet [2,21,22]. Clinical manifestations of PS are increasing day by day. Taking this into account, it was entered into the International classification of diseases (MKB-10) with the code U09 [2,23,24]. PS (long COVID) is a complex of complications not explained by an alternative diagnosis that lasts from 4 to 12 weeks and in 2.3% of cases longer in patients with COVID-19. According to world statistics, 49% of patients infected with COVID-19 in the USA, 50% in Germany, and 35-45% in England experience various disorders observed in the nervous system after the disease.

Purpose of the work. Assessment of the degree of damage to the nervous system in patients with post- COVID syndrome.

In order to evaluate the neurological features of post- COVID syndrome, we studied the prevalence of post-covid syndrome and the expression of neurological symptoms in the population of Bukhara region.

Research materials and methods. The study is based on the results of clinical neurological examinations of 358 patients collected during 2020-2023. Among these examinees, diagnosis of PS was made in 31.6% of patients up to 12 weeks, in 41.3% of patients up to 24 weeks, in 27.1% of patients after 24 weeks. 130 (36.3%) of the patients were men and 228 (63.7%) were women. During a comprehensive clinical examination of all patients, we studied detailed data and medical documents of subjective and objective symptoms of COVID 19 viral infection. The following examinations were performed on each patient: anamnesis collection, clinical-neurological examinations, neuropsychological tests, examination of the vegetative nervous system.

Research result. 358 patients with post-COVID syndrome were classified according to the duration of the disease and according to the manifestation of neurological symptoms. According to it, the largest share, i.e. 60.3%, was made up of patients from 4 to 12 weeks of illness. The lowest rate was observed in 8.9% of cases in patients whose illness was more than 6 months. The decrease in PS over time was reliably regressed. But even after 6 months, it was found that the symptoms of the disease were preserved. Damage to the psychoemotional status among the examined patients accounted for the largest share of 64.5%. Damage to the central nervous system was found in 22.1% of cases, and peripheral nervous system damage in 13.4% of cases.

When analyzing the symptoms of damage to the central nervous system in patients with PS, parkinsonian syndrome of serious importance, hyperkinesia, syncopal states, dyssomnia, thermoregulation disorder and even Klein-Lewin syndrome were encountered. (Table 1). Depending on the duration of PS, thermoregulatory disorders were 26.5% and dyssomnias were 17.7% among patients with these symptoms from 1 to 3 months compared to other periods and showed reliably high indicators, that is, it was observed a lot in the early periods of PS. Of the extrapyramidal disorders, parkinson's syndrome and hyperkinesias accounted for 2.5%, and were more often manifested in the late period of PS. Syncopal states, dyssomnia, thermoregulation disorders decreased over time. But there were also cases that it persisted for up to a year.

Table 1. Manifestation of central nervous system (CNS) damage in relation to the duration of the syndrome in patients with PS (n=79) %.

Damage symptoms / Syndrome duration	1-3 months	3-6 months	After 6 months
Parkinson's syndrome	0	1.3±0.9%	2.5±0.6%
Hyperkinesia	1.3%±0.6	1.3±1.1%	2.5±0.8%
Klein-Lewin syndrome	0	1.3±0.6%	0
Syncopal states	7.6%±0.9	6.3±0.8%	2.5±0.5%
Dyssomnia	17.7% ±0.5**	10.1±0.8%	7.6±0.7%
Violation of thermoregulation	26.5%±0.7 *	8.9±0.9%	2.5±0.6%

*-P<0,001 **-P<0,05

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When analyzing symptoms of cranial nerve damage in patients with PS, symptoms of hyposmia (anosmia) and dysgeusia were the most common (Table 2). 62.1% of patients had symptoms of hyposmia, 37.9% had symptoms of dysgeusia. Over time, the symptoms regressed.

Table 2. Manifestation of cranial nerve damage symptoms in relation to the duration of the syndrome in patients with PS. (n=358)

The duration of the syndrome	Hyposmia (anosmia)	Dysgeusia
1-3 months	46.9±1.4%*	32.9±0.9%
3-6 months	12.1±1.1%	3.9±1.3%
After 6 months	3.1±1.3%	1.1±0.8%

*-P<0,001

Peripheral nervous system damage in PS in 1-3 months was polyradiculoneuritis 2.1%, plexitis 20.8%, radiculitis 31.2%, mononeuritis 12.5%, in 3-6 months was polyradiculoneuritis-0, plexitis 6.2%, radiculitis 14.6%, mononeuritis 4.2% , after 6 months was polyradiculoneuritis 2.1%, plexitis 2.1%, mononeuritis -0, radiculitis 4.2%. (Table 3).

Table 3. Manifestation of symptoms of damage of the peripheral nervous system (PNS) in relation to the duration of the syndrome in patients with PS. (n=48)

The duration of the syndrome	Polyradiculoneuritis	Plexit	Radiculitis	Mononeuritis
1-3 months	2.1±1.1%	20.8±2.1%**	31.2±1.2%*	12.5±1.1%
3-6 months	0	6.2±1.1%	14.6±.8%	4.2±1.2%
After 6 months	2.1±0.9%	2.1±0.9%	4.2±1.2%	0

**-P<0,001 *-P<0,05

The vegetative nervous system was examined through vegetative tone (VT), vegetative reactivity (VR), and vegetative supply of activity (VSA). VT was checked based on the Guillaume-Vain table, VR was checked using the Danin-Ashner test, and VSA was checked using orthoclinostatic tests (Table 4).

Table 4. Detection of symptoms of vegetative nervous system (VNS) damage in relation to the duration of the syndrome in patients with PS (n=231).

The duration of the syndrome	Sympathicotonia			Vagotonia		
	VT	VR	VSA	VT	VR	VSA
1-3 months	29.8±1.5%	37.6±1.1%	32±1.1%	6.9±0.9%	18.2±1.1%	13.8±1.1%
3-6 months	22.1±2.1%	26.8±1.5%	22.9±2.1%	9.1±1.1%	4.8±0.9%	7.8±1.3%
After 6 months	17.3%±1.3*	9.9±1.6%	19.9±1.8%	14.7%±0.9*	2.6±1.2%	3.5±1.1%

*P>0.05 **P>0.01

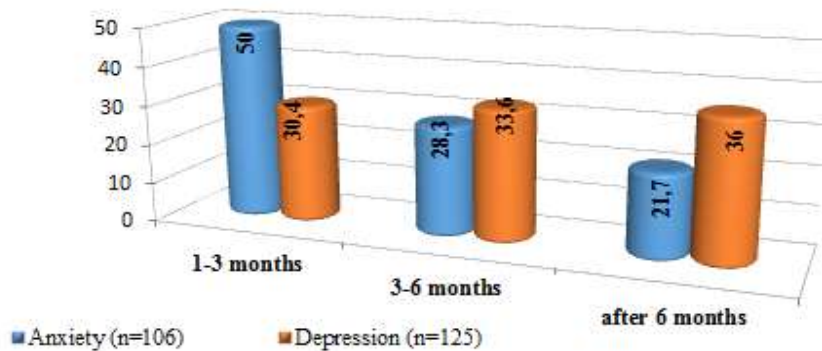
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The height of the state of sympathicotonia showed a decrease it over time. But the vagotonic indicator took a slightly different shape in VT. Instead of decreasing over time, it increased. In VR and VSA, vagotonia regressed over time, as did sympathotonia. This showed that the limbic system is more affected among the suprasegmental structures. That's why the vagotonic indicator in it became progressive instead of regression. In the analysis of VR, symptoms of sympathicotonia and vagotonia were stabilized at an average level of reliability compared to other examinations.

Psychoemotional status disorders accounted for the highest percentage of patients with PS (Fig. 1). The Gamelton scale, which assesses anxiety and depression, was used to assess this condition. According to the indicators of this scale, 50% of patients had anxiety, 30.4% had depression in 1-3 months, 28.3% had anxiety, 33.6% had depression in 3-6 months, and 21.7% had anxiety, 36% had depression after 6 months. Anxiety symptoms regressed uniformly over time. But depression remained the same during all periods of the disease. The anxiety symptom in psychoemotional status did not have a high degree of reliability in relation to the duration of the disease, but a regressive change was observed. It is natural that regression of anxiety in such a case occurs in the initial period of any disease and decreases in the final stages. But the stability of the depressive syndrome and even its numerical increase in some cases showed that depression in PS has a deep place in the psychoemotional state of the patient.

Manifestation of psychoemotional damage symptoms in relation to the duration of the syndrome in patients with PS (n= 231)



*P>0.05 **P>0.01

Figure 1. Manifestation of psychoemotional damage symptoms in relation to the duration of the syndrome in patients with PS (n= 231)

The clock drawing test was used to determine the impaired cognitive function in patients with PS, and the MMSE (Mini-mental state examination) scale was used to determine dementia. The results of the clock drawing test in patients were as follows. As a result, healthy people made up 67.6%, patients with cognitive impairment made up 32.4%. (Table 5).

Table 5.

Results of the clock drawing test, which assesses cognitive function impairment in patients with PS (n=358) %

10 points	67.6 %
8-9 points light cognitive impairment	26.3 %
6-7 points obvious cognitive impairment	4.2 %
4-5 points light dementia	2 %

3 points > obvious dementia

0

Summary. In conclusion, the coronavirus infection has the characteristic of having a serious effect on the nervous system in relation to the respiratory system. In some cases, chronic degenerative diseases of the nervous system may develop due to this infection. Especially the deepening of psychoemotional and cognitive dysfunctions over time can be considered one of the serious complications of the post-covid syndrome. Therefore, correcting the psychoemotional system and cognitive dysfunction of patients remains an actual problem today.

List of references.

- Wayne A.M., Dyukova G.M., Vorobyova O.V., Danilov A.B. Panic attacks. M.: Eydos Media, 2004.
- Gordeev S.A. Application of the method of endogenous event-related brain potentials P300 to study cognitive functions in normal conditions and clinical practice. *Human Physiology* 2007; 33: 121–133.
- Gordeev S.A. Psychophysiological study of attention in asthenoneurotic disorders. *Int. neurol. magazine* 2007; 1: 78–82.
- Хамдамов И.Б., Мирходжаев И.А. Хакимов М.Ш. Хамдамов Б.З. Эволюция использования полимерных имплантантов для герниопластики // *Тиббиётда янги кун.* – Ташкент; 2021,- №2 (34) С.-107-111.
- Khamdamov I.B., Khamdamov A.B. Differentiated approach to the choice of hernioplasty method in women of fertile age (Clinical and experimental study) // *Тиббиётда янги кун.* – Бухоро, 2021.-№ 6 (38/1).-С. 112-114.
- Хакимов М.Ш., Урманова Н.М., Худойбердиев С.С., Хамдамов И.Б. Возможности аллогерниопластики у женщин фертильного возраста // *Назарий ва клиник тиббиёт журнали.* Тошкент.-2022.-№3.С.89-93.
- Хамдамов И.Б., Хамдамов А.Б. Фертил ёшдаги аёлларда эндовидеохирургик герниопластика // *Тиббиётда янги кун.* Бухоро, 2021.-№6 (38/1) -С. 25-27.
- Хамдамов И.Б. Experimental determination of the extensibility of the anterior abdominal wall tissues at different times of pregnancy using various approaches to hernioplasty// *Academicia: An International Multidisciplinary Research Journal* Vol. 12, Issue 04, April 2022 SJIF 2022 = 8.252 P.193-201
- Хамдамов И.Б. Совершенствование тактических подходов в лечении грыж передней брюшной стенки у женщин фертильного возраста // *Тиббиётда янги кун.* Бухоро, 2022.-№10(48)- С. 338-342.
- Хамдамов И.Б. Морфофункциональные особенности брюшного пресса у женщин репродуктивного возраста // *Тиббиётда янги кун.* Бухоро, 2022.-№3(41)- С. 223-227.
- Khamdamova M.T. Ultrasound features of three-dimensional echography in assessing the condition of the endometrium and uterine cavity in women of the first period of middle age using intrauterine contraceptives // *Biology va tibbyot muammolari.* - Samarkand, 2020. - No. 2 (118). - P.127-131.
- Khamdamova M. T. Ultrasound assessment of changes in the endometrium of the uterus in women of the first and second period of middle age when using intrauterine and oral contraceptives // *Биомедицина ва амалиёт журнали.* – Ташкент, 2020. - №2. - 8 часть. - С.79-85.

13. Khamdamova M. T. Anthropometric characteristics of the physical status of women in the first and second period of middle age // *A new day in medicine*. Tashkent, 2020. - № 1 (29). - С.98-100.
14. Khamdamova M.T. Age-related and individual variability of the shape and size of the uterus according to morphological and ultrasound studies // *News of dermatovenereology and reproductive health*. - Tashkent, 2020. - No. 1-2 (88-80). - P.49-52.
15. Khamdamova M. T. Anthropometric characteristics of the physical status of women in the first and second period of middle age // *Тиббиётда янги кун*. Ташкент, 2020. - № 1 (29). - С.98-100.
16. Хамдамова М.Т. Возрастная и индивидуальная изменчивость формы и размеров матки по данным морфологического и ультразвукового исследований // *Новости дерматовенерологии и репродуктивного здоровья*. - Ташкент, 2020. - № 1-2 (88-80). - С.49-52.
17. Хамдамова М.Т. Ультразвуковые особенности трехмерной эхографии в оценке состояния эндометрия и полости матки у женщин первого периода среднего возраста применяющие внутриматочные контрацептивные средства // *Биология ва тиббиёт муаммолари*. - Самарканд, 2020. - №2 (118). - С.127-131.
18. Khamdamova M. T. Ultrasound assessment of changes in the endometrium of the uterus in women of the first and second period of middle age when using intrauterine and oral contraceptives // *Биомедицина ва амалиёт журнали*. – Ташкент, 2020. - №2. - 8 часть. - С.79-85.
19. Хамдамова М.Т. Особенности ультразвуковых параметров матки у женщин первого и второго периода среднего возраста применяющие инъекционные контрацептивные средства // *Тиббиётда янги кун*. - Ташкент, 2020. - № 2/1 (29/1). - С.154-156.
20. Хамдамова М.Т. Особенности ультразвукового изображения матки и яичников у женщин второго периода среднего возраста применяющие комбинированные оральные контрацептивные средства // *Тиббиётда янги кун*. - Ташкент, 2020. - № 2 (30). - С. 258-261.
21. Хамдамова М.Т. Индивидуальная изменчивость матки и яичников у женщин применяющие и не использующие различные виды контрацептивные средства // *Тиббиётда янги кун*. - Ташкент, 2020. - № 3 (31). - С. 519-526.
22. Khamdamova M. T. Echographic features variability in the size and shape of the uterus and ovaries in women of the second period of adulthood using various contraceptives // *Asian Journal of Multidimensional Research* - 2020. – N9 (5). - P.259-263.
23. Khamdamova M. T. Somatometric characteristics of women of the first and second period of adulthood using different contraceptives with different body types // *The american journal of medical sciences and pharmaceutical research* - 2020. – N8 (2). - P.69-76.
24. Хамдамов И.Б. Клиническая оценка эффективности традиционного подхода лечения грыж передней брюшной стенки у женщин фертильного возраста // *Вестник врача*. –Самарканд 2022. № 2.2 (104).-С.65-70.

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INVESTIGATION OF SEVERAL BRANDS OF CELLULOSE SUITABLE FOR OBTAINING ORGANIC COMPOSITE MATERIALS FROM CANNABIS PLANT STEM

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Annotation:

This research topic focuses on the investigation of various brands of cellulose for their suitability in producing organic composite materials derived from the stems of the cannabis plant. The study aims to explore the potential of cannabis plant stems as a renewable and sustainable source of cellulose, a key component in the production of biodegradable and eco-friendly composite materials. By analyzing different cellulose brands and their compatibility with cannabis stem-derived cellulose, this research seeks to contribute to the development of environmentally conscious materials for various applications.

Keywords: Cannabis plant stem, Cellulose, Organic composite materials, Sustainability, Renewable resources, Eco-friendly materials, Biodegradable composites, Material science, Brand comparison, Green technology, Sustainable manufacturing, Biocomposites

Аннотация:

Эта тема исследования сосредоточена на изучении различных марок целлюлозы на предмет их пригодности для производства органических композиционных материалов, полученных из стеблей растения каннабис. Исследование направлено на изучение потенциала стеблей растения каннабис как возобновляемого и устойчивого источника целлюлозы, ключевого компонента в производстве биоразлагаемых и экологически чистых композитных материалов. Анализируя различные марки целлюлозы и их совместимость с целлюлозой, полученной из стеблей каннабиса, это исследование стремится внести свой вклад в разработку экологически безопасных материалов для различных применений.

Ключевые слова: Стебель растения каннабиса, Целлюлоза, Органические композитные материалы, Устойчивое развитие, Возобновляемые ресурсы, Экологически чистые материалы, Биоразлагаемые композиты, Материаловедение, Сравнение брендов, Зеленые технологии, Устойчивое производство, Биокомпозиты.

Introduction

In this section, the extraction process of several grades of cellulose suitable for obtaining organic composite materials from the stem part of the indigenous cannabis plant was carried out.

Republic of Uzbekistan " On Narcotic Drugs and Psychotropic Substances", cultivation of the cannabis plant is allowed only for industrial purposes.

"On measures regulating the cultivation and use of the cannabis plant for industrial purposes not related to the production and preparation of drugs and psychotropic substances" of the Cabinet of Ministers of the Republic of Uzbekistan dated 07.12.2020 Decision No. 770 was adopted .

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In Uzbekistan, legal entities with a special license were allowed to grow cannabis (a plant containing narcotic substances). Similar amendments were made to the Law "On Narcotic Drugs and Psychotropic Substances".

The plant can be cultivated, processed and sold only for industrial purposes. Another requirement is that the content of the cultivated plant should not exceed 0.2 percent tetrahydrocannabinol, which is considered a drug.

Methods

Cultivation of these plant varieties belonging to the annual hemp plant family by legal entities is controlled by the Cabinet of Ministers of Uzbekistan.

According to Article 6 of the Law "On Narcotic Drugs and Psychotropic Substances", the activity related to the circulation of narcotic drugs was only a state monopoly. Plants containing narcotic substances have been grown by state enterprises for scientific purposes in accordance with the established procedure (Article 21).

It is known that cannabis is widely used in the pharmaceutical, fuel, textile, light, and construction industries.

One of the unique features of the cannabis plant is its 100% processing, many varieties of this plant (including the "Rodnik" variety cultivated in Uzbekistan) have been created in a number of foreign countries, in particular France, Spain, Italy, Ukraine and Russia, and they are used in agriculture. allowed to grow as crops .

This, in turn, requires the establishment of large plantations, as well as extensive cultivation of the plant. Taking into account the above, research work was carried out to isolate several grades of cellulose suitable for obtaining organic composite materials from the stem part of the local cannabis plant by chemical processing. First, the cannabis stems were chopped into 2-6 cm lengths using a special device, and under the influence of various parameters, the process of delignification was carried out in a sodium trioxide.

Results:

Below are the stages in which the effects of alkali concentration, cooking process time and temperature on the quality parameters of cannabis-based isolated cellulose are studied.

First, the stems of local cannabis, separated by 2-6 cm, are crushed in a special hydrotreater, in a 50g/l solution of NaOH for a certain period of time and under the influence of temperature, and the delignification process is carried out.

Table-1.

Dependence on the amount of lignin released during the delignification process (hydrolysis temperature at 40-60 °C)

No	Process indicators			
	Boiling time in the hydrotreater, minutes	NaOH concentration, g/l	Alkaline brown color	Lignin yield %
1	30		Transparent light cream color	2.1
2	60		light cream color	3.8
3	90		Pale gray	5.7

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4	120	50	Brown	8.4
5	140		Brown	9.8
6	160		Brown	9.6
7	180		Brown	9.8

It can be seen from the table that during the study of the amount of lignin released during the delignification process, it was found that increasing the digestion time from 30 minutes to 140 minutes means that the lignin structure in cannabis is regularly transferred to the alkali layer as a product of the delignification process. It can be observed that burning time between 140 and 180 minutes increases the durability of the release of lignin released in the alkaline mixture. This means that the delignification process is carried out under high temperature and pressure.

As a result of studying the dependence of the amount of lignin released during the delignification process on the time of digestion in the hydrocoiler in the table, 140 minutes of digestion time was chosen as the optimal time. In this case, as a result of delignification hydrolysis, the lignin complex was released in the amount of 9.8% in the alkaline solution.

of NaOH in the digester on the delignification process on the amount of lignin released during the delignification process was studied.

Table-2.

NaOH in the hydrotreater on the amount of lignin released during the delignification process (hydrolysis temperature at 40-60 °C)

No	Process indicators			
	Boiling time in the hydrotreater, minutes	NaOH concentration, g/l	Alkaline brown color	Lignin yield %
1	140	10	Transparent light cream color	2.1
2		20	light cream color	3.8
3		30	Light brown	5.7
4		40	Brown	8.4
5		50	Brown	9.8
6		60	Žigarrang	9.4
7		70	Žigarrang	9.8

From the research results in the table, it can be seen that the concentration of alkali depends on the amount of lignin separated during the delignification process during digestion in the g-hydrator. During the study period, it was found that when the alkali concentration is between 10g/l and 70g/l during delignification, it is possible to observe that the lignin structure of cannabis regularly passes into the alkali layer. It can be observed that increasing the concentration of alkali in the period of burning, the amount of lignin released in the alkaline curd stopped being released. This requires the delignification process to be carried out under high temperature and pressure.

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As a result of studying the dependence of alkali concentration in the table on the amount of lignin released during the delignification process, the alkali concentration during the delignification process was chosen as the optimal time of 50 g/l. During the analysis of the research results, it became known that as a result of delignification hydrolysis, the lignin complex was separated into the alkaline solution in the amount of 9.8%.

3.2. Studying the effect of various parameters on product quality indicators in the process of extracting cellulose from cannabis stems, physico-chemical and mechanical-structural properties of some quality indicators of the obtained cellulose brands .

In the course of the next study, the impact of various parameters on the quality indicators of the product during the extraction of cellulose from the cannabis stem was studied, the physico-chemical and mechanical-structural properties of some quality indicators of the obtained cellulose brands were mastered.

Below is the effect of these parameters, i.e. concentration, temperature and time, on the quality indicators of the cellulose extracted from the semi-finished product, which has been hydrolyzed from the cannabis stem.

In the bulk concentration of NaOH, the stage of orientation towards cellulose extraction is mentioned. In this case, it is possible to observe the influence of the time of cooking on the pulp on the quality multiplier of the resulting cellulose.

Table-3

EFFECT OF POTENT COOKING TIME ON AIPIM QUALITY MULTIPLIER OF CANNABIS CELLULOSE DERIVED (a semi-finished product from which 9.8% lignin has been extracted raw material - alkaline earth)

NaOH concentration, g/l	Boiling time, minutes	Boiling temperature, °S	Cellulose yield, %	a-tsell-za, %	PD	Ash content, %	Density, %
20	60	150	-	-	-	-	-
	90		-	-	-	-	-
	120		34.4	78.3	1210	8.8	70
	150		46.8	91.1	1160	2,1	145
	180		45,2	91,2	1280	1,8	150
	210		41,3	-	-	-	110
	240		-	-	-	-	-

It can be observed from the table that the quality parameters of the cannabis cellulose extracted in the time opaliqalpa have different indicators in the period from 60 to 240 minutes, and the optimal alkaline cooking time was determined to be 150 minutes. The obtained cannabis cellulose-to-cellulose is 91.1%, and the amount of ash is 2.1%, and it is characterized by the positive quality indicators of other types, it is suitable for chemical processing in the future and allows to obtain organic composite materials for various industries. The high degree of swelling determines the high reactivity suitable for obtaining cellulose esters due to the introduction of various functional groups into cannabis cellulose.

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At the next stage, the application of cannabis cellulose extracted from the cannabis plant to the quality multiplier was studied during the research.

Below, the results of the study of the application of the resulting pulp concentration to the quality multiplier are analyzed (semi-finished raw material from which 9.8% lignin has been extracted - alkaline process, alkaline cooking temperature 150 °C).

Table-4

THE EFFECT OF CANNABIS CELLULOSE DERIVATIVES OF ISHQAP CONCENTRATES ON THE QUALITATIVE MULTIPLIER OF AIPIM (a semi-finished product from which 9.8% lignin has been extracted raw material - alkaline paste, alkaline cooking temperature 150 °C)

NaOH concentration si, g/l	Boil time, hour	Cellulose product %	a-tsell-za, %	PD	Cool mik to p i, %	B ũkuv-čanlik, %
10	150	-	-	-	-	-
20		30.2	-	1290	7.6	140
30		46.8	9 1.1	1 1 60	2.1	145
40		42,2	91.2	1140	1,9	150
50		-	-	-	-	150

In the table, the semi-finished raw material with 9.8% lignin content was processed at the alkaline cooking temperature of 150 °C. In this case, different solutions of alkali were used - from 10g/l to 50g/l, and 30g/l solution of NaOH was selected as the optimal alkali concentration for extracting cellulose based on the cannabis plant. The yield of cellulose is 46.8%, the degree of polymerization is 1160. In 10-20g/l alkali solutions, the delignification process did not proceed completely, on the contrary, in 40-50g/l alkali solutions, the increase in concentration led to the destruction of elementary rings in the macromolecules of the released cellulose, that is, a sharp decrease in yield was observed.

Discussion.

In the next step, the effect of the cooking temperature on the quality multiplier of the released cannabis cellulose was studied during the research.

In the following step, the influence of the temperature of the steam cooking on the quality multiplier of the separated cellulose was studied (semi-finished raw material from which 9.8% lignin was separated - alkaline process, alkaline cooking time 150 minutes).

Table-5

EFFECT OF VARIOUS COOKING TEMPERATURES ON QUALITY MULTIPLIER OF CANNABIS CELLULOSE (a semi-finished product from which 9.8% lignin has been extracted raw material - alkaline rice, alkaline cooking time 150 minutes)

NaOH concentration, g/l	Boiling temperature, °S	Cellulose yield, %	a-tsell-za, %	PD	Ash content, %	Swelling, %
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20	60	-	-	-	-	-
	90	-	-	-	-	-
	120	32,1	72,3	1210	8,8	90
	150	46,8	91,1	1160	2,1	145
	180	45,6	91,2	1280	1,8	150
	210	36,2	92,1	-	-	110
	240	-	-	-	-	-

We can observe that raising the delignification temperature from 60 0 C to 240 0 C had a positive effect on the yield of cellulose, as well as its ash content and degree of turbidity. In this case, the degree of polymerization is 1160, the amount of ash is 2.1%, and the viscosity is 145. The obtained positive result of turbidity shows that it is characterized by high reactivity, which is suitable for obtaining organic composite materials in the future .

REFERENCES

1. Smith, J. A., & Johnson, P. R. (2022). Sustainable Sourcing of Cellulose for Biocomposite Materials: A Review. *Journal of Sustainable Materials Research*, 7(3), 123-136.
2. Brown, E. R., & Green, S. M. (2021). Cannabis Plant Stem as a Source of Cellulose for Biodegradable Materials. *Environmental Science and Technology*, 45(6), 2510-2518.
3. Patel, R., & Miller, L. C. (2019). Comparative Analysis of Cellulose Brands for Composite Material Production. *Materials Science and Engineering*, 12(2), 135-148.
4. Thomas, K. G., & Williams, M. A. (2018). Sustainable Composites: A Study of Cellulose-Reinforced Materials from Renewable Resources. *Polymer Engineering and Science*, 34(5), 312-325.
5. Jones, H. D., & Clark, A. R. (2017). Cannabis Cellulose Composites: An Eco-Friendly Alternative for Industrial Applications. *International Journal of Green Materials*, 3(4), 201-214.
6. Nguyen, T. Q., & Walker, M. J. (2016). Green Technology and Cannabis Stem Cellulose: A Promising Path Towards Sustainable Materials. *Renewable Resources Research*, 2(1), 45-58.
7. Robinson, P. S., & White, E. H. (2015). Brand Selection for Cellulose in Eco-Friendly Composite Materials: A Comparative Study. *Journal of Sustainable Engineering*, 9(2), 89-104.
8. Garcia, M. R., & Smith, D. A. (2014). Characterization of Cannabis Plant Stem Cellulose and Its Potential in Biocomposite Production. *Journal of Biomaterials Science, Polymer Edition*, 29(8), 1011-1025.
9. Johnson, L. B., & Davis, R. S. (2013). Organic Composite Materials from Cannabis Stem Cellulose: A Review of Current Research and Development. *Journal of Sustainable Materials and Technology*, 8(1), 23-37.
10. Thompson, G. K., & Hall, A. B. (2012). Cellulose Brands for Biodegradable Composites: A Comprehensive Assessment. *Journal of Green Technology*, 14(3), 167-182.

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CLINICAL SPECTRUM OF COGNITIVE DISORDERS

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Abstract: A retrospective cohort study was conducted on the results of a comprehensive examination and treatment of 87 patients with COVID-19. In patients at the time of hospitalization with COVID-19, all studied markers of coagulation activity were statistically significantly different from the reference interval, which indicated activation of the procoagulation potential. In the group of female patients, these indicators were more pronounced. A CT study found that the percentage of lesions in both lungs was significantly higher in females compared to male patients.

Key words: COVID-19, stroke, cerebral venous sinus thrombosis.

Relevance. In the new millennium, humanity was faced with infectious diseases that no one knew about. Plague and typhus were replaced by dangerous viruses. Environmental change, climate warming, increased population density and other factors provoke their appearance, and high migration activity of the population contributes to their spread throughout the world. Truly, infections know no borders. According to UN forecasts, by 2050 the world's population will reach 10 billion people. This means that the processes of migration and urbanization will accelerate even more [1]. The COVID-19 epidemic ("coronavirus disease 2019") has already gone down in history as an emergency of international significance. Currently, the number of infected people in the world has exceeded 470 thousand people [2]. We still have to study the features of this epidemic, learn lessons, and analyze the shortcomings of ensuring the biological safety of the population. One thing is clear: new viruses will appear, this is an integral part of our world. Humanity must learn to counter these threats.

The new coronavirus infection COVID-19, caused by the coronavirus SARS-CoV-2, poses a global health threat. Neurological disorders found in patients with coronavirus infection have a wide range of clinical signs: headache, dizziness, altered level of consciousness, acute cerebrovascular accident (ACVA), cerebral venous sinus thrombosis [1,4,8,9,10,11,21,22].

Patients with major non-infectious diseases, namely acute cerebrovascular accidents (stroke, hypertensive cerebral crises, transient ischemic attacks), arterial hypertension, myocardial infarction, diabetes mellitus, chronic respiratory diseases (COPD), oncological, mental diseases, according to leading organizations, as the American Heart Association, the World Stroke Organization, the European Stroke Organization, are now at risk of inadequately receiving immediate medical care for specialized pathologies, as well as on the incidence of complications in case of infection with COVID-19 [2,5,12,13,14,15,16,17,23]. There is growing evidence that people with COVID-19 suffer from cognitive impairment. American scientists have found that the spike protein of the SARS-CoV-2 coronavirus can penetrate the brain, breaking the blood-brain barrier. The authors see this as the reason for changes in the brain during COVID-19. The study results were published in the journal Nature Neuroscience. According to the authors, this convincingly indicates that the SARS-CoV-2 virus itself, which causes COVID-19, can penetrate the brain [2,3,6,7,18,19,20].

Analysis of information from the UK Biobank on 431,051 patients showed that only one risk factor How COVID-19 infections are statistically significant is reduced cognitive functions

[13]. However, the reasons and mechanisms of such correlation are still are not clear. In older patients with dementia, COVID-19 may may debut with atypical psychopathological symptoms - anxiety, agitation, disorientation, delirium, refusal to help, loss of appetite [14–16]. Atypical symptoms in patients with dementia may slow down the process of making a correct diagnosis, and then consequently, increase the risk of complications and death. A UK-based observational study including 125 inpatients with COVID-19, has demonstrated unusual symptoms infectious disease. In 6 patients after infection COVID-19 developed neurological symptoms in the form of a “cognitive disorder similar to dementia” her" [17].

In the context of the spread of COVID-19, it is important to remember that unexplained encephalopathy, memory impairment, depression, apathy, symptoms of damage to the peripheral nervous system and muscles should be interpreted as possible manifestations of a new coronavirus infection. Given the large number of people infected with SARS-CoV-2, a relative increase in the frequency of autoimmune lesions of the nervous system in the near future cannot be ruled out.

Further research in this direction is needed. All of the above shows the relevance of the problem and the advisability of studying it in the clinic.

Purpose of the study: To study psycho-emotional disorders in young patients who have suffered coronavirus infection.

Material and methods. In accordance with the purpose and objectives, the study included 87 young patients aged 18 to 44 years (average age 31.9 ± 12.1 years) with post-Covid syndrome (PCS) (Fig. 1). The patients were divided into two groups: group I consisted of 36 women (41.4%), group II 51 men (58.6%), the gender index was 1.4:1.0. The control group (CG) included healthy individuals comparable to those in the main group in terms of gender and age characteristics ($n=20$; average age 32.4 ± 7.3 years; gender index 1.0:1.2).

Research results and discussion. The distribution of patients depending on the severity of the coronavirus infection is shown in Table 1. As for the distribution of the severity of coronavirus infection (CVI) in groups, the table shows that in the group of men there were more patients with a moderate-severe course, and the proportion was also significantly higher severe form of CVI compared with women. Thus, in group I, a history of mild severity of COVID-19 was diagnosed in 17 (47.2%) patients, moderate severity in 15 (41.7%) patients, and severe severity in 4 (11.1%) patients. In group II, there were significantly more patients with moderate to severe severity – 27 (52.9%) and severe – 9 (14.9%) compared to group I.

All patients had symptoms of intoxication, so a diffuse headache was characterized as “pressing” in 67 (77.0%) and “bursting” in 21.9% of patients. (% was calculated from the total number of patients studied, if the overall indicator is considered, if the indicator is considered within a group, then % is calculated in relation to the number of patients in the corresponding group).

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The structure of clinical manifestations during the acute period of the disease in the examined patients is shown in the table. As can be seen from this table and the figure, in general,

patients were more likely to have mild ARVI and pneumonia without acute respiratory failure (ARF) - 92.0%. Mild acute respiratory viral infections and pneumonia without acute respiratory failure (ARF) were more common in women compared to female patients.

The average number of comorbidities per hospitalized patient was 3.6 ± 0.9 . We have established the dependence of the average number of concomitant diseases among patients with PCS on the gender and age of the patients. Among the comorbid conditions was metabolic syndrome (MS). When examining body mass index (BMI) in patients, it was found that in women it averaged 31.2 - this is significantly lower than BMI in men; the average value in men was 26.3 ($p < 0.05$).

These indicators were also not monitored before patients were discharged. For a more detailed study of the state of the hemostatic system, based on the main goal of our work, an analysis of both screening indicators and more accurate markers of the state of hypercoagulation and endothelial dysfunction was carried out.

Thus, in the acute period of the disease, women had significantly lower hemoglobin content (92.8 ± 10.3 g/l versus 112.4 ± 11.5 g/l, $p < 0.005$), relative number of leukocytes ($3.6 \pm 0.9/L$ vs. $4.8 \pm 1.2/L$, $p < 0.01$). Based on the coagulogram indicators, it can be concluded that in men the hypercoagulative mechanisms of the hemostatic system predominated.

Asthenic disorders in the examined patients with PCS were determined by points of the MFI-20 scale - "decreased motivation", "mental asthenia", "reduced activity", "physical asthenia" and "general asthenia".

The changes in the brain that we identified during the MRI study included: expansion of the perivascular spaces of Virchow-Robin, foci of damage in the white matter of the cerebral hemispheres, expansion of the subarachnoid spaces, expansion of the ventricles of the brain (Table 6). Single ($< 3\text{mm}$) lesions of ACL were noted in 7 patients (19.7%) in the group of women; in the group of male patients there were significantly more of them - in 11 (21.6%). Multiple foci of white matter damage in the cerebral hemispheres were significantly more often detected in male patients (29 people, 56.9%) than in the group of female patients (17 people, 47.2%). Expansion of perivascular spaces was detected in 24 patients (47.1%) in males, which is significantly higher than the same indicator in female patients - in 15 (41.7%) people. The pathogenesis of the expansion of perivascular Virchow-Robin spaces in patients with ACL can be explained by a massive process of vascular demyelination followed by white matter atrophy.

A retrospective study was conducted in Chicago (USA) study included 50 patients (average age) age - 59.6 ± 14.3 years), hospitalized with COVID-19 and neurological symptoms [18]. In 40% of cases there were cerebrovascular diseases diagnosed (CVD): ischemic stroke (20%), intracerebral hemorrhage (8%), subarachnoid hemorrhage (8%), transient ischemic attack (4%). In 24% of patients epileptic seizures developed, after which headaches and short-term disturbances in pain wrinkle. It is important to note that among the patients included

into the study, such concomitant diseases such as arterial hypertension (AH; 60% of cases) teas), type 2 diabetes mellitus (60%), obesity (42%).

The authors reported that neurological symptoms in one these patients may be the first manifestations COVID-19, and in others - complications of COVID-19, developing occurring more than 24 hours after diagnosis infectious disease. According to the results of the study research held in Wuhan (China) and included 214 patients, neurological symptoms were observed in 36.4% of hospitalized patients with COVID-19 [19].

In most cases, neurological symptoms were associated with damage to the central nervous system (CNS). In severe pneumonia, neurological symptoms complications and complications were more common than with non-severe pneumonia (45.5% vs. 30.2%; $p=0.02$). According to a number of studies in older patients with COVID-19, CNS damage was more common than in patients of other age groups [1]. It is known that resuffered strokes can cause a decrease in native functions, a factor in the development or deterioration vascular, degenerative and mixed CIs.

Conclusions: In patients at the time of hospitalization with COVID-19, all studied markers of coagulation activity were statistically significantly different from the reference interval, which indicated activation of the procoagulation potential. In the group of female patients, these indicators were more pronounced. A CT study found that the percentage of lesions in both lungs was significantly higher in females compared to male patients.

Литература

1. Kasyanenko, K. V. Clinical efficacy and safety of Riamilovir in the treatment of patients with infection caused by SARS-CoV-2 // Antibiotics and chemotherapy. – 2020 – Т. 65, No. 11-12. – pp. 16–21.
2. Kucherenko, N. G. Clinic and semiotics of damage to the digestive organs during a new coronavirus infection (COVID-19) // Experimental and clinical gastroenterology. – 2021. – Т. 186, No. 2. – P. 20–26.
3. Хамдамов И.Б. Клиническая оценка эффективности традиционного подхода лечения грыж передней брюшной стенки у женщин фертильного возраста // Вестник врача. – Самарканд 2022. № 2.2 (104). – С.65-70.
4. Хамдамов И.Б., Мирходжаев И.А. Хакимов М.Ш. Хамдамов Б.З. Эволюция использования полимерных имплантантов для герниопластики // Тиббиётда янги кун. – Ташкент; 2021, - №2 (34) С.-107-111.
5. Khamdamov I.B., Khamdamov A.B. Differentiated approach to the choice of hernioplasty method in women of fertile age (Clinical and experimental study) // Тиббиётда янги кун. – Бухоро, 2021.-№ 6 (38/1).-С. 112-114.
6. Хакимов М.Ш., Урманова Н.М., Худойбердиев С.С., Хамдамов И.Б. Возможности аллогерниопластики у женщин фертильного возраста // Назарий ва клиник тиббиёт журналы. Тошкент.-2022.-№3.С.89-93.
7. Хамдамов И.Б., Хамдамов А.Б. Фертил ёшдаги аёлларда эндовидеохирургик герниопластика // Тиббиётда янги кун. Бухоро, 2021.-№6 (38/1) - С. 25-27.
8. Хамдамов И.Б. Experimental determination of the extensibility of the anterior abdominal wall tissues at different times of pregnancy using various approaches to hernioplasty// Academicia: An International Multidisciplinary Research Journal Vol. 12, Issue 04, April 2022 SJIF 2022 = 8.252 P.193-201
9. Хамдамов И.Б. Совершенствование тактических подходов в лечении грыж передней брюшной стенки у женщин фертильного возраста // Тиббиётда янги кун. Бухоро, 2022.-№10(48)- С. 338-342.
10. Хамдамов И.Б. Морфофункциональные особенности брюшного пресса у женщин репродуктивного возраста // Тиббиётда янги кун. Бухоро, 2022.-№3(41)- С. 223-227.

11. Khamdamova M.T. Ultrasound features of three-dimensional echography in assessing the condition of the endometrium and uterine cavity in women of the first period of middle age using intrauterine contraceptives // *Biology va tibbiyot muammolari*. - Samarkand, 2020. - No. 2 (118). - P.127-131.
12. Khamdamova M. T. Ultrasound assessment of changes in the endometrium of the uterus in women of the first and second period of middle age when using intrauterine and oral contraceptives // *Биомедицина ва амалиёт журнали*. – Ташкент, 2020. - №2. - 8 часть. - С.79-85.
13. Khamdamova M. T. Anthropometric characteristics of the physical status of women in the first and second period of middle age // *A new day in medicine*. Tashkent, 2020. - № 1 (29). - С.98-100.
14. Khamdamova M.T. Age-related and individual variability of the shape and size of the uterus according to morphological and ultrasound studies // *News of dermatovenereology and reproductive health*. - Tashkent, 2020. - No. 1-2 (88-80). - P.49-52.
15. Khamdamova M. T. Anthropometric characteristics of the physical status of women in the first and second period of middle age // *Тиббиётда янги кун*. Ташкент, 2020. - № 1 (29). - С.98-100.
16. Хамдамова М.Т. Возрастная и индивидуальная изменчивость формы и размеров матки по данным морфологического и ультразвукового исследований // *Новости дерматовенерологии и репродуктивного здоровья*. - Ташкент, 2020. - № 1-2 (88-80). - С.49-52.
17. Хамдамова М.Т. Ультразвуковые особенности трехмерной эхографии в оценке состояния эндометрия и полости матки у женщин первого периода среднего возраста применяющие внутриматочные контрацептивные средства // *Биология ва тиббиёт муаммолари*. - Самарканд, 2020. - №2 (118). - С.127-131.
18. Khamdamova M. T. Ultrasound assessment of changes in the endometrium of the uterus in women of the first and second period of middle age when using intrauterine and oral contraceptives // *Биомедицина ва амалиёт журнали*. – Ташкент, 2020. - №2. - 8 часть. - С.79-85.
19. Хамдамова М.Т. Особенности ультразвуковых параметров матки у женщин первого и второго периода среднего возраста применяющие инъекционные контрацептивные средства // *Тиббиётда янги кун*. - Ташкент, 2020. - № 2/1 (29/1). - С.154-156.
20. Хамдамова М.Т. Особенности ультразвукового изображения матки и яичников у женщин второго периода среднего возраста применяющие комбинированные оральные контрацептивные средства // *Тиббиётда янги кун*. - Ташкент, 2020. - № 2 (30). - С. 258-261.
21. Хамдамова М.Т. Индивидуальная изменчивость матки и яичников у женщин применяющие и не использующие различные виды контрацептивные средства // *Тиббиётда янги кун*. - Ташкент, 2020. - № 3 (31). - С. 519-526.
22. Khamdamova M. T. Echographic features variability in the size and shape of the uterus and ovaries in women of the second period of adulthood using various contraceptives // *Asian Journal of Multidimensional Research* - 2020. – N9 (5). - P.259-263.
23. Khamdamova M. T. Somatometric characteristics of women of the first and second period of adulthood using different contraceptives with different body types // *The american journal of medical sciences and pharmaceutical research* - 2020. – N8 (2). - P.69-76.

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IDENTIFYING PRIORITY ENVIRONMENTAL PROBLEMS IN ANDIJAN REGION

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Abstract: Changes in heart rate variability, identified using the cardiorythmography method, indicate the severity of autonomic disorders, characterized by a sympathetic-parasympathetic imbalance with a predominance of sympathetic and suprasedgmental autonomic influences, as well as a violation of adaptive mechanisms in patients with HT; these changes are more pronounced in females. In both groups there was a large percentage of patients with such symptoms - 89.1% and 80.7%, respectively, in MG and SG.

Key words: brain, cranial nerve lesions, hypothyroid myopathy, myotonic phenomenon.

Relevance. Hypothyroidism is defined as a clinical syndrome caused by a persistent borderline decrease in the level of thyroid hormones in the body, when a normal level of peripheral thyroid hormones is determined in combination with an increased level of thyroid-stimulating hormone (TSH) [1,4,8,9,10,11,21,22]. Most cases of persistent hypothyroidism develop as a result of autoimmune thyroiditis (AIT); sometimes the syndrome may have a different etiology [2,3,6,7,18].

Hypothyroidism is a significant socio-medical problem, which is associated with its wide prevalence, increasing incidence, the possibility of developing systemic manifestations and transition to the manifest form of hypothyroidism, decreased quality of life, association with other diseases with their aggravation, adverse effects on the course of pregnancy and the condition of the fetus, prognostically negative long-term consequences, especially cardiovascular ones [19,20,24].

The prevalence of hypothyroidism varies from 4 to 10%, depending on gender, age and other characteristics of the population studied [2,3,6]. According to some data, the frequency of its detection can reach 17% and even 20%, and women are affected several times more often than men [2,5,12,13]. In recent years, there has been a tendency to increase the incidence of FH, including among the population of Uzbekistan, in all age groups.

The prevalence of hypothyroidism in various population groups on the planet ranges from 1.2% to 15% and depends on many factors [19,20,24]. According to epidemiological studies, the prevalence of hypothyroidism in Uzbekistan is higher than in Russia, the USA and Europe - 12-15% versus 4.5-5%, respectively [7,18]. However, the results of individual studies differ significantly from each other. Thus, according to the Wickham study (Great Britain, 2779 patients), the prevalence of HT among those examined was 8% for women and 3.5% for men ($p < 0.05$). In the Colorado study (USA, 25,686 people), the prevalence of SCH in the study group without regard to gender was 9.5%. In the NHANES III study (USA, more than 16 thousand patients) – 4.5%.

The possibility of the appearance of clinical symptoms of hypothyroidism even with minimal thyroid insufficiency has been shown by many scientific works. A large Colorado study of 25,865 participants confirmed a small but statistically significant difference in the presence of symptoms between individuals with hypothyroidism and euthyroidism, especially in such manifestations as dry skin, memory loss, slow thinking, muscle weakness and cramps, fatigue, chilliness, swelling around the eyes, hoarseness, constipation [1,4]. In particular, when comparing patients with hypothyroidism with TSH less than 10 mU/l and healthy individuals, it

was found that patients with minimal thyroid insufficiency complain of fatigue significantly more often [14,15]. The possibility of eliminating subjective manifestations during levothyroxine replacement treatment (LLT) in patients with hypothyroidism remains a subject of debate [16,17,23].

Systemic manifestations of hypothyroidism affect a number of organs and metabolic processes, affecting the nervous, cardiovascular and other systems, as well as hematopoiesis, iron metabolism, oxidative and other metabolic changes.

However, there is still no consensus on the characteristics of nervous system damage in patients with hypothyroidism depending on gender. All of the above shows the relevance of the problem and the advisability of studying it in the clinic.

Purpose of the study: To identify the characteristics of damage to the nervous system and the level of quality of life in primary hypothyroidism depending on gender.

Material and methods. 78 patients with primary hypothyroidism (HT) were examined. The study included only patients aged from 18 to 59 years, average age 38.2 ± 17.6 years, observed in the department of neurology and endocrinology of the ASMI clinic. All subjects signed informed consent to participate in the study. The duration of hypothyroidism at the time of the initial examination ranged from 6 months to 30 years (patients with hypothyroidism experience of 5 to 10 years predominated). The inclusion criteria for the study were: age from 18 to 59 years, the presence of autoimmune thyroiditis (AIT) and compensated manifest or subclinical hypothyroidism. The average age of women was 42.1 ± 11.7 years, men – 48.2 ± 8.3 years ($p > 0.05$). It is obvious that with age the number of patients with hypothyroidism syndrome increased. The control group consisted of 20 healthy individuals comparable to the main groups by gender and age. During a comprehensive clinical examination of patients, the following were used: generally accepted clinical examination of somatic and neurological status, laboratory, ultrasound and neuroimaging examination methods.

Research results and discussion. In group I of patients with hypothyroidism (women), polyneuropathy was an almost obligate syndrome and occurred in 81.8% of cases (45 people). In group II, 69.6% of patients had polyneuropathy. This indicator is significantly lower than the indicator in the female group ($p < 0.05$).

It should also be noted that a mild form of polyneuropathy predominated in men - 43.5% of cases, in women this figure was 40.0%, no significance was found. But moderate polyneuropathies were significantly more common in women compared to men: 41.8% versus 26.1% ($p < 0.05$).

Among female patients (group I), tunnel neuropathies were detected in 72.7% of cases (40 people). The average To index in the examined patients was 2.31 ± 0.70 points. In men, clinical signs of this pathology were detected less frequently and amounted to 56.5% (13 people), ($p < 0.05$).

In patients with primary hypothyroidism, carpal tunnel syndrome was generally more common than others. Its clinical manifestations in group I were noted in 69.1% of cases (38 people). The second most common syndrome was Guyon's canal syndrome (54.5%). In all examined patients, this syndrome was observed in 44.8% of cases (45 people). In terms of frequency of occurrence, cubital tunnel syndrome ranked third among tunnel neuropathies in patients with primary hypothyroidism. Of the 78 patients examined, this syndrome was observed in 39.7% of patients (31 people). Tarsal tunnel syndrome was the rarest.

According to the results of a clinical electroneuromyographic (ENMG) study, sensory polyneuropathy in group I patients with MHT was diagnosed in 22 (31.9%) patients, sensorimotor polyneuropathy in 42 (60.9%).

In the group of patients of group II with OHT, sensory polyneuropathy was diagnosed in 15 (26.8%) patients, sensorimotor polyneuropathy in 32 (57.1%).

Comorbid diseases were studied in patients with HT. Among patients with HT in general, 61.5% of patients had concomitant diseases, a significant proportion of the examined patients - 31 (39.7%) - had 3 or more different concomitant pathological conditions. The average number of comorbidities per hospitalized patient was 2.36 ± 0.7 . We have established the dependence of the average number of concomitant diseases among patients with HT on the gender and age of the patients.

In patients of group I, diseases such as hypertension, cerebrovascular diseases, metabolic syndrome, and diabetes mellitus were more common compared with patients in group II - 27.3%, 27.3%, 30.9%, 16.4% versus 21.7%, 17.4%, 26.1%, 17.0% respectively. In group II, there was more often comorbid pathology such as COPD and gastrointestinal diseases 17.4% and 39.1% versus 12.7% and 30.9%, respectively.

In patients with primary hypothyroidism, carpal tunnel syndrome was generally more common than others. Its clinical manifestations in group I were noted in 69.1% of cases (38 people). The second most common syndrome was Guyon's canal syndrome (54.5%). In all examined patients, this syndrome was observed in 44.8% of cases (45 people). In terms of frequency of occurrence, cubital tunnel syndrome ranked third among tunnel neuropathies in patients with primary hypothyroidism. Of the 78 patients examined, this syndrome was observed in 39.7% of patients (31 people). Tarsal tunnel syndrome was the rarest.

ENMG study in groups of patients revealed a number of disorders, most pronounced in the nerves of the lower extremities. In both groups, a statistically significant, compared to the control, decrease in the amplitude of the M-response and an increase in residual latency were determined. The results of the analysis of motor units in both groups showed that the primary muscle type of lesion was determined in all muscles studied. This was evidenced by a pathological shortening of the duration of the MUAP, with a shift of the duration histogram to the left, towards smaller values. This confirmed the results of the clinical study, in which all patients showed signs of myopathies.

Conclusions: The pattern of organic brain damage depends on the form of primary hypothyroidism and gender. In female patients with MHT (neurological symptoms were more pronounced in scores compared to male patients with MHT. Pyramidal symptoms and CN lesions were observed in 41.7% and 61.1% of cases in women with MHT, in men these indicators were 30.8% and 38.5%, respectively ($p < 0.05$). In women with HT, polyneuropathy was an almost obligate syndrome and occurred in 81.8% of cases (45 people). In men, 69.6% of patients had polyneuropathy. This indicator is significantly lower than the indicator in the female group ($p < 0.05$). The predominance of cubital canal syndrome among women was established - 47.2% (26 people), compared with the group of male patients in whom this syndrome was observed in 34.8% of cases (8 people).

Literature

1. Vernigorodsky, V. S. Pro-inflammatory cytokines and their role in the development of cardiovascular complications in patients with hypothyroidism // Ros. medicobiol. Vestn. them. acad. I. P. Pavlova. – 2013. – No. 2. – pp. 93–96.
2. Demidova, T. Yu. The role of hypofunction of the thyroid gland in the development of metabolic syndrome // Therapist. arch. – 2019. – No. 4. – P. 69–73.
3. Drapkina, O. M. Diastolic heart failure: mechanisms of development and prospects for influencing them // Journal Heart Failure. - 2012. - Т. 13, No. 5 (73). – P. 310 – 316.
4. Хамдамов И.Б. Клиническая оценка эффективности традиционного подхода лечения грыж передней брюшной стенки у женщин фертильного возраста // Вестник врача. –Самарканд 2022. № 2.2 (104).-С.65-70.
5. Хамдамов И.Б., Мирходжаев И.А. Хакимов М.Ш. Хамдамов Б.З. Эволюция использования полимерных имплантантов для герниопластики // Тиббиётда янги кун. – Ташкент; 2021,- №2 (34) С.-107-111.
6. Khamdamov I.B., Khamdamov A.B. Differentiated approach to the choice of hernioplasty method in women of fertile age (Clinical and experimental study) // Тиббиётда янги кун. – Бухоро, 2021.-№ 6 (38/1).-С. 112-114.
7. Хакимов М.Ш., Урманова Н.М., Худойбердиев С.С., Хамдамов И.Б. Возможности аллогерниопластики у женщин фертильного возраста // Назарий ва клиник тиббиёт журнали. Тошкент.-2022.-№3.С.89-93.
8. Хамдамов И.Б., Хамдамов А.Б. Фертил ёшдаги аёлларда эндовидеохирургик герниопластика // Тиббиётда янги кун. Бухоро, 2021.-№6 (38/1) - С. 25-27.
9. Хамдамов И.Б. Experimental determination of the extensibility of the anterior abdominal wall tissues at different times of pregnancy using various approaches to hernioplasty// Academicia: An International Multidisciplinary Research Journal Vol. 12, Issue 04, April 2022 SJIF 2022 = 8.252 P.193-201
10. Хамдамов И.Б. Совершенствование тактических подходов в лечении грыж передней брюшной стенки у женщин фертильного возраста // Тиббиётда янги кун. Бухоро, 2022.-№10(48)- С. 338-342.
11. Хамдамов И.Б. Морфофункциональные особенности брюшного пресса у женщин репродуктивного возраста // Тиббиётда янги кун. Бухоро, 2022.-№3(41)- С. 223-227.
12. Khamdamova M.T. Ultrasound features of three-dimensional echography in assessing the condition of the endometrium and uterine cavity in women of the first period of middle age using intrauterine contraceptives // Biology va tibbyot muammolari. - Samarkand, 2020. - No. 2 (118). - P.127-131.
13. Khamdamova M. T. Ultrasound assessment of changes in the endometrium of the uterus in women of the first and second period of middle age when using intrauterine and oral contraceptives // Биомедицина ва амалиёт журнали. – Ташкент, 2020. - №2. - 8 часть. - С.79-85.
14. Khamdamova M. T. Anthropometric characteristics of the physical status of women in the first and second period of middle age // A new day in medicine. Tashkent, 2020. - № 1 (29). - С.98-100.

15. Khamdamova M.T. Age-related and individual variability of the shape and size of the uterus according to morphological and ultrasound studies // News of dermatovenereology and reproductive health. - Tashkent, 2020. - No. 1-2 (88-80). - P.49-52.
16. Khamdamova M. T. Anthropometric characteristics of the physical status of women in the first and second period of middle age // Тиббиётда янги кун. Ташкент, 2020. - № 1 (29). - С.98-100.
17. Хамдамова М.Т. Возрастная и индивидуальная изменчивость формы и размеров матки по данным морфологического и ультразвукового исследований // Новости дерматовенерологии и репродуктивного здоровья. - Ташкент, 2020. - № 1-2 (88-80). - С.49-52.
18. Хамдамова М.Т. Ультразвуковые особенности трехмерной эхографии в оценке состояния эндометрия и полости матки у женщин первого периода среднего возраста применяющие внутриматочные контрацептивные средства // Биология ва тиббиёт муаммолари. - Самарканд, 2020. - №2 (118). - С.127-131.
19. Khamdamova M. T. Ultrasound assessment of changes in the endometrium of the uterus in women of the first and second period of middle age when using intrauterine and oral contraceptives // Биомедицина ва амалиёт журнали. – Ташкент, 2020. - №2. - 8 часть. - С.79-85.
20. Хамдамова М.Т. Особенности ультразвуковых параметров матки у женщин первого и второго периода среднего возраста применяющие инъекционные контрацептивные средства // Тиббиётда янги кун. - Ташкент, 2020. - № 2/1 (29/1). - С.154-156.
21. Хамдамова М.Т. Особенности ультразвукового изображения матки и яичников у женщин второго периода среднего возраста применяющие комбинированные оральные контрацептивные средства // Тиббиётда янги кун. - Ташкент, 2020. - № 2 (30). - С. 258-261.
22. Хамдамова М.Т. Индивидуальная изменчивость матки и яичников у женщин применяющие и не использующие различные виды контрацептивные средства // Тиббиётда янги кун. - Ташкент, 2020. - № 3 (31). - С. 519-526.
23. Khamdamova M. T. Echographic features variability in the size and shape of the uterus and ovaries in women of the second period of adulthood using various contraceptives // Asian Journal of Multidimensional Research - 2020. – N9 (5). - P.259-263.
24. Khamdamova M. T. Somatometric characteristics of women of the first and second period of adulthood using different contraceptives with different body types // The american journal of medical sciences and pharmaceutical research - 2020. – N8 (2). - P.69-76.

EFFECTIVE METHODS IN TEACHING ENGLISH

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Abstract

Teaching English as a second language (ESL) or as a foreign language (EFL) is a complex and dynamic endeavor, with a diverse range of teaching methods and approaches. This article explores the key methods and strategies that have proven to be effective in enhancing the teaching and learning of English. The literature review delves into the history of language teaching, highlighting the evolution of methodologies. The methodology section presents practical techniques, tools, and tips for effective language instruction. The results section discusses the outcomes and benefits of these methods, supported by research and real-world experiences. In conclusion, this article emphasizes the importance of a flexible and learner-centered approach to teaching English.

Keywords. Effective teaching, English as a Second Language (ESL), English as a Foreign Language (EFL), language teaching, methodologies, language acquisition, communicative approach.

Аннотация

Преподавание английского языка как второго языка (ESL) или как иностранного языка (EFL) — это сложная и динамичная задача, включающая разнообразный спектр методов и подходов обучения. В этой статье рассматриваются ключевые методы и стратегии, которые доказали свою эффективность в улучшении преподавания и изучения английского языка. Обзор литературы углубляется в историю преподавания языка, подчеркивая эволюцию методологий. В разделе «Методология» представлены практические приемы, инструменты и советы для эффективного обучения языку. В разделе результатов обсуждаются результаты и преимущества этих методов, подкрепленные исследованиями и реальным опытом. В заключение, в этой статье подчеркивается важность гибкого и ориентированного на учащихся подхода к преподаванию английского языка.

Ключевые слова. Эффективное преподавание, английский как второй язык (ESL), английский как иностранный язык (EFL), преподавание языка, методики, овладение языком, коммуникативный подход.

INTRODUCTION

Teaching English is a global endeavor, with learners spanning diverse age groups and backgrounds. Instructors continually seek effective methods to facilitate language acquisition and fluency. This article explores various teaching methods that have proven successful in the field of English language education. It highlights the evolution of language teaching methodologies, from traditional grammar-translation methods to more modern, communicative approaches. The focus here is on practical strategies that educators can employ to enhance their students' language proficiency.

Language teaching methodologies have evolved over the years. In the past, traditional methods emphasized rote memorization of grammar rules and vocabulary. While these approaches provided a solid foundation, they often fell short in developing students' practical language skills. The advent of communicative language teaching (CLT) marked a paradigm shift. CLT prioritizes real-world communication and encourages students to use the language in authentic contexts. The benefits of CLT and other modern methodologies are widely acknowledged in the field of language education.

Furthermore, the integration of technology and online resources has transformed the way English is taught. Virtual classrooms, language learning apps, and multimedia tools have created interactive and engaging learning experiences. These digital resources have enabled instructors to provide individualized attention and tailor lessons to students' needs.

1. Communicative Language Teaching (CLT): CLT emphasizes communication over rote learning. Instructors create activities that encourage students to interact, negotiate meaning, and use English in real-life situations. Role-plays, group discussions, and problem-solving tasks are common techniques.

2. Task-Based Language Teaching (TBLT): TBLT centers lessons around real-world tasks. Students work on projects, such as planning a trip, giving presentations, or solving practical problems. This method enhances language proficiency through active engagement.

3. Blended Learning: Combining traditional classroom instruction with online resources creates a flexible and adaptive learning environment. Instructors can leverage online platforms for grammar exercises, vocabulary practice, and multimedia content.

4. Use of Authentic Materials: Incorporating authentic materials like newspapers, podcasts, and films exposes students to real-world language usage. This fosters cultural awareness and language immersion.

5. Technology Integration: Utilize language learning apps, virtual classrooms, and educational websites to create interactive and engaging lessons. These tools offer immediate feedback and opportunities for self-paced learning.

RESULTS

Research and practical experience show that the methods mentioned above yield positive outcomes. Students exposed to CLT and TBLT tend to develop better speaking and listening skills, as they engage in meaningful conversations and tasks. Blended learning approaches enhance flexibility and adaptability in teaching, accommodating diverse learning styles. Authentic materials and technology integration improve motivation and cultural competence, essential aspects of language acquisition.

CONCLUSION

The field of English language teaching is continually evolving, with an emphasis on learner-centered, communicative, and technology-driven methods. Effective teaching methods in English language education encourage active participation, meaningful interactions, and real-world applications. Educators must remain open to innovative approaches that address the evolving needs of students in an increasingly interconnected world.

In conclusion, a blend of teaching methodologies and a focus on practical application can significantly enhance the teaching and learning of English. By embracing these strategies, instructors can better prepare students to communicate effectively in the globalized 21st century.

REFERENCES

1. Celce-Murcia, M., Brinton, D. M., & Snow, M. A. (2014). *Teaching English as a Second or Foreign Language*. Cengage Learning.
2. Richards, J. C., & Rodgers, T. S. (2001). *Approaches and Methods in Language Teaching*. Cambridge University Press.
3. Nunan, D. (1999). *Second Language Teaching and Learning*. Heinle & Heinle.
4. Thornbury, S. (2006). *An A-Z of ELT*. Oxford University Press.



Morphofunctional changes of sterno-costal junctions of Experimental Diabetes mellitus

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ABSTRACT. Diabetes mellitus is on the list of social problems and is accompanied by profound changes in the human body. Disturbances of peripheral microcirculation and innervation are observed with a long course of the disease. The morphofunctional active point in the formation of the chest is the sternocostal complex. Changes in the shape and functional structure of the chest affect the functional state of the chest cavity organs.

KEY WORDS: experimental diabetes, alloxan, cartilage, chondrocyte, sternocostal complex.

INTRODUCTION

According to the World Health Organization, more than 100 million people worldwide have been diagnosed with diabetes. Diabetes mellitus is on the list of social problems and is accompanied by profound changes in the human body. Disturbances of peripheral microcirculation and innervation are observed with a long course of the disease [1,3,4,5,6,7,8,9,10]. The morphofunctional active point in the formation of the chest is the sternocostal complex. Changes in the shape and functional structure of the chest affect the functional state of the chest cavity organs. Congenital and acquired diseases of the musculoskeletal system account for 94–99% of a person's life expectancy, of which the incidence of congenital defects is 32: 1000 [2,11,12,13,14,15,16,17]. Therotologically, defects in the development of the chest make up 4–12% of all anomalies [3,18,19,20,21,22,23]. The lack of data on the morphofunctional properties of the sternocostal complex leads to serious shortcomings and errors in the prevention and treatment of injuries and deformities in certain areas. Conducting scientific research in this area has not only scientific, but also practical importance [3,24,25,26,27].

All of the above allows us to draw conclusions about the problem we have developed and its relevance in connection with the prevalence of deformities and injuries of the sternocleidomastoid complex and their morphological and functional substantiation.

The purpose of the study the dynamics of morphological changes in the sternocostal complex of rats with alloxan diabetes mellitus.

MATERIALS AND METHODS: The study was carried out on 42 white laboratory rats weighing 150-200 g. The animals were kept in living conditions according to a standard diet (with food and water). For the study, the animals were divided into 2 groups. In the control group, there were 10 rats, male rats were injected in a ratio of 3: 1 and 0.5 ml of 0.9% sodium chloride solution was injected once. The research group consisted of 32 rats, the male had a ratio of 3: 1. On the fifth day of gestation, the rats were induced experimental diabetes mellitus using the alloxan model. In the experimental group, a mixture of alloxan 150 mg / kg + 15 ml of distilled water was injected intraperitoneally by a single intraperitoneal injection. An increase in blood glucose up to about 350 mg / dL (Plus Satellite, Russia) confirms hyperglycemia.

In the rats in our experiment, sucking was observed after 30 minutes. Within 5-7 hours, the tails began to turn blue. In the following days, thirst, polyuria, a decrease in wheezing and

tachycardia were observed. Follow-up 20-24 days later followed by observation in rats with low mobility, weight loss, prolonged wound healing, and hair loss. Of the 22 rats taken for the experiment, 40% died. The material for the study was the breast components of 14–21–30–45–60 days of age in young rats born to mothers with experimental diabetes. For histological analysis in the study, it was necessary to obtain a sternocostal combination of rats of the experimental group.

The decapitation of animals was carried out under general ether anesthesia using a guillotine knife in accordance with ethical rules. For histological examination, an incision was made in the sternocleidomastoid joint. The samples taken for the experiment were immersed in 10% formalin. The sample was dried in increasing percent alcohol and processed histologically. Then paraffin was poured. The prepared sections were stained by the Mason method for the study of hematoxylin-eosin and connective tissue, cells and its intermediate elements, as well as a histochemical reaction was performed using the PIC methods. The finished slides were examined under a SARL Zeiss Microscopy GmbH microscope and photographed with an Axio Lab.A1 camera (Germany).

Blood was taken from rats to determine mineral metabolism and markers of bone tissue (indices of resorption and remodeling), as well as fragments of organs and tissues for morphological examination during subsequent periods of observation.

Electrolytes Ca, P, Mg in blood serum were determined using a HUMAN colorimetric kit (Germany).

Bone resorption marker - alkaline phosphatase and remodeling marker - b-STX were investigated using ELISA reagents.

RESULTS AND DISCUSSION: In fact, the growth zone in all bones plays an important role in the formation and growth of bones, so the state of the structures of the sternocleidomastoid ridge has been studied.

In morphological examination for histological examination of the thorax regions of the sternum complex of rats in the initial period of observation, the normative formation of ribs in the control animal during this period corresponds to the observation period (Fig. 2).

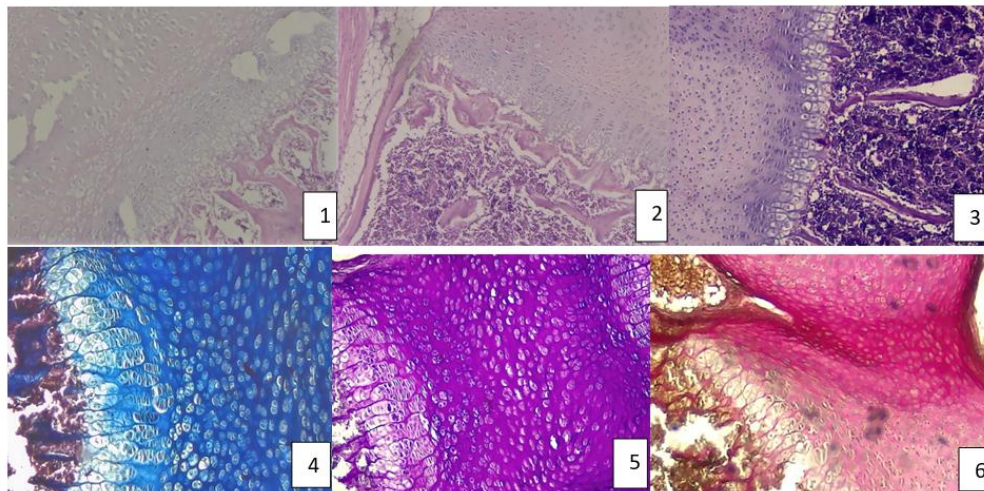
During this period, patients showed symmetrical basophilia of the sternum along the ossification line, relative intensity of proximal ossification, chaotic formation of the distance between the columns of bone tissue, uneven distribution of the proliferative stratum corneum, and an abundance of fatty pads in the surrounding soft tissue interval. experimental group of animals (Fig. 6).

On the 14th day of observation, when examining the breast tissue, linear differentiation at the junction of the chest with the chest in the control animal began on the periphery, and bruises on the periphery were found in the cervical matrix. It was found that the epichondral film became thinner, relatively thickened in the corners of the cartilage-costal film (Fig. 3).

The results of control and morphological studies of the sternocostal complexes in the offspring of experimental rats in the dynamics of growth of early postnatal ontogenesis showed that maternal alloxan diabetes leads to a change in the mechanism of development of the sternum during pregnancy and lactation of a mother with diabetes. [4] On day 21 of the experiment, the main side effects of diabetes mellitus were observed in connective tissue in zone 4 of the growth of the sternum and in synchondrosis at the junction of the ribs (Fig. 4).

By day 30, the transitional tissue in all four growth zones has the same architecture. The tubules on both sides (proximal and distal) are separated from the bone growth zones by the same mechanism of bone formation. Isogenic chondrocytes are not observed in the main group of the study, in the early stages (14 days) they are chaotic, single, in pairs, in later periods (14-30 days) small isogenic groups, consisting of an average of 3 people. There are 4 cells of different sizes [5]. The shape of these chondrocytes is elliptical or cylindrical, in some places round-shaped cells are revealed (Fig. 5).

At a later date (45 days), chondrocytes have a spherical or round nucleus surrounded by cytoplasm. The growth zone is represented by proliferative cells, which are columnar and consist of 10-12 cells in each column. These chondrocytes differ from the adjacent columns by a clear set of fibrils oriented longitudinally along the layers of the main matrix material. In some chondrocytes of this zone, mitotic patterns were revealed. Specific cases of mitosis were revealed in rats of the main group [6]. Cartilage cracks are found between the columns of chondrocytes. In places, local dystrophic changes in chondrocytes are detected, the vascular wall thickens, fibrous structures decrease, and plasmorrhagic foci appear around the vessels (Fig. 1).



1. Experiment. Day 45 observation. Staining method-Hematoxylin-Eosin. Magnification 200 times.

2. Control. 45th day of observation. Staining method-hematoxylin-eosin. Magnification 200 times

3. Experiment, 21st day of observation. Staining method-Hematoxylin-Eosin. Magnification 200 times.

4. Experiment, 30th day of observation. Staining method-Masson. Increased 200 times.

5. Experiment. 30 days of observation. Masson's staining by the PIC method. Increased 200 times.

6. Experiment. Day 7 observation. Masson's staining by the Wangizon method. Increased 200 times.

CONCLUSIONS: The greatest changes in rats under conditions of diabetes mellitus of a pregnant mother occur in the connective tissue of the growth zones, where it becomes significantly thinner and the number of cells in it decreases.

It was found that significant changes in markers of mineral metabolism and ossification in the advanced generation as a result of the adverse effects of experimental diabetes during pregnancy were more pronounced in the late (30–45 days) follow-up period.

During the observation periods, the process of differentiation in the bone trabeculae slows down sharply, and therefore the range of the growth zone of the sternum expands in the distal and proximal directions.

The data obtained indicate that during pregnancy in rats with maternal alloxan diabetes, the development of all structural structures of the growth zones of the sternocostal complex is delayed.

REFERENCES

1. Liao C.C., Lin C.S., Shih C.C., Yeh C.C., Chang Y.C., Lee Y.W. et al. Increased risk of fracture and postfracture adverse events in patients with diabetes: two nationwide population-based retrospective cohort studies. *Diabetes Care*. 2014; 37: 2246–2252.
2. Hough F.S. et al. Mechanisms in endocrinology: mechanisms and evaluation of bone fragility in type 1 diabetes mellitus. *Eur. J. Endocrinol.* 2016; 174: R127–138. DOI: 10.1530/EJE-15-0820.
3. Jackuliak P., Payer J. Osteoporosis, fractures, and diabetes. *Int. J. Endocrinol.* 2014; 2014: 820615. DOI: 10.1155/2014/820615.
4. Ibrokhimova LI, Rasulov Kh.A., Structural features of the sternocostal complex of rats in the stages of early postnatal ontogenesis in alloxan diabetes mellitus. -118 p
5. Ibrokhimova LI, Rasulov Kh.A., Abdullaeva I.Kh., Morphological characteristics of the sternum of the offspring of rats with experimental sugar diabetes, 215-216 bet "Actual problems of pharmacology and pharmacotherapy" Scientific practice TTA Urganch branches.
6. Ibrokhimova LI, Features of chemical models of experimental diabetes mellitus, *Pediatrics №1 / 2021 294-296p.*
7. Хамдамов И.Б. Клиническая оценка эффективности традиционного подхода лечения грыж передней брюшной стенки у женщин фертильного возраста // Вестник врача. –Самарканд 2022. № 2.2 (104).-С.65-70.
8. Хамдамов И.Б., Мирходжаев И.А. Хакимов М.Ш. Хамдамов Б.З. Эволюция использования полимерных имплантантов для герниопластики // Тиббиётда янги кун. – Ташкент; 2021,- №2 (34) С.-107-111.
9. Khamdamov I.B., Khamdamov A.B. Differentiated approach to the choice of hernioplasty method in women of fertile age (Clinical and experimental study) // Тиббиётда янги кун. – Бухоро, 2021.-№ 6 (38/1).-С. 112-114.
10. Хакимов М.Ш., Урманова Н.М., Худойбердиев С.С., Хамдамов И.Б. Возможности аллогерниопластики у женщин фертильного возраста // Назарий ва клиник тиббиёт журнали. Тошкент.-2022.-№3.С.89-93.
11. Хамдамов И.Б., Хамдамов А.Б. Фертил ёшдаги аёлларда эндовидеохирургик герниопластика // Тиббиётда янги кун. Бухоро, 2021.-№6 (38/1) -С. 25-27.
12. Хамдамов И.Б. Experimental determination of the extensibility of the anterior abdominal wall tissues at different times of pregnancy using various approaches to hernioplasty// *Academicia: An International Multidisciplinary Research Journal Vol. 12, Issue 04, April 2022 SJIF 2022 = 8.252 P.193-201*
13. Хамдамов И.Б. Совершенствование тактических подходов в лечении грыж передней брюшной стенки у женщин фертильного возраста // Тиббиётда янги кун. Бухоро, 2022.-№10(48)- С. 338-342.

14. Хамдамов И.Б. Морфофункциональные особенности брюшного пресса у женщин репродуктивного возраста // Тиббиётда янги кун. Бухоро, 2022.-№3(41)- С. 223-227.
15. Khamdamova M.T. Ultrasound features of three-dimensional echography in assessing the condition of the endometrium and uterine cavity in women of the first period of middle age using intrauterine contraceptives // Biology va tibbyot muammolari. - Samarkand, 2020. - No. 2 (118). - P.127-131.
16. Khamdamova M. T. Ultrasound assessment of changes in the endometrium of the uterus in women of the first and second period of middle age when using intrauterine and oral contraceptives // Биомедицина ва амалиёт журнали. – Ташкент, 2020. - №2. - 8 часть. - С.79-85.
17. Khamdamova M. T. Anthropometric characteristics of the physical status of women in the first and second period of middle age // A new day in medicine. Tashkent, 2020. - № 1 (29). - С.98-100.
18. Khamdamova M.T. Age-related and individual variability of the shape and size of the uterus according to morphological and ultrasound studies // News of dermatovenereology and reproductive health. - Tashkent, 2020. - No. 1-2 (88-80). - P.49-52.
19. Khamdamova M. T. Anthropometric characteristics of the physical status of women in the first and second period of middle age // Тиббиётда янги кун. Ташкент, 2020. - № 1 (29). - С.98-100.
20. Хамдамова М.Т. Возрастная и индивидуальная изменчивость формы и размеров матки по данным морфологического и ультразвукового исследований // Новости дерматовенерологии и репродуктивного здоровья. - Ташкент, 2020. - № 1-2 (88-80). - С.49-52.
21. Хамдамова М.Т. Ультразвуковая особенности трехмерной эхографии в оценке состояния эндометрия и полости матки у женщин первого периода среднего возраста применяющие внутриматочные контрацептивные средства // Биология ва тиббиёт муаммолари. - Самарканд, 2020. - №2 (118). - С.127-131.
22. Khamdamova M. T. Ultrasound assessment of changes in the endometrium of the uterus in women of the first and second period of middle age when using intrauterine and oral contraceptives // Биомедицина ва амалиёт журнали. – Ташкент, 2020. - №2. - 8 часть. - С.79-85.
23. Хамдамова М.Т. Особенности ультразвуковых параметров матки у женщин первого и второго периода среднего возраста применяющие инъекционные контрацептивные средства // Тиббиётда янги кун. - Ташкент, 2020. - № 2/1 (29/1). - С.154-156.
24. Хамдамова М.Т. Особенности ультразвукового изображения матки и яичников у женщин второго периода среднего возраста применяющие комбинированные оральные контрацептивные средства // Тиббиётда янги кун. - Ташкент, 2020. - № 2 (30). - С. 258-261.
25. Хамдамова М.Т. Индивидуальная изменчивость матки и яичников у женщин применяющие и не использующие различные виды контрацептивные средства // Тиббиётда янги кун. - Ташкент, 2020. - № 3 (31). - С. 519-526.
26. Khamdamova M. T. Echographic features variability in the size and shape of the uterus and ovaries in women of the second period of adulthood using various contraceptives // Asian Journal of Multidimensional Research - 2020. – N9 (5). - P.259-263.
27. Khamdamova M. T. Somatometric characteristics of women of the first and second period of adulthood using different contraceptives with different body types // The american journal of medical sciences and pharmaceutical research - 2020. – N8 (2). - P.69-76.

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Morphological structure cartilage joints of sternum of alloxan Diabetes

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Resume

The material of the study was 32 mature rats and their offspring. We used informative methods such as histological and histochemical, morphometric. As a result of the study, morphological changes in the bone-cartilaginous-ligamentous structure of the rib-sternal complex in the offspring obtained from pregnant rats with diabetes mellitus in the period of early ontogenesis are presented. It has been established that the negative impact of antenatal diabetes mellitus on the development of the connective tissue formation of the sterno-costal complex. This article describes the morphological changes in the anatomical structures of the rib-sternal complex in rat pups born from pregnant individuals with experimental diabetes mellitus.

Keywords: *Cartilage, rib –sternal complex, experimental alloxan diabetes, alloxan, chondrocytes, rats.*

Relevance

Diabetes mellitus is a global problem, and although it is receiving more and more attention, its importance is growing year by year. The number of patients is growing rapidly [3,18,19,20,21,22,23]. While the total number of people with diabetes in the world has increased fivefold since 1980, in 2018, 422 million people suffered from the disease, accounting for almost 10 percent of the world's population. While maintaining the current situation, the number of cases is projected to double by 2030 and account for 20 percent of the world's total population [WHO 21.10.2021], [1,3,4,5,6,7,8,9,10]. Changes in the shape and functional structure of the chest affects the functional state of the organs in the cavity of the cage [2,11,12,13,14,15,16,17]. Lack of information on the morphofunctional properties of the rib –thoracic complex leads to serious shortcomings and errors in the prevention and treatment of injuries and deformities in certain areas [3,24,25,26,27].

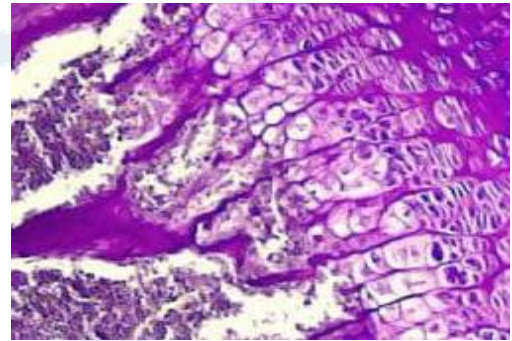
Scientific research in this field is not only scientific but also of practical importance. All of the above allows us to draw conclusions about the problems developed by us and the relevance of the rib-sternal complex due to the prevalence of its deformations and injuries and their morphofunctional substantiation.

The purpose of the work. To study the dynamics of morphological changes in the rib-sternal complex of rats with experimental alloxan diabetes.

Materials and methods: The study was performed on 32 white laboratory rats weighing 150-200 g. The animals were kept in vivariums with food and water according to a standard ration. The animals were divided into two groups for the study. The control group produced 10 rats and the male rats were in a 3: 1 ratio and were injected with 0.5 ml of 0.9% sodium chloride solution once. The study group consisted of 32 rats and the male rat had a 3: 1 ratio. On the fifth day of gestation, experimental diabetes mellitus using an alloxan model was called in rats. A mixture of alloxan 150 mg / kg and distilled water was administered to the experimental group by a single intraperitoneal injection into the abdominal cavity. An increase in blood glucose to approximately 350 mg / dl (Plus Satellite.Russia) confirms hyperglycemia. In our experimental rats, 15 minutes later, the rats were weaned. After 20 minutes, the tails began to turn blue. After 3 hours, thirst and polyuria were observed. The next day there was less

convulsions and tachycardia. In a 20- to 24-day follow-up, the study group found that the rats had low mobility, weight loss, long-term wound healing, and hair loss. Of the 22 rats taken for the experiment, 40% died. The study materials were components of the 14-21-30-45-60-day-old thorax of young rats born to mothers with experimental diabetes. The study required histological analysis the rib-sternal complex of the experimental group.

RESULTS AND DISCUSSION: The results of the study showed the presence of many SHIK-positive homogeneous structures around the epiphyses and apophyses of the bone as a result of experimental diabetes mellitus of the rib-sternal complex. These changes occur mainly in the extracellular matrix and are characterized by the presence of atrophically altered cells in a



group of chondrocytes that shrivel in many forms.

Fig 1. General view of the sternocostal joint. The gap between the joints is almost indistinguishable. Most of the interstitial spaces are filled with homogeneous structures. Around the synovial membranes, foci of mucoid edema are detected. The paint is dyed according to Masson. 10x4.

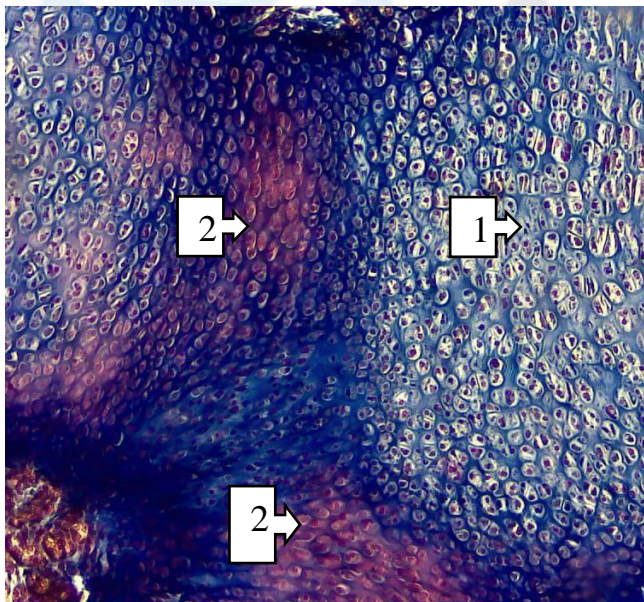


Fig.2 The proximal part of the sternum is stained with SHIK. Heterogeneous stained furnaces are detected in susceptible areas (1). In focus, the staining around the chondrocytes is of a different appearance, with the areas rich in glycosaminoglycans being stained from pinkish red to dark red (2). The phenomenon of metachromosis dye SHIK. 10x10. In conclusion, based on the above histological sections, under the influence of experimental diabetes leads to disruption of the activity of the rib-thoracic complex in the paracapsular areas and the accumulation of pathological metabolites in the extracellular matrix. This process, in turn, requires a reasonable

assumption that increased dystrophic necrotic and dysregenerative activity on the surface of large joints leads to the formation of ankylosis in the joints and osteophytes in the apophyses. So, based on the above morphological examinations, the formation of contractures in clinically small and large joints, and the development of practical recommendations that allow to predict the growth of additional osteophytes in ankylosis and apophyses will allow to develop an algorithm to solve another topical problem of evidence-based medicine.

References.

1. Hoshiyama Y, Otsuki S, Oda S, Kurokawa Y, Nakajima M, Jotoku T, Tamura R, Okamoto Y, Lotz MK, Neo M. Chondrocyte clusters adjacent to sites of cartilage degeneration have characteristics of progenitor cells. *J Orthop Res.* 2015;33(4):548-555. <https://doi.org/10.1002/jor.22782>
2. Kinds M., Marijnissen A., Viergever M., Emans P., Lafeber F, Welsing P. Identifying phenotypes of knee osteoarthritis by separate quantitative radiographic features may improve patient selection for more targeted treatment. *J Rheumatol.* 2013; 40(6):891-902.
3. Hough F.S. et al. Mechanisms in endocrinology: mechanisms and evaluation of bone fragility in type 1 diabetes mellitus. *Eur. J. Endocrinol.* 2016; 174: R127–138. DOI: 10.1530 / EJE-15-0820.
4. Ibrokhimova LI, Rasulov Kh.A., Influence of Alloxan Diabetes During Pregnancy on the Morphological Formation of the Sterno-Costal Complex. *American Journal of Medicine and Medical Sciences* 2021; 11(12): 847-850 doi:10.5923/j.ajmms.20211112.01
5. Ibrokhimova LI, Rasulov Kh.A., Abdullaeva I.Kh., Morphological characteristics of the sternum of the offspring of rats with experimental sugar diabetes, "Actual problems of pharmacology and pharmacotherapy" Scientific practice TTA Urganch branches.2021; Y. №1. Pp. 215-216
6. Ibrokhimova LI, Features of chemical models of experimental diabetes mellitus, *Pediatrics* /2021;№1.294-296р.
7. Хамдамов И.Б. Клиническая оценка эффективности традиционного подхода лечения грыж передней брюшной стенки у женщин фертильного возраста // Вестник врача. –Самарканд 2022. № 2.2 (104).-С.65-70.
8. Хамдамов И.Б., Мирходжаев И.А. Хакимов М.Ш. Хамдамов Б.З. Эволюция использования полимерных имплантантов для герниопластики // Тиббиётда янги кун. – Ташкент; 2021,- №2 (34) С.-107-111.
9. Khamdamov I.B., Khamdamov A.B. Differentiated approach to the choice of hernioplasty method in women of fertile age (Clinical and experimental study) // Тиббиётда янги кун. – Бухоро, 2021.-№ 6 (38/1).-С. 112-114.
10. Хакимов М.Ш., Урманова Н.М., Худойбердиев С.С., Хамдамов И.Б. Возможности аллогерниопластики у женщин фертильного возраста // Назарий ва клиник тиббиёт журнали. Тошкент.-2022.-№3.С.89-93.
11. Хамдамов И.Б., Хамдамов А.Б. Фертил ёшдаги аёлларда эндовидеохирургик герниопластика // Тиббиётда янги кун. Бухоро, 2021.-№6 (38/1) -С. 25-27.
12. Хамдамов И.Б. Experimental determination of the extensibility of the anterior abdominal wall tissues at different times of pregnancy using various approaches to hernioplasty// *Academicia: An International Multidisciplinary Research Journal* Vol. 12, Issue 04, April 2022 SJIF 2022 = 8.252 P.193-201

13. Хамдамов И.Б. Совершенствование тактических подходов в лечении грыж передней брюшной стенки у женщин фертильного возраста // Тиббиётда янги кун. Бухоро, 2022.-№10(48)- С. 338-342.
14. Хамдамов И.Б. Морфофункциональные особенности брюшного пресса у женщин репродуктивного возраста // Тиббиётда янги кун. Бухоро, 2022.-№3(41)- С. 223-227.
15. Khamdamova M.T. Ultrasound features of three-dimensional echography in assessing the condition of the endometrium and uterine cavity in women of the first period of middle age using intrauterine contraceptives // Biology va tibbyot muammolari. - Samarkand, 2020. - No. 2 (118). - P.127-131.
16. Khamdamova M. T. Ultrasound assessment of changes in the endometrium of the uterus in women of the first and second period of middle age when using intrauterine and oral contraceptives // Биомедицина ва амалиёт журнали. – Ташкент, 2020. - №2. - 8 часть. - С.79-85.
17. Khamdamova M. T. Anthropometric characteristics of the physical status of women in the first and second period of middle age // A new day in medicine. Tashkent, 2020. - № 1 (29). - С.98-100.
18. Khamdamova M.T. Age-related and individual variability of the shape and size of the uterus according to morphological and ultrasound studies // News of dermatovenereology and reproductive health. - Tashkent, 2020. - No. 1-2 (88-80). - P.49-52.
19. Khamdamova M. T. Anthropometric characteristics of the physical status of women in the first and second period of middle age // Тиббиётда янги кун. Ташкент, 2020. - № 1 (29). - С.98-100.
20. Хамдамова М.Т. Возрастная и индивидуальная изменчивость формы и размеров матки по данным морфологического и ультразвукового исследований // Новости дерматовенерологии и репродуктивного здоровья. - Ташкент, 2020. - № 1-2 (88-80). - С.49-52.
21. Хамдамова М.Т. Ультразвуковые особенности трехмерной эхографии в оценке состояния эндометрия и полости матки у женщин первого периода среднего возраста применяющие внутриматочные контрацептивные средства // Биология ва тиббиёт муаммолари. - Самарканд, 2020. - №2 (118). - С.127-131.
22. Khamdamova M. T. Ultrasound assessment of changes in the endometrium of the uterus in women of the first and second period of middle age when using intrauterine and oral contraceptives // Биомедицина ва амалиёт журнали. – Ташкент, 2020. - №2. - 8 часть. - С.79-85.
23. Хамдамова М.Т. Особенности ультразвуковых параметров матки у женщин первого и второго периода среднего возраста применяющие инъекционные контрацептивные средства // Тиббиётда янги кун. - Ташкент, 2020. - № 2/1 (29/1). - С.154-156.
24. Хамдамова М.Т. Особенности ультразвукового изображения матки и яичников у женщин второго периода среднего возраста применяющие комбинированные оральные контрацептивные средства // Тиббиётда янги кун. - Ташкент, 2020. - № 2 (30). - С. 258-261.

25. Хамдамова М.Т. Индивидуальная изменчивость матки и яичников у женщин применяющие и не использующие различные виды контрацептивные средства // Тиббиётда янги кун. - Ташкент, 2020. - № 3 (31). - С. 519-526.

26. Khamdamova M. T. Echographic features variability in the size and shape of the uterus and ovaries in women of the second period of adulthood using various contraceptives // Asian Journal of Multidimensional Research - 2020. – N9 (5). - P.259-263.

27. Khamdamova M. T. Somatometric characteristics of women of the first and second period of adulthood using different contraceptives with different body types // The american journal of medical sciences and pharmaceutical research - 2020. – N8 (2). - P.69-76.



Mobile Robot Position Determining Using Odometry Method

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Abstract

In this article, the authors propose an analysis of the cumulative error of robot movement. We are considering a two-wheeled robot based on an Arduino board with three ultrasonic rangefinders. The position of the mobile robot is calculated using the odometry method. Experiments were carried out on various coatings. And the calculated position of the robot was compared with the real one. When writing a mobile robot control program, it is proposed to take these results into account.

Key words: Mobile robot, Robot control, Odometry, Error accumulation

Introduction

At the current stage of technological development, robotic devices are finding more and more areas of application in human activity. This is due, first of all, to the fact that robotic devices are able to work better, longer and more reliably than a person, completely excluding such systematic errors as the "human factor"[1]-[6].

Planning the workspace with a robotic device will allow us to receive accurate, high-quality and easy-to-understand information without physical effort. For successful navigation in the surrounding space, the robotic system must build a route, correctly set the angles of rotation of the wheels and their speed of rotation, correctly interpret the information about the environment that comes from the sensor and constantly monitor its own coordinates. For efficient navigation, mobile robots need to adopt effective localization strategy [7]-[14].

But it is necessary to understand that even the most accurate engines cannot guarantee movement without error. In addition, sensors, in our case ultrasonic rangefinders, also have their own error, which largely depends on the distance to the object/obstacle. Moreover, when writing a control program for a mobile robot, developers must take into account the fact that there is an error, which will tend to accumulate over time, that is, to increase. Thus, research related to the estimation of the accumulated error is extremely relevant and timely

Related works

Plenty of authors consider a problem, connected with a motion error. Different scientists use different approaches to solve the problem of accumulated robot motion error. Among them some researchers try to solve this problem by improving accuracy another ones propose to estimate such an error in order to correct control program.

In [15] authors propose a new calibration method to improve the circular plane kinematic accuracy of industrial robot by using dynamic measurement of double ball bar (DBB). Researchers in [16] also are solving a problem of calibration. They propose to use a camera attached to the mounting plate of the robot is used to capture a fixed reference sphere as a point constraint and to record robot joint angles and gauge block lengths that are used as a distance constraint. This study is

interesting by its significant results. After calibration, the average distance error of robot motion is decreased from 2.05 mm to 0.24 mm. Nguyen, H. N. and others proposes a new method for enhancing robot position accuracy[17]. They use an artificial neural network in order to compensate the robot position errors, which are caused by these non-geometric error sources. Scientists in [18] also decided to use an artificial neural network as well as conventional identification procedures to reduce the absolute position error of robots. They reached a high level of accuracy using only measurements data and deep learning methods.

We see that a lot of authors use artificial neuron networks of different types to solve the problem of movement error compensation. Thus, in [19] authors note that pose error prediction of robots is possible by the neural network.

Cao, C. T. and his co-authors [20] have studied a method to reduce the absolute position error of robots using machine vision and neural network. Their application of the proposed algorithm in the actual robot experiment reduced the error to 50.3%. But there is another approach to solve the problem mentioned above. And this approach consists of using various sensors, including ultrasonic rangefinders, laser tackers and so on, which allow real-time assessment of the robot's position relative to other objects. And [21] is an example of such approach. This paper explores the use of a real-time robot kinematic error compensation technique where an external high-precision feedback sensor (in this case a laser tracker) directly measures the robot kinematic error and corrections are implemented during processing.

Among the many ways to improve robot positioning, we can highlight one more – odometry. A disadvantage of using it alone is unbounded error accumulation. So, odometry calibration is critical in reducing error propagation [22]. This paper presents an analysis of the developments and advances of systematic methods for odometry calibration.

Authors [23] in view of kinematic parameters errors, propose an odometry calibration method for three-wheeled omnidirectional mobile robots.

Odometry is a simple and practical method [24]-[28]. This method provides a periodic real-time estimation of the relative displacement of a mobile robot based on the measurement of the angular rotational speed of its wheels. But it has some disadvantages. The main disadvantage is unbounded accumulation of errors. In [24] researchers propose their own procedure to evaluate and correct the systematic odometry errors of a human-sized three-wheeled omnidirectional mobile robot. Thus, we see many ways to improve the accuracy of a robot's movement. One of the relatively simple ones is the odometry method. Although it has its drawback – an accumulative error, we propose to calculate it and take it into account when controlling robots. This is exactly what is discussed below.

The mobile robot hardware development

To implement the task, it is necessary to develop a system that includes a mobile robotic device and a program for processing data received from the device, the architecture of which is shown in Figure 1.

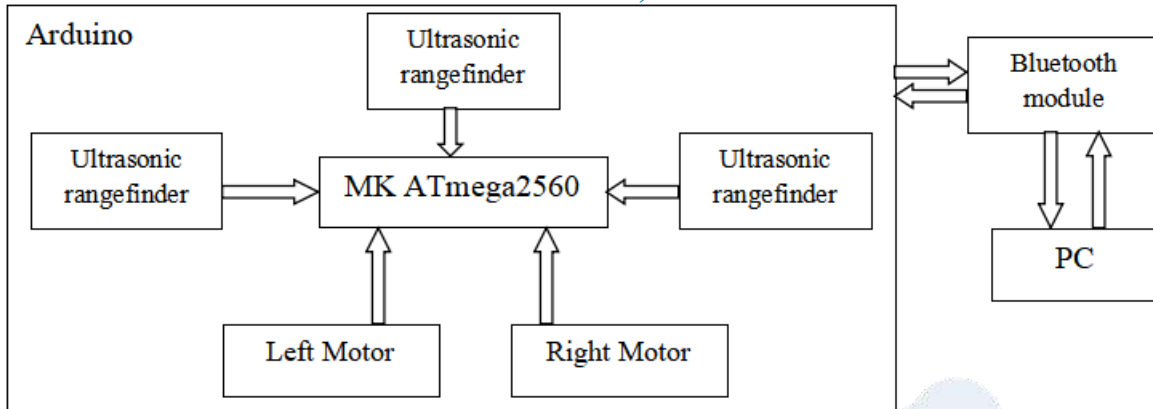


Figure 1: Developed system architecture

According to the assembled scheme, we will describe the hardware part in more detail. So, one of the main parts of the developed system is the Arduino control board based on the ATmega 2560 microcontroller, which controls the sensors and motors, and also receives and sends pointers from the rangefinders to the PC via the Bluetooth wireless information transmission module.

Due to the fact that the implementation of the main function of controlling a mobile robotic device is iterative, at the beginning, a check is made to see if the mobile robot has achieved the goal.

We must say that we are considering a simple room with no interior corners. During the environment analysis, i.e. mapping, the conclusion that the analysis is over is made by counting the number of turns. If the device makes a turn counterclockwise, then the value of the global variable count of turns is decremented, if clockwise - it is incremented, when the number of turns reaches four – mobile robot concludes that he went around the entire perimeter of the simulated room. Therefore, after start, the first step in the iteration is to check whether the mobile robotic device has achieved its goal.

If the goal is achieved, then robot should go to label A2, which will transfer the mobile robot to the state of waiting for control commands from the control computer. If the goal is not achieved, then you should measure the analysis of the distance to the obstacle ahead and go to the "while" loop of the forward movement, which leads before the mobile robot moves forward, it measures the left turn conditions and sends the received data regarding the movement and the distance to the obstacle on the left to the computer and is executed as long as the distance to the obstacle is more than twenty-five centimeters.

If the data from the mobile robot is displayed without processing, it can be seen that the sensor sends data with some error. And the data about obstacles in the places where they combine (corners) cannot be obtained due to the design features of the mobile robot, namely, because the mobile robot is equipped with only three rangefinders, which are located in the front part of the structure, due to which a "blind zone" is formed at the turns of the MR.

This means that in order to obtain a reliable map of the model of the surrounding space, it is necessary to process the received data.

Analysis of the measurement error accumulation for the traveled path

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Since the measurement of distance traveled by a mobile robotic device is carried out by means of an odometry software implementation, when the mobile robot moves in a straight line, the measurement data may be affected by wheel slippage during movement. In order to determine the effect of slippage while driving in a straight line, we will conduct an experiment where the mobile robot will move along an obstacle 250 centimeters long and send data to a personal computer.

Figure 2 shows the data received from MR in graphic form and saved to a file for further processing.

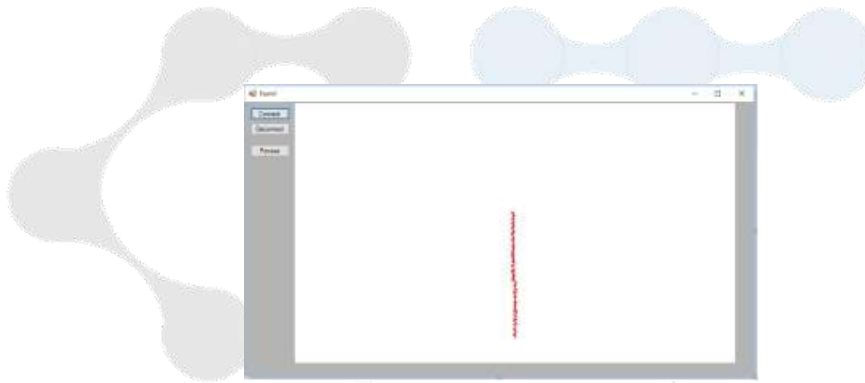


Figure 2: Received data in graphic form

While traveling a distance of 250 centimeters, mobile robot sent 181 data packages to a personal computer. The wheel diameter of the mobile robot is 6.5 centimeters. It is known that the length of the wheel circumference is determined by the formula:

$$C = 2\pi R = \pi D = 3.14 \cdot 6.5 = 20.41, \quad (1)$$

where π – a mathematical constant equal to the ratio of the length of a circle to its diameter;

D – wheel diameter.

Due to the fact that the mobile robot is not equipped with stepper motors, but with direct current motors, software implementation of odometry is more difficult. Empirically, it was determined that a full rotation of the wheel is made in 560 milliseconds, and it is assumed that in 40 milliseconds one cycle of the encoder associated with the wheel takes place, i.e., 14 encoder counts are made for one full rotation of the wheel. Then, taking into account formula 1, the formula for the traveled distance will take next form (2):

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$$L = \frac{n}{N} \pi D, \tag{2}$$

where L – the final distance traveled (for a given period of time);

n – the total number of encoder counts;

N – the number of encoder readings per wheel rotation;

D – wheel diameter;

p – a mathematical constant equal to the ratio of the length of a circle to its diameter.

Based on the data obtained from mobile robot, we calculate the path traveled by it (3):

$$L = \frac{181}{14} \cdot 3.14 \cdot 6.5 \approx 262 \tag{3}$$

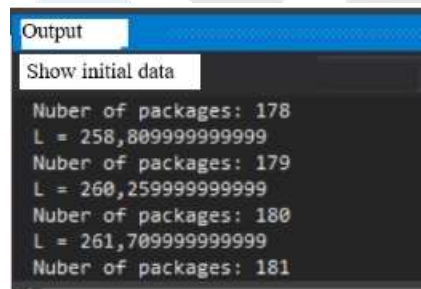


Figure 3: Results of traveled path software calculation

That is, the path calculated using the software implementation of the odometry principle, the path traveled by the mobile robot is 263 centimeters, which is 7 percent more than the real distance traveled.

When testing the calculation of the distance traveled by a mobile robotic device on a carpet surface, where the adhesion of the mobile robot wheels to the surface was significantly greater, 173 data packages were received, and the distance traveled was 251.6 centimeters, the measurement result is shown in Figure 4.

```
Output
Show initial data
L = 248,659999999999
Nuber of packages: 172
L = 250,109999999999
Nuber of packages: 173
L = 251,559999999999
```

Figure 4: Results of traveled path software calculation

That is, with minimal wheel slippage, the error in calculations is 0.4 percent. However, it is necessary to take into account that as the distance traveled increases, the error will accumulate. This means that when controlling a mobile robot, this error must be taken into account.

Conclusion

The article discusses a mobile robot built on the basis of an Arduino board. It contains 2 motors (for left and right wheels), as well as 3 ultrasonic rangefinders. This study used a Bluetooth connection.

By conducting an experiment, it was established that the distance calculated by the program differs from that actually traveled by the robot.

An interesting result was that when moving on carpet the error was only 0.4 percent, while on a smooth surface it was 7 percent.

Therefore, further studies are planned to determine the adjustment ranges at different travel distances for different floor coverings.

References:

1. Attar, H., Abu-Jassar, A. T., Yevsieiev, V., Lyashenko, V., Nevliudov, I., & Luhach, A. K. (2022). **Zoomorphic mobile robot development for vertical movement based on the geometrical family caterpillar.** *Computational Intelligence and Neuroscience*, 2022.
2. Maksymova, S., & et al.. (2017). Voice Control for an Industrial Robot as a Combination of Various Robotic Assembly Process Models. *Journal of Computer and Communications*, 5, 1-15.
3. Khan, A., & et al.. (2015). Some Effect of Chemical Treatment by Ferric Nitrate Salts on the Structure and Morphology of Coir Fibre Composites. *Advances in Materials Physics and Chemistry*, 5(1), 39-45.
4. Attar, H., & et al.. (2022). Control System Development and Implementation of a CNC Laser Engraver for Environmental Use with Remote Imaging. *Computational Intelligence and Neuroscience*, 2022.
5. Abu-Jassar, A. T., & et al.. (2022). Electronic user authentication key for access to HMI/SCADA via unsecured internet networks. *Computational Intelligence and Neuroscience*, 2022.

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-3, ISSUE-3

6. Nevliudov, I., & et al.. (2020). Development of a cyber design modeling declarative Language for cyber physical production systems. *J. Math. Comput. Sci.*, 11(1), 520-542.
7. Panigrahi, Prabin Kumar, & et al. (2022). Localization strategies for autonomous mobile robots: A review. *Journal of King Saud University-Computer and Information Sciences*, 34(8) 6019-6039.
8. Baker, J. H., & et al.. (2021). Some interesting features of semantic model in Robotic Science. *SSRG International Journal of Engineering Trends and Technology*, 69(7), 38-44.
9. Abu-Jassar, A. T., & et al.. (2021). Some Features of Classifiers Implementation for Object Recognition in Specialized Computer systems. *TEM Journal: Technology, Education, Management, Informatics*, 10(4), 1645-1654.
10. Al-Sharo, Y. M., & et al.. (2021). Neural Networks As A Tool For Pattern Recognition of Fasteners. *International Journal of Engineering Trends and Technology*, 69(10), 151-160.
11. Abu-Jassar, A. T., & et al.. (2023). Access Control to Robotic Systems Based on Biometric: The Generalized Model and its Practical Implementation. *International Journal of Intelligent Engineering & Systems*, 16(5), 313-328.
12. Lyashenko, V., Tahseen, A. J. A., Yevsieiev, V., & Maksymova, S. (2023). Automated Monitoring and Visualization System in Production. *Int. Res. J. Multidiscip. Technovation*, 5(6), 09-18.
13. Al-Sharo, Y. M., Abu-Jassar, A. T., Sotnik, S., & Lyashenko, V. (2023). Generalized Procedure for Determining the Collision-Free Trajectory for a Robotic Arm. *Tikrit Journal of Engineering Sciences*, 30(2), 142-151.
14. Sotnik, S., & et al.. (2020). Some features of route planning as the basis in a mobile robot. *International Journal of Emerging Trends in Engineering Research*, 8(5), 2074-2079.
15. Yang, Ping, & et al. (2020). Plane kinematic calibration method for industrial robot based on dynamic measurement of double ball bar. *Precision Engineering*, 62, 265-272.
16. Wang, R., & et al. (2020). A point and distance constraint based 6R robot calibration method through machine vision. *Robotics and Computer-Integrated Manufacturing*, 65, 101959.
17. Nguyen, H. N., & et al. (2019). A new calibration method for enhancing robot position accuracy by combining a robot model-based identification approach and an artificial neural network-based error compensation technique. *Advances in Mechanical Engineering*, 11(1), 1687814018822935.
18. Sellami, S., & Klimchik, A. (2021). A deep learning based robot positioning error compensation. In 2021 International Conference " Nonlinearity, Information and Robotics"(NIR), IEEE. (pp. 1-5).
19. Wang, W., & et al. (2022). Error compensation of industrial robot based on deep belief network and error similarity. *Robotics and Computer-Integrated Manufacturing*, 73, 102220.
20. Cao, C. T., & et al. (2019). A novel indirect calibration approach for robot positioning error compensation based on neural network and hand-eye vision. *Applied Sciences*, 9(9), 1940.

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-3, ISSUE-3

21. Woodside, M. R., & et al. (2021). A kinematic error controller for real-time kinematic error correction of industrial robots. *Procedia Manufacturing*, 53, 705-715.
22. Sousa, R. B., & et al. (2020). Evolution of odometry calibration methods for ground mobile robots. In *2020 IEEE International Conference on Autonomous Robot Systems and Competitions (ICARSC)*, IEEE, 294-299.
23. Lin, P., & et al. (2019). Calibration for odometry of omnidirectional mobile robots based on kinematic correction. In *2019 14th International conference on computer science & education (ICCSE)*, IEEE, 139-144.
24. Palacín, J., & et al. (2022). Systematic Odometry Error Evaluation and Correction in a Human-Sized Three-Wheeled Omnidirectional Mobile Robot Using Flower-Shaped Calibration Trajectories. *Applied Sciences*, 12(5), 2606.
25. Гіль А., Чала О., Филипченко О. (2021) Промислові інтерфейси та протоколи передачі даних інтегрованих систем для автоматизованого управління в умовах Industry 4.0 *Виробництво & Мехатронні Системи 2021. Матеріали V-ої Міжнародної конференції, Харків*, 127-30.
26. Matarneh R., & et al. (2017). Building Robot Voice Control Training Methodology Using Artificial Neural Net. *International Journal of Civil Engineering and Technology*, 8(10), 523–532.
27. Svitlana Maksymova, & Mykhailo Akopov (2023). Selection of Sensors for Building a 3D Model of the Mobile Robot's Environment. *Manufacturing & Mechatronic Systems 2023*, 33-35.
28. Максимова С., & Канаєв В. (2023) Розробка підсистеми керування мобільного роботу для орієнтації в виробничому просторі *Виробництво & Мехатронні Системи 2023: тези доповідей VII-ої Міжнар. конф.* 54–56.

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Abstract

In this article, the authors consider the feasibility of developing systems for recognizing road signs, as well as road markings, registration and recognition of obstacles, and other traffic objects. The authors consider the possibility of using artificial neural networks to solve this problem. In particular, they propose using a multilayer perceptron to achieve sufficient recognition accuracy. In the future, it is planned to develop software for the implementation of the developed road sign recognition system.

Key words: Tenserflow, Machine learning, Object recognition, Usability, Computer Vision.

Introduction

Computer vision systems are of great importance in recognizing objects of various categories and types [1]-[13].

As the autonomy of mobile devices increases, systems that make it possible to recognize signs indicating the direction of movement, as well as rules of movement, in other words, road signs, are becoming increasingly important. Among them we can distinguish systems that allow recognizing road signs that comply with traffic rules. At the same time, we must understand the increased attention to traffic safety, since such traffic occurs on highways with the participation of a large number of people. It should be noted that such research is extremely timely. They must include recognition of road signs, road markings, obstacles on the roads, as well as other road users. Accordingly, the accuracy and speed of recognition should be close to the reaction speed of the human body, and it is better if these indicators are improved.

Today, there are approximately 169.5 thousand km of state roads in Ukraine. The network of main routes is spread throughout the country and connects all major cities of Ukraine, as well as provides cross-border routes with neighboring countries.

Due to such an increase in cars on the roads of Ukraine, the number of offenses is increasing, according to statistics, one offense or traffic accident occurs every 15 minutes [14]-[16].

For assistance and control of traffic signs, navigation systems are most often used, such systems use pre-loaded maps. Usually, such navigation systems use a touch screen to control the device, the quality of the screen in navigation systems is much worse than in modern smartphones, except for the most modern systems, but usually their cost is very high. Another exception may be untimely updating of traffic signs, or termination of support by the manufacturer, as well as outdated maps in such products [17], [18].

Also, navigation systems integrated into the car are used to help drivers, such systems can be supplemented with external cameras that analyze the situation around the car in real time, and can warn the driver if the speed limit is exceeded, relying on traffic signs. However, such systems

do not have a mass character in the automotive world, and are most often installed on cars of the highest class, of which there are few on the roads.

Thus, taking into account all of the above, the research topic related to the development of a system that will recognize road signs is relevant and extremely timely.

Related works

Due to the constant increase in traffic, the demand for automated or even automated traffic sign monitoring systems is constantly increasing. That is, the development of systems that can recognize road signs and then transmit the corresponding instructions to the control systems of certain devices is becoming more and more relevant. In [19] authors prove that currently there are all necessary conditions to develop control systems of traffic regulations based on artificial intelligence with logical reasoning. Let's look at at least some of the latest research on this topic.

Campbell, A and co-uthors in [20] explore the possibility of using deep learning to produce an autonomous system for detecting traffic signs on GSV images to assist in traffic assets monitoring and maintenance.

Many scientists are trying to recognize at least traffic light signs. And also control traffic lights using artificial intelligence methods. For example, in [21] authors propose to create a new traffic simulator CityFlow with fundamentally optimized data structures and efficient algorithms. They say that besides traffic signal control, CityFlow could serve as the base for other transportation studies and can create new possibilities to test machine learning methods in the intelligent transportation domain.

Lee, W. H. & Chiu, C. Y. [22] designed and implemented their smart traffic signal control (STSC) system. It supports several smart city transportation applications including emergency vehicle signal preemption (EVSP), public transport signal priority (TSP), adaptive traffic signal control (ATSC), eco-driving supporting, and message broadcasting.

In [23] researchers note that a core feature of autonomous vehicle systems is the identification of the traffic sign. They implement the spatial pyramid pooling (SPP) principle to boost Yolo V3's backbone network for the extraction of functionality. Their work uses SPP for more comprehensive learning of multiscale object features.

Authors [24] note that the automatic traffic sign detection and recognition system is very important research in the development of advanced driver assistance systems. They show current issues and challenges of the existing technologies with brief suggestions and a discussion on the progress of driver assistance system research in the future.

Based on the analyzed literature, we can conclude that road sign recognition systems can be complex, that are able to recognize not only road signs, but also markings, obstacles, and other road users. And there are also simple systems that are capable of recognizing only one type of object, for example, a traffic light signal.

Later in this article we will look at a road sign recognition system based on a technical vision system.

The traffic sign recognition system development

Various technologies are suitable for recognizing road signs. One of the most popular OpenCV (Open Source Computer Vision Library) is an open source computer vision and machine learning library.

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The library contains more than 2,500 optimized algorithms, including a complete set of both classic and state-of-the-art computer vision and machine learning algorithms. These algorithms can be used to detect and recognize faces, identify objects, classify human actions in video, track camera movements, track moving objects, extract 3D object models, create 3D point clouds from stereo cameras, connect images to obtain high resolution. image of an entire scene, find similar images in an image database, remove red-eye from flash images, track eye movements, recognize scenery and set markers to overlay it with augmented reality, and more. OpenCV has a community of over 47,000 users and an estimated number of downloads exceeding 18 million. The library is widely used by companies, research groups, and government agencies.

OpenCV has C++, Python, Java, and MATLAB interfaces and supports Windows, Linux, Android, and Mac OS, and is also mostly targeted at real-time vision applications and takes advantage of MMX and SSE instructions when available.

With the help of OpenCV, it is possible to create applications that will qualitatively recognize road markings and work on many platforms. At the same time, the problem arises that for each device you need to create your own application and use different technologies, which is a very time-consuming process that requires in-depth knowledge of various programming languages. Also, with the help of OpenCV, it is not possible to create an application for devices based on IOS.

The solution to this problem is the creation of a web application. With the help of this approach, it is possible to solve several problems at once. Today, most of the devices that people use every day have access to the Internet using browsers. Having created a web application, it becomes possible to use the same application, regardless of which operating system a person uses. That is, the developer must possess only one set of skills, and close the need for users of any devices. Another problem that the creation of a web application solves is the problem of memory. The browser is installed by default on most devices, the user does not need to download any additional applications, only have the address to the web application, which does not take up additional space on the device, and always works with the latest version available.

To solve this problem, you can use TensorFlow.js, an open source library that can be used to define, train and run machine learning models entirely in the browser using Javascript and a high-level API.

The use of the TensorFlow.js model has grown exponentially over the past few years, and many JavaScript developers are now looking to take existing state-of-the-art models and retrain them to work with user data unique to their industry. The act of taking an existing model (often called a base model) and using it in a similar but different domain is known as transfer learning.

Transfer learning has many advantages over starting learning from a completely blank model. You can reuse the knowledge gained from the previously trained model and you will need fewer examples of the new item you want to classify. In addition, training is often much faster because only the last few layers of the model architecture need to be retrained instead of the entire network. For this reason, transfer learning is very well suited for a web browser environment where resources may vary depending on the execution device, but also has direct access to sensors for easy data collection.

Client side in a web browser using vanilla JavaScript:

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- Server side and even IoT devices like Raspberry Pi that use Node.js;
- Desktop applications using Electron;
- Native mobile apps using React Native.

TensorFlow.js also supports multiple backends in each of these environments (the actual hardware environments in which it can run, such as CPU or WebGL. "Backend" in this context does not mean a server-side environment - the backend for execution can be on client-side, such as in WebGL) to ensure compatibility as well as ensure fast performance. TensorFlow.js currently supports:

- running WebGL on the device's graphics card (GPU) is the fastest way to run larger models (larger than 3MB) with GPU acceleration;
- web assembly execution (WASM) on the CPU - to improve CPU performance on various devices, including, for example, old-generation mobile phones. This is better for smaller models (less than 3MB in size), which can actually run faster on the CPU with WASM than with WebGL due to the overhead of loading content to the GPU;
- CPU execution is a backup option if none of the other environments are available. This is the slowest of the three, but always handy.

Running TensorFlow.js in a web browser on a client machine can lead to several benefits.

- Privacy, it is possible to train and classify data on the client machine without sending the data to a third-party web server.
- Speed, because there is no need to send data to a remote server, inference (the act of classifying data) can be faster. Even better, there is direct access to device sensors such as camera, microphone, GPS, accelerometer, etc. if the user grants access.
- Anyone in the world can click on the link, open the web page in their browser and use the app. There's no need for complex server-side Linux setup with CUDA drivers and more to just use a machine learning framework.
- No server costs mean the only thing you need to pay for is a CDN to host your HTML, CSS, JS and model files. The cost of a CDN is much cheaper than keeping a server (perhaps with a connected video card) running 24/7.

Server functions, using the TensorFlow.js implementation in Node.js, provide many features. Full CUDA support, server-side, for GPU acceleration, you must install NVIDIA CUDA drivers to enable TensorFlow to work with the GPU (unlike a browser that uses WebGL - no installation required). However, with full CUDA support, you can fully utilize the capabilities of your lower-level graphics card, resulting in faster learning and inference times. Performance is on par with the Python implementation of TensorFlow because they both use the same C++ server.

For the latest research models, it is possible to work with very large models, perhaps gigabytes in size. These models cannot currently be run in a web browser due to memory usage limits for each browser tab. To run these larger models, you need to run Node.js on your own server with the hardware specifications required to run such a model efficiently.

IOT, Node.js is supported on popular single-board computers such as the Raspberry Pi, which in turn means that it is possible to run TensorFlow.js models on such devices.

Node.js is written in JavaScript, which means it benefits from compile-time. This means that you can see performance gains when using Node.js because it will be optimized at runtime, especially for any pre-processing that is done.

Running ML(machine learning) in the browser means that there is no need to install libraries or drivers from the user's point of view. Just open a web page and your app is ready to run. In addition, it is ready to work with GPU acceleration. TensorFlow.js automatically supports WebGL and will accelerate your code as soon as the GPU is available. Users can also access a web page from a mobile device, in which case your model can use data from sensors, such as a gyroscope or accelerometer. Importantly, all data remains with the client, making TensorFlow.js useful for low-latency output as well as privacy-preserving applications.

There are three workflows you can use when working with TensorFlow.js:

- it is possible to import an existing, pre-trained model for output. If an existing TensorFlow or Keras model that was previously trained offline is available, it can be converted to TensorFlow.js format and loaded into the browser for output;
- the ability to use transfer learning to supplement an existing model trained offline using a small amount of data collected in the browser using the Image Retraining method. This is one way to quickly train an accurate model using only a small amount of data;
- in-browser model generation with TensorFlow.js to fully define, train, and run models in the browser using Javascript and high-level API layers.

TensorFlow.js also includes a low-level API (formerly deeplearn.js) and Eager execution is shown in Figure 1

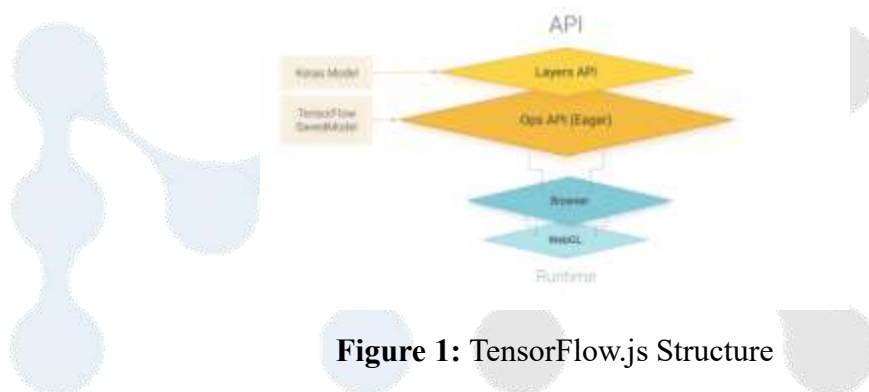


Figure 1: TensorFlow.js Structure

TensorFlow.js is based on WebGL and provides a high-level API for defining models and a low-level API for linear algebra and automatic differentiation. TensorFlow.js supports importing TensorFlow SavedModels and Keras models.

TensorFlow.js, a JavaScript ecosystem for machine learning, is the successor to deeplearn.js, now called TensorFlow.js Core. TensorFlow.js also includes the Layers API, which is a high-level library for building machine learning models using Core, as well as tools for automatically migrating TensorFlow SavedModels and Keras hdf5 models.

At work, transfer learning is used, it involves the use of already acquired knowledge to help learn different, but similar things. Humans do this all the time, there are a bunch of neurons in the brain that know how to identify tree-like objects, and other neurons that are good at finding long straight lines. This can be reused to quickly classify a willow tree, which is a tree-like object with many long, straight, vertical branches. Similarly, if there is a machine learning model already trained on a domain, such as image recognition, it is possible to reuse it for a different but related task.

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This is exactly what can be done with an advanced model like MobileNet, which is a very popular research model that can perform image recognition on 1000's of different object types. From dogs to cars, it was trained on a huge dataset known as ImageNet, which contains millions of labeled images.

During training, this model has learned to pick out the common features important to all of these 1,000 objects, and many of the lower-level features it uses to identify such objects can be useful for detecting new objects that it has never seen before. After all, in the end, everything is just a combination of lines, textures, and shapes.

Looking at a traditional Convolutional Neural Network (CNN) architecture (similar to MobileNet) shows how transfer learning can use this trained network to learn something new. The image below shows a typical architecture of a CNN model, which in this case was trained to recognize the handwritten digits 0 to 9 in Figure 2.

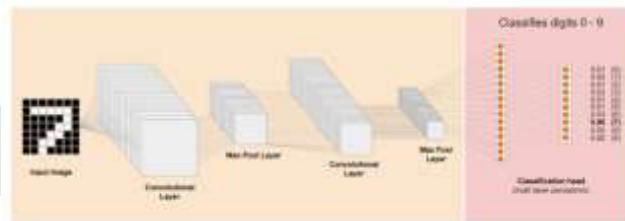


Figure 2: Traditional Convolutional Neural Network Architecture

If it were possible to separate the pre-trained lower-level layers of an existing trained model, as shown on the left, from the end-of-model classification layers shown on the right (sometimes called the model's classification head), then using the lower-level layers to generate output functions for any given image based on the raw data it was trained on. The same network with removed classification head is presented in Figure 3.

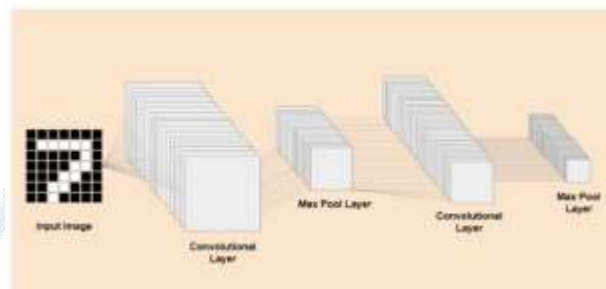


Figure 3: Network with Removed Classification Head

Assuming that the new subject being recognized can also use the same input features that the previous model trained, then there is a good chance that they can be reused for a new purpose.

In the diagram above, this hypothetical model was trained on numbers, so what it already learned about numbers can also be applied to letters like a, b, and c.

So now we can add a new classification head that will try to predict a, b or c instead, as shown in Figure 4.

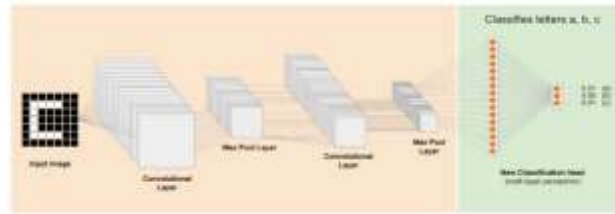


Figure 4: New Classification Head

Here, the lower-level layers are frozen and untrained, only the new classification head will be updated to learn the features provided from the pre-trained sliced model on the left. The act of doing this is known as transfer learning, and that's what the Teachable Machine does behind the scenes. It can also be seen that the multilayer perceptron at the very end of the network trains much faster than if you had to train the entire network from scratch.

Conclusion

In the course of the work, an analysis was made of modern computer vision systems and software for their development.

This article discusses the relevance and feasibility of developing a road sign recognition system. Various types of such systems are presented and analyzed. It has been established that there are complex systems that are able to recognize not only road signs, but also markings, obstacles, and other road users. And there are also simple systems that are capable of recognizing only one type of object, for example, a traffic light signal.

Possible approaches to solving the problem of implementing a traffic sign recognition system are analyzed. It is proposed to develop a system using artificial neural networks. A multilayer perceptron was chosen as such a network.

In the future, it is planned to implement a software-developed system.

References:

1. Lyashenko V., & et al. (2023). Automated Monitoring and Visualization System in Production. *Int. Res. J. Multidiscip. Technovation*, 5(6), 09-18.
2. I. Nevliudov, & et al. (2022). Object Recognition for a Humanoid Robot Based on a Microcontroller. In *IEEE XVIII International Conference on the Perspective Technologies and Methods in MEMS Design (MEMSTECH)*, IEEE, 61-64.
3. Maksymova, S., Velet, A., (2022) [Development of an Automated System of Terminal Access to Production Equipment Using Computer Vision](#). In *Manufacturing & Mechatronic Systems 2022*, 22-23.
4. Maksymova, S., Nikitin, V., Software for Monitoring Traffic Signs In *Manufacturing & Mechatronic Systems 2022*, 27-30.
5. Lyashenko, V., Kobylin, O., & Ahmad, M. A. (2014). General methodology for implementation of image normalization procedure using its wavelet transform. *International Journal of Science and Research (IJSR)*, 3(11), 2870-2877.
6. Baker, J. H., Laariedh, F., Ahmad, M. A., Lyashenko, V., Sotnik, S., & Mustafa, S. K. (2021). Some interesting features of semantic model in Robotic Science. *SSRG International Journal of Engineering Trends and Technology*, 69(7), 38-44.
7. Abu-Jassar, A. T., Al-Sharo, Y. M., Lyashenko, V., & Sotnik, S. (2021). Some Features of Classifiers Implementation for Object Recognition in Specialized Computer systems. *TEM Journal: Technology, Education, Management, Informatics*, 10(4), 1645-1654.

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-3, ISSUE-3

8. Al-Sharo, Y. M., Abu-Jassar, A. T., Sotnik, S., & Lyashenko, V. (2021). Neural Networks As A Tool For Pattern Recognition of Fasteners. *International Journal of Engineering Trends and Technology*, 69(10), 151-160.
9. Ahmad, M. A., Sinelnikova, T., Lyashenko, V., & Mustafa, S. K. (2020). Features of the construction and control of the navigation system of a mobile robot. *International Journal of Emerging Trends in Engineering Research*, 8(4), 1445-1449.
10. Abu-Jassar, A. T., & et al.. (2023). Access Control to Robotic Systems Based on Biometric: The Generalized Model and its Practical Implementation. *International Journal of Intelligent Engineering & Systems*, 16(5), 313-328.
11. Al-Sharo, Y. M., Abu-Jassar, A. T., Sotnik, S., & Lyashenko, V. (2023). Generalized Procedure for Determining the Collision-Free Trajectory for a Robotic Arm. *Tikrit Journal of Engineering Sciences*, 30(2), 142-151.
12. Matarneh, R., & et al.. (2019). Development of an Information Model for Industrial Robots Actuators. *IOSR Journal of Mechanical and Civil Engineering (IOSR-JMCE)*, 16(1), 61-67.
13. Lyashenko, V., & Sotnik, S. (2020). Analysis of Basic Principles for Sensor System Design Process Mobile Robots. *Journal La Multiapp*, 1(4), 1-6.
14. Minenko, E., Pyna, O., Belenchuk, O., & Bondar, T. (2021). Analysis and results of measures to ensure road safety in Ukraine for the period.
15. Holovkin, B. M. (2022). Assessment of Road Traffic Accidents and the Severity of Its Consequences in Ukraine. *Probs. Legality*, 156, 52.
16. Karbovska, L., & et al. (2019). State and trends of the road goods transportation field development in Ukraine. *Journal of Advanced Research in Law and Economics*, 10(4 (42)), 1022-1031.
17. Elfring, J., Dani, S., Shakeri, S., Mesri, H., & van den Brand, J. W. (2020, September). Vehicle localization using a traffic sign map. In *2020 IEEE 23rd International Conference on Intelligent Transportation Systems (ITSC)*, IEEE, 1-6.
18. Kumar, R., & et al. (2023). Real-time data sharing, path planning and route optimization in urban traffic management. *Multimedia Tools and Applications*, 1-19.
19. Aladin, D. V., & et al. (2019). Logic-based artificial intelligence in systems for monitoring the enforcing traffic regulations. In *IOP Conference Series: Materials Science and Engineering*. IOP Publishing, 534(1)
20. Campbell, A., & et al. (2019). Detecting and mapping traffic signs from Google Street View images using deep learning and GIS. *Computers, Environment and Urban Systems*, 77, 101350.
21. Zhang, H., & et al. (2019).. Cityflow: A multi-agent reinforcement learning environment for large scale city traffic scenario. In *The world wide web conference*, 3620-3624.
22. Lee, W. H., & Chiu, C. Y. (2020). Design and implementation of a smart traffic signal control system for smart city applications. *Sensors*, 20(2), 508.
23. Tai, S. K., & et al. (2020). Deep learning for traffic sign recognition based on spatial pyramid pooling with scale analysis. *Applied Sciences*, 10(19), 6997.
24. Wali, S. B., & et al. (2019). Vision-based traffic sign detection and recognition systems: Current trends and challenges. *Sensors*, 19(9), 2093.

**Defect Engineering: Application in Automation System Components Production
Technological Processes**

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Abstract

Defect engineering is a field of scientific development that finds application in various fields. At the same time, the goals of using its approaches may differ radically. This article provides an overview of common applications of this concept. The authors propose to use the capabilities of defect engineering in the production of MEMS and MOEMS to predict failures, as well as to make possible changes and adjustments to the technological process.

Key words: Defect engineering, Automation system, MEMS, MOEMS, Silicon structures

Introduction

At present, more than twenty technological methods and directions for manufacturing MEMS and MOEMS products based on silicon structures are known [1]-[8].

Silicon is the main semiconductor material that has become the most widely used due to the high electrophysical characteristics of devices based on it [9].

Silicon is the basis for substrates of electronic products, functional components of MEMS and MOEMS. MEMS and MOEMS are usually the main components of sensors and actuators for automation systems.

Control and testing operations included in the structure of modern technological processes cannot provide a full guarantee of the absence of defects in the production of this components type and their behavior over time, taking into account the operating conditions [9]-[12].

Most of the defects arise precisely because of defects and (or) the presence of impurities in the raw materials of substrates or substrates sublayers of MOEMS functional components and during the technological process of their manufacture [12]-[16].

Therefore, it was decided to consider the defects of the substrates of the layers and sublayers of the MOEMS functional component, as the main and primary source of the MOEMS component defect as a whole.

To do this, the work provides a brief analysis of related works.

Related works

Defect engineering is a rather interesting direction in the development of science, which is largely based on the properties of specific materials. Many authors suggest using it for various purposes. Let's look at at least some of them.

At first note, that defect engineering is regarded as one of the efficient approaches to modulating the physical and chemical properties of materials for energy-related applications [17].

Kimoto, T., & Watanabe in their review [18] introduce the advantages and present status of SiC devices and then defect engineering in SiC power devices is presented.

In [19] scientists write, that recent studies have highlighted the potential of defect engineering for boosting the light-harvesting, charge separation, and adsorption characteristics of

semiconductor photocatalysts in reductive processes such as water splitting and CO₂ reduction. And they explore the potential of defect engineering to similarly enhance photocatalytic N₂ fixation in this paper.

Authors [20] note, that defect engineering is an effective strategy to enhance the performance of photocatalysts and photoelectrodes. But the widely reported benefits of defects in the photocatalytic system may not necessarily cancel out the negative spillover effect of charge recombination. To inspire innovative defect engineering for further improving the STH conversion efficiency, they provide the perspectives from their point of view.

Shi, Z. and co-authors [21] write that defect engineering allows for the effective exposure of active sites and optimization of electronic structure. It has emerged expeditiously as an essential strategy to enhance polysulfide modulation, and hence expedite Li-S chemistry.

In their work [22] Yan, X., Zhuang, L., Zhu, Z., & Yao, X. note, that defect engineering provides a feasible and efficient approach to improve the intrinsic activities and increase the number of active sites in electrocatalysts. Here they observe recent investigations on defect engineering of a wide range of electrocatalysts. And different defect creation strategies are described.

Researchers in [23] systematically summarized recent advances regarding defect engineering in electrode materials for rechargeable batteries. They say, that the defects can not only effectively promote ion diffusion and charge transfer but also provide more storage/adsorption/active sites for guest ions and intermediate species, thus improving the performance of batteries.

In [24] it is noted that increasing attention is being devoted to modulating the surface/interface electronic structure of electrocatalysts and optimizing the adsorption energy of intermediate species by defect engineering to enhance their catalytic performance.

Article [25] presents leverage a defect engineering strategy to develop a simple yet efficient redox nanozyme by constructing enzyme-mimicking active centers and investigated its formation and catalysis mechanism thoroughly.

In [26] the challenges and opportunities of silanol defect engineering in tuning the properties of zeolites to meet the requirements for specific applications are presented.

Zhu, J., & Mu, S. [27] draw our attention to the fact that the inevitable defect sites in architectures greatly affect physicochemical properties of carbon nanomaterials, thus defect engineering has recently become a vital research orientation of carbon-based electrocatalysts.

Thus, we see that defect engineering is being widely used. Further in the article we will consider defect formation as the basis for defect engineering in MEMS and MOEMS.

Defect engineering in the production of automation system components

The main problem arises in the fact that at the stage of raw materials production, it is unlikely that it will be possible to track the defectiveness of structures and the dependence of physical and technological parameters that directly affect the quality and compliance of the initial characteristics of MOEMS components, a special limitation is imposed by the factor of kinetics of degradation processes in materials during and operating conditions of the product.

However, the main reason for the limitation of the resource characteristics of the functional components of MOEMS are manufacturing defects that develop over time during the operation of the MEMS.

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In this regard, there is an "open" scientific and practical task of predicting and managing the defect formation of layers and sublayers of MOEMS functional components, which is solved by controlling operating parameters, the development of defects embedded during production, which in turn do not always worsen the parameters of microsystems [28]-[31], but on the contrary, they can improve over time, even with the right approaches and certain operating conditions [20]-[33]. Technological defects prediction and control in the manufacture of silicon structures is a rather promising direction in technological processes development for the manufacture of MEMS and MOEMS.

The control possibility became the basis for the development of a promising scientific direction in the production technologies of semiconductors, materials and devices of electronic equipment - defect engineering [33], [34], which is based on the defect formation processes prediction and control.

Microelectromechanical systems are formed by combining mechanical elements, sensors, and electronics on a common silicon substrate using micro- and nanofabrication technologies [3]. The methods used in the manufacturing processes of MEMS can be attributed to one of the following classes:

- three-dimensional processing with a high aspect ratio;
- surface treatment;
- mixed technology using the first two;
- hybrid technology with assembly of mechanical and electronic parts at the level of atomic-molecular splicing;
- others (fiber, micromechanical processing, bulk polymer);
- multilayer film structures [3].

We can distinguish three types of the most common defects formed on silicon:

- surface: formed due to various types of mechanical processing, such as laser cutting, grinding, polishing, the main method of elimination is the etching of the surface layer of the silicon substrate;
- angular: due to anisotropic etching, which causes the seeds of cracks - the main method of elimination is the use of isotropic etching, with the help of which the edges of the substrate are rounded, which practically eliminates (minimizes) corner defects;
- volumetric: arise due to heat treatment and lead to the emergence of internal stresses, which, in combination with edge, surface and volume imperfections of the structure, can lead to the concentration of stresses and the subsequent splitting of the substrate along the plane.

If we consider the defect formation of such components through the prism of physico-chemical transformations and reactions, it is possible to single out several main mechanisms of the occurrence of production defects of MOEMS functional components, the development of which is associated with the transformation of the micro- and macrostructure of the starting materials that occur during the production and operation of MOEMS functional components .

1. Diffusion of layers and sublayers of MOEMS functional components can be represented using Fick's second law: for one-dimensional diffusion (1) or diffusion through a film (2):

$$\frac{dV}{dt} = D \frac{d^2V}{dx^2}, \quad (1)$$

$$\frac{dV}{dt} = D \frac{\Delta V}{y}, \quad (2)$$

where D – diffusion coefficient;
 V – concentration of the diffusion component;
 y – film thickness.

2. Chemical corrosion of layers and sublayers of MOEMS functional components can be represented in the form (3), and in the presence of protective films (4):

$$\frac{dV}{dt} = V_0 e^{-\frac{E}{RT}}, \quad (3)$$

$$\frac{dV}{dt} = \frac{k_d k_p}{k_d + k_p h_0} V_0, \quad (4)$$

where E – activation energy of molecules participating in the reaction;
 k_p – chemical reaction rate constant;
 V_0 – reagent concentration on the outer surface at the boundary with the gas phase;
 h_0 – coating thickness;
 k_d – diffusion coefficient during corrosion.

3. Electrical corrosion can be expressed as the amount of material worn (5) and the depth of wear (6):

$$V_E = \gamma_{(-)} Q, \quad (5)$$

$$h = \frac{\gamma_{(-)} Q}{\rho s_0} = \frac{\gamma_{(-)} \int i dt}{\rho s_0} = \frac{\gamma_{(-)} I_{CP} t}{\rho s_0}. \quad (6)$$

where $\gamma_{(-)}$ – erosion coefficient;
 Q – amount of electricity;
 ρ – specific weight;
 s_0 – the area of the surface worn part;
 I_{CP} – the average value of the current;
 t – current action time.

4. Evaporation of the material (speed of the process) can be expressed as (7):

$$V' = \frac{k_p}{\sqrt{2\pi R}} \cdot \frac{1}{P \sqrt{\frac{M}{T}}}, \quad (7)$$

where M – the molecular weight of the material being vaporized;

p – pressure;

R – gas constant;

T – absolute temperature [35]-[41].

On the basis of the given differential equations of the physical and technological processes of defect formation, during the production of MEMS and MOEMS functional components, it is necessary to develop a mathematical model that would make it possible to predict the occurrence of certain defects and explain the degree of their influence on the parameters and probability of component failures.

Thus, during the implementation of technological processes, the defects that have arisen further develop in accordance with the objective patterns of changes in the micro- and macrostructure of the materials that make up the elements and devices of MEMS and MOEMS.

Considering various materials and processes of production defects development, analyzing and generalizing the process mechanism, it is possible to conclude that there are three main types of the above changes: diffusion of components, corrosion (chemical, electrical, electrochemical) and evaporation.

Analysis of the capabilities of defect detection tools and data on the causes of MEMS and MOEMS failures shows that a significant part of defects may not be detected. Therefore, it is necessary pay attention to the prediction of parametric failures in the process of production tests and maintenance, as a result, they make decisions about the technical condition and technologies of the production of devices [33]-[37].

Modern prediction methods are based on functional analysis, theory of series, theory of extrapolation and interpolation, theory of probabilities and mathematical statistics, theory of random functions and random processes, correlation and spectral analysis, and theory of pattern recognition [38]-[41].

When displaying the time dependence of parameters, linear and quadratic models are used [40]. Work [39] shows that increasing the order of the model above the second does not lead to a significant increase in the accuracy of the forecast, but significantly complicates the calculation procedures.

Within the framework of prediction using the recognition theory [39], it is used to identify areas in n -dimensional space that correspond to certain degrees of efficiency of MEMS and MOEMS, and to determine the limit of the permissible level of efficiency.

Much attention is paid to the prediction quality [30]-[43], i.e., a set of such prediction characteristics, which together make it effective and useful in management, ensure obtaining a reliable description of the object for a certain perspective and the possibility of reliable use of prediction results for the control procedure.

Prediction results are always related to certain management procedures, and prediction quality can be evaluated from the point of view of the needs of control itself, its sensitivity to possible prediction errors.

The main directions for a justified determination of prediction quality should be sought in the assessment of uncertainty, which carries one or another description of the object.

Prediction quality, first of all, depends on the completeness and quality of the description of the object itself, the prediction procedure carries a specific component - "time" and therefore descriptive topological characteristics are supplemented by dynamic ones.

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The assessment of prediction results must be carried out based on the accounting of internal processes and external influences on MEMS. Obtaining predictive results under the influence of variable external factors increases prediction effectiveness, makes it an effective tool for control the production of MEMS and MOEMS.

Currently existing verification methods in the vast majority operate only with statistical procedures [37], [39], which are reduced to the estimation of confidence intervals for the considered results.

At the same time, two types of errors are assumed: errors that are determined by the information or description of the object, and errors directly in the prediction method.

Errors of the first kind are quite easily formalized and can be calculated by statistical methods.

The analysis of the source information involves the identification of a set of statistical indicators, including the determination of the type of distribution. Many statistical calculations and criteria are valid only for the normal law of distribution, otherwise the estimates are ineffective.

The methods of improving efficiency are: detection of anomalous observations, selection of non-periodic components, determination of jump-like changes to the trend of the investigated process, determination of variations of the investigated process, determination of variations of the investigated indicator, its periodicity [33].

When making prediction calculations, you should always evaluate and find the optimal match between the information and the method used to obtain the prediction.

There is a need to develop methods for improving the prediction quality, based on the description of objects and operating with some new concepts for prediction: stability, inertia, connectivity, complexity, appearance and functional integrity of the object, accuracy and completeness of the description, decision-making risk.

Thus, the concept of inertia characterizes the object's resistance to changes in its own trajectory over time under the influence of the external environment; sustainability implies a certain priority of development directions in time, the choice of any certain trajectories by the object, both in the space of the considered indicators and in time.

For adequate assessment, forecasting, prediction and management of MEMS and MOEMS defects, it is necessary to thoroughly study the physico-chemical processes underlying their production, the various possible conditions of their operation, and on the basis of the obtained information, after careful analysis, develop mathematical models that would give representation and explanation of the occurrence and development of production defects over time.

Conclusion

This article discusses defect engineering and its areas of application. To reduce the number of defects in the production of MEMS and MOEMS, we propose to use defect engineering approaches. The article analyzes the main defects that occur on silicon. Thus, modeling and mapping the processes of the development of production defects for predicting parametric failures, changing and correcting the technological processes of MEMS and MOEMS production is an actual scientific and practical task that can be tried to be solved on the basis of defect engineering.

References:

1. Невлюдов, И., Палагин, В., Чалая, Е. (2015). Технологии микросистемной техники (часть II). Технология приборостроения, Харьков, 2, 5-10.
2. Семенець, В. Невлюдов, І., Палагін В. А. (2011) Введення в мікросистемну техніку та нанотехнології. Харків «Комп. СМІТ», 416.
3. Чала, О. (2020). Дефектоутворення, як основа Defect Engineering в МЕМС та МОЕМС. Технология приборостроения, 1, 78–81.
4. Sotnik, S., Matarneh, R., & Lyashenko, V. (2017). System model tooling for injection molding. International Journal of Mechanical Engineering and Technology, 8(9), 378-390.
5. Lyashenko, V. V., Lyubchenko, V. A., Ahmad, M. A., Khan, A., & Kobylin, O. A. (2016). The Methodology of Image Processing in the Study of the Properties of Fiber as a Reinforcing Agent in Polymer Compositions. International Journal of Advanced Research in Computer Science, 7(1), 15-18.
6. Khan, A., Joshi, S., Ahmad, M. A., & Lyashenko, V. (2015). Some Effect of Chemical Treatment by Ferric Nitrate Salts on the Structure and Morphology of Coir Fibre Composites. Advances in Materials Physics and Chemistry, 5(1), 39-45.
7. Lyashenko, V. V., Deineko, Z. V., & Ahmad, M. A. Properties of wavelet coefficients of self-similar time series. In other words, 9, 16, 1492-1499.
8. Nevliudov, I., & et al.. (2020). Development of a cyber design modeling declarative Language for cyber physical production systems. J. Math. Comput. Sci., 11(1), 520-542.
9. Пилипенко, В.А., Горушко, В.А., Петлицкий, А.Н., Понарядов, В.В. Турцевич, А.С., Шведов, С.В. (2013) Методы и механизмы геттерирования кремниевых структур в производстве интегральных микросхем, Технология и конструирование в электронной аппаратуре., 2-3, 43-57.
10. Оксанич, А. П., Седин, Е. А. (2011) Разработка модели расчёта внутренних напряжений и деформаций в кремниевых эпитаксиальных структурах. Напівпровідникові матеріали, інформаційні технології та фотовольтаїка. Тези доповідей на Першій міжнародній науково-практичній конференції (НМІТФ-2011), Кременчук, Україна. 70.
11. Абдуллин, Ф. А., Пауткин, В. Е., Печерская, Е. А., Печерский, А. В. (2018) Применение методов селективного травления кремния для оценки качества пластин при изготовлении микромеханических датчиков. Модели, системы, сети в экономике, технике, природе и обществе, 1(25).
12. Филипенко, О.І., Чала, О.О., Відешин, М.І. (2017). Технологічні дефекти виробництва кремнієвих підкладок для функціональних відбиваючих поверхонь МОЕМС-перемикачів. Системи управління, навігації та зв'язку, Полтава: ПНТУ, 2 (42), 61-63.
13. Филипенко, О.І., Чала, О.О., Відешин, М.І. (2017). Технологічні фактори виробництва, що впливають на якість покриттів дзеркальних поверхонь МОЕМС-перемикачів. Наукові нотатки, 57, 178-183.
14. Kuzomin, O., Lyashenko, V., Tkachenko, M., Ahmad, M. A., & Kots, H. (2016). Preventing of technogenic risks in the functioning of an industrial enterprise. International Journal of Civil Engineering and Technology, 7(3), 262-270.

15. Lyashenko, V., Kobylin, O., Ahmad, M. A., & Khan, A. (2017). Study of composite materials for the engineering using wavelet analysis and image processing technology. *International Journal of Mechanical and Production Engineering Research and Development*, 7(6), 445-452.
16. Lyashenko, V., Sotnik, S., & Babker, A. Ma. (2018). Features of Packaging from Polymers in Pharmaceuticals. *Saudi Journal of Medical and Pharmaceutical Sciences*, 4(2), 166-174.
17. Zhang, Y., & et al. (2021). Defect engineering in metal sulfides for energy conversion and storage. *Coordination Chemistry Reviews*, 448, 214147.
18. Kimoto, T., & Watanabe, H. (2020). Defect engineering in SiC technology for high-voltage power devices. *Applied Physics Express*, 13(12), 120101.
19. Shi, R., & et al. (2019). Defect engineering in photocatalytic nitrogen fixation. *Acs Catalysis*, 9(11), 9739-9750.
20. Wang, Z., & et al. (2022). Defect Engineering in Photocatalysts and Photoelectrodes: From Small to Big. *Accounts of Materials Research*, 3(11), 1127-1136.
21. Shi, Z., & et al. (2021). Defect engineering for expediting Li-S chemistry: strategies, mechanisms, and perspectives. *Advanced Energy Materials*, 11(23), 2100332.
22. Yan, X., & et al. (2021). Defect engineering and characterization of active sites for efficient electrocatalysis. *Nanoscale*, 13(6), 3327-3345.
23. Zhang, Y., & et al. (2020). Defect engineering on electrode materials for rechargeable batteries. *Advanced Materials*, 32(7), 1905923.
24. Li, W., & et al. (2020). Defect engineering for fuel-cell electrocatalysts. *Advanced Materials*, 32(19), 1907879.
25. Yu, B., & et al. (2021). Defect engineering enables synergistic action of enzyme-mimicking active centers for high-efficiency tumor therapy. *Journal of the American Chemical Society*, 143(23), 8855-8865.
26. Medeiros-Costa, I. C., & et al. (2021). Silanol defect engineering and healing in zeolites: opportunities to fine-tune their properties and performances. *Chemical Society Reviews*, 50(19), 11156-11179.
27. Zhu, J., & Mu, S. (2020). Defect engineering in carbon-based electrocatalysts: insight into intrinsic carbon defects. *Advanced Functional Materials*, 30(25), 2001097.
28. Abdelnaby, H. & et al. (2012). Numerical simulation of heat generation during the back grinding process of silicon wafers. In *IEEE Workshop on Microelectronics and Electron Devices*, Boise, ID, 1-4.
29. И. Ш. Невлюдов, М. А. Омаров, К. Ю. Харенко (2006) Проектные решения повышения надежности кремниевых интегральных преобразователей механических величин. *Радиотехника: Всеукр. межвед. науч.-техн. сб. X. : ХНУРЭ*, 147, 119–122.
30. Abdelnaby, H., & et al. (2012). Numerical simulation of heat generation during the back grinding process of silicon wafers. In *IEEE Workshop on Microelectronics and Electron Devices*, Boise, ID, 2012, 1-4.
31. Wilson, M. & et al. (2013). Importance of defect photoionization in silicon-rich SiN_x dielectrics for high PID resistance. In *IEEE 39th Photovoltaic Specialists Conference (PVSC)*, Tampa, FL, 0218-0222.

32. Margutti, G. & et al. (2014). Silicon defects characterization for low temperature ion implantation and spike anneal processes. In 20th International Conference on Ion Implantation Technology (IIT), Portland, OR, 1-4.
33. Filipenko O. & et al. (2019). Impact of Technological Operations Parameters on Moems Components Formation. In IEEE 8th International Conference on Advanced Optoelectronics and Lasers (CAOL). IEEE, 371-374.
34. Bai S. & et al. (2018). Defect engineering in photocatalytic materials. Nano Energy. 53, 296-336.
35. Hu Z. & et al. (2018). Two-dimensional transition metal dichalcogenides: interface and defect engineering. Chemical Society Reviews. 47(9), 3100-3128.
36. Nevliudov, I., & et al. (2019). Research Of Factors Influencing The Process Of Formation Of Welded Microconnections In Electronic Modules . Eskişehir Technical University Journal of Science and Technology A - Applied Sciences and Engineering , 20, 181-187.
37. Zhang, L., & et al. (2019). Wind Speed Forecasting Using a Two-Stage Forecasting System With an Error Correcting and Nonlinear Ensemble Strategy. In IEEE Access, 7, 176000-176023.
38. Wei, L. & et al. (2019). Improved Markov Residual Error to Long-Medium Power Load Forecast Based on SVM Method. In First International Workshop on Education Technology and Computer Science, Wuhan, Hubei, 128-132.
39. Charan C. R. (2010), Application of Generalized Neuron Model in Short Term Load Forecasting under error functions. In Second International conference on Computing, Communication and Networking Technologies, Karur, 1-4.
40. Filipenko, O., & et al. (2019). Some Issues of Dependencies of Loss from Technological Features of Optical Switches for Communication Systems. In International Scientific-Practical Conference Problems of Infocommunications. Science and Technology (PIC S&T), Kharkiv, Ukraine, 599-603.
41. Filipenko, O., & et al. (2019). Impact of Technological Operations Parameters on Moems Components Formation. In IEEE 8th International Conference on Advanced Optoelectronics and Lasers (CAOL), Sozopol, Bulgaria, 371-374.
42. Funkendorf, A., & et al. (2019) Mathematical Model of Adapted Ultrasonic Bonding Process for MEMS Packaging. In IEEE XVth International Conference on the Perspective Technologies and Methods in MEMS Design (MEMSTECH), IEEE, 79-82
43. Nevliudov, I., & et al. (2018) Using MEMS to adapt ultrasonic welding processes control in the implementation of modular robots assembly Processes. In XIV-th International Conference on Perspective Technologies and Methods in MEMS Design (MEMSTECH), IEEE, 223-226,

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Аннотация: Статья написана о музыке, математике и медицине и их связи. Многие люди могут задаться вопросом, почему эти разные области связаны с точной наукой? Можно считать, что эти три области взаимно совместимы. Даже примеры приводятся, чтобы помочь вам понять.

Ключевые слова:

Синтез/Ритм/Медицина/Физиологический/Арифметика/Пульс/Интеграция/Темперамент/Ико'ий/ Теория пропорций.

Annotatsion: The article is written about music, mathematics and medicine and their connection. Many people may wonder why these different fields are associated with exact science? These three areas can be considered to be mutually compatible. Even examples are given to help you understand.

Key words:

Synthesis/Rhythm/Medicine/Physiological/Arithmetic/Pulse/Integration/Temperament/Iko'iy/Theory of proportions.

В этой статье есть представления о математике и музыке, медицине, которая является специфической наукой, мы на приведенных примерах узнаем о взаимосвязи этих трех наук, и вы научитесь понимать понятие чувства в музыке и медицине, а также вы также научитесь чувствовать и слушать ритм. После возникновения человечества речь, чувство не понимали понятий и



чувств, а выражали связь говорения друг через друга, т. е. не строя определенного предложения, а лишь создавая посредством штрихов разные звуки. То есть эта доля и есть ритм. Каждая минута нашей жизни воплощена в ритмах. Замечали ли вы, что даже в ряби и потоках обычной воды есть ритм, таких примеров в нашей жизни немало. Мы не только можем создавать музыку из музыкального инструмента или тона нашего голоса, но она также присутствует в нашей разговорной части, если мы обращаем на это внимание. Даже в этом случае то, как один говорит и как начинает другой, отражает ритм человеческого темперамента через разговорную культуру. Когда мы делаем шаг, наши ноги двигаются до и после, и мы не чувствуем давления на руки или не можем воплотить движение рук. Все это примеры нашего физиологического образа жизни, но если мы внимательно

прислушаемся, увидим и почувствуем от самой природы, то все происходящие составляют основу ритма.



В медицине при измерении пульса человека, т. е. ритма сердцебиения, в первую очередь ощущается кровь, оттекающая от запястья. Так что же это? Человеческий разум воспринимает происходящее внутри извне. Он сознательно подсчитывает количество ударов в минуту в результате ударов «кольцо-кольцо». Об этом писал современник Абу Райхана, Беруний, великий учёный Средней Азии Абу Али ибн Абдуллах ибн Сина (980-1037), работавший в различных областях науки. Не будет преувеличением сказать, что не было областей, которых он не знал. Мы считаем Ибн Сину основоположником современной медицины, но он также написал около 200 книг по химии, математике, физике, астрономии, философии, морали и манерам, теории ораторского искусства, музыке и другим областям. Ибн Сина преподаёт теорию сложных пропорций и числовых пропорций, которая отличается от метода Евклида, применяя геометрию к теории музыки.

* Следует знать, что пульс имеет какую-то музыкальную природу. То же самое и с



ударами пульса, подобно тому, как музыкальное искусство есть соединение голосов в определенном соотношении высоты и веса [1 т.е. прихотливости и гармонии], и стандартных кругов времени, разделяющих удары (падающие на струнах). Соотношение времени между скоростью и последовательностью пульса есть мелодическое [2 Ико'ий: т. е. они имеют определённый ритм и такт] отношение, соотношение его состояний по силе, слабости и количеству — это соотношение дополнения. Тон, темп и темп их голосов могут быть гармоничными, а могут и не быть гармоничными, подобно тому, как неравномерность пульса упорядочена и неупорядочена. Они могут быть согласованными, а иногда и непостоянными, даже разнородными по соотношению силы, слабости и количества импульсов. В это время это выходит за рамки определения какой-либо закономерности (нерегулярности пульса).

Жолинус (т. е. греческий учёный Голэн) говорит, что воспринимаемая характеристика соотношения силы удара представлена одним из следующих соотношений, встречающихся в вышеупомянутой музыке. Оно либо находится в соотношении «целого и пятого», то есть в тройном отношении, потому что это двойное соотношение, состоящее из соотношения, превышающего половину. Об этом соотношении он пишет, что «оно находится в соотношении пять». Эти данные приводятся в источниках, написанных в поисках врача-исследователя-хирурга О.О.Ярашева. В заключение следует сказать, что

представители обеих медицинских наук, а точнее, ученые, раскрывающие чувство музыки, выявили ритмичность, возникающую в результате подачи интуицией руки сигнала в мозг. В основе всего этого лежит ритм тела. По своей сути это указывает на то, что тело живо благодаря ритму.

Используемая литература

1. Тураевич Ж.Я., Уктамовна М.Д. (2022). МЕТОДЫ РАЗВИТИЯ ВОКАЛЬНОГО ДИНАМИЧЕСКОГО ЧУВСТВА УЧАЩИХСЯ НА ЗАНЯТИЯХ МУЗЫКАЛЬНОЙ КУЛЬТУРЫ. Транснациональный научно-гуманитарный журнал берлинских исследований, 2 (1,5 Педагогические науки).
2. Тураевич Ж.Я. (2022). Шлифование музыки в Центральной Азии на протяжении веков. Репозиторий открытого доступа, 8(05), 66-69.
3. Тураевич Ж.Я., Ботыровна К.М. (2022). Творчество в развитии музыкально-педагогической деятельности в высшей школе. Тематический журнал искусства и культуры, 6 (1).
4. Тураевич Ж.Я. Музыкальная терапия. Международный журнал по экономике, финансам и устойчивому развитию, 3 (3), 128-131.
5. Абу Али ибн Сина «Канон врачебной науки». IV том
6. Книга «История развития арифметики и преподавания ее в Средней Азии» О.А.Ахмедова, Н.С.Ахмедовой (с.33)
7. Gaybulloyevich N. F., Karimovna N. N., Abdugarim o'g'li S. A. UZLUKSIZ TA'LIMDA O'ZBEK XALQ QOSHIQLARINING TUTGAN ORNI VA TARBIYAVIY ANAMIYATI //TA'LIM VA RIVOJLANISH TAHLILI ONLAYN ILMIY JURNALI. – 2022. – С. 59-62.
8. Нуруллаев Ф. Г. Содержание обучения бухарским народным песням в музыкальном образовании //Academy. – 2021. – №. 3 (66). – С. 48-50.
9. Нуруллаев Ф. Г. Композиционный и исполнительский процесс в музыке //Scientific progress. – 2021. – Т. 2. – №. 4. – С. 576-581.
10. Нуруллаев Ф. Г. Импровизаторское творчество в XX веке по сфере музыки //Scientific progress. – 2021. – Т. 2. – №. 4. – С. 582-587.
11. Нуруллаев Ф. Г. Музыкальный процесс в западной музыке //Scientific progress. – 2021. – Т. 2. – №. 4. – С. 570-575.
12. Нуруллаев Ф. Г. Случайный выбор качественных характеристик материала по музыки или порядок его изложения в процессе создания музыки или исполнения опуса //Scientific progress. – 2021. – Т. 2. – №. 4. – С. 588-593.
13. Нуруллаев Ф. Г. Интерактивные уроки музыки по программы STEAM //Science and Education. – 2022. – Т. 3. – №. 1. – С. 595-601.
14. Нуруллаев Ф. Г. Значение Фольклёрной Музыки В Воспитание Детей //Periodica Journal of Modern Philosophy, Social Sciences and Humanities. – 2022. – Т. 12. – С. 189-193.
15. Рахмонова В. Р., Нуруллаев Ф. Г. Особенности использования современных компьютерных программ в организации профильных предметов по музыки //Science and Education. – 2023. – Т. 4. – №. 4. – С. 904-911.

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-3, ISSUE-3

16. Хабибуллоева Г. Х., Нуруллаев Ф. Г. МУЗЫКА КАК ОРУДИЯ ВОСПИТАНИЯ ДЕТЕЙ РАННЕГО ВОЗРАСТА //Multidisciplinary Journal of Science and Technology. – 2023. – Т. 3. – №. 3. – С. 60-65.
17. NURULLAYEV F. СОДЕРЖАНИЕ ОБУЧЕНИЯ БУХАРСКИМ НАРОДНЫМ ПЕСНЯМ В МУЗЫКАЛЬНОМ ОБРАЗОВАНИИ //ЦЕНТР НАУЧНЫХ ПУБЛИКАЦИЙ (buxdu.uz). – 2022. – Т. 22. – №. 22.
18. NURULLAYEV F. Интерактивные уроки музыки по программы STEAM //ЦЕНТР НАУЧНЫХ ПУБЛИКАЦИЙ (buxdu.uz). – 2022. – Т. 20. – №. 20.
19. Шамсиев Ш. И. Формы организации музыкального общения //Вестник науки и образования. – 2020. – №. 21-2 (99). – С. 71-74.
20. Шамсиев Ш. И., Солиев А. А. Основы хорового пения на уроках музыки //Проблемы науки. – 2021. – №. 1 (60). – С. 55-57.
21. Шамсиев Ш. И. Молодой специалист учитель музыки, как руководитель хорового коллектива в общеобразовательной школе //Science and Education. – 2022. – Т. 3. – №. 1. – С. 540-545.
22. Шамсиев Ш. И. Новые подходы к подготовке молодых специалистов учителей музыки, разработка уроков музыки //Science and Education. – 2022. – Т. 3. – №. 1. – С. 528-533.
23. Рахимов Р. Н. Способы развития навыков понимания музыки //Наука, техника и образование. – 2021. – №. 2-2 (77). – С. 94-97.
24. Рахимов Р. Н. Роль музыкального образования в развитии личности //Проблемы науки. – 2021. – Т. 60. – №. 1. – С. 46-48.
25. Рахимов, Р. Н. (2021). В общих областях теории и гармонии музыки приёмы, методы и информационные технологии. *Science and education*, 2(11), 1032-1038.
26. Рахимов Р. Н. Музыка как наука для формирования личности и основа организации музыкального образования и воспитания //Science and Education. – 2022. – Т. 3. – №. 4. – С. 1588-1593.
27. Рахимов Р. Н. О дидактических функциях сольфеджио при обучении теории музыки //Science and Education. – 2022. – Т. 3. – №. 11. – С. 776-781.
28. Рахимов Р. Н. Учебная мотивация у школьника, через пения в хоре //Science and Education. – 2022. – Т. 3. – №. 4. – С. 1570-1575.

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Abstract. Currently, knowing two or more languages is common because of different reasons. This article is just about bilingualism.

Key words: language, bilingualism, mastery, comprehension, community, ability, fluent

Annotatsiya. Hozirgi vaqtda ikki yoki undan ortiq tilni bilish turli sabablarga ko'ra keng tarqalgan. Ushbu maqola shunchaki bilingvizm haqida.

Kalit so'zlar: til, ikki tillilik, mahorat, tushunish, jamiyat, qobiliyat, ravon

Аннотация. В настоящее время знание двух или более языков является распространенным явлением по разным причинам. Эта статья как раз о двуязычии.

Ключевые слова: язык, двуязычие, мастерство, понимание, сообщество, способность, свободное владение

Bilingualism is not a phenomenon of language; it is a characteristic of its use. It is not a feature of the code but of the message. It does not belong to the domain of “langue” but of “parole”. If language is the property of the group, bilingualism is the property of the individual. An individual's use of two languages supposes the existence of two different language communities; it does not suppose the existence of a bilingual community. The bilingual community can only be regarded as a dependent collection of individuals who have reasons for being bilingual. A self-sufficient bilingual community has no reason to remain bilingual, since a closed community in which everyone is fluent in two languages could get along just as well with one language. As long as there are different monolingual communities, however, there is likelihood of contact between them; this contact results in bilingualism.

The concept of bilingualism has become broader and broader since the beginning of the twentieth century. It was long regarded as the equal mastery of two languages; and this is the definition still found in certain glossaries of linguistics, e.g., “Qualité d'un sujet ou d'une population qui se sert couramment de deux langues, sans aptitude marquée pour l'une plutôt que pour l'autre” (Marouzeau, 1951). Bloomfield considered bilingualism as “the native-like control of two languages” (Bloomfield, 1933:56). This was broadened by Haugen to the ability to produce “complete meaningful utterances in the other language” (Haugen, 1953: vol. 1, p. 7). And it has now been suggested that the concept be further extended to include simply “passive-knowledge” of the written language or any “contact with possible models in a second language and the ability to use these in the environment of the native language” (Diebold, 1961:111). This broadening of the concept of bilingualism is due to realization that the point at which a speaker of a second language becomes bilingual is either arbitrary or impossible to determine. It seems obvious, therefore, that if we are to study the phenomenon of bilingualism we are forced to consider it as something entirely relative (Mackey, 1956:8). We must, moreover, include the use not only of two languages, but of any number of languages (Mackey, 1959). We shall therefore consider bilingualism as the alternate use of two or more languages by the same individual. What does this involve? Since bilingualism is a relative concept, it involves the question of DEGREE. How well does the individual know the languages he uses? In other words, how bilingual is he? Second, it involves the question of FUNCTION. What does he use his languages for? What role have his languages played in his total pattern of behaviour? Third, it includes the question of ALTERNATION. To what extent does he alternate between his languages? How does he change from one language to the other, and under what conditions? Fourth, it includes the question of INTERFERENCE. How well does the bilingual keep his languages apart? To what extent does he

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fuse them together? How does one of his languages influence his use of the other? Bilingualism is a behavioural pattern of mutually modifying linguistic practices varying in degree, function, alternation, and interference. It is in terms of these four inherent characteristics that bilingualism may be described.

The first and most obvious thing to do in describing a person's bilingualism is to determine how bilingual he is. He may indeed be able to understand both languages equally well; but he may be unable to speak both of them with equal facility. Since the language skills of the bilingual may include differences in comprehension and expression in both the spoken and written forms, it is necessary to test each of these skills separately if we are to get a picture of the extent of his bilingualism. If, however, we are only interested in determining his bilingualism rather than in describing it, other forms of tests are possible: word-detection tests, word-association and picture-vocabulary tests, for example, have been used for this purpose (Peal and Lambert, 1962:76). The bilingual's mastery of a skill, however, may not be the same at all linguistic levels. He may have a vast vocabulary but a poor pronunciation, or a good pronunciation but imperfect grammar. In each skill, therefore, it is necessary to discover the bilingual's mastery of the phonology (or graphics), the grammar, the vocabulary, the semantics, and the stylistics of each language. What has to be described is proficiency in two sets of related variables, skills, and levels. Bilingualism cannot be described within the science of linguistics; we must go beyond. Linguistics has been interested in bilingualism only in so far as it could be used as an explanation for changes in a language, since language, not the individual, is the proper concern of this science. Psychology has regarded bilingualism as an influence on mental processes. Sociology has treated bilingualism as an element in culture conflict. Pedagogy has been concerned with bilingualism in connection with school organization and media of instruction. For each of these disciplines bilingualism is incidental; it is treated as a special case or as an exception to the norm. Each discipline, pursuing its own particular interests in its own special way, will add from time to time to the growing literature on bilingualism (see bibliographies in Weinreich, 1953; Haugen, 1956; Jones, 1960). However, it seems to add little to our understanding of bilingualism as such, with its complex psychological, linguistic, and social interrelationships.

References:

1. Bloomfield, L. (1933) *Language*. New York: Holt
2. Haugen, E. (1953) *The Norwegian Language in America: a Study in Bilingual Behavior*. Vol 1 *The Bilingual Community Philadelphia: University of Pennsylvania Press*
3. Li Wei (1996) Network analysis. In H. Goebel, P. Nelde, Z. Stary and W. Wolck (eds), *Contact Linguistics: An international handbook of contemporary research*. New York: Walter de Gruyter, pp. 805–11.
4. Mackey, W.F. (1962) The description of bilingualism. *Canadian Journal of Linguistics* 7:51–85.
5. Fishman, J.A. (1965b) Bilingualism, intelligence and language learning. *Modern Language Journal* 49:227–37.
6. Gumperz, J.J. (1962) Types of linguistic communities. *Anthropological Linguistics* 4(1): 28-40
7. Weinreich, U. (1951) *Research problems in bilingualism, with special reference to Switzerland*. Unpublished PhD dissertation, Columbia University.

MODERN METHODS OF TREATING GOUT

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Abstract: Gout is a systemic tophi disease from the group of microcrystalline arthritis, which is characterized by the deposition of monosodium urate crystals in various tissues and the inflammation that develops in connection with this in individuals with hyperuricemia caused by environmental and/or genetic factors. Over the past decades, it has been considered one of the most studied and treatable rheumatic diseases, however, the frequency of errors made when prescribing therapy for patients with gout remains extremely high.

Keywords: padagra, allopurinol, dose, research, therapy.

According to T. R. Mikuls et al., allopurinol is inadequately prescribed in only three parameters studied (dose adjustment in the presence of renal failure, combined use of allopurinol and azathioprine, treatment of asymptomatic hyperuricemia) in 25–57% of cases. Another large study demonstrated that the majority of patients with gout do not undergo the necessary laboratory monitoring when prescribed allopurinol and colchicine [22]. Some mistakes in the treatment of gout by doctors are made more often than by patients when self-medicating. For example, refusal of any therapy even during an acute attack of arthritis or the use of only analgesics to relieve it, failure to prescribe urate-lowering drugs in medical practice are 2 times more common than when patients with gout self-medicate [20].

The main clinical manifestation of gout is an acute attack of arthritis, which occurs suddenly, mainly between two o'clock in the morning and seven o'clock in the morning, and is characterized by severe pain, quickly increasing to severe pain (within several hours the signs of arthritis reach maximum intensity), severe hyperemia and hyperthermia. In half of the cases, arthritis is accompanied by fever. Most often, one joint is affected (up to 90% of cases); sometimes the attack occurs in the form of oligoarthritis. The duration of the first attacks of arthritis ranges from several days to 1-2 weeks, after which there is an asymptomatic interval called the inter-attack period. The duration of interictal periods can vary from several days to several years. Most often, at the onset of the disease, the first metatarsophalangeal joint is affected (about 2/3 of cases), less often the metatarsal joints, knee and ankle joints. The

development of bursitis and tenosynovitis is possible. In women, small joints of the hands are often affected, especially the interphalangeal joints. Provoking factors for the development of an attack of arthritis are injuries, hypothermia, alcohol intake, heavy consumption of meat and fatty foods, surgical interventions, fasting; Often the onset of gout is associated with taking diuretics and low doses of acetylsalicylic acid. The frequency and duration of gout attacks in the absence of adequate treatment gradually increase, and the inter-attack periods progressively shorten, new joints are involved, and the effectiveness of anti-inflammatory drugs decreases. As a result, the course of arthritis becomes chronic, tophi are formed (deposits of monosodium urate crystals), which are revealed upon examination in the form of subcutaneous formations, usually in the area of the ears and joints; stones form in the kidneys. In women with reduced renal function, subcutaneous tophi can form already in the first years of the disease.

In the vast majority of cases (according to international studies, their share reaches 90%), nonsteroidal anti-inflammatory drugs (NSAIDs) are used to relieve attacks of gouty arthritis. They are recommended as first-line drugs by experts of the European League Against Rheumatism on the diagnosis and treatment of gout [28] and in the absence of contraindications (severe renal failure, heart failure, exacerbation of peptic ulcer disease, anticoagulant therapy, hypersensitivity) are the drugs of choice. The advantages of NSAIDs are the ability to significantly reduce the duration of acute attacks of gouty arthritis and relative safety with short-term use. There are few comparative studies of the effectiveness of various anti-inflammatory drugs in patients with gout. Most of them did not show any significant advantages of drugs that are non-selective with respect to cyclooxygenase-2 (COX-2) inhibition over selective ones [23]. Studies conducted at the Institute of Rheumatology of the Russian Academy of Medical Sciences showed that the selective COX-2 inhibitor nimesulide, when used in patients with gout, was more effective than diclofenac sodium, including in patients with chronic tophi gout, and the granular form of nimesulide was superior to the tablet form [3]. The use of selective COX-2 inhibitors may be preferable given their greater safety. When prescribing NSAIDs to elderly patients, in the presence of a history of ulcers and other risk factors for gastrointestinal complications, parallel use of gastroprotectors is mandatory [27]. To reduce the risk of side effects of NSAIDs when a clinical effect occurs, a gradual reduction in their dose is recommended, but NSAIDs should be completely discontinued no earlier than 2 days after the symptoms of arthritis disappear. It is also possible to use NSAIDs to prevent joint attacks in patients with chronic gouty arthritis, especially with parallel therapy with allopurinol [27].

The use of the meadow saffron plant (*Colchicum autumnale*), the use of which for medicinal purposes has a long history, has not lost its relevance. Thus, the first-line treatment for acute attacks of gout includes colchicine, an extract of meadow saffron bulb, which is comparable in effectiveness to NSAIDs. The most common regimen for prescribing colchicine, used in clinical practice for more than 40 years: a single dose of the drug at a dose of 1 mg followed by 0.5 mg every 1–3 hours (no more than 6 mg in 12 hours) until the onset of a clinical effect [14]. However, when using this regimen, even before clinical improvement is achieved, side effects (diarrhea, nausea, vomiting) often occur, which may require discontinuation of the drug. In addition, the use of colchicine is associated with a risk of developing agranulocytosis and liver damage. In case of renal failure, the dose of colchicine should be reduced, and if the glomerular filtration rate is less than 10 ml/min, its use is contraindicated. Recent studies have shown that taking significantly lower doses of colchicine (0.5 mg 2–3 times a day), which is

characterized by significantly better tolerability, including in patients with reduced renal function, can be no less successful [19]. Like NSAIDs, colchicine can be used long-term to prevent exacerbations in patients with chronic gout [27]. However, it should be remembered that with prolonged use of even low doses of colchicine, the development of neuromyopathy is possible, especially in patients with reduced renal function. There have been no randomized studies comparing the effectiveness of NSAIDs and colchicine in patients with gout.

If there are contraindications to the use of NSAIDs and colchicine, glucocorticoids (GC) can be used to relieve an acute attack of gout. The initial dose of prednisolone, prescribed orally and taken for 1–3 days, averages 30 mg/day, then it is gradually reduced until the drug is completely discontinued over 1–2 weeks. If a large number of joints are involved, the initial dose can reach 50 mg/day, and the duration of administration increases [13]. J. A. Allovay et al. showed that the use of intramuscular injections of triamcinolone acetonide at a dose of 60 mg/day led to relief of arthritis slightly faster compared to indomethacin, although these differences were not statistically significant [5]. Recently published data from a double-blind study of the use of the NSAID naproxen at a dose of 500 mg twice a day and prednisolone at a dose of 35 mg/day for 5 days in 120 patients with gouty arthritis showed completely comparable efficacy of the drugs. According to the authors, a short course of GC therapy can serve as an alternative to the use of NSAIDs in relieving attacks of gouty arthritis. Attention should be paid to the high incidence of side effects when taking both naproxen (37% of patients) and prednisolone (34% of patients) [17]. The main disadvantage of systemic GC therapy, in addition to the large number and frequency of side effects, is the frequent development of exacerbation of arthritis, especially with a rapid reduction in the dose of GCs and their withdrawal.

Along with the systemic use of GC, a good clinical effect, especially during attacks of arthritis involving 1-2 joints, can be achieved using intra-articular injections of GC. A recent study using intra-articular injections of low doses of triamcinolone (10 mg in the knee joint and 8 mg in other smaller joints) showed that a single dose of the drug was sufficient to relieve arthritis in 95% of patients within 48 hours after injection [12].

Local application of cryotherapy can also help reduce the duration of taking NSAIDs and colchicine and reduce the duration of arthritis attacks [27].

Despite the ease of stopping attacks of arthritis, especially at the onset of the disease, timely administration of antihyperuricemic drugs is fundamentally important. Thus, the main goal of gout therapy, in addition to relieving acute attacks of arthritis, is to persistently reduce the serum level of uric acid (UA) to a state in which the likelihood of developing attacks of arthritis and the formation of tophi is minimal.

In most cases, it is advisable to prescribe antihyperuricemic drugs after the first attack of arthritis, but with low serum levels of uric acid in a small proportion of patients, it is sufficient to use non-drug treatment methods. For several centuries, a low-purine diet has been successfully used in the treatment of gout, which is based on limiting the diet of animal products rich in purines (primarily meat, fish and seafood). The basic principles of the diet, which have remained relevant in our time, were described by the English physician and philosopher J. Locke back in the 17th century. It has been shown that strict adherence to a low-purine diet leads to a decrease in serum UA levels by 60–120 $\mu\text{mol/L}$ [9]. A good urate-lowering effect was also established for a low-calorie diet (1600 kcal/day). A decrease in serum uric acid levels occurred already in the first days of therapy, and after 16 weeks of dieting, normouricemia was achieved in 58% of

patients [7]. This result can be explained by the effect of diet on metabolic disorders that contribute to the development of hyperuricemia and gout, primarily by reducing the levels of insulin, triglycerides and body mass index. Avoiding alcohol is of great importance.

The most commonly used pharmacological agent for the correction of hyperuricemia is allopurinol, a xanthine oxidase inhibitor. Its role in the treatment of gout is so high that in 1988, J. Hitchings and G. Elion were awarded the Nobel Prize in Medicine for the discovery of a number of drugs, including allopurinol. The drug is prescribed in a low dose, as a single dose, no more than 50–100 mg/day and no earlier than 2–4 weeks after the relief of an attack of arthritis. Subsequently, the dose of allopurinol is gradually increased every 3–4 weeks until the target serum sUA level is achieved. Less commonly, in no more than 10% of patients, uricosuric drugs are prescribed, which include probenecid, sulfinpyrazone and benzbromarone. Unlike allopurinol, the dose of which can be easily adjusted in the presence of renal failure depending on the decrease in glomerular filtration rate and serum creatinine level, the use of uricosuric drugs can be dangerous even with a slight decrease in renal function. Currently, these funds are not registered in our country.

In the first weeks of therapy with allopurinol and uricosuric drugs, low doses of NSAIDs or colchicine may be prescribed to prevent exacerbations of arthritis. If an attack of arthritis develops while taking allopurinol, its dose does not change during the exacerbation.

The uricosuric effect is also characteristic of some drugs belonging to other groups. A pronounced decrease in UA levels, exceeding 20% of the initial level, can be achieved with the use of fenofibrate, prescribed for hypertriglyceridemia not corrected by diet, including in patients with type 2 diabetes mellitus (DM2) [6, 11]. A significant decrease in serum UA levels, amounting to 19%, was also demonstrated when this drug was taken together with allopurinol [10]. Losartan, an angiotensin II receptor antagonist, has a uricosuric effect, which allows it to be successfully used in patients with gout with arterial hypertension [25]. It should be remembered that uricosuric activity is not a group effect of fibrates and angiotensin II receptor antagonists. The uricosuric effect of high doses of vitamin C (4–8 g/day) has been proven, but even with the use of vitamin C in a daily dose of 500 mg for 2 months, the decrease in serum UA levels reached 30 $\mu\text{mol/L}$ [15]. The advantage of these drugs over the actual uricosuric drugs is the possibility of using them in patients with nephrolithiasis.

In patients with gout and in cases of chronic hyperuricemia, the use of urine-alkalinizing drugs that promote the dissolution and prevention of the formation of uric acid and mixed stones is justified, given the presence of urate nephrolithiasis in most patients with gout, the frequency of which in this disease is hundreds of times higher than the population [26]. One such remedy is Blemaren, used to dissolve urate and urate-oxalate stones in the urinary tract and prevent their formation. The drug changes the pH of urine from acidic to neutral, thereby providing optimal conditions for the dissolution of stones and preventing the crystallization process. If the urine pH is constantly maintained at 6.2–7.0, this leads to the gradual dissolution of uric acid stones and prevents their formation. In addition, taking citrate mixtures prevents the formation of uric acid and calcium oxalate stones and improves the solubility of calcium oxalate in urine [21].

The use of citrate drugs in patients with gout, which promote alkalinization of urine and resorption of stones, may be important, especially at the beginning of treatment with allopurinol.

The possibility of using biologically active additives in patients with gout that promote alkalinization of urine and have a uricosuric effect is being considered. Administration of the

biologically active supplement urisan, the main components of which include various types of ginger, led to a 1.5-fold increase in UA excretion by the kidneys and a significant decrease in the level of uricemia [2].

It is assumed that some glucose-lowering drugs that increase tissue sensitivity to the action of insulin can also contribute to a decrease in serum UA levels. Prescribing metformin (biguanide group) in a daily dose of 1500 mg to patients with gout with type 2 diabetes or pre-diabetes disorders of carbohydrate metabolism led to a decrease in serum sUA levels by more than 20%, and with long-term use - to a decrease in adherence to NSAID therapy and a reduction in the frequency of arthritis attacks [8]. A decrease in serum UA levels has been reported for troglitazone (a group of thiazolidinediones) [24]. A study of the possibility of using another thiazolidinedione, rosiglitazone, in patients with gout in combination with type 2 diabetes is nearing completion. In addition to the beneficial effect on carbohydrate metabolism, preliminary data indicate a significant decrease in serum UA levels after 6 weeks of therapy [1]. Interestingly, there was no effect on renal excretion of UA biguanides and thiazolidinediones. It is assumed that the urate-lowering effect of drugs is based on the ability to reduce the synthesis of UA due to a decrease in the formation of free fatty acids in the liver, the overproduction of which under conditions of insulin resistance leads to hyperuricemia [16].

The optimal selection of therapy for patients with gout, therefore, should be carried out strictly individually, always taking into account the possibility of combining medications, the presence of comorbid conditions, with the maximum use of modern methods of treatment and prevention.

Literature:

1. Елисеев М. С., Барскова В. Г. Влияние росиглитазона на показатели углеводного и уратного обмена у больных подагрой: Тез. докл. IV Всероссийского диабетологического конгресса. — М., 2008. — С. 102.
2. Ильина А. Е., Барскова В. Г. Применение урисана при подагре // Современная ревматология. — 2008. — № 1. — С. 81–83.
3. Кудяева Ф. М., Елисеев М. С., Барскова В. Г. и др. Сравнение скорости наступления анальгетического и противовоспалительного эффектов различных форм нимесулида и диклофенака натрия при подагрическом артрите // Тер. архив. — 2007. — № 5. — С. 35–40.
4. Насонова В. А., Барскова В. Г. Ранние диагностика и лечение подагры — научно обоснованное требование улучшения трудового и жизненного прогноза больных // Научно-практическая ревматология. — 2004. — № 1. — С. 5–7.
5. Allovay J. A., Moriarty M. J., Hoogland Y. T. et al. Comparison of triamcinolone acetonide with indomethacin in the treatment of acute gouty arthritis // J. Rheumatol., 1993; 20: 111–113.
6. De La Serna G., Cadarso C. Fenofibrate decreases plasma fibrinogen, improves lipid profile and reduces uricaemia // Clin. Pharmacol. Ther., 1999; 66: 166–172.
7. Dessein P., Shipton E., Stanwix A. et al. Beneficial effects of weight loss associated with moderate calorie/carbohydrate restriction, and increased proportional intake of protein and unsaturated fat on serum urate and lipoprotein levels in gout: a pilot study // Ann. Rheum. Dis., 2000; 59: 539–543.
8. Eliseev M. S., Barskova V. G., Volkov A. V. et al. The efficacy and safety of metformin treatment in gouty patients with insulin resistance syndrome (pilot case control 6-months study) // Ann. Rheum. Dis., 2005; 64 (suppl. 3): 500.
9. Emmerson B. T. The management of gout // N. Engl. J. Med., 1996; 334: 445–451.

10. Feher M. D., Hepburn A. L., Hogarth M. B. et al. Fenofibrate enhances urate reduction in men treated with allopurinol for hyperuricaemia and gout // *Rheumatology*, 2003; 42: 321–325.
11. Feher M. D., Caslake M., Foxton J. et al. Atherogenic lipoprotein phenotype in 2 diabetes: reversal with fenofibrate // *Diabetes Metab. Res. Rev.*, 1999; 15: 395–399.
12. Fernandez C., Noguera R., Gonzalez J. A. et al. Treatment of acute attacks of gout with small doses of intraarticular triamcinolone acetonide // *J. Rheumatol.*, 1999; 26: 2285–2286.
13. Groff G. D., Franck W. A., Raddatz D. A. Systemic steroid therapy for acute gout: a clinical trial and review of the literature // *Seminars Arthritis Rheum.*, 1990; 19: 329–336.
14. Hollander J. L. *Arthritis and Allied Conditions: A Textbook of Rheumatology*. 6th ed. Philadelphia: Lea & Febiger, 1960.
15. Huang H. Y., Appel L. J., Choi M. J. et al. The effects of vitamin C supplementation on serum concentrations of uric acid: results of a randomized, controlled trial // *Arthritis Rheum.*, 2005; 52: 1843–1847.
16. Iwatani M., Wasada T., Katsumori K. Troglitazone decreases serum uric acid concentrations in type II diabetic patients and nondiabetic // *Diabetologia*, 2000; 43: 814–815.
17. Janssens H. J., Janssen M., van de Lisdonk E. H. et al. Use of oral prednisolone or naproxen for the treatment of gout arthritis: a double-blind, randomised equivalence trial // *Lancet*, 2008; 371: 1854–1860.
18. Mikuls T. R., Farrar J. T., Bilker W. B. et al. Suboptimal physician adherence to quality indicators for the management of gout and asymptomatic hyperuricaemia: results from the UK General Practice Research Database (GPRD) // *Rheumatology (Oxford)*, 2005; 44: 1038–1042.
19. Morris I., Varughese G., Mattingly P. Colchicine in acute gout // *BMJ*, 2003; 327: 1275–1276.
20. Neogi T., Hunter D. J., Chasson C. E. et al. Frequency of inappropriate management of acute gout attacks // *Arthritis & Rheumatism*, 2004; 50 (suppl. 9): S339.
21. Pak C. Y., Peterson R. Successful treatment of hyperuricosuric calcium oxalate nephrolithiasis with potassium citrate // *Arch. Intern. Med.*, 1986; 146 (5): 863–867.
22. Singh J. A., Hodges J. S., Toscano J. P. et al. Quality of care for gout in the US needs improvement // *Arthritis Rheum.*, 2007; 57: 822–829.
23. Slesinger N. Management of acute and chronic gouty arthritis // *Drugs*, 2004; 64 (21): 2399–2416.
24. Tsunoda S., Kamide K., Minami J. et al. Decreases in serum uric acid by amelioration of insulin resistance in overweight hypertensive patients: Effects of a low-energy diet and an insulin-sensitizing agent // *Am. J. Hypertens*, 2002; 15: 697–701.
25. Wurzner G., Gerster J. C., Chiolero A. et al. Comparative effects of losartan and irbesartan on serum uric acid in hypertensive patients with hyperuricemia and gout // *J. Hypertens*, 2001; 19: 1855–1860.
26. Wyngaarden J. B., Kelley W. N. (eds). *Gout and Hyperuricemia*. London: Grune & Stratton, 1976: 233–52.
27. Zhang W., Doherty M., Bardin T. et al. Clinical Studies Including Therapeutics (ESCISIT) EULAR Standing Committee For International Part II: Management. Report of a task force of the EULAR evidence based recommendations for gout // *Ann. Rheum. Dis.*, 2006; 65: 1312–1324.
28. Zhang W., Doherty M., Pascual-Gymez E. et al. EULAR evidence based recommendation for the diagnosis and management of gout // *Ann. Rheum. Dis.*, 2005; 64 (suppl. 3): 501.

**SYNTHESIS AND RESEARCH OF CHELATE PRODUCING SORBENTS
BASED ON MELAMINE, FORMALINE AND DICARBONIC ACIDS**

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Abstract. This article conducted the synthesis of SORBENT on the basis of Melamine, Formalin and Lemonic acid (MFL) and MFL, formalin, and sadronic acid (MFQ). At the same time, the ratio of original substances from the main parameters in the process of synthesis, 2: 3: 6, the effect of important parameters such as 100-120 02C and environment PH = 8. Also during the polyconencing process, temperatures and time effects, as well as the structure of the Sarbent obtained using the ionic exchange and static infliction of the temperature, and the structure of the sorbent. According to the results, productivity of raction field is 92%.

Keywords: Melamines: Formalin, citric acid, polyconindation, Raman spectrommetry.

Introduction.

Most heavy metals are toxic at low concentrations. Although Mn, Cu, Zn etc. are elements needed by biological activities at parts per million levels, they are essential to maintain the metabolism of the human body. As we know, one of the main tasks of sorbents is intermediate cleaning of sorption of various metal ions in different solutions. For this purpose, the prospects of using triethylenediamine $N(CH_2-CH_2)_3N$ (TEDA) sorbents based on silica gel with slightly high porosity for cleaning ^{137}Cs , ^{90}Sr , ^{90}Y and d-element ions (Cu^{2+} , Ni^{2+}) from aqueous solutions have been studied[2]. The results show that ^{90}Sr , ^{90}Y radionuclides, as well as Cu^{2+} , Ni^{2+} ions are well sorbed in KSKG containing 0.01-6.72 wt% TEDA [3]. In addition, the equilibrium time of sorption of these sorbents was reached within 3 hours, while the capacity of sorbents for copper Cu^{2+} varied from 63 to 320 mg, and it mainly depends on the conditions of sorbent synthesis, researchers S.A. Kulyukhin and M.P. Gorbacheva noted. Krasavina E.P. and others determined that the sorption capacity of these sorbents for Ni^{2+} does not exceed 130 mg per gram of sorbent [4]. In this study, a novel nanobiomaterial based on (3-aminopropyl)triethoxysilane (APTES)-coated iron oxide. The adsorption isotherms were electrochemically investigated and it was shown that the adsorption capacity of the nanoparticles towards heavy metals decreased in the following order: $Cu^{2+} > Pb^{2+} > Cd^{2+}$ [5].

Purpose of work. The purpose of the research is to study the synthesis of sorbent obtained by polycondensation based on melamine, formalin and citric acid (MFL), as well as melamine, formalin and succinic acid (MFQ).

Materials. For the synthesis of these sorbents, substances such as melamine, formalin and citric acid (MFL), as well as melamine, formalin and succinic acid were obtained. In the experiment, "pure" and "chemically pure" reagents were used. Reagent solutions were prepared by dissolving a specific sample in a certain volume of solvents.

Methods. The results of the research were analyzed using devices such as HORIBA Scientific Raman spectrometer (range 400–4000 cm^{-1}). was held. The interpretation of the spectra was carried out with the help of basic software that performs automatic measurement of spectra, has tools for graphical display of spectra and their parts, and organizes work with the user's spectrum library.

2. Experimental part

Synthesis of sorbents. 2.52 g (0.02 mol) of melamine was dissolved in 5 ml (0.06 mol) of formalin and NH₄OH solution was added until pH=8. The temperature was heated at 80-90 °C until a viscous mass was formed. 3.54 g (0.03 mol) of citric acid (a separate experiment was conducted for succinic acid in the same mole ratio) was added dropwise to the resulting viscous mixture in 5 ml of NH₄OH and mixed. When the temperature increased to 100-120 °C, a solid or gummy mass was formed. The resulting resinous mass was placed in a porcelain bowl and dried in a drying cabinet at a temperature of 95 °C for 20 hours. After the dried polymer was crushed, the low molecular weight substances were washed first with 5% NaOH solution and then several times with distilled water until it became neutral. As a result, a white granular mass consisting of small pores was formed. Product yield was 92%.

Moisture content of the obtained sorbent according to GOST 10898.1–84, mass density according to GOST 10898.2–84, density of the sorbent in the hydrated state according to GOST 10898.3–84, specific volume of the swollen sorbent according to GOST 10898.4-84, static exchange capacity - GOST 20255.1-89 was determined.

3. Results and Its Discussion

A polycondensation reaction type sorbent (ion exchanger) was obtained, which is aimed at systematizing the properties of sorbents and providing them with effective performance.

Studies on the influence of alternative temperatures on the process of polycondensation of melamine, formalin and citric acid (MFL) were conducted. The polycondensation process was studied at temperatures of 100, 110, 120 and 130 °C. At the same time, the time dependence of the reaction, the specific volume of the sorbent in water and the value of static exchange capacity (SAS) for 0.1 n NaOH solution were determined. Data are presented in Table 1.

Table 1.**Effect of temperature on ion exchange properties during polycondensation**

	Reaction temperature T, °C	Reaction time τ , hours	Specific volume of sorbent H form in water, ml/g	SAS, in mg-eq/g of 0.1 N NaOH solution
MFL				
.	100	5-6,5	1,6	2,9
.	110	4,5-5	1,4	3,2
.	120	2,5-3	1,1	4,0
.	130	1,5-2	1,0	3,9
MFQ				
.	100	5-6,5	1,7	2,8
.	110	4,5-5	1,5	3,2

120	2,5-3	1,2	3,9
130	1,5-2	1,1	3,8

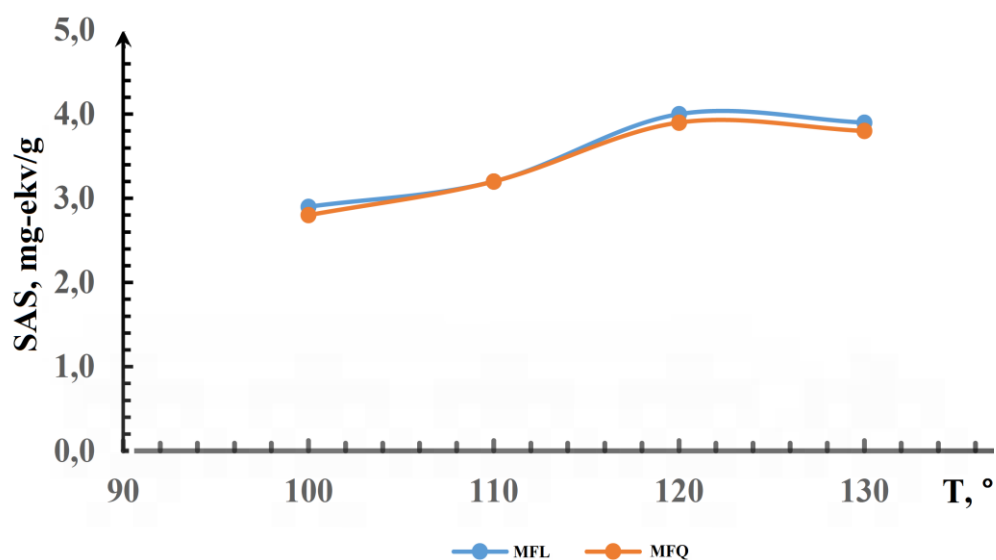


Figure 1. Graph of static exchange capacity of synthesized MFL and MFQ sorbents as a function of temperature.

The results presented in Table 1 and Figure 1 show that the duration of the polycondensation reaction at 100°C is 5-6.5 hours, and the exchange capacity of the ion exchanger is 2.9 mg-eq/g for MFL and 2.8 for MFQ mg-eq/g. This is due to the low activity of reactants at a certain temperature. As the reaction temperature increases to 130 °C, the polycondensation reaction proceeds rapidly, and the reaction time decreases to 1.5-2 hours, while the value of the exchange capacity and the level of ion exchanger swelling also decrease. It seems that the structure of the ion exchanger formed at a certain temperature is more dense, as a result of which the mobility of ionogenic groups becomes difficult.

120 °C was taken as an alternative temperature for polycondensation, the reaction time was 2.5–3 h, the reaction was homogeneous, and the exchange capacity for 0.1 N NaOH solution was 4.0 mg-eq/g for MFL and 4.0 mg-eq/g for MFQ and it was determined to have a value of 3.9 mg-eq/g.

Along with chemical analysis methods, the use of physico-chemical methods is also important in studying the structural structure and main properties of the synthesized ionite. A Raman spectrometer was used to establish the structure of the obtained ionites.

Analyses of Sorbents. The Raman spectrometer results of the obtained sorbent show that in Figure 2a, the valence vibration frequency of the -OH bond in the MFL sorbent is in the area of 3128.42 cm⁻¹, the valence vibration frequency of the -NH bond is in the area of 3055.95 cm⁻¹, -C The vibrational frequency of the =O bond is in the area of 1667.83 cm⁻¹, the deformational vibration frequency of the -NH bond is in the area of 1568.20 cm⁻¹, the asymmetric vibrational

frequency of the -COO- bond is in the area of 1725.93 cm^{-1} , and the ether bond The symmetric vibrational frequency of 1176.01 cm^{-1} was formed in the field.

In Figure 2b, the valence vibration frequency of the -NH bond in the MFQ sorbent is in the area of 3073.29 cm^{-1} , the vibration frequency of the -C=O bond is 1619.23 cm^{-1} in the area, and the deformational vibration frequency of the -NH bond is 1563.94 cm^{-1} area, the asymmetric vibrational frequency of -COO- bond was formed at 1730.19 cm^{-1} area, and the symmetric vibrational frequency of ether bond was formed at 1175.84 cm^{-1} area.

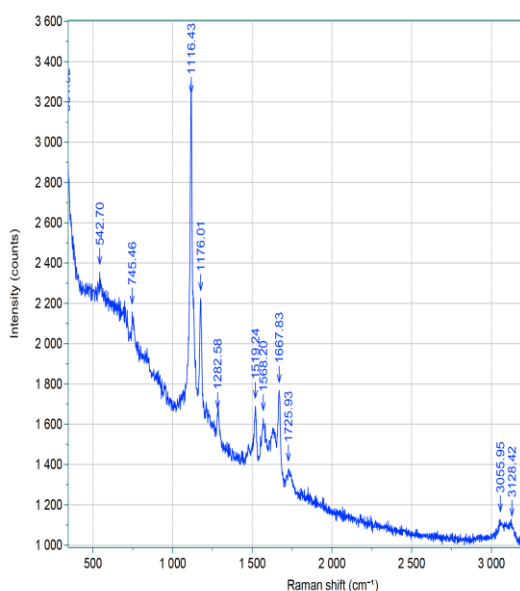


Figure 2a. Raman spectrum of MFL sorbent.

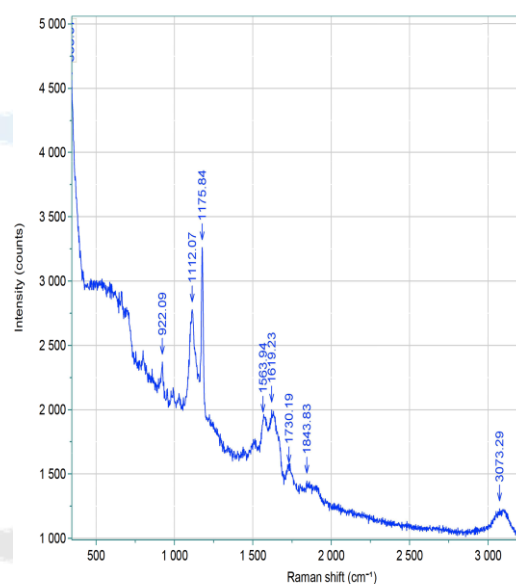


Figure 2b. Raman spectrum of MFQ sorbent.

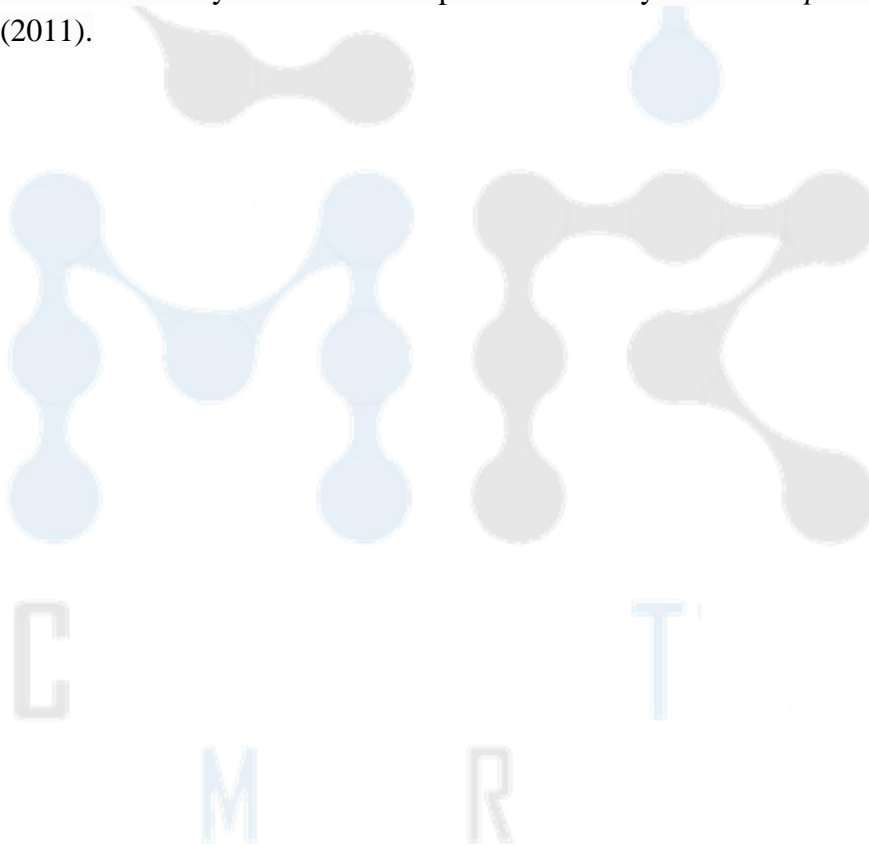
4. Conclusion

Chelating sorbents were obtained as a result of the polycondensation reaction of melamine, formalin and citric acid, as well as melamine, formalin and succinic acid. Alternative conditions for the synthesis of the obtained sorbents were determined. The structure of the obtained ion exchangers was studied using a Raman spectrometer.

References.

1. J.F. Moulder, W.F. Stickle, P.E. Sobol, K.D. Bomben, and J. Chastain (Ed.), *Handbook of X-Ray Photoelectron Spectroscopy* (Perkin Elmer Corporation, Eden Prairie, Minnesota, 1992), p. 182.
2. Kulyukhin, S.A., Gorbacheva, M.P., Krasavina, E.P. *et al.* Recovery of ^{137}Cs , ^{90}Sr , ^{90}Y , and d -element ions from aqueous solutions with sorbents containing triethylenediamine. *Radiochemistry* **53**, 296–302 (2011).
3. Zemskova, L., Tokar, E., Shlyk, D. *et al.* Sorbents based on Ni(OH)_2 /chitosan, immobilization of metal hexacyanoferrates, and application for removal of radionuclide Cs from aqueous solutions. *J Sol-Gel Sci Technol* (2022).
4. Toubi, Y., Radi, S. & Bacquet, M. Synthesis of pyridin-3-yl-functionalized silica as a chelating sorbent for solid-phase adsorption of Hg(II) , Pb(II) , Zn(II) , and Cd(II) from water. *Res Chem Intermed* **39**, 3791–3802 (2013).

5. El-Nahhal, I.M., Zaggout, F.R., Nassar, M.A. *et al.* Synthesis, Characterization and Applications of Immobilized Iminodiacetic Acid-Modified Silica. *Journal of Sol-Gel Science and Technology* **28**, 255–265 (2003).
6. Mikhailov, O.V. Mild template synthesis in the ternary system Co(II)-dithiooxamide-acetone in gelatin-immobilized $\text{Co}_2[\text{Fe}(\text{CN})_6]$ matrix implantates. *Russ J Gen Chem* **78**, 82–89 (2008).
7. Graham, B., Comba, P., Hearn, M.T.W. *et al.* An examination of the binding behavior of histidine-containing peptides with immobilized metal complexes derived from the macrocyclic ligand, 1,4,7-triazacyclononane. *J Biol Inorg Chem* **12**, 11–21 (2007).
8. Mikhailov, O.V., Kazymova, M.A. & Chachkov, D.V. Self-assembly and quantum chemical design of macrotricyclic and macrotetracyclic 3d-element metal chelates formed in the gelatin-immobilized matrix. *Russ Chem Bull* **64**, 1757–1771 (2015).
9. Bayramoglu, G., Karagoz, B., Altintas, B. *et al.* Poly(styrene–divinylbenzene) beads surface functionalized with di-block polymer grafting and multi-modal ligand attachment: performance of reversibly immobilized lipase in ester synthesis. *Bioprocess Biosyst Eng* **34**, 735–746 (2011).



THE ROLE AND IMPORTANCE OF THE "GREEN" ENERGY SECTOR IN
ENSURING THE ECONOMIC SECURITY OF THE STATE

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Abstract: this article highlights the role and importance of the "green" energy sector in ensuring the economic security of the state. The main problem of the economy is the limited economic resources, but the limitless human needs, as a result of the increased demand for energy resources, the need to switch from non-renewable resources to renewable resources, the importance of green energy has been revealed. In addition, the directions of the state policy on green energy are highlighted.

Key words: green energy, green economy, economic security, limited economic resources, economic problem, state policy.

Every task, proposal and assignment indicated in the Address of the President to the Oliy Majlis and the people of Uzbekistan serves to ensure the prosperous life of the people living on this land.

In fact, the head of our state, while putting forward important tasks and proposals for the development of all directions, paid special attention to the work done in the energy sector, existing problems and their solutions.

It was noted that problems in the field of energy have not arisen today, and for many years no investments have been made in new gas fields, electricity and gas networks have not been modernized. The main factor in this was the lack of accurate accounting in the system and the fact that large losses became commonplace.

Today, on the initiative of the President, solutions to the problems in the field are being sought. It should be noted that the development of "green" energy and the initial steps in this regard have begun.

Of course, such reforms can be the basis for covering the demand in the field. As the President noted, in the last six years, our population has increased by 12%, and industrial enterprises have increased by 2 times, from 45 thousand to 100 thousand. This is evidence that the demand for electricity has increased by at least 35% and it is increasing year by year.

In the address, the honorable President emphasized the issues that need to be implemented in order to improve the supply of energy resources, and said that for the sustainable development of our economy, 25-30 billion dollars of investment in the energy sector is needed, and this can be achieved only by attracting private investments.

As noted, in the last three years, 8 billion dollars of direct investment has been attracted to the industry. In particular, last week, the competition for the construction of 3 more solar photoelectric power plants with a total capacity of 500 megawatts was completed in Bukhara, Namangan and Khorezm regions.

In fact, since the beginning of this year, 7 power plants with a capacity of 1.5 thousand megawatts have been put into operation. Next year, we will implement 11 large projects of 4.5

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thousand megawatts. In particular, solar and wind power plants to be built in Bukhara, Jizzakh, Kashkadarya, Navoi, Samarkand, Fergana, Tashkent regions and the Republic of Karakalpakstan will create an additional 14 billion kilowatts of electricity production. This will increase the amount of electricity supplied to households by 50%.

today, the use of energy resources is also the most important issue. The President focused on the same issue and noted that energy consumption in our economy is 2 times higher than in other countries, and therefore we will accept the National Program for Energy Efficiency Improvement.

Based on this, it should be said that today "green" energy can be a solution to existing problems. It is advisable to use every opportunity for this.

In the Address, the President noted that in the next three years, all state organizations will be instructed to install solar panels and hot water collectors, and due to this, 60 percent of their electricity and gas consumption will be transferred to "green" energy. It can be said that the volume of subsidies allocated for the installation of solar panels in households will be doubled, which is the beginning of the work that has started in this regard.

In short, energy is the most important system for the economy of our country. Considering the development of "green" energy as an important factor of the "green" economy, not only system employees, but also residents and consumers are responsible for contributing to it. This is important in ensuring more effective implementation of priority tasks defined in the Address of President Shavkat Mirziyoyev.

Today, humanity is facing new threats. The population of our planet continues to increase, and the stock of natural resources is constantly decreasing. First of all, we are observing the aggravation of global environmental problems. The world community emphasizes the need to introduce the principles of "green development" in the world economy in order to correct the situation. This approach is reflected in the UN Sustainable Development Goals.

The tragedy of the island is of urgent importance for Central Asia and the whole world, as well as inefficient use of land and water resources,

and environmental problems such as the degradation of the ecosystem, the reduction of biological diversity, the gene pool of plant and animal species, the pollution of atmospheric air and waste water, the accumulation of industrial and household waste, require every country to pay more serious attention to this issue. Such problems are very important for us and cannot be postponed.

Because, if the above environmental issues are not resolved, they may cause irreparable consequences in the future.

The fact that the first direction in the election program of Abdushukur Hamzaev, the candidate for the Presidency of the Republic of Uzbekistan, is devoted to ensuring the country's stable development and accelerating the transition to a "green" economy is a sign of how important and important this goal is.

In order to transition to a "green" economy, the Ecological Party of Uzbekistan sets a number of goals in its election program:

First, a policy aimed at the development of all sectors of the economy based on the principles of "green" economy is implemented. This ensures the rational use of natural resources, their conservation and the restoration of biological resources.

It is known that the transition to a "green" economy in our country is based on geographical location, climate change and innovative approaches. Based on the fact that Uzbekistan has a high

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technical potential for energy production from renewable sources, first of all, special attention should be paid to the use of solar, wind, small water flows, geothermal and biomass energy in economic sectors, as well as the introduction of advanced innovative technologies in these areas. attention should be paid.

In the election program, it is proposed to create organic mechanisms for the transition to the use of renewable energy sources in all areas of the economy.

Based on the climatic conditions of Uzbekistan, about 97% of "green" energy sources correspond to solar energy. The power of generating solar energy in the regions of our country is from 525 to 760 billion kWh. This is because the number of sunny days per year is 320 days and the number of active sun hours is 3000 hours on average.

Seven years ago, with the initiative of our President Shavkat Mirziyoyev, a new era began in the energy sector in our country. In particular, great attention has been paid to the introduction of renewable energy sources and energy-saving technologies. At that time, some people thought: "This is a temporary campaign." But the past period has shown that they have been renewed. In the following years, a solid legal framework was created for the development of the industry. Foreign investors were attracted and many promising projects were developed. One after another, solar and wind power plants, small hydroelectric power plants are being put into operation. The most important thing is that we are not turning back from the chosen path in this regard. On the contrary, the scope of work is expanding and the pace is accelerating. Last week in the city of Bukhara, under the chairmanship of the President of the Republic of Uzbekistan, 430 megawatts of renewable energy sources were built in the video selector meeting, where the issue of guaranteeing the population and economic sectors with energy resources was also discussed. They alone produce 1.2 billion kilowatt hours of electricity per year. This means that it is equal to 60% of the annual consumption of social sector objects.

Of course, these changes and reforms will be another important factor for us to rise to a new stage in development.

Almost everyone knows that natural gas, oil, and coal reserves are limited. Their extraction is becoming more and more difficult every year, so their prices are getting more and more expensive. Moreover, the use of these fuels causes a lot of damage to nature. In the conditions where the population and the quality of life are growing, various enterprises are increasing, the most optimal way is the efficient use of renewable energy sources. Many countries envy our country's great potential in this regard. For example, there are 320 sunny days a year in our country. We also have a lot of windy areas, streams and creeks. According to the calculations of international financial institutions, the annual reserve of alternative energy (especially solar energy) in the republic is equivalent to 270 million tons of conventional fuel. This is three times more than our real needs. So, if we can effectively use the opportunities, we will achieve unprecedented achievements.

It should also be noted that not only the state or business will benefit from the "green economy", but also ordinary people, significant positive changes will occur in their lives. That is its social importance.

We, deputies of UzLiDeP, are supporting the measures aimed at the development of "green energy" in our country with practical work. In particular, we are conducting public and parliamentary control over the processes of construction of green energy sources implemented

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within the framework of the programs. We are organizing promotional activities encouraging the widespread use of renewable energy sources in enterprises and households.

This is actually a favorable opportunity for widespread introduction of renewable energy sources in all aspects. How to adequately use this opportunity to increase the economic potential of our country, and how to introduce the principles of "green" economy into every sector, are clearly reflected in the election program.

In particular, we propose to implement market mechanisms in the field of renewable and alternative energy sources, to expand the participation of the private sector in the market of energy resources. Through this, it will be possible to meet the constantly growing energy needs of the population.

First of all, users of renewable and alternative energy sources in remote and remote areas are actively supported. Attractive projects are offered for them. Privilege for private investors and through the introduction of preferences, it is planned to attract foreign direct investment to the sector.

The program envisages support for the widespread introduction of energy, resource-saving and other innovative ecological and digital technologies in the resource-intensive sectors of the economy - energy, construction, agriculture, transport communication system and utilities. By implementing them, first of all, the possibilities of creating material goods to meet the needs of the population and increase their well-being, level of living and quality without harming ecology and the environment will expand.

Secondly, the main producers in the country, especially large enterprises, will be directed to green technologies.

All over the world, including in our country, the rational use of natural resources, their conservation and the restoration of biological resources are becoming more and more important.

As part of the Paris Agreement, Uzbekistan reaffirms its commitment to reduce greenhouse gas emissions per unit of GDP by 35% by 2030.

It is planned to increase the share of "green" energy to 8,000 MW by 2026, which will reduce carbon dioxide emissions by 5 million tons.

Research shows that Uzbekistan loses at least 4.5% of its GDP every year due to the use of hydrocarbon energy - oil, gas, coal. In addition, about half of the country's power generation facilities are outdated. Their restoration or modernization requires a lot of money. Instead, it is preferable to switch to "green energy", which is considered to be both economically and ecologically efficient.

Thirdly, in order to increase the investment attractiveness of Uzbekistan, a proposal was made to introduce the "Green Visa" program. It is worthy of attention that capital will be attracted to our country for the effective use of natural resources.

As a result, developed "green" manufacturers of the world will begin to enter our country, and strong competition will be formed in the market of technologies that generate renewable energy sources. As a result, the population's and small business entities' access to "green" energy sources will significantly increase, and the cost of products and technologies will decrease.

Fourthly, the proposal to develop the "green economy transition index" of industries and regions will be put forward. What does this give us?

First of all, as the conditions and opportunities for the transition to the "green" economy are being created in our country, it is possible to achieve the desired results only by using it in a

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targeted manner. In order to assess the level of use of these opportunities in all sectors of the economy and regions, an "index of the transition to a green economy" is required. Moreover, since the "green" economy is the future of our country, it is clear which sector or region is ready for it or which is lagging behind.

Today in our country, preferential or interest-free loans, subsidies and grants, and tax incentives are provided to enterprises and organizations, various segments of the population, for the use of alternative energy sources, reduction of carbon consumption in the production process, use of "green technologies" and the purchase of relevant equipment. is being done. The result of our efforts, the work done to make everything "green" in the economic sectors, is clearly expressed in the "transition to green economy index" that we propose above.

"Green" economy (green economy) is a model of economic development that includes a responsible attitude of man to natural resources and is aimed at finding a reasonable compromise between the growth of well-being and the conservation of natural resources.

Of course, the transition to a "green" economy is not a quick process that will happen all at once. In this regard, we should not ignore the importance of using financial instruments. In particular, the role of the state in this process, the conditions created for market mechanisms are of decisive importance in how the industry develops.

The Ecological Party of Uzbekistan is not in favor of putting the financial burden of the development of the "green" economy on the state budget. At the same time, creating the necessary conditions for "greenness" in any business, giving incentives to implementers of "green" projects, creating incentives and motivation to work based on the principles of "green" economy will become a priority for achieving our goals. .

One of the main issues before us is the prevention and elimination of problems in the energy system. As we all know, providing the population and economic sectors with continuous energy is a very important issue. From the beginning, special attention is being paid to this in the candidate's election program.

In recent years, 6 new thermal and 1 solar photoelectric power plants have been put into operation in our country, and it should be noted that the volume of new power generation capacity in the last 5 years has exceeded 5,000 megawatts. However, taking into account the growing energy needs of the population and economic sectors, such results may not be enough for our country in the coming years.

In the election program of the candidate, a special emphasis is placed on the development of renewable energy as the safest and most appropriate way to ensure energy stability in the country. In particular, alternative and safe ways to get rid of our people from the problem of electricity shortage in today's modern life are offered by carrying out the work in this regard as quickly as possible and with better quality.

First, we need to develop a "Green Energy Strategy" aimed at the development of renewable energy sources. The important aspect of this is that it will be possible to prevent and eliminate one of the main issues facing us - problems in the energy system.

It is known that a large investment is needed to increase the production capacity of renewable energy sources in Uzbekistan by 15 GW and to increase their share to more than 30% of the total volume of electricity production.

However, judging by today's demand, it is time to take the work to a new level.

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Secondly, the widespread introduction of energy, resource-saving and other innovative environmental and digital technologies in the resource-intensive sectors of the economy - energy, construction, agriculture, transport communication system and utilities - should first of all be supported by the state.

Of course, the candidate from the Ecological Party of Uzbekistan emphasizes that the "green economy" does not consist only of reforming the energy sector. Multifaceted measures such as food security, agricultural innovations, sustainable cities, rational waste management, expansion of forest areas, reduction of desertification are also being promoted.

The next step in the transition to a "green" economy is to encourage the population to buy environmentally friendly goods, encourage business entities relying on green technologies, and introduce energy-efficient technologies in construction and energy-intensive industries. When creating this system, the state itself must first of all fulfill its regulatory role.

Another of today's global issues is reducing the amount of toxic gases released into the atmosphere and ensuring environmental safety. Indeed, the main demand of the "green" economy is to develop the general economy without harming nature and the environment.

In the election program of the candidate for the President of the Republic of Uzbekistan from the Ecological Party of Uzbekistan, a number of proposals are put forward that will solve the problem of atmospheric air pollution.

In addition, in 2022, the amount of pollutants released into the atmosphere from vehicles in the city of Tashkent alone amounted to 403 thousand tons, while this figure for the country reached 1 million 296.9 thousand tons. These numbers alone encourage us to think seriously about the future of vehicles running on hydrocarbon raw materials in our country.

Special attention is paid to this problem in the election program. The most important initiative in this regard is to ban the sale and import of passenger cars with internal combustion engines in the country starting from 2030. At the same time, it is necessary to take into account the share of large trucks that cause air pollution, and change the transportation of goods from large trucks to railways and other types of transport that have less impact on the environment.

Such strategic goals are already on the agenda in the developed countries of the world. In particular, in Japan, it is planned to reduce emissions from vehicles to zero percent by 2050 at the expense of renewable energy sources. Great Britain wants to completely ban the sale of diesel and gasoline cars by 2030. In the US, by 2030, it is planned to replace 50% of all new cars and trucks with zero-emission vehicles.

As a result of human activity, 20 billion tons of carbon dioxide gas is released into the atmosphere every year, and more than 300 million tons of plastic waste are created. One of the main principles of the green economy is state support for sustainable production and consumption, as well as the introduction of low-carbon, resource-saving technologies.

The transition to a new economic model requires a step-by-step approach. The main stages of the transition can be seen in the example of environmental initiatives introduced by the European Union.

At the first stage, it is important to reduce investments in environmentally harmful production. Thus, many banks in Europe are stopping lending to gas projects from 2022. This not only deprives the industry of preferential government loans, but also reduces the attraction of private investors.

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One of the priorities of our republic is the need for electricity, which is becoming a global issue for all of us, and its rational use, taking measures to introduce cheap, reliable, stable and modern energy.

In order to provide the population with high-quality and continuous energy sources, it is necessary to develop public-private partnerships and attract sustainable investment projects.

The head of our state, Shavkat Mirziyoyev, during his recent visit to Navoi region, symbolically commissioned the first large solar photoelectric power plant in our country with a capacity of 100 megawatts, built in the Karmana district.

The construction of this complex started last year. As part of it, 110 million dollars of investment were used and 300 thousand solar panels were installed. With the implementation of this project, 80 mln. cubic meter of natural gas is saved and this gas goes to people's houses. Most importantly, 160,000 tons of toxic gases will be prevented from spreading into the air. It is not an exaggeration to say that this was literally the first step in the transition of Uzbekistan to a "green economy" and was a worthy gift on the eve of celebrating the thirtieth anniversary of our country's independence.

Of course, these things do not happen by themselves. It is another practical result of the far-sighted policy of the leader of our country. In the Address sent to the Oliy Majlis, the President focused on the issues of energy sector development and listed the projects and plans to be implemented in this direction one by one. In particular, as economic activity and incomes of the population grow, the demand for energy resources will increase, it was emphasized that the reforms in the oil and gas and energy sectors, and the completion of the started large projects, should be completed.

In fact, many meetings and meetings have been held in recent years under the leadership of our President on the issues of fundamental reform of the energy sector in our country. Relevant laws, international agreements, a number of decrees and decisions were adopted.

In the energy sector alone, thermal and solar photoelectric power plants with a total capacity of 1,800 megawatts are expected to be put into operation by the end of this year. To date, a total of 19 projects worth 7.4 billion US dollars have been implemented in the energy sector based on public-private partnership mechanisms, of which 12 projects have been signed. As a result, the production capacity will be increased from 14,000 megawatts to 15,800 megawatts. Compared to 2016, the growth rate is 52 percent.

For information, it can be said that 2 thermal power plants with a capacity of 240 megawatts and 1 of 230 megawatts in the Qibray district of Tashkent region, 174 megawatts in the Khorezm region, 270 megawatts in the Bukhara region, 220 megawatts in Kashkadarya, and a solar power plant with a total capacity of 100 megawatts in the Samarkand region. is about to be taken down. At the same time, 38 megawatt Zarchob-2 hydropower stations and 8 megawatt Kamolot hydropower stations will be launched in Surkhandarya.

Conclusion

In conclusion, our state is taking all measures to support the economic reforms being carried out in our republic and to fully satisfy the population's demand for energy resources. Energy is the most important system for the economy of our country. Considering the development of "green" energy as an important factor of the "green" economy, not only system employees, but also residents and consumers are responsible for contributing to it. This is important in ensuring more effective implementation of priority tasks defined in the Address of President Shavkat Mirziyoyev.

An important step in the transition to a "green" economy is to reduce emissions from vehicles. In 2022, the amount of emissions into the atmosphere in Uzbekistan amounted to 2,057 million tons, of which 63 percent came from vehicles and 37 percent from industrial and manufacturing enterprises. That is why we must find a solution to the problem of vehicles and the toxic gases emitted from them, which have become an integral part of our lives today.

References.

1. 2022 Speech of the President of the Republic of Uzbekistan in the Address to the Oliy Majlis.
2. Gunnarsdottir, I.; Davidsdottir, B.; Worrel, E.; Sigurgeirsdottir, S. (2021). "Sustainable energy development: History of the concept and emerging themes". *Renewable and Sustainable Energy Reviews*. 141: 110770.
3. Doi:10.1016/j.rser.2021.110770. ISSN 1364-0321. S2CID 233585148. Archived from the original on 15 August 2021. Retrieved 15 August 2021.
4. Kutscher, Milford & Kreith 2019, pp. 1-2.
5. Муракаева, З. И., & Амирова, О. К. (2023). НАУКА И АРМИЯ ГЛАЗАМИ ЖЕНЩИНЫ: ВЗГЛЯД ИЗНУТРИ. *Herald pedagogiki. Nauka i Praktyka*, 3(2).
6. Usmonjon o'g, A. U. B., Alimjon o'g'li, A. A., Bobirovich, Y. A., & Jamshid o'g'li, X. M. (2023). The State Authority System of the Republic of Uzbekistan and Its Organization. *EUROPEAN JOURNAL OF BUSINESS STARTUPS AND OPEN SOCIETY*, 3(8), 30-41.
7. Said o'g'li, S. S., & Abdurasul o'g'li, R. S. (2022). Psychological View of the Military Community. *Pioneer: Journal of Advanced Research and Scientific Progress*, 1(2), 5-12.
8. Usmonjon o'g, A. U. B., Nishon o'g'li, T. D., Nodir o'g'li, B. J., & Shuhrat o'g'li, A. Z. (2023). Management of Professional Promotion of Employees in Organizations. *EUROPEAN JOURNAL OF BUSINESS STARTUPS AND OPEN SOCIETY*, 3(8), 13-29.
9. Usmonjon o'g, A. U. B., Ergashali o'g, T. U. A., Sadulla o'g'li, Z. S., & Ravshanbek o'g'li, Q. A. (2023). Laws and Principles Of Management. *Central Asian Journal of Innovations on Tourism Management and Finance*, 4(6), 174-186.
10. Usmonjon o'g, A. U. B., Raxmatullo o'g, T. X. N., Hakimovich, H. P., & Jahongir o'g'li, F. J. (2023). Provision of Information to Management. *Central Asian Journal of Innovations on Tourism Management and Finance*, 4(7), 152-166.
12. Olimjon o'g'li, O. O., & Shuxrat o'g'li, Z. I. (2022). The Main Features and Signs of "Relations Contrary to the Charter"(On the Example of Russian Experience). *Web of Scholars: Multidimensional Research Journal*, 1(5), 17-21.
13. <https://uzlidep.uz/uz/news-of-party/14783>

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CONCEPT AND EVOLUTION OF MONEY SUPPLY SYSTEM TO MILITARY SERVANTS (CASE OF RUSSIA)

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Abstract: this article describes the concept and evolution of money supply of military personnel. In addition, the nature, principles, functions and structure of military allowances are analyzed. In addition, the evolution of the payment system for military personnel is covered in detail.

Key words: military serviceman, financial support, material support, evolution, material support, monetary allowance, military service, social support.

Military servicemen perform military service on the basis of a call-up or voluntarily - under a contract. Depending on how a soldier performs his military service, whether he is called up for military service or under a contract, the amount of monetary allowance, which is the main source of his support, depends on it. The topic of this dissertation - "Money allowances for military personnel: system, structure, development" - is relevant primarily because the need to improve the legal regulation of monetary benefits for military personnel has been emphasized by many scientists Slivkov A.S. , Prikhodchenko A.A. , Venediktov A.A. At the same time, the experience of recent years shows that all the changes made to the legislation on monetary benefits for military personnel, unfortunately, hardly improve the financial situation of military personnel and their family members, and secondly, monetary benefits provision of an element of the national defense and state security system should be aimed at creating appropriate conditions for military personnel to perform their duties; thirdly, provision of monetary allowances can and should encourage enlistment and conscientious performance of military service. their duties and long-term military personnel. Accordingly, the improvement of legal regulation should be aimed at strengthening the reproductive, stimulating and regulatory functions of money. The implementation of the state policy on the implementation of the rights and freedoms of military personnel, their social support, decent social status and standard of living, and the promotion of the prestige of the military service is defined in the "Strategy for the Social Development of the Armed Forces". "Main principles and directions for the development of the state military organization, which is the core of the Armed Forces of the Russian Federation" for the period until 2020. The importance of monetary allowance is evidenced by the fact that, on the one hand, it is the main source of meeting the material and moral needs of military personnel and their family members, and on the other hand, it serves as the main source of meeting the material and moral needs of military personnel. . To encourage the work of military personnel due to the hardships and deprivation of military service, for example, the need to be in constant combat readiness, the ability to be called at any time to solve official tasks, including life-threatening combat tasks. health, relatively frequent change of place of residence compared to citizens, living with family members in remote areas and places with harsh or unfavorable climatic conditions, military servicemen undergoing military service separation from families and permanent residence, etc. Cash allowance is directly affected. happens in the

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armed forces. Such importance of the monetary allowance given to military personnel, its direct connection with the life and activity of the Armed Forces, their combat readiness, determines the introduction of changes to the legal documents in this regard, the continuous improvement and development of the legal regulation in this regard. . The socio-economic changes taking place in the Russian Federation, the development of free market relations and the implementation of the concept of transfer of allowances to cash determined the decisive role of monetary allowances in the system of material support of military personnel.

In scientific and legal literature, as well as in official statements of political and public figures, the current state of monetary allowance is assessed at a very low level that does not correspond to the nature and importance of the tasks performed by military personnel. At the same time, there is no single point of view in assessing the necessary and sufficient level of funds. At present, there have been few attempts to study the nature of monetary allowances for military personnel, organizational and legal guarantees, and the procedure for timely and complete delivery to each military personnel, as well as the powers of the state from a separate regulatory and legal point of view. bodies in the field of military service by citizens and military administration bodies, the right to fair remuneration for work in terms of consistency and efficiency. At the same time, all these issues require careful study and understanding. This applies especially to the issues of creating a new structure of payment for military servicemen, providing conditions for them to live a decent life, adequately covering all the difficulties and risks of military service, limiting their rights and freedoms. There is no doubt that it will be more effective if the work on increasing the salary of military personnel is carried out on a scientific basis. The object of research is the system of cash benefits for military personnel. The subject of research is financial and economic relations that determine the amount and structure of military allowances, the order of their delivery to recipients, as well as legal guarantees of timely and complete satisfaction with this type of assistance.

Achieving the goal includes solving the following tasks: • Studying the essence, content of the current legislation of the Russian Federation, the mechanism for determining the amount and procedure for paying military allowances to military personnel; • to study the history of the development of monetary allowances for military personnel from the tsarist army to the present state; • Review of powers of state bodies of the Russian Federation and military command and control bodies in the field of legal regulation of funds for military personnel and determination of conflicts; • to study the specific features of determining the amount of military payments in the context of socio-economic changes in society and military reforms; • analysis of the main trends in the development of legislation in the field of monetary benefits in modern times; • developing proposals for improving the legal regulation of military service pay; • developing proposals for improving the salary structure and level of military personnel.

The methodological basis of the research is the general scientific dialectical method of knowledge and scientific methods: historical, logical, sociological, systematic-structural, comparative legal, etc. General logical methods of knowledge (analysis, synthesis, generalization) are also used in the research. with their help, the existing legalities in the field of state-legal events, problems and ways to improve the legal regulation of monetary allowances for military personnel are identified. The legal basis of the research is the Constitution of the Russian Federation, the Budget Code of the Russian Federation, Federal Laws "On Defense", "On the Status of Military Servicemen", other federal laws, decrees and orders of the President of the Russian Federation.

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The Russian Federation, decisions of the Government of the Russian Federation, regulatory legal documents of the federal executive authorities, as well as orders of the Minister of Defense of the Russian Federation regulating the issue of monetary allowances to military personnel. The theoretical importance of the work is determined by the development of rules, conclusions and proposals that have a certain scientific novelty, including the determination of the nature of military servicemen's monetary allowances, the definition, determination and analysis of the legal mechanisms for the formation of its composition and amounts. Functions of the state bodies of the Russian Federation, military command and control bodies in this field in terms of their completeness, consistency and efficiency.

The nature, principles, functions and structure of monetary allowances for military personnel. Currently, a clear understanding of the monetary supply system for military personnel and its elements is not given, and their content has not been studied. Legal regulation of the procedure for determining the amount of benefits for military personnel needs research. "System" (from the Greek Systema - composed of parts, connected) is a set of elements that interact and communicate with each other and form a certain wholeness, unity. Analysis of current legislation and scientific literature allows to talk about the concept of monetary system in a narrow and broad sense. In a narrow sense, the salary system for military personnel is a set of principles, methods and methods for calculating, determining and changing the salary, allowances and other additional payments provided by law for military personnel. It should be taken into account that the established mechanism for the formation of monetary allowance and its delivery to specific military personnel is carried out through the entry into legal relations of the relevant subjects. The generality of this type of legal relationship, in turn, should be included in the system of monetary benefits. Therefore, in a broad sense, the salary system can be defined as a system of legal relations related to the determination and implementation of payment to military personnel in accordance with laws and other regulatory legal documents.

In legal and military literature, there is no uniform definition of the monetary allowance of military personnel. In determining the nature of money, the authors use different approaches and consider individual aspects of this social phenomenon. Thus, in the Military Encyclopedia, monetary allowance is defined as an integral part of financial support aimed at meeting the personal material needs of the troops, provided to them by the state in the form of regular payments of money, according to the official duties performed. On the other hand, financial support means a set of activities organized and carried out in order to timely and fully meet the needs of troops (forces) for funds, including financial planning and financing; request, receive, store, spend economically and appropriately, control their use, record and report. Thus, the important points in the given definition are, firstly, the funds are the financial support of the troops, that is, the activities of the competent authorities in the process of financing the costs of maintaining the troops, and secondly, in the definition, the purpose of funds, in particular: to meet the personal material needs of troops (military personnel). Starov B.F. and Kuznetsov N.I. In the textbook, the Military Administration indicates that monetary compensation is the payment of monetary rewards to military personnel for performing military service and military duties. In this case, the authors emphasize that in determining the salary of military personnel, it is directly related to the performed military service duties. The authors of the Legal Reference on the issue of cash benefits to military personnel are of the same opinion. Other authors, in determining the monetary allowance of military personnel, emphasize that it is an integral part of the material support of

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military personnel and, unlike natural types of pension, is aimed at meeting the monetary needs of military personnel. All the above points of view deserve the right to exist and do not contradict each other in any way.

They should be considered in a dialectical unity, which together reflects the important features of the concept of monetary allowance for military personnel. It should be noted that the concept of "monetary allowance" does not have a regulatory legal framework, unlike concepts such as "salary" and "salary", which are, for example, in Article 129 of the Labor Code of the Russian Federation. Federation No. 197-FZ dated December 30, 2001. However, in Article 12 of the Federal Law of May 27, 1998 "On the Status of Military Servicemen". No. 76-ФЗ actually only reveals the salary structure for military personnel and names its main elements. At the same time, this issue is not only theoretical, but also practical. The lack of a clear and reasonable definition of monetary compensation significantly complicates the legal regulation of certain legal relations, because it creates controversial issues, for the resolution of which the parties (state authorities, military personnel) are forced to go to court. Moreover, even case law on some of these issues is not always consistent. Based on the analysis, it seems possible to determine the following main features of monetary allowances: - military servicemen's right to monetary allowances due to the specific nature of their activities and the duties assigned to the military organization to ensure the defense and security of the military organization. the country is established and guaranteed by the state; The exercise of the right of military personnel to receive pensions is carried out by transferring funds allocated for these purposes from the federal budget to their property; • monetary allowance is an integral part of all-round material provision (supply) of military personnel, aimed at meeting the material needs of military personnel for financial resources; • the term "monetary allowance" is used only in relation to military personnel, in relation to other categories of citizens "salary", "money bonus", "salary" and others; • the amount and order of payment of monetary allowances to military personnel are determined only by the state (state bodies and their officials within the scope of the powers granted to them by the current legal documents), they cannot be determined by agreement between the military personnel and the commander. (head) or other official; • the current legislation defines the content of the right of military servicemen to monetary allowances (amount, terms of payment, currency of payments) directly depending on the military position held, military rank, total period of military service, qualification level.

The nature and complexity of the tasks performed, the conditions and results of the service activity and some other conditions (cases of legal significance established in normative legal documents); It is related to the need to take into account all the features of military service related to the imposition of additional responsibilities on military personnel in relation to other citizens and the establishment of certain restrictions for them, as well as the need to establish financial incentives for military personnel without; for employees to conscientiously perform their duties, including in special circumstances, the current legislation includes a complex of compensation and incentive payments. It seems possible to give the following definition to this social phenomenon based on the identified characteristics of monetary allowance. Cash allowance for military servicemen is a monetary award determined and guaranteed by the state for fulfilling military service obligations, depending on the position held, the assigned military rank, the total length of military service, the nature and complexity of the tasks performed. conditions and results of service activities carried out at the expense of the federal budget, as well as social and compensation payments.

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The principles reflect the most important aspects of the organization and operation of the military payment system and, in their entirety, define the content of complex relations within this system. One of the main principles on which military servicemen's monetary allowance is based is to determine the amount of monetary allowance depending on the quantity and quality of military work of military personnel. The use of this principle in relations with military personnel allows the state to fully take into account the quantity and quality of military labor, specific types of their military activities. The main indicator that determines the amount of work performed by a soldier is the position he performs. The name of the position refers to the scope of the military serviceman's official activities, provides his practical experience, education necessary for the successful performance of his duties. This rule is taken into account when setting salaries for military positions: the more responsible the position, the higher the salary. The second principle of construction of monetary allowances for military servicemen is to take into account the characteristics of military service (the nature of military work, danger to life, age and service limitations, geographical and climatic conditions, danger to the life of military servicemen, age and service of military service determining the amount of allowance taking into account restrictions on military service. service mobility, military family budget formation resources). It is natural that the government of the Russian Federation takes into account all the specific conditions of this service when determining the salary for military personnel.

The third principle of the construction of monetary allowances for military personnel is the determination of the amount of monetary allowances for various categories of military personnel taking into account the order of service. Military personnel are divided into several groups according to the order of service: officers, guards, midshipmen, female military personnel, military personnel serving as private soldiers under contract, sergeants and conscripts. Just as the duration of compulsory military service for these groups is different, their level of satisfaction with livelihood is also different. If the term of service for a conscript is set to 1 year, military service for an officer is a lifelong profession. If conscripts are satisfied primarily with benefits, officers, bailiffs and contract servicemen have only a small part of their material and cultural needs covered by benefits, and the main part by monetary benefits.

Since the main responsibility for the combat readiness of military units rests with officers, the salary for officers is higher than for other categories of military personnel. The fourth principle is that the amount of monetary allowance should ensure the social importance of military service. A military career should not pay less than other civil service careers and a military career should not be less attractive than others. This principle of construction of salary system should ensure the following: a) payment for military work should not be lower than other professions in public service; b) the opportunity to receive free education in specialties that are in acute shortage along with military service at the same time; c) proportionality of monetary compensation (especially for young officers) with the content of colleagues in their specialty, employees of state and commercial organizations. The fifth principle is the universality, obligation and timeliness of payment of monetary benefits.

Cash allowance is paid for the military serviceman's time in service, treatment period, rest and holidays, the payment is made in the specified terms. The sixth principle of the construction of monetary allowance is the legality of determining the amount of monetary allowance in accordance with the Federal Law "On the Status of Military Servicemen", paying military servicemen in the amount that is undoubtedly due, strictly regulating the types of monetary

allowances. These are the principles that are the basis of remuneration for the work of military personnel and are taken into account in the development of salary standards. The principles of military servicemen's pension must be considered as a whole, there is a connection and interdependence between them. It is impossible to make a correct conclusion about the salary of military personnel, taking into account only one principle, without taking into account others. Such a decision on monetary allowance does not allow to correctly describe the work of military personnel, to fully assess its quantity and quality, as well as the conditions of performance of military duties by military personnel. Military service has material and moral incentives. The principles of monetary construction cover only the scope of material order.

Cash allowance refers to material incentives and therefore only these incentives will be considered later. This, of course, does not reduce the importance of moral stimulation of military service in the ranks of the Armed Forces of the Russian Federation. The government of the Russian Federation, when determining the salary level for military personnel, taking into account the principles of salary construction, also takes into account the economic capabilities of the state, because they set certain limits when determining salary standards. an important factor in solving the issues of introducing new types of wages. For example, proposals for the introduction of some new types of monetary benefits or the expansion of existing ones to other groups of military personnel are made, sometimes justified, but due to their absence, it is not possible to allocate appropriate funds for these purposes from the federal budget. Consequently, economics has a significant impact on the manifestation and application of principles.

Therefore, the principles of monetary benefits should be considered closely related to the state of the country's economy. In the system of market relations in the country, monetary allowance as a form of salary, as an assessment of the labor power of professional military personnel, is based on the performance of three main functions: 1) reproductive - monetary allowance should provide military personnel. while the volume of consumption of material goods and services is sufficient for the expanded reproduction of their labor force; 2) incentives - monetary compensation should ensure the resolution of labor incentive issues; 3) regulatory - financial aid acts as a regulator of the supply of military labor in the labor market.

The composition of the monetary allowance of military personnel is defined in Article 12 of the Federal Law of May 27, 1998 No. 76-FZ "On the Status of Military Personnel", according to which the monetary allowance of military personnel is established monthly. Salary according to the military post (hereinafter referred to as the salary for the military post) and monthly salary according to the given military rank (hereinafter referred to as the salary according to the military rank) employees (hereinafter referred to as wages), monthly and other additional payments (hereinafter referred to as additional payments in the text). The composition of monetary allowance is the internal composition of payments to military personnel established by the current legislation, which together make up the total amount of monetary allowance. When considering the composition of funds, the methods and rules for determining and determining the amount of monthly and additional payments must also be taken into account.

The concept of the structure of money is closely related to the concept of the monetary system. Their relationship can be defined as the relationship between general (system) and specific (structure). In this regard, the composition of monetary benefits for military personnel is a concept that describes the external expression of the operation of the entire system of monetary benefits for military personnel, and at the same time is an integral part of it. The composition of monetary

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allowances for military personnel under the contract is understood as the main method of grouping and classification of monetary allowances for military personnel depending on the characteristics describing the direction of payments, the frequency of their implementation and regulation by legislation. The Russian Federation, as well as the organic composition of monetary benefits as a share of individual payments to the total amount of monetary benefits. Let's take a closer look at each of these groups of monetary benefits.

Monthly salary includes salaries for military ranks and salaries for military positions of military personnel. This distribution of wages is the most suitable. It meets the specific characteristics of the military service, helps to improve the skills of military personnel, fully satisfy their personal needs in accordance with their service position, and encourages the activity and integrity of the service. The higher the position, the higher the salary for that position, the higher the military rank, the higher the salary for the military rank. Additional cash payments. In monetary allowances, in addition to monetary salaries, additional monetary allowances paid depending on specific conditions of military service, qualification, complexity of work and responsibilities of individual categories of military personnel are of great importance for different groups of military personnel. money wages are not taken into account. All additional cash funds are earmarked. Based on this feature, they can be divided into several groups: - promoting long-term service. Additional cash payments related to this group, such as percentage increases for length of service, etc., are intended for financial benefit of servicemen for the period of service in the army and navy, as well as in some units and units of the armed forces.

Armed Forces; - paid for special terms of service. The service of military personnel in military units, certain positions and a number of settlements is carried out under conditions that differ from the conditions of service in other military units, places and positions. Since these differences are significant, they are reflected in the form of a number of allowances and rewards about work, for example, percentage allowance for service in remote areas, allowance for special conditions of service, navy, etc.; - promotion of more qualified labor (advanced training). Special payments were established in order to improve the quality of work of military servicemen and increase their financial interest in improving their qualifications. Thus, military servicemen occupying positions with the same name, but whose work is highly qualified and of high quality, will be paid a monetary award for a class qualification (category of qualification), an allowance for a scientific title and a scientific degree; - paid for additional tasks.

Military servicemen are given additional payments if they are assigned additional tasks that are not related to the performance of official duties in their main positions or are related to the positions they perform, but are of a special nature and are not considered as part of their work. , for example, the official allowance of a cadet; - encouraging high achievements in professional activity. The purpose of additional payments to this group is to encourage personal achievements of servicemen, their impeccable service and discipline. Including: a one-time cash award for conscientious performance of military service duties, a cash award for completing military educational institutions, awards for personnel, including in aviation, for high quality of combat training and flights without disasters and accidents, and some others. others; According to the period of payment, additional payments of monetary allowance are divided into monthly and other (one-time) payments. Additional monthly cash allowances.

Additional monthly payments of cash benefits are such payments, the right to which occurs when certain conditions are established by law, and these conditions are valid for the entire period

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of validity. These include: · a percentage increase for seniority; coefficients (for military service in regional, high-mountain areas, for military service in desert and waterless areas); - Interest allowances for military service in the Far North, regions equivalent to it and other regions with unfavorable climatic and environmental conditions, including remote areas; -monthly allowances for scientific degree (scientific title), professor (associate professor) military positions; allowance for special service conditions; · service allowance for cadets; · monetary award for class qualifications (qualification category); · sea money; · bonus for service complexity, tension and special mode, etc.; · permanent increase of the monthly interest rate for military personnel who are allowed to state secrets; -cash prize for skydiving (landing with equipment); - monetary reward for diving activities, etc.

Other (one-time) additional payments of cash allowance. Other (one-time) additional payments of monetary benefits are payments for which the right is exercised, and in order to receive them the next time, the right to them must appear again, regardless of the previously exercised right. These include: · a one-time monetary award for conscientious performance of military service duties; · a one-time monetary award for continuous military service to officers whose service is related to parachute jumping; · a one-time monetary award for graduating from military educational institutions of vocational education; · monetary reward for long and continuous service on ships, ships and departments of their structures (associations); · a one-time allowance upon conclusion of the contract; · one-time allowance upon discharge from military service; Award for exemplary performance of military service; · material support; · other one-time payments. One of the groups of additional funds includes travel money.

Travel allowance. The travel fee includes: · daily allowance for a business trip; · cover the costs of booking and renting accommodation on business trips; Allowance for servicemen serving under the contract when moving to a new place of military service; · daily allowance for the route during the assignments and movement of military personnel; · field money; · reimbursement of travel expenses on business trips. The right of military personnel to receive monetary benefits. Military servicemen serving in the Armed Forces, if they: hold permanent positions in military units, ships, ships, headquarters, offices, institutions, military educational institutions, enterprises and organizations; study in military educational institutions; · there is. In some cases, military personnel may be sent to civilian ministries and agencies while remaining in military service. Such military servicemen are paid monetary allowances by relevant ministries and agencies in the amount and in the manner determined by the Government of the Russian Federation. Thus, we can say that monetary allowance is the main source of support for military personnel, which consists of monthly salary according to the military post and monthly salary according to the assigned military rank, which make up the monthly salary of military personnel, monthly and other additional fees.

In recent years, the modern Russian state and Russian society have significantly intensified efforts to restore the traditional high meaning of the concepts of "statesman", "sovereign man" in Russia. For this purpose, state regulatory measures are used in various spheres of public relations: state-legal, political, economic, informational, cultural, and others. At the moment, measures are being developed to increase the prestige of military service and strengthen military discipline in the troops. In the legislation of the Russian Federation, clarifications on the procedure of military service, improvement of the system of social guarantees for military personnel, etc. are ongoing.

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Historical experience in increasing Russia's influence in solving the most pressing issues of modern military development. and the appeal of military service is of particular interest. For the first time, "military manpower" measures were implemented in the middle of the 15th century. Warriors were always under the special attention and patronage of princely (state) authorities. For their conscientious service, they received plots of land that were leased to free peasants during military service. Provision of a detachment until the middle of the 16th century. it was done by collecting a certain tribute from the artisans and peasants of the city. It was created in the 50s of the 16th century. Streltsy troops armed themselves and underwent annual centralized training at the expense of the treasury. Military service exempted archers from the burden of taxation and protected them from the risk of becoming indentured servants or serfs. To compensate for the hardships and privations of military service, the state granted the archers the right to engage in crafts and trade, and also provided them with land. Since the 17th century. social guarantees for military personnel were significantly reduced.

The state did not want to fully pay for the standing army. It was either disbanded or reassembled during hostilities. Salaries are given only for participation in battles. This greatly reduced the combat effectiveness of the troops and led to the fact that the people serving were not interested in showing enthusiasm in military service. This process reflects the general weakening of state power, which, in turn, led to Polish-Swedish intervention. Peter's military reforms of the late 17th - early 18th centuries. was accompanied by regular improvements in wages and provisions, not only for officers, but also for enlisted men and sailors. Military expenses began to occupy the main part of state expenses (78.3% in 1701). The transformation of Russia into a naval power and the almost complete absence of professional military sailors forced Peter I, tempted by high wages and low food prices (6-8 times lower than European ones), to recruit foreigners who were ready for military service.

Service in Russia. At the same time, the salary of foreigners was 1.5-2 times higher than that of Russian officers. For example, the salary of a foreign naval officer with the rank of captain of the 2nd rank was 455 rubles per year, and the salary of a Russian captain was 300 rubles; foreign navigator received 156 rubles, Russian - 120 rubles, boat - 91 and 36 rubles. In November 1706, Peter I issued a decree "On the production of salaries for the ranks of the fleet", which increased the specified amount for each sailor according to his military rank, in addition to "salary cottages in all future years" . from the amount of monthly salary. In other words, the "thirteenth wage" was introduced. In 1716-1722, Peter I issued a number of national legal documents regulating the legal basis of the official activities of military personnel, systematizing and guaranteeing their social status. Significantly, new, higher standards for military and naval ranks were established by law. This applies primarily to cash payments and "provisions". At the same time, state-wide military personnel had to receive money first. The granting of another military rank, in particular, officer, allowed its owner to significantly improve his financial situation. For example, a lieutenant in the galley fleet received 11 times more than a midshipman; the salary of a second lieutenant was 7 times higher than that of a sergeant. Some of the money doubled. Such a serious difference in the material conditions of different categories of military personnel, of course, aroused their enthusiasm for service and the desire to constantly improve their professional training. In 1719, career creation was carried out only on the basis of competition (at least 2-3 candidates for a vacant position).

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When there was a disparity between the incomes and expenses of military personnel (for example, 1722), the introduction of the "Table of colors" served as a legal basis for determining the amount of monetary allowances and determining the amount of allowances given to officers. with increased prices and the cost of services) the Admiralty Council, and then the military department sent a special dispatch to the government, for example: "... due to lack of wages, naval and admiralty employees are experiencing great difficulties..". State thanks to the measures taken by the leadership, during Peter's reign even junior officers enjoyed a very enviable position in terms of financial support. was superior to most employees of civil offices, a social group that received

In 1930, the code of benefits for servicemen of the Red Army and their families and those forced into military service was revised. It envisages the granting of benefits to military personnel in the field of social insurance and maintenance, as well as maintaining the general and continuous length of service during the period of military service. The right to preserve the housing area and its priority provision, the establishment of a preferential payment for housing, as well as a number of benefits in the provision of medical care, sanatorium-resort treatment and recreation were granted. (preferential vouchers) to both military personnel and family members of command staff. In November 1932, military pay was significantly increased by the introduction of new official salaries. By the decision of the Council of People's Commissars on August 4, 1935, a percentage increase for seniority of 5 to 25% was introduced for commanders. In 1938, a higher regular salary for command and control personnel was again established, which made it possible to increase the salary of this category by 2.9 times. Thus, in the period from 1934 to 1939. salaries of platoon commanders increased by 2.4 times, regiment commanders by 3 times, and corps commanders by 3.64 times. In the Soviet Union since the 1940s. and prior to 1991, determining the amount of pay for military personnel was based on the application of the comparative method of military labor incentives. This method was developed by the Department of Labor and Social Affairs of the Ministry of Labor of the USSR. It was based on the need to differentiate wages for workers in different sectors of the national economy based on the characteristics of work in each sector. When using this method, the salary of equivalently qualified engineers and technicians working in the defense industry was used as a guide to determine the official salaries of military personnel. Accordingly, with the increase in wages in various sectors of the national economy, the official salaries of military personnel should have increased in the same proportion.

In the conditions of the planned economy, inflationary processes were weakly expressed in the period under consideration. Until the second half of the 1980s, the average salary of military personnel was higher than the national average.

Summary

In conclusion, we can say that money has a direct impact on the processes taking place in the Armed Forces. Such importance of monetary allowances given to military personnel, its direct connection with the life and activity of the Armed Forces, their combat training, determines the introduction of amendments to the relevant legislation, the continuous improvement and development of the legal regulation in this regard. The socio-economic changes taking place in the Russian Federation, the development of free market relations, the implementation of the concept of transferring cash allowances to cash determined the decisive role of cash allowances in the system of material support of military personnel.

List of used literature

1. Legal encyclopedia of military personnel 2004 No. 10 p. 5-10.
2. Federal Law "On the subsistence level in the Russian Federation" (adopted by the State Duma of the Federal Assembly of the Russian Federation on October 10, 1997)
3. Decree of the President of the Russian Federation of September 21, 2008 No. 1394 "On increasing the monthly salaries of persons holding positions in the federal state civil service."
4. Tyurin A.I. Stimulating the performance of military service duties: practical recommendations for commanders and superiors. M., 2008. pp. 70-74.
5. <https://www.bibliofond.ru/view.aspx?id=580182>
6. Shukyurov A.T. The amount of pay for members of the US Armed Forces. // Law in the Armed Forces, 2010 - No. 6.
7. Gatsko M.F. Peculiarities of monetary allowances for military personnel performing military service under a contract, in cases where they are placed at the disposal of commanders (chiefs). // Law in the Armed Forces 2009. - No. 12.
8. Koryakin V.M., Makhaev A.B. On some aspects of improving the system of legal regulation of service activities of military personnel. // Law in the Armed Forces 2008. - No. 6.
9. Муракаева, З. И., & Амирова, О. К. (2023). НАУКА И АРМИЯ ГЛАЗАМИ ЖЕНЩИНЫ: ВЗГЛЯД ИЗНУТРИ. Herald pedagogiki. Nauka i Praktyka, 3(2).
10. Usmonjon o'g, A. U. B., Alimjon o'g'li, A. A., Bobirovich, Y. A., & Jamshid o'g'li, X. M. (2023). The State Authority System of the Republic of Uzbekistan and Its Organization. EUROPEAN JOURNAL OF BUSINESS STARTUPS AND OPEN SOCIETY, 3(8), 30-41.
11. Said o'g'li, S. S., & Abdurasul o'g'li, R. S. (2022). Psychological View of the Military Community. Pioneer: Journal of Advanced Research and Scientific Progress, 1(2), 5-12.
12. Usmonjon o'g, A. U. B., Nishon o'g'li, T. D., Nodir o'g'li, B. J., & Shuhrat o'g'li, A. Z. (2023). Management of Professional Promotion of Employees in Organizations. EUROPEAN JOURNAL OF BUSINESS STARTUPS AND OPEN SOCIETY, 3(8), 13-29.
13. . <http://vpk-news.ru/> 2008 yil 13 fevraldagi 6-sonli harbiy-sanoat kuryeri (222).
14. <http://www.livejournal.com/>

Development problems and prospects of public-private partnership in Uzbekistan

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Abstract: the article mainly describes the problems and prospects of the development of public-private partnerships in the current modern economy and their specific characteristics in economic sectors. The article analyzes the advantages and disadvantages of the mechanism of public-private partnership in the conditions of our country, the opportunities and threats of its introduction, the practice of implementing projects and their features are revealed. Also, directions for the consistent implementation of a number of necessary steps to encourage the use of the public-private partnership mechanism in the near future are scientifically based.

Key words: public-private partnership, public-private partnership project, regulatory documents, private financial initiative model, special financial companies, life cycle.

The measures and institutional reforms implemented in our country to liberalize the economy help to improve the investment environment and increase the number of foreign and domestic investors.

At the same time, the problems and shortcomings accumulated in the sectors of the economy and the social sphere, which are traditionally owned and managed by the state, require taking important measures to accelerate the introduction of the public-private partnership (hereinafter referred to as PPP) system. is doing.

The state monopoly in social and communal areas, urban planning and beautification, road management, and energy reduces the quality of goods production and service provision, as well as the efficiency of using state funds.

The legal and institutional framework defining the principles, conditions and directions of PPP development, as well as mechanisms for assessing the impact of financial, technical and commercial risks on the budget system in the medium and long term, have not been developed.

Therefore, in order to create a favorable environment for the implementation of PPP projects in Uzbekistan, it is necessary to improve the legislative base, adopt a number of new regulatory documents and make changes to the existing documents.

The Law "On Concession" today requires revision and improvement in a new version, taking into account the following reasons:

✓ firstly, the range of concessionaires is limited to foreign investors, which limits the opportunity of local entrepreneurs to participate in potential PPP projects;

✓ secondly, although the law defines economic activity as the subject of a concession, it strictly connects the types of economic activity with existing material assets (property, land plots and underground resources), the concession and the modern point of view is that the state grants a private firm the right to carry out economic activities under conditions of imperfect competition (the concessionaire has a certain "market power");

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✓ thirdly, the law limits the duration of the concession contract to 15 years (50 years in the generally accepted standard), which limits the conclusion of contracts for large objects with long payback periods.

International experts rate the level of selection of concessionaires, implementation and termination of such agreements relatively low.

In general, within the framework of legislation on concession issues, development of state support measures, methods of formation of tariffs for concessionaire services, development of a concession model for the transfer of existing state property to a concession, objects that cannot be transferred to a concession. It is necessary to revise the list, as well as expand the areas of application of the concession by introducing its new models.

In the Republic of Uzbekistan, there may be difficulties in the "securitization" of such projects, that is, the issuance of financial instruments put on sale for them, which hinders the attraction of large amounts of foreign investments. National financial markets are at an early stage of development and will not be able to solve the problem of attracting financial funds to infrastructure in the near future, and international investors should receive reliable guarantees of investment return. The prospects of DSH in the Republic of Uzbekistan depend on the ability and willingness of private investors to invest in the country's infrastructure network.

In addition, in accordance with the Civil Code of the Republic of Uzbekistan, based on international practice, contractual relations regarding the transfer of state property to the trust management and lease of state property with PPP symbols were established.

These contractual relations do not fully apply to PPP contracts, the reason for which is that they do not have the obligation to execute long-term contracts with the sharing of risks between the state and private parties, and to comply with the competition rules for the selection of a private partner.

In this regard, in order to recognize the transactions as transactions under the PPP mechanism within the framework of the civil legislation of the Republic of Uzbekistan, it is required to make certain amendments to the normative legal documents regulating the project planning process, to conduct a selection process for concluding a PPP contract and managing the implementation of projects. .

There are problematic issues in the section of networks. That is, large private investments in infrastructure are mainly limited to the telecommunications sector, which is the most dangerous for investors. During the implementation of large-scale projects, conflicts arise between the parties, related to the cancellation of agreements reached and the exclusion of private investors and operators from cooperation. Micro-level projects are easier to implement and generate significant income, but remain isolated initiatives that are not capable of fundamentally improving the situation in the country's public utilities.

When considering the issue of water supply and water management, the PPP mechanism has been used for a long time in the field of water supply and sanitation, but it faces serious difficulties in its implementation.

In the field of PPP water supply and sanitation, projects in this sector are the most difficult for satisfactory commercial and financial structures. Unlike water treatment, water distribution is often complex and difficult to integrate with a PPP model, given the need to identify and disseminate a broader risk profile.

In the conditions of our republic, three models of water supply are used in the field of water supply:

1. "Dutch model" - stockization of a state enterprise, as a result of which a business entity with a state share is established.

A profit-oriented joint-stock company is a private company operating on the basis of a limited liability company-trade (perhaps on the basis of a contract) and a part of the shares is owned by government organizations that tend to work on a political basis.

2. The "French model" - in this model, the state is responsible for the shared assets, while the private sector is responsible for management, which may include concession contracts, leasing, service contracts and management contracts. liq provides comprehensive services, which is organized as a private delegation management.

3. The "British model" - full implementation of assets on a large scale, is often compared to "privatization". It includes the private sector, owns existing enterprises, including all assets and land - utilities become private companies, regulated by the state for control and support.

It is important to note that approaches can be mixed and chosen depending on the needs of the sector, and whatever approach is chosen for PPP should be regulated by the government to ensure quality of service and fair pricing.

At the same time, at this stage of development, the second model will be more convenient, since water resources in our republic have a strategic and social nature, which should remain under state control.

In addition, private businesses are not always eager to quickly upgrade water supply systems due to high capital costs, so the responsibility for updating water supply systems again falls on local and national budgets. Therefore, in such a situation, it is appropriate to involve management companies, but control and regulation is carried out by the state.

In the field of road construction, despite the fact that in international practice, the field of construction and use of highways is the most thorough and attractive field for the implementation of PPP projects, no PPP project has been fully implemented in our country.

In order to improve the quality of infrastructure services of the private sector and use the existing opportunities to attract additional investments, it is necessary to pay attention to the following important issues, as a result of which it will be possible to expand the participation of private sector enterprises in the field of construction, repair and use of highways.

Regarding the development of competition in the market of road construction works, today the market of construction and repair of highways is highly concentrated. Enterprises that are part of Uzavtoyol JSC are monopolists in local markets (regions and districts). Repair of streets of cities and other settlements of local (district, city) importance is mainly carried out by regional and district divisions of "Uzavtoyol" DAK. According to the evaluation data, more than 90% of the total work on road construction is performed by the units of the "Uzavtoyol" DAK.

The participation of private business entities in this market is limited by their underdeveloped material and technical base, limited financial capabilities and lack of experience in implementing large and complex projects.

However, the Decree of the President of the Republic of Uzbekistan "On the new development strategy of Uzbekistan for 2022-2026" dated January 28, 2022 No. PF-60 and the new development strategy for 2022-2026 approved by this Decree Energy, transport, health, education, ecology, communal services, water management, on the basis of public-private

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partnership, in connection with the implementation of the State program on the implementation of the development strategy of Uzbekistan in the "year of human dignity and active neighborhood" 14 bln. It is intended to attract US dollar investments.

Prospects for development of PPP, analysis of advantages and disadvantages of the PPP mechanism, opportunities and threats in its implementation (SWOT analysis) in the conditions of Uzbekistan.

Advantages

- 1) balanced distribution of risks, obligations and rights between the state and private sector;
- 2) reducing the state budget burden;
- 3) transfer of rights to the private sector
with the exception of the procedure for the use and ownership of state property (except for the contract for construction and use);
- 4) increase the transparency of state expenses for the maintenance of the PPP facility (enforcement of contract norms and attracting debt funds by the operator, i.e. monitoring of creditors);
- 5) maintenance of levers affecting the activity of the operator (private sector);
- 6) faster adoption of new technologies;
- 7) clear orientation of services to the needs of consumers;
- 8) encouraging the development of the stock market and the banking sector;
- 9) attraction of private internal and external investments;
- 10) development of small and medium business;
- 11) variety of forms of long-term contracts concluded by the private sector with state and local bodies;

Disadvantages

- 1) the complexity of long-term forecasting due to changes in market conditions;
- 2) the presence of restrictions in some areas: tariff, license, etc.;
- 3) complexity of attracting investors in large projects;
- 4) availability of financial resources for implementation of infrastructure projects;
- 5) Inadequacy of the normative legal framework in the field of PPP.
- 6) long-term procedures planning in relation to budget investments;

Opportunities

- 1) normative legal framework for NDP development;
- 2) the country's development is limited for a certain period of time;
- 3) UzLiDeP cooperates with the executive committee of the political council of UzLiDeP;
- 4) knowledge in the field of DSHS and experience with tin and crack;
- 5) foreign economic activity;
- 6) "some dirt" news infiltration;
- 7) quality of service, low prices;
- 8) current jotisha standards graduates, fashion designer, technician, etc.

Threats

- 1) deterioration of the country's financial indicators depending on the price of mineral resources and the level of inflation;
- 2) lack of knowledge in the field of PPP;
- 3) lack of skilled personnel in the use of new technologies;

4) incompatibility of standards.

As can be seen from the results of the SWOT analysis, there are many factors that have a positive and negative impact on the use of the PPP mechanism. The analysis makes it possible to clearly determine what steps should be taken for the development of DHS and what problems should be given special attention.

A comparison of the advantages and disadvantages, opportunities and threats of the use of DHS allows us to draw the following conclusions:

- line ministries and local executive bodies can use internal factors and specific advantages in implementing projects using the PPP mechanism;
- the opportunities identified during the analysis may be the strengths of using the PPP mechanism in the future;
- these shortcomings require improvements.
- Threats such as lack of knowledge in the field of PPP require special attention and appropriate strategic actions should be taken to reduce them.

In order to encourage the use of the PPP mechanism in the near future, it is recommended and considered necessary to consistently implement the following steps:

1. Developing a state program for the development of foreign trade, which provides for further expansion of the areas of application of foreign trade mechanisms, creation of a legislative base in the field of foreign trade, provision of privileges and preferences, and comprehensive measures for the implementation of certain projects.

2. Amendments and additions to the Law "On Concession". Within the framework of the concession legislation, a number of legal documents affecting the planning and implementation of concession projects should be developed.

3. Adoption of the law "On Securitization". This, in turn, helps to determine the rights related to the sale and purchase of PPP projects during the operational period and to resolve disputes related to this period.

4. Implementation of the life cycle contract.

A life cycle contract is an ideal form of PPP in a budget deficit, and the government cannot participate in projects that require budget investments. A life cycle contract is a mixed type of contract based on a service contract. A life cycle contract may contain elements of other types of contracts, such as a trust contract. Under such a contract, the executor receives money only from the moment the object is made available for public use.

1. Private financial initiative model (PFI).

IMO-public services and contracts for works financed by the private sector, but the services are paid for by the state, not by consumers (for example, in projects related to lighting in the community, hospitals, schools, the state uses a long-term contract state-guaranteed procedure pays facility maintenance costs depending on placement and quality of service). At the same time, the right to property and maintenance remains private. At the end of the contract period, the state can extend the contract.

In this regard, it is necessary to consider the possibility of introducing this type of contract in the current legislation on concession issues.

2. Stimulating the practice of establishing special financial companies (SPV - Special Purpose Vehicle).

Financial assistance may be required to attract additional investments for the implementation of large-scale investment projects using the concession mechanism.

A possible solution to this issue can be the positive international practice of using a project financing tool, in which the concessionaire can be a special financial company created by the project sponsor to implement a specific project using the PPP mechanism.

Due to its flexibility, this form is an effective means of raising funds in an unstable economy.

A distinctive feature of the project financing tool is the assessment of the project's ability to generate current and future cash flows, which serve as a source of funds to service and repay the debt and pay the capital gains invested in the project. does.

3. Provide training and professional development of civil servants and representatives of the private sector. PPP is at the stage of development as a tool for the implementation of investment projects, therefore it is necessary to study the issue of improving the skills of civil servants and representatives of the private sector.

In this regard, it is appropriate to consider and organize seminars and trainings in the field of PPP in the training and advanced training programs of civil servants.

Conclusion

In conclusion, it should be said that the legal and institutional framework defining the principles, conditions and directions of PPP development, as well as mechanisms for assessing the impact of financial, technical and commercial risks on the budget system in the medium and long term, have not been developed. Therefore, in order to create a favorable environment for the implementation of PPP projects in Uzbekistan, it is necessary to improve the legislative base, adopt a number of new regulatory documents and make changes to the existing documents.

References

1. Law of the Republic of Uzbekistan "On Public-Private Partnership" of May 10, 2019 ORQ-537. <https://lex.uz/docs/4329270>
2. In connection with the improvement of the Legislation on Public-Private Partnership of the Republic of Uzbekistan, about making changes and additions to some legal documents of the Republic of Uzbekistan, as well as declaring some legal documents as invalid Law of January 22, 2021 ORQ-669. <https://lex.uz/pdfs/5235535>
3. Decree of the President of the Republic of Uzbekistan No. PF-101 of April 08, 2022 "on further reforms to create conditions for sustainable economic growth through the improvement of the business environment and the development of the private sector." <https://lex.uz/docs/5947775>
4. Decree of the President of the Republic of Uzbekistan dated January 28, 2022 "On the development strategy of the new Uzbekistan for 2022-2026" No. PF-60. <https://lex.uz/uz/docs/5841063>
5. Resolution PQ-3980 of October 20, 2018 of the President of the Republic of Uzbekistan "On the primary measures to create a legal and institutional basis for the development of public-private partnership". <https://lex.uz/ru/docs/4007891>
6. Resolution No. 259 of April 26, 2020 of the Cabinet of Ministers of the Republic of Uzbekistan "On improving the procedure for the implementation of public-private partnership projects". <https://lex.uz/docs/4798603>
7. Decision of the President of the Republic of Uzbekistan dated June 7, 2021 "On measures to organize modern greenhouse farms in the regions based on public-private partnership". <https://lex.uz/docs/5446729>

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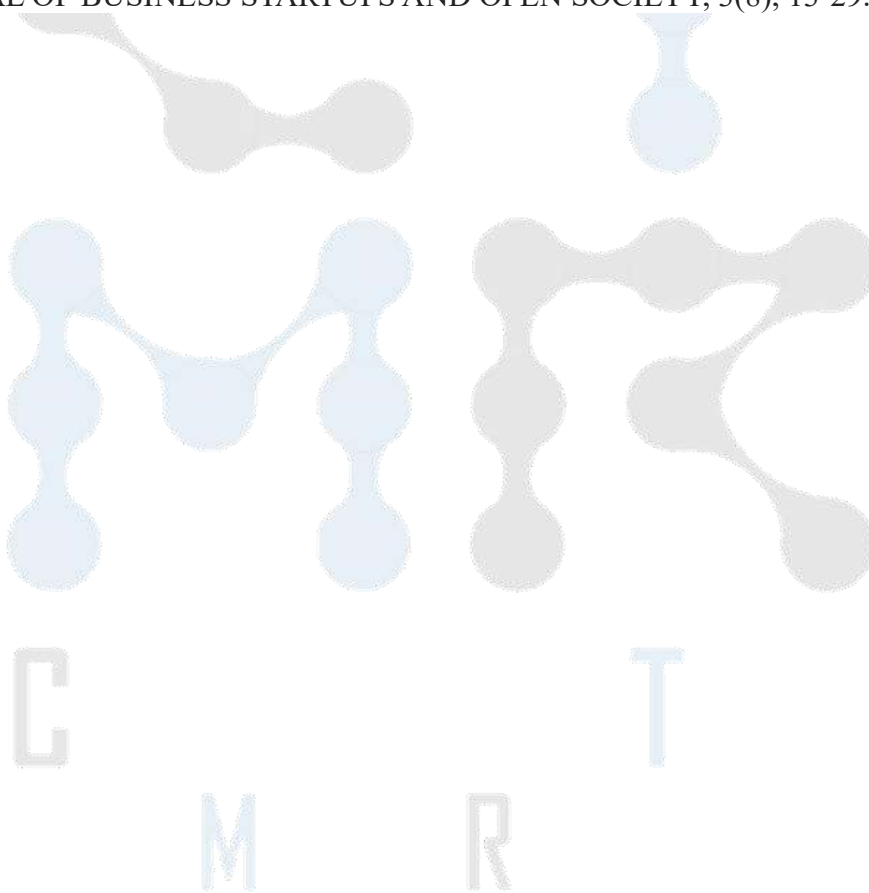
8. Decree No. PF-5138 of October 8, 2019 of the President of the Republic of Uzbekistan "On approval of the concept of development of the higher education system of the Republic of Uzbekistan until 2030". <https://lex.uz/docs/4545884>

9. Муракаева, З. И., & Амирова, О. К. (2023). НАУКА И АРМИЯ ГЛАЗАМИ ЖЕНЩИНЫ: ВЗГЛЯД ИЗНУТРИ. Herald pedagogiki. Nauka i Praktyka, 3(2).

10. Usmonjon o'g, A. U. B., Alimjon o'g'li, A. A., Bobirovich, Y. A., & Jamshid o'g'li, X. M. (2023). The State Authority System of the Republic of Uzbekistan and Its Organization. EUROPEAN JOURNAL OF BUSINESS STARTUPS AND OPEN SOCIETY, 3(8), 30-41.

11. Said o'g'li, S. S., & Abdurasul o'g'li, R. S. (2022). Psychological View of the Military Community. Pioneer: Journal of Advanced Research and Scientific Progress, 1(2), 5-12.

12. Usmonjon o'g, A. U. B., Nishon o'g'li, T. D., Nodir o'g'li, B. J., & Shuhrat o'g'li, A. Z. (2023). Management of Professional Promotion of Employees in Organizations. EUROPEAN JOURNAL OF BUSINESS STARTUPS AND OPEN SOCIETY, 3(8), 13-29.



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Abstract: this article analyzes socio-economic relations in the provision of public safety. In addition, the meaning of the concept of public safety and its role in the socio-economic development of the society were analyzed. In addition, legal documents in the field of public safety were analyzed.

Key words: public safety, social attitude, economic attitude, peace, concept, economic development.

In our country, a number of works are being carried out to ensure a peaceful and peaceful life of the population, to form a culture of public safety, as well as to improve the legislation in the field of public safety and to organize work in this direction based on the principle of "serving the interests of the people".

At the same time, in the conditions of today's globalization, it is necessary to consistently continue the measures implemented to ensure public safety, prevent crimes and fight against crime.

Peace and tranquility is a great blessing for all of us. If there is no peace and health, nothing will be good for a person. Neither the household nor the country can be at peace when it has lost its peace. And in a peaceful place there will be development.

In the conditions of today's globalization, the big and small sad events happening in different parts of the world, the worries of the people living there call us to be more aware and encourage us to live with the value of peace in our country.

public safety This means that the citizens of one region can live in harmony, each respecting the individual rights of the other. The State is the maximum responsible for the guarantee of public safety and prevention of changes in the social order.

In this sense, public security should be a universal service (should reach all people) to protect the physical integrity of citizens and their property. For this, there are security forces (like the police), who work together with the Judicial system.

Public security forces must prevent and prosecute crimes. The security forces are responsible for prosecuting the criminals and handing them over to Justice, to determine the appropriate punishments according to this law.

After the declaration of independence and the adoption of our Constitution, the issues of systematic provision of human rights and freedoms in all spheres of state life, in particular: economic, socio-political, spiritual, informational, political and other spheres, gained particular importance. At the same time, the socio-political situation formed in our country in the early days of independence is a complex, often conflicting set of processes, trends and events, including the financial and economic situation of the Republic of Uzbekistan in the market of goods and services, the delay in the payment of wages in the budget sector, the law - characterized by problems in the field of law enforcement, crime fighting and others.

Every year, thousands of public order crimes are registered, and even people die as a result

of crimes committed in public places. It should be said that the international practice of preventing, fighting against, and eliminating the consequences of various crimes and violations shows that one of the serious threats to the modern democratic state is the violation of the rights and freedoms of individuals and legal entities.

According to Professor A.M. Bandurka, it is necessary to look for extraordinary measures to solve "acute" social conflicts, which can be solved not by the initiative of "separate" politicians, but by strengthening the legal foundations of society and implementing effective reforms in various spheres of public life.

Today, it is often said that the state, as the leading subject of public security, protects abstract and non-specific things to a certain extent. However, experts and specialists attribute this to the lack of scientific research on this issue. Most of the studies were carried out within the framework of the interpretation of the legal and organizational bases of the activities of the internal affairs bodies to ensure public safety, in which the concept of "public safety" was developed within the framework of broad legal norms.

With the concept of "public security" in the "Concept of public security of the Republic of Uzbekistan" approved by the Decree of the President of the Republic of Uzbekistan dated November 29, 2021 PF - No. installation is of great importance for research, law, and enforcement practice. It should be noted that, in the context of the country's transition to a fundamentally new concept of security, the theoretical study of this issue has a new theoretical and practical significance. This is, first of all, due to a significant change in internal and external conditions for the development of our society and the entire country.

The importance of ensuring public safety is that this legal case draws attention to the complex processes taking place in the state. There is an opinion that ensuring national security, in particular, public security, in a certain sense, is a condition and at the same time the goal of reforming the country.

From the point of view of the general approach, it is necessary to pay attention to a number of difficulties in defining the concept of "public safety", which has all the necessary signs of a complex legal phenomenon. At the same time, "public safety", which reflects complex social processes and phenomena, objectively has a specific historical (therefore dynamic) nature and is closely related to all forms and directions of interaction in the "nature - man - society" system.

The relevance of scientific and practical problems in the field of public safety both in normal conditions and in emergency situations arises due to several reasons, in particular:

provision of public safety was brought to a new level in terms of the quality of legal regulation, i.e. it got out of the "departmental legal regulation" view;

- the state management bodies feel the need for special measures to ensure public safety, which will allow effective implementation of the actions of authorized entities for ensuring public safety, and the use of restrictive measures against individuals and legal entities in a certain area;

- the number of objects and territories whose activity determines the need to ensure the appropriate level of security, in particular, public security, is increasing. Ensuring the appropriate level of safety of the population helps to create conditions for their stable operation;

- measures used by competent bodies to ensure public safety in emergency situations are considered appropriate administrative and legal measures used by the state. The state of emergency is always accompanied by the instability of social life, the disruption of its usual rhythm, which in turn necessitates the use of these measures.

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It should be noted that in legal literature and official documents, the concept of "public security" is used to describe a situation in which various interests of the state are protected, real and potential risks, internal and external threats are minimized, and opportunities are created for the effective development of individuals and society.

This general theoretical definition reflects management and legal (administrative-legal) aspects, while ensuring public safety is the development of normative-legal documents as a guarantee of protecting individuals and society, ensuring their safe life, rights and freedoms. check-in, check-in and check-out.

If we stop to analyze the concept of "public safety", it should be noted that today in scientific works, many opinions have been formed regarding the definition of this legal category. The term "public safety" is widely used in various fields of scientific knowledge and in the practical activities of executive power bodies, as well as law enforcement agencies. However, despite its widespread use, today, unfortunately, there is no unified approach to the definition of "public safety". In this regard, to clarify the content of the concept of "public safety", it is appropriate to comprehensively interpret the scientific literature and the current legal documents.

Taking public safety into account, L. Rogozin defines it as "a system of public relations that is formed in accordance with legal norms, using objects that pose an increasing threat to society in the event of natural disasters or other special conditions."

According to S.I.Ghirko, public security as protection of society from internal and external threats is a very important theoretical and practical problem, its implementation, as well as other social relations, is directly related to defining the strategy of law enforcement in the country to ensure public security.

In the opinion of Professor L.L. Popov, public safety means the use of facilities and objects that pose an increased risk to people and society as a whole, in the event of unusual conditions, a natural disaster or other emergency situations of a social or man-made nature, legal, technical and other a system of public relations that occurs in accordance with the norms of the type is understood.

S. V. Stepashin believes that public safety is the quality of social relations, ensuring the consistent development of society in certain historical and natural conditions, and avoiding the dangers arising from internal and external conflicts that change their content and direction under the influence of various factors.

The original concept was proposed by B.P. Kondrashov. According to him, public security is a socio-legal category formed as a result of compliance and implementation of norms, a system of public relations whose inviolability is guaranteed by the state and society.

In this sense, it is necessary to distinguish the organizations or organizations around the world that are responsible for taking appropriate actions so that the citizens of a certain region or country are free from criminal activities and live in harmony. Thus, for example, Mexico has a national security system that, among other things, implements the distribution of powers between the municipalities or the Federal State itself for that matter.

In 1994, an organization of Mexican origin was established, which defines public security policies, regulates the procedure for the introduction of people into the security forces and bodies, controls these personnel and also databases. implements criminal statistics and all established security policies.

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In the same way, it should not be forgotten that in Spain there are several organizations that not only respond to the development of policies and actions in the field of public security, but also undertake the improvement of professionals working in this field. This is, for example, the Andalusian School of Public Safety (ESPA), where every day the police or firefighters, among other professionals, undertake seminars, courses and technical conferences with the specific aim of updating their duties. increase knowledge and skills to improve the quality of life for local citizens.

Usually big cities are facing public safety problems with high crime rate. In contrast, small cities often have better security conditions.

This is, in a sense, related to the public, because the city's millions of residents remain unknown. In villages, a person cannot commit a crime without anyone knowing.

Public safety, as well as social conditions related to the effectiveness of the police, the functioning of the judicial system, public policy, etc. Debate on the disease poverty Although many experts have a correlation between the level of poverty and the number of crimes, the issue of poverty has always been controversial.

We have always been a peace-loving nation. In order to ensure this peace and tranquility, special attention is being paid to ensuring a peaceful and peaceful life of the population in our country in the coming years and to forming a culture of law-abidingness and public safety in our society. In particular, completely new mechanisms and procedures for organizing work in the direction of public safety on the basis of the principle of "serving the interests of the people" were introduced, and mutual purposeful cooperation of state bodies with public structures was established.

In turn, various dangers and conflicts that are intensifying in the world, threats to the peace and tranquility of the country, pandemics, natural and man-made disasters are responsible for the priority of "All efforts for human dignity" in their activities. is tasked with further improvement based on the idea.

The decree of the head of our state "On approval of the concept of public security of the Republic of Uzbekistan and measures for its implementation" defined the promising directions of state policy in this field.

In particular, according to it, the concept of public safety of the Republic of Uzbekistan, developed on the basis of advanced foreign and national experiences in ensuring public safety and aimed at guaranteed protection of the population from any threats, will promote public safety in the Republic of Uzbekistan in 2022-2025. the strategy for the development of the supply system and the "roadmap" for the implementation of this strategy in 2022 were approved. The responsibility for ensuring the timely and effective implementation of the measures defined in the Concept, Strategy and "Roadmap" was assigned to the first heads of state bodies that ensure public safety.

Also, according to the decree, the Department of Public Security was established within the structure of the Ministry of Internal Affairs. To ensure the safety of the population in public places of the department, to take measures to effectively manage the forces and means of the internal affairs bodies, to prevent offenses among them by effectively organizing educational and preventive measures aimed at minors and young people, especially their unorganized part, or 'l-deals with tasks such as early prevention of traffic accidents.

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In general, the decree defines a number of other organizational and legal norms aimed at maintaining public safety. The goal is to ensure that our people live a contented, calm, peaceful and prosperous life from tomorrow.

The Constitution of the Republic of Uzbekistan takes priority in the legislative system in accordance with the step-by-step proportionality of normative legal documents regulating the activity of ensuring public safety. After all, the Constitution of the Republic of Uzbekistan, as the main law of the state, is an important legal basis for the development and systematization of national legislation, including legislation in the field of public safety.

While we are talking about the important importance of our constitution in ensuring public security, in its articles 3, 25, 57 and 125, the inviolability of every person, the inviolability of the borders and territories of our country, the protection of the constitutional system and the peaceful life and safety of the population and the defense potential of the Armed Forces it should be noted that the norms related to assistance have been established. In the event of an emergency situation related to a real external threat, mass disorder, major disaster, natural disaster, and epidemic, the introduction of a state of emergency in the entire territory of the country or in some parts of the country by the decision of the head of state is constitutionally established.

In the system of legal documents, which includes the legal provision of public safety activities, the constitutional norms acquire a special place and importance and are manifested in the following: take priority, first of all, in our Constitution itself, in particular, in the Republic of Uzbekistan in its Article 15, the unconditional recognition of the supremacy of the Constitution and laws of the Republic of Uzbekistan, and in the second part of Article 16, no law or other normative legal it follows from the content of the rule that the document may not conflict with the norms and rules of the Constitution.

Secondly, the Constitution of the Republic of Uzbekistan is important in the formation of all legal documents, including military legal documents.

Thirdly, if it is planned to create a new legal document as a result of systematization, including codification, it should include norms aimed at guaranteeing constitutional requirements. That is, "the activity of law creation is a legal tool for the implementation of the Constitution.

Fourthly, as the society develops, along with the formation of various new social relations, the laws, especially the Constitution, improve. Currently, the Constitution of the Republic of Uzbekistan is being reformed based on the principle of the social state. These reforms are literally making great changes and additions to our General Council based on the initiative and suggestions of our people.

It is worth noting that the norm related to ensuring public safety is reflected in paragraph 19 of Article 93 of the Constitution of the Republic of Uzbekistan on the powers of the President of the Republic of Uzbekistan, according to which the President of the Republic of Uzbekistan In order to ensure the safety of citizens in the event of situations (real external danger, mass disturbances, major catastrophes, natural disasters, epidemics), to introduce a state of emergency in the entire territory of the Republic of Uzbekistan or in some of its places, and to make a decision within three days It can be submitted for approval by the Chambers of the Oliy Majlis of the Republic of Uzbekistan. However, this norm serves the implementation of the powers of the President of the Republic of Uzbekistan within the framework of the Constitution to ensure the life, health, rights and freedoms of citizens in emergency situations that threaten public safety.

In the Constitution of the Republic of Uzbekistan, the main special rules of the state in the field of public safety are also strengthened. In particular, it is mentioned in the content of Articles 3,

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33, 35, 43, 57, 64, 70, 78, 93, 98, 125 and 126. For example, the inviolability of the state border and territory (Article 3), ensuring the political rights of citizens in connection with rallies, meetings and demonstrations (Article 33), the appeal of each person to the competent state body and their appeals consideration in accordance with the law (Article 35), ensuring the rights and freedoms of citizens enshrined in the Constitution and laws (Article 43), protecting the constitutional system (Article 57), sovereignty of the Republic of Karakalpakstan Republic of Uzbekistan protection by (Article 70) is one of them.

According to the second part of Article 125 of our Constitution, "The structure and organization of the Armed Forces shall be determined by law." That is, due to the regulation of the military construction sector, which is the most important activity of the state, the organization of defense and the management of the Armed Forces of the Republic of Uzbekistan will be under public control. This once again shows that the Constitution of the Republic of Uzbekistan is a democratic Constitution that embodies the universally recognized norms of international law. The Constitution of the Republic of Uzbekistan is the most important source of military law.

In our opinion, a brief analysis of the constitutional norms allows for the establishment of the priorities of the activity of ensuring the safety of man, society and the state in the provision of public security, their further clarification in normative legal documents, and the sustainable development of the culture of law enforcement. we count.

The main tasks of the strategy include:

regulation, systematization of relations in the field of public security and elimination of existing legal gaps and conflicts;

maintenance of public order, crime prevention, ensuring road safety and coordination of probation activities;

maintenance of public order, including the development of an algorithm for the joint movement of forces and means of ministries and agencies involved in public events and its continuous improvement;

wide implementation of modern forms and working methods and advanced information technologies in the activities of public safety provision;

minimization of the human factor in service activities by bringing the digitization of the public safety system to 90%;

Preventive accounting, administrative control and drastic reduction of recidivism by persons under probation control.

Conclusion

In conclusion, it should be said that the purpose of the strategy for the development of the public safety system in the Republic of Uzbekistan in 2022-2025 (hereinafter - the Strategy) is to introduce a qualitatively new system of public safety in the country, legal, development and effective implementation of methodological, scientific, organizational measures. It is envisaged to fully implement the measures defined in the strategy by the end of 2025, based on the concept of public safety of the Republic of Uzbekistan.

List of used literature

1. Constitution of the Republic of Uzbekistan 2023.
2. On the approval of the "road map" for the implementation of the strategy for the development of the public safety system in the Republic of Uzbekistan in 2022-2025.

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3. Decree of the President of the Republic of Uzbekistan "On measures to raise the quality of the activities of internal affairs bodies to a new level in the field of ensuring public safety and fighting crime", No. PF-6196 dated 03.26.2021
4. Tavakkal Choriyev, member of the Defense and Security Committee of the Legislative Chamber of the Oliy Majlis. <https://parliament.gov.uz/articles/1420>
5. Муракаева, З. И., & Амирова, О. К. (2023). НАУКА И АРМИЯ ГЛАЗАМИ ЖЕНЩИНЫ: ВЗГЛЯД ИЗНУТРИ. Herald pedagogiki. Nauka i Praktika, 3(2).
6. Usmonjon o'g, A. U. B., Alimjon o'g'li, A. A., Bobirovich, Y. A., & Jamshid o'g'li, X. M. (2023). The State Authority System of the Republic of Uzbekistan and Its Organization. EUROPEAN JOURNAL OF BUSINESS STARTUPS AND OPEN SOCIETY, 3(8), 30-41.
7. Said o'g'li, S. S., & Abdurasul o'g'li, R. S. (2022). Psychological View of the Military Community. Pioneer: Journal of Advanced Research and Scientific Progress, 1(2), 5-12.
8. Usmonjon o'g, A. U. B., Nishon o'g'li, T. D., Nodir o'g'li, B. J., & Shuhrat o'g'li, A. Z. (2023). Management of Professional Promotion of Employees in Organizations. EUROPEAN JOURNAL OF BUSINESS STARTUPS AND OPEN SOCIETY, 3(8), 13-29.
9. Usmonjon o'g, A. U. B., Ergashali o'g, T. U. A., Sadulla o'g'li, Z. S., & Ravshanbek o'g'li, Q. A. (2023). Laws and Principles Of Management. Central Asian Journal of Innovations on Tourism Management and Finance, 4(6), 174-186.
10. Usmonjon o'g, A. U. B., Raxmatullo o'g, T. X. N., Hakimovich, H. P., & Jahongir o'g'li, F. J. (2023). Provision of Information to Management. Central Asian Journal of Innovations on Tourism Management and Finance, 4(7), 152-166.
11. Olimjon o'g'li, O. O., & Shuxrat o'g'li, Z. I. (2022). The Main Features and Signs of "Relations Contrary to the Charter"(On the Example of Russian Experience). Web of Scholars: Multidimensional Research Journal, 1(5), 17-21.

The experience of foreign countries in improving the activities of auxiliary enterprises in military units

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Abstract: this article examines the experience of foreign countries in improving the activities of auxiliary farms in military units. In addition, the role and importance of the military industrial complex in the development of the military sector is highlighted. In particular, the experience of Russia and the USA, as well as information on the article from leading countries such as Germany, France, and China are presented.

Key words: subsidiary economy, military-industrial complex, innovative development, small innovative enterprises, industrial-innovative cluster.

The military-industrial complex (DIC) enterprises have a great role for the country's economy, because these enterprises preserved their scientific potential and production capacity during the difficult period of transition from the administrative economy to the market economy, which allows them today. production of highly competitive products in world markets.

At the current stage of development, defense industry enterprises receive very strong support from the state in the form of state defense orders as part of the program of rearmament of the country's army. This program has ultimate goals and outcomes. By 2020, directing defense industry enterprises to the production of civilian products is one of these goals, therefore, the experience of foreign countries in establishing mutually beneficial cooperation between defense industry enterprises and small innovative enterprises is of great interest. is shooting Such cooperation allows using the main resources of enterprises and organizations to create competitive high-tech products both in the arms market and in the civilian product market. It is also important to determine the conditions for the effectiveness of such interaction in the country's economy.

National defense, from the point of view of economic theory, production, as we know it, refers to the pure public goods that the state undertakes. However, the components of the defense complex are created both by state commercial and non-commercial enterprises, and by private enterprises, including small innovative enterprises. At the same time, it is of great interest to study the innovative component of defense production and the impact of this component on the innovative processes of the entire economy. Because it is an innovative component that allows countries to compete with each other in global arms markets and has a diffusion effect on other sectors of the economy.

The modern economy is characterized by the development of the global arms market, which shows very stable development indicators - the share of military expenditures in the world GDP varies at the level of 2.3-2.6%, the accumulated experience in creating a competitive product, which ensures stability. financial stability of the main players in the international arms market.

According to the Stockholm Peace Research Institute, the main countries leading the arms market in 2015 are the USA - 33%, Russia - 25%, China - 5.9%. The United States of America and Russia have long occupied the first places in the world ranking of major arms exporters. However, if the US arms market share increased from 29% to 33% in 2009-2015, Russia would

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lose its market share from 27% to 25% during the same period. Germany and France, which until recently held the third and fourth places in terms of arms exports, are giving way to China.

The United States occupies a leading position in the arms market, because there is a NATO bloc under the auspices of this country, and accordingly, the US spending on military needs in this bloc was 72.2% in 2015].

The experience of the impact of the US military-industrial complex on innovation processes

It is known that the United States has created an effective system of cooperation between the enterprises of the military-industrial complex and business structures, which can be considered "classic". Such a system began to take shape in the 30s of the 20th century and continued after the Second World War, in which loans were given to open companies for social purposes only, to rehabilitate ex-servicemen and return them to a peaceful life. to serve in the army. Later, a special department for financing and investment activities was established in the administration of the President of the USA, and its functions were significantly expanded. It began working as a prime contractor on federal contracts to supply goods and services to the military, contracts awarded to small businesses.

Maintaining the technological superiority of the US armed forces, preventing the sudden emergence of new technical means of armed warfare for the US, supporting advanced research and bridging the gap between basic research and its military application for the US Department of Defense (US Department of Defense) is conducting research that is divided into two main groups:

1. Internal R&D conducted in defense research laboratories (Livermore Laboratory, Los Alamos National Laboratory, Lincoln Laboratory, US Army Research Center, etc.);
2. "External" scientific and research work conducted in corporations, universities, small innovative enterprises, sometimes in cooperation with defense laboratories.

Accordingly, the implemented scientific projects have three directions:

- fundamental projects, as a rule, are financed by universities;
- practical research, often a continuation of basic research that is fully compatible with defense tasks; these studies, as a rule, are financed by enterprises of the military-industrial complex, with which the university can be a partner;
- practical research, at the stage of which the development has a special military application and has been tested. This type of work is usually carried out by the enterprise, sometimes in cooperation with a potential operational service.

The Defense Advanced Research Projects Agency (DARPA) has been established under the US Department of Defense to carry out fundamental research, and it actively works with US universities. This interaction is related to the institutional characteristics of the concentration of scientific and research personnel in large developed universities in the United States, which is significantly different from, for example, Russia, where the concentration of scientific personnel in specialized research centers prevails. , which does not always combine scientific and educational potential (in the Russian Federation, an exception to the rule may be the Novosibirsk academic town, where, along with educational institutions, scientific institutes are concentrated, where students do internships, etc.).

With the financial support of DARPA, scientific and research work is carried out not only on military issues, but also on bilateral technologies. Thus, in the organization of the work of the Internet, in the production of semiconductors and integrated components, there are developments carried out with the direct participation of DARPA.

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In addition to purely defense research funding, which accounted for 18% of DARPA's budget expenditures in 2011, materials and biotechnology (~10.1% of the budget), advanced aerospace systems (9.8% of the budget), and electronics technology (~9.2% of the budget).

This type of cooperation between the state, business and science is beneficial for all parties. The first party receives its military orders using the latest, state-of-the-art technology. The second is to re-equip the material and technical base at the expense of loans, and will have the opportunity to conduct scientific research, and the third is to attract talented students to scientific research in close cooperation with business, and then they will have the opportunity to become employees of large enterprises. owners of concerns or small small enterprises implementing innovative developments. In addition, small innovative companies make it possible to obtain high-quality services/products at an acceptable price-quality ratio.

In the global innovation index published in 2015, the United States is ranked 5th, Russia is 48th, and Switzerland is leading.

As noted by the co-author of the lecture and the head of the deanery. Ann and Elmer Lindseth Graduate School of Management. Samuel Curtis Johnson at Cornell University, "Quality of innovation matters. Building top-notch universities and investing in research is critical to continuing to lead the global race for successful innovation."

The Russian defense industry occupies a special place in the structure of the national economy. It is the most competitive part of the non-resource sector of the economy, solves the problems of creation and production of modern types of weapons and military equipment, meets the needs of the civil industry for high-tech products that require knowledge. despite this, the defense industry is the only production industry capable of solving many technological problems at the level of modern requirements. Currently, according to the information of the Interdepartmental Analytical Center, more than 70 percent of all scientific products produced in our country are contributed by the defense industry, more than 50 percent of all scientific workers are employed in the defense industry. and can play an important role in ensuring the new quality and pace of development of the country's economy as a whole.

The regions least affected by the current economic situation, as noted in the report of N. Zubarevich, director of the regional program of the Independent Social Policy Institute, "Crisis in Russia - regional forecast: what to expect and what to prepare for." The crisis in Russia is the agro-industrial sector, the regions where oil and gas enterprises are located, as well as the regions where there are enterprises of the defense industry. Because these enterprises are strongly supported by the state in the modern economic reality.

According to RINCCE, a scientific research institute of the Federal State Budgetary Institution, the costs of technological innovations are mainly financed from the state budget, and the volume of these costs is increasing every year.

There is a clear trend of reduction in the amount of own funds of organizations allocated to financing technological innovations - from 79.9 percent in 2005 to 51 percent in 2014. activities related to the use of computing and information technologies, scientific research and development decreased from 88.6 percent in 2005 to 26.2 percent in 2014, budget funds for these purposes increased from 0.7 percent in 2005 to 55.4 percent in 2014 appeared. Of course, part of these funds was directed to defense industry enterprises.

With an appropriate, functioning mechanism of interaction between defense industry enterprises and small innovative enterprises, which can also be created in universities, a

sufficiently high diffusion effect can be obtained for the development of the entire national economy.

For this, there are all internal incentives for defense industry enterprises, which should increase the volume of civilian products by 30% by 2015 and by 2020. But as M. Remizov, president of the National Strategy Institute, noted at the roundtable discussion "Growth points of the regional economy: the interaction of the defense industry and small and medium-sized enterprises", held on May 25, 2016 in Voronezh - "We (in the defense industry) have established a price system that does not always encourage savings; it is profitable. Invest more. And this is unacceptable in the civilian market." Therefore, attracting small/medium innovative businesses it is vital not only for defense industry enterprises, but also for the economy as a whole. It is defense industry enterprises that can and should involve small enterprises in the implementation of the state defense order (SDO) for the fulfillment of orders - all the organizational and legal mechanisms for this are in place, which strengthen cooperative relations. Create less painful conditions for the transition of defense industry enterprises to the production of civilian products by 2020 d. In addition, such cooperation increases the competitiveness of the civil sector of the engineering industry, which is known to have a high multiplier effect.

Such cooperation is possible in the conditions of subcontracting, outsourcing, business incubation and innovation cluster (industrial-innovation cluster).

In our opinion, the most successful option for cooperation is an industrial-innovative cluster, which includes small innovative enterprises, including enterprises established on the basis of leading specialized universities and parent enterprises of the defense industry, which confirms the experience of successful countries. High results in adapting the defense industry to market conditions, the first general US experience.

The clustering effect is formed by optimizing the costs of parent enterprises by transferring high-risk innovative projects to small enterprises. Small innovative enterprises are more adapted to such activities if they have the core competencies of personnel, technology and equipment specialized in research activities.

In recent years, the Russian state has paid enough attention to the development of industrial policy, including the defense industry. A number of regulatory and legal documents aimed at activating these processes have been adopted. The main ones are: the national standard of the Russian Federation 56425-2015; Resolution No. 1119 of the Government of the Russian Federation; Federal Law No. 488-FZ of December 31, 2014; Resolution of the Government of the Russian Federation dated July 31, 2015 No. 779 and others.

In modern conditions, the considered mechanism does not work very effectively, because, as experts have pointed out, there are a number of specific features in the relationship between defense industry enterprises and small/medium businesses. First, the conditions for organizing and accepting jobs in the defense industry are stricter. The second is the existence of state secrets and the need to create such working conditions for their preservation. The third feature is that large concerns tend to buy small innovative businesses or outgrow a specialist who is engaged in the necessary development.

In addition, the creation of clusters for the simple use of budget funds often leads to their inefficient use and the manifestation of the element of corruption in the defense industry.

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The above characteristics of cooperation are determined by the shortcomings of legal regulation and, among other things, the specific characteristics of licensing activities of SMEs engaged in innovative developments in the field of weapons and military equipment (WME). Federal Law No. 275-FZ of December 29, 2012 "On the Order of State Defense" defines the requirements for the initial qualification of participants (qualification requirements, experience in providing defense and security needs, financial limitations), which are small organizations will be beyond their capabilities. enterprises. Decree of the Government of the Russian Federation dated June 13, 2012 No. 581 "Licensing the development, production, testing, installation, assembly, maintenance, repair, disposal and sale of weapons and military equipment" The decision "on" significantly limits the participation of small and medium-sized business entities. State defense order (GOZ) due to a large number of requirements, for example, ownership of property (equipment) to carry out activities, having the right to carry out activities related to the use of information included in state secrets (in cases provided for by the rules). legislation of the Russian Federation) and others.

These regulations contradict the decision of the Government of the Russian Federation dated July 31, 2015 No. 779 "On Industrial Clusters and Specialized Organizations of Industrial Clusters". state defense order.

Federal Law No. 275-FZ "On State Defense Order" No. 44-FZ "On State Defense Order" "Contract system in the field of procurement of goods, works, services meeting state requirements" Similar to the law on ", it is necessary to make changes on the participation of small and medium-sized enterprises in the state defense order. and municipal needs", as well as to reduce licensing requirements for small and medium-sized businesses in the field of weapons and military equipment, but not to harm the security of the country. That is, in accordance with the innovative development strategy of the Russian Federation for the period up to 2020, adopted in 2011, it is necessary to eliminate norms that hinder technological development and do not ensure increased safety.

Conclusion

In conclusion, it can be said that a very successful experience of cooperation between small innovative business and enterprises of the military-industrial complex, in particular the USA, has been accumulated. In the post-restructuring economy of the country, it was the defense industry enterprises that managed to preserve their innovative potential, which allows them to maintain one of the leading positions in the world arms market. In modern conditions, innovation processes occur faster, so there is a need to quickly adapt defense industry enterprises to market conditions. The state industrial policy directs defense industry enterprises to cooperate with small innovative enterprises and institutions, which allows them to solve scientific and technical problems, increase their efficiency and maintain competitiveness. However, the existing mechanism of cooperation between small innovative and defense industry enterprises does not give the desired results. Therefore, in the current institutional environment where it is necessary to eliminate legal conflicts, there is a need to improve the mechanism of encouraging cooperation of the parties aimed at mutually beneficial cooperation.

References

1. *Abreu C.* Pafses da NATO travam cortes na Defesa Electronic resource // Expresso. - 2016. January 28. - Mode of access: <http://expresso.sapo.pt/internacional/2016-01-28- Paises-da-NATO-travam-cortes-na-Defesa>

2. The Global Innovation Index 2015: Effective Innovation Policies for Development [Electronic resource] // The Global Innovation Index. - 2015. - Mode of access: <https://www.globalinnovationindex.org/gii-2015-report>
3. Глобальный инновационный индекс 2015 [Электронный ресурс] // Всемирная организация интеллектуальной собственности (WIPO). - 2015. - Режим доступа: http://www.wipo.int/econ_stat/ru/economics/gii/#about
4. Молодан И.В., Лухтер А.В. Институциональные аспекты управления предприятиями
ОПК // Решетневские чтения. - 2015. - Т. 2. - № 19. - С. 358-360.
5. Инновационная деятельность в Российской Федерации [Электронный ресурс] // Статистика науки и образования. - 2015. - С. 19. - (Статистика науки и образования, Вып. 7). - Режим доступа: http://www.csr.ru/archive/stat_2015_inno/innovation_2015.pdf
6. Федеральный закон от 02.08.2009 № 217-ФЗ «О внесении изменений в отдельные законодательные акты Российской Федерации по вопросам создания бюджетными научными и образовательными учреждениями хозяйственных обществ в целях практического применения (внедрения) результатов интеллектуальной деятельности» (ред. от 29.12.2012).
7. Круглый стол «Роль и место малых и средних предприятий в системе оборонно - промышленного комплекса РФ», 20 ноября 2015 г. [Электронный ресурс] // МК Инвест: Промышленный консалтинг. - 2015. - Режим доступа: <http://www.mkinvest.ru>
8. Муракаева, З. И., & Амирова, О. К. (2023). НАУКА И АРМИЯ ГЛАЗАМИ ЖЕНЩИНЫ: ВЗГЛЯД ИЗНУТРИ. Herald pedagogiki. Nauka i Praktyka, 3(2).
9. Usmonjon o'g, A. U. B., Alimjon o'g'li, A. A., Bobirovich, Y. A., & Jamshid o'g'li, X. M. (2023). The State Authority System of the Republic of Uzbekistan and Its Organization. EUROPEAN JOURNAL OF BUSINESS STARTUPS AND OPEN SOCIETY, 3(8), 30-41.
10. Said o'g'li, S. S., & Abdurasul o'g'li, R. S. (2022). Psychological View of the Military Community. Pioneer: Journal of Advanced Research and Scientific Progress, 1(2), 5-12.
11. Usmonjon o'g, A. U. B., Nishon o'g'li, T. D., Nodir o'g'li, B. J., & Shuhrat o'g'li, A. Z. (2023). Management of Professional Promotion of Employees in Organizations. EUROPEAN JOURNAL OF BUSINESS STARTUPS AND OPEN SOCIETY, 3(8), 13-29.
12. Usmonjon o'g, A. U. B., Ergashali o'g, T. U. A., Sadulla o'g'li, Z. S., & Ravshanbek o'g'li, Q. A. (2023). Laws and Principles Of Management. Central Asian Journal of Innovations on Tourism Management and Finance, 4(6), 174-186.
13. Usmonjon o'g, A. U. B., Raxmatullo o'g, T. X. N., Hakimovich, H. P., & Jahongir o'g'li, F. J. (2023). Provision of Information to Management. Central Asian Journal of Innovations on Tourism Management and Finance, 4(7), 152-166.
14. Olimjon o'g'li, O. O., & Shuxrat o'g'li, Z. I. (2022). The Main Features and Signs of "Relations Contrary to the Charter"(On the Example of Russian Experience). Web of Scholars: Multidimensional Research Journal, 1(5), 17-21.

Development history, place, role, tasks and structure of clothing service (in the case of Russia)

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Abstract: this article describes the genesis of the history of the development of the clothing service. In addition, the place and role of the clothing service, as well as its tasks, were analyzed. The structure of the clothing service is highlighted.

Key words: clothing, supply, mission, structure, history, equipment, army, military personnel, military supply.

With the accession of Peter the Great, a period of radical transformation of the Russian armed forces began. A regular army was formed to replace the local troops, archers and various regiments of the foreign regime.

From 1699 all newly formed regular regiments were to receive all clothing, equipment, and other allowances from the treasury in time of peace and war. Meeting the needs of the army under this new order of supply was beyond the authority of rank and other commands, and necessitated the establishment of independent departments to take over all the concerns of the economy of the troops.

The Special Order was established by royal decree of February 18, 1700. The "Special Order" was tasked with providing the regiments with clothing, equipment, and wages.

The publication of states, tables and rules began two years after the Poltava victory. Prior to the issuance of administrative regulations, economic bodies followed private orders or acted "as usual" in their actions.

In 1708, a single office was established for the purchase of clothing, linen, shoes, and equipment. Subsequently, there were three such offices, namely: the Infantry Uniform Office, the Cavalry Uniform Office, and the Izhora Uniform Office.

With the new administrative structure of the Russian state based on the decree of Peter the Great on December 18, 1708, according to which the entire territory of Russia was divided into 8 regions and 39 regions under the control of governors. governors, the importance of military order, as well as central institutions temporarily fell. After this reform, it was determined that all state duties and expenses would be transferred to the provincial treasury, so that all the needs of the army could be met without worrying about the government, that is, from the full-fledged provinces. troops are decentralized.

In 1711, funds for the maintenance of all regiments were allocated to the provinces, and special commissioners were appointed from them to each separate division, who had to solve all issues of providing the regiments with clothing and ammunition. , wages and food. The purchasing part also went to the regions. They were sent the necessary samples for instructions on how to make uniforms and clothes.

The abnormality of this system of providing for the army was soon discovered, and from 1713 it was ordered that not only uniforms, but all clothing items be remade in the uniform offices, where the governors were required by law to send money. count.

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The abnormality of this system of providing for the army was soon discovered, and from 1713 it was ordered that not only uniforms, but all clothing items be remade in the uniform offices, where the governors were required by law to send money. count. Instead of divisional commissions, warehouses were formed, which were not associated with any combat unit of the troops, but with a well-known local region.

Local depots were established in St. Petersburg, Riga, Smolensk, Kiev, Kherson, Moscow, and Kazan to directly supply the troops. Depot included the following members: commissary commission; separate commission agents and titles for some points distant from the depot; all commissary institutions in the area.

Each depot also consists of an "availability" and a "workshop", and each additionally has: a treasury department, levels for various tasks, and parcels for preparing items and receiving them. queues for delivery consisted of groups of convoy transport. with things.

The clothing allowance was organized according to the approved deadlines and was implemented according to the mixed system. The troops received some items ready-made, while other military units were given money or supplies. Military units were mainly supplied with ready-made goods: ammunition and equipment, saddles and horse equipment, hats without tools, cloth and linen, leggings and leather goods. Troops were often paid for other things. In some cases, as an exception, with the consent of the commissary departments, the troops could receive everything ready or with all the money.

In 1812, the Military Ministry was established instead of the Military College. In the administration of the Central Commissariat, expeditions received the name of departments. An Army General Field Headquarters was established to manage the Army's economy, which included the Army Quartermaster's Department and the Field Commissary's Department.

The Field Commissariat Department was headed by the Chief Kriegs Commissar and consisted of commissariat commissions under the office, troops, and each separate corps. The office is divided into three sections and a special computer desk. The first division was responsible for the provision of the army and hospitals, the second division distributed supplies and looked after the reserves located within the state. The third department was in charge of hospitals. A special calculation table that deals with reports and accounting.

The left commissar commission consisted of "presence" and "cabinet". "This" includes: the manager of the commission and three members. The office is divided into six desks. Both tables were under the special control of one of the "current" members. The leadership of the commissariat commissions was entrusted to the following: those located under the troops - lieutenants of the chief commissariat, and commissions under separate corps - chief commissariat masters. Such military-economic management lasted until the 60s of that century.

The main disadvantage of this device was its excessive centralization. The concentration of administrative power in the central apparatus deprived the administrative bodies of their independence and limited them to small controls. And also, the commissary department, on the one hand, was responsible for receiving, storing and issuing various things, and on the other hand, for administrative orders.

The Commissariat Commission managed the preparation of things and at the same time participated in their reception and delivery to the troops.

During the military reform of Milyutin, three military districts were created, in which, among other administrative bodies, local economic departments were established.

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In 1864, the General Quarters Department was formed from the Commissary and Supply Departments, which underwent various minor changes until the revolution of 1917.

In 1867, a Technical Committee was established within the Directorate of General Quarters, which was transformed from the commission for the introduction of technical improvements in the commissariat and supply units, which had existed since 1863. Since then, the wide use of technology in the production, reception and storage of various commissary items has begun. It should be noted that the emperor was a member of the technical committee.

With the formation of the Red Army, a new stage in the development of the uniform service began. In 1917, the Military Revolutionary Committee (MRC) was formed in Petrograd and was entrusted with the functions of organizing material and other types of material and technical support.

An Army Economic Committee (Arkhozkom) was created to manage military-economic activities, which in June 1918 was renamed the General Military-Economic Directorate of the Red Army.

Military economic departments were also established in military districts (OVHU) and fronts (VHU front).

Order No. 322 of the Supreme Soviet of January 31, 1922 introduced uniform uniforms and insignia for the units of the Red Army for the first time. The direct supply of troops with clothes was entrusted to the district supply authorities.

By the decision of the Council of People's Commissars No. 39 of August 9, 1935, the Department of Military Economy was divided into two: Department of Clothing and Cargo Supply and Department of Food Supply.

In August 1935, by order of the NPO, categories of clothing and footwear repair were established (small, medium, capital repair and restoration).

According to the order of the NPO of February 19, 1938, the functions of the bathroom and laundry services of the Red Army were transferred to the Military Sanitary Department of the Red Army.

Starting from March 1, 1940, a number of organizational measures were implemented based on the experience of combat operations in the Red Army. The Red Army Cargo Supply Department was reorganized into two independent departments in the center and district: the Red Army Cargo Supply Department and the Red Army Cargo Supply Department.

Four departments were established in the center: supply of clothing, supply of transportation, supply of food and housing fund.

On March 1, 1940, two independent departments were created from the Red Army's Department of Packing and Clothing Supply: the Department of Clothing Supply of the Red Army and the Department of Packing and Economic Supplies.

There is no set period of time for wearing active duty military uniforms during wartime. Things were changed because they were actually obsolete and completely unfit for further use.

At the beginning of the war, the Clothing Supply Department managed the bathing and laundry services for the troops. From September 1941 and throughout the war, the General Military Sanitary Department managed bath and laundry services for Red Army troops.

At the beginning of 1942, the supply of clothing to the Red Army was particularly stressful. In the east, the evacuated textile, tailoring and leather-shoe factories were not yet operational, and

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the existing factories, factories, and workshops still lacked raw materials, electricity, fuel, and labor.

The release of the clothing property of the Red Army began to be carried out according to monthly and quarterly plans - orders approved by the State Defense Committee at the suggestion of the People's Commissariat of Defense. Delivery of clothing to the fronts and military districts was carried out according to the monthly limits approved by the State Defense Committee for each front and military district.

In April 1946, in connection with the establishment of the Ministry of the Armed Forces of the USSR, the Department of Uniform Supply of the State Administration of the Air Force was renamed the Department of Uniform Supply of the State Administration of the Armed Forces.

The clothing service in the Great Patriotic War successfully fulfilled the tasks of providing the front with all the necessary things.

In connection with the establishment of the Ministry of War in March 1950, the directorate was renamed the Department of Clothing and Cargo Supply of the Ministry of War.

In December 1950, the Technical Committee became part of the Department of Clothing and Cargo Supply of the State Department of the Ministry of War.

In connection with the establishment of the Ministry of Defense of the USSR in March 1953, the directorate was recognized as the Department of Clothing and Cargo Supply of the State Institution of the Moscow Region.

From June 1953, the directorate was renamed the Department of Clothing and Cargo Supply of the Ministry of Defense.

In March 1954, the Department of Clothing and Cargo Supply of the State Military District of the Moscow Region took over the maintenance, accounting and provision of soft equipment and property to units and institutions from the Military Medical Department of the Moscow Region. bath and laundry services to them troops.

In May 1955, the position of chief quartermaster of the Ministry of Defense and its staff was abolished. The Department of Clothing and Convoy Supply of the GI MO was renamed the Department of Clothing and Household Supplies of the Ministry of Defense of the USSR, subordinated to the head of material and technical support of the Ministry of Defense of the USSR, and from December 1959 - Defense of the USSR deputy minister - head of the department of material and technical support of the Ministry of Defense of the USSR.

Departments of clothing and household goods were established in the military districts under the command of the deputy commander of the district troops for rear services.

From June 1958, during the reorganization, the Department of Supply of Uniforms of the Ministry of Defense of the USSR was established. Corresponding changes have also taken place in the organization of clothing supply departments (troops, fleet groups) of military districts. This name lasted until 1978.

In July 1961, troop bathing and laundry services were transferred from the Department of Defense's Military Medical Office to the Department of Defense's Clothing Supply Department and the Department of Defense's Central Military District Bath and Laundry Department. created.

Since November 1978, the directorate was renamed the Central Material and Technical Directorate of the Ministry of Defense and was transferred to the new headquarters No. 1/27, which consisted of a command, a scientific and technical committee, six departments, a secret department and a directorate. administrative and economic part.

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The current state of the supply system is the subject of study in economics and supply management.

When talking about the role of the clothing service in the logistics system of the Armed Forces, first of all, it is necessary to highlight the main, main feature, because it is aimed at directly meeting the needs and requirements for personal clothing, shoes and equipment. , washing in the bathroom with changing underwear and sheets, repairing clothes and other household services.

Provision of clothing is a type of material provision of the Armed Forces of the Russian Federation, other troops, military structures and bodies, in order to determine their need for property and technical equipment of the clothing service, sleep includes a set of measures. uniform service - clothing property, panels of battle flags, standards and pennants of the Minister of Defense of the Russian Federation and the heads of federal executive bodies, in which the federal law provides for military service, bathroom equipment, cleaning and repair materials, and shoe care. products, convoy property, equipment (except equipment related to the technical means of clothing service) and materials for clothing repair and bathroom and laundry services, materials and spare parts for the specified equipment .

Technical means of clothing service means washing, dry cleaning and repair of clothes, washing of employees, repair and maintenance of technical equipment of clothing service, mobile household service complexes, bathroom-laundry disinfection trains , as well as technological means are understood. auxiliary equipment of field laundries, baths, dry cleaning and repair workshops, materials and spare parts for specified technical tools and equipment.

Clothing property includes military uniforms, badges, bedclothes, sheets and blankets, special and sanitary equipment, tents, tarpaulins, soft containers, sports and mountaineering equipment, fabrics and materials for the production of clothing items, and consumables.

Badges mean military ranks of military personnel of the Armed Forces of the Russian Federation, other troops, military structures and bodies, branches of the Armed Forces of the Russian Federation, divisions of the armed forces and services, and functional signs. goals and personal goals.

management of such property and tools, their development, purchase, maintenance, use (wear and tear (use), consumption), modernization, repair and disposal (sale), bathroom and laundry services , as well as managing the activities of the clothing service bodies of the Armed Forces of the Russian Federation, other troops, military structures and bodies on issues of supplying the specified troops (forces) with uniforms.

The property of the clothing service means the property of clothing, panels of military flags, standards and flags of the Minister of Defense of the Russian Federation and heads of federal executive bodies, where the federal law provides for military service, bathroom equipment, washing. and repair materials, shoe care products, convoy property, equipment (except equipment related to the technical means of clothing service) and materials for the repair of clothing equipment and bathroom and laundry services, clothes materials and spare parts for said equipment.

Conclusion

In conclusion, it should be said that the clothing service is the main basis of military supply and has a long historical development. Technical means of clothing service means washing, dry cleaning and repair of clothes, washing of employees, repair and maintenance of technical equipment of clothing service, mobile household service complexes, bathroom-laundry

disinfection trains, as well as technological means are understood. auxiliary equipment of field laundries, baths, dry cleaning and repair workshops, materials and spare parts for specified technical tools and equipment.

Clothing property includes military uniforms, badges, bedclothes, sheets and blankets, special and sanitary equipment, tents, tarpaulins, soft containers, sports and mountaineering equipment, fabrics and materials for the production of clothing items, and consumables.

References

1. Екатерина Александровна Гуцина – курсовой офицер, преподаватель Вольского военного института материального обеспечения – филиала Военной академии материально-технического обеспечения имени генерала армии А.В. Хрулева (г. Вольск).
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3. Контактные данные для связи с авторами (Курбанов А.Х.): 190000, Санкт-Петербург, наб. Макарова, дом 8 (Russia, St. Petersburg, Makarova emb., 8). E-mail: kurbanov-83@yandex.ru
4. Курбанов А.Х., Красовитов Р.А. Перспективы применения технологий «Индустрии 4.0» в интересах ресурсного обеспечения военных потребителей // Теория и практика сервиса: экономика, социальная сфера, технологии. 2019. № 4 (40). С. 41-45
5. Курбанов А.Х., Красовитов Р.А. Перспективы применения технологий «Индустрии 4.0» в интересах ресурсного обеспечения военных потребителей // Теория и практика сервиса: экономика, социальная сфера, технологии. 2019. № 4 (40). С. 41-45
6. Муракаева, З. И., & Амирова, О. К. (2023). НАУКА И АРМИЯ ГЛАЗАМИ ЖЕНЩИНЫ: ВЗГЛЯД ИЗНУТРИ. Herald pedagogiki. Nauka i Praktyka, 3(2).
7. Usmonjon o'g'li, A. U. B., Alimjon o'g'li, A. A., Bobirovich, Y. A., & Jamshid o'g'li, X. M. (2023). The State Authority System of the Republic of Uzbekistan and Its Organization. EUROPEAN JOURNAL OF BUSINESS STARTUPS AND OPEN SOCIETY, 3(8), 30-41.
8. Said o'g'li, S. S., & Abdurasul o'g'li, R. S. (2022). Psychological View of the Military Community. Pioneer: Journal of Advanced Research and Scientific Progress, 1(2), 5-12.
9. Usmonjon o'g'li, A. U. B., Nishon o'g'li, T. D., Nodir o'g'li, B. J., & Shuhrat o'g'li, A. Z. (2023). Management of Professional Promotion of Employees in Organizations. EUROPEAN JOURNAL OF BUSINESS STARTUPS AND OPEN SOCIETY, 3(8), 13-29.
10. Usmonjon o'g'li, A. U. B., Ergashali o'g'li, T. U. A., Sadulla o'g'li, Z. S., & Ravshanbek o'g'li, Q. A. (2023). Laws and Principles Of Management. Central Asian Journal of Innovations on Tourism Management and Finance, 4(6), 174-186.
11. Usmonjon o'g'li, A. U. B., Raxmatullo o'g'li, T. X. N., Hakimovich, H. P., & Jahongir o'g'li, F. J. (2023). Provision of Information to Management. Central Asian Journal of Innovations on Tourism Management and Finance, 4(7), 152-166.
12. Olimjon o'g'li, O. O., & Shuxrat o'g'li, Z. I. (2022). The Main Features and Signs of "Relations Contrary to the Charter"(On the Example of Russian Experience). Web of Scholars: Multidimensional Research Journal, 1(5), 17-21.

The main criteria and levels of ensuring food safety

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Abstract: food safety is an important element of national security, therefore its provision is one of the most important tasks of any country. The strategy and tactics of ensuring food security of the country should be based on the results of an impartial assessment of its level in the cross-section of regions. In the article, the criteria and indicators for evaluating the integral indicator of food security in the region, that is, five criteria (physical and economic availability of food, nutritional balance, food quality and safety, stability of the food system), each of them it is proposed to describe one, a set of indicators is defined.

Key words: food security, region, food security criteria and indicators of the region, evaluation, integrated indicator of food security.

Food security is a state of reliable protection of the vital interests and basic foundations of the existence of the individual, society and the state from internal and external threats, in which it is possible to provide the main types of food through our own production. with the mandatory priority of the weakest, disadvantaged groups and the entire population of the country, provided that there is physical and economic availability of food products in the quantity and quality necessary for the full or maximum maintenance and preservation of human life and capacity. independence of the state from external sources of food.

The national interests of the state in the field of agro-food include:

- 1) to ensure the necessary volume of its own food production;
- 2) maintaining the state food stock at a normative level;
- 3) ensuring compliance of the quality of produced and sold food products with quality and food safety standards;
- 4) ensuring the necessary standard of living, decent level and high quality of healthy life of the population;
- 5) ensuring the creation of an effective management system of the agrarian sector of the economy;
- 6) expanding the production of competitive food products for export;
- 7) development of the material and technical base of agriculture and processing industry;
- 8) implementation of a single scientific and technical policy in the agro-food complex;
- 9) implementation of state control over the food market (including production, external and internal supply, accounting and control of food supply).

Threats to food safety are divided into internal and external. Internal threats include: 1) increased dependence on food imports;

- 2) excessive openness of the economy;
- 3) criminalization of economic relations.

External threats include:

- 1) technological blockade, the risk of which is increasing due to lagging behind in the

scientific and technical sphere;

- 2) the loss of foreign and foreign trade markets;
- 3) excess production of food products in other countries;
- 4) economic and financial dependence on other countries.

Food security is a functional, organizational, resource and technological (economic, social and environmental relations) system formed from interrelated subsystems, the main goal of which is reliable (continuous), adequate supply the resource structure system of the demographic population consisting of quality satisfaction of the population's need for essential (basic) food products.

The system-creating factor of the formation of this system is the agro-industrial complex, all of its sub-complexes are aimed at solving the problems of ensuring food security and food independence of the country.

The functional-purpose subsystems of the food security system include the agro-industrial complex, the sale and distribution of food products, the subsystems of food stocks and consumption. The supporting subsystems are: management; financial assistance; information supply; logistics; technological support; research and innovation.

Food safety includes horizontal and vertical components. At the same time, the horizontal structure involves considering the country's food security as an integral part of national security.

The place and role of food safety is reflected in the interrelationship with other components of the national security system.

Thus, the external political security of the state is largely determined by the level of solving the food problem in a given country. The dependence of the state on the supply of food raw materials, food products and means of production to the agro-industrial complex leads to the complete or partial loss of the country's geopolitical position and sovereignty. However, the problem of food security should not be considered only from the point of view of limiting the volume of food imports, because the country is not protected from the consequences of the population's consumption of genetically modified agricultural products. Annual sales of transgenic products (corn, soybeans, chicory, potatoes, pumpkins, pumpkins, sugar beets, tomatoes, radishes, cotton and flax) in the world exceed 20 billion dollars. In this regard, it is necessary to create a legal framework to limit control over the production and use of such products.

The military-strategic security of the state is largely related to the supply of food to the armed forces, as well as the size and quality of the food supply. Therefore, food security is an important condition for ensuring the state's defense capability. At the same time, military-strategic security helps maintain the material and technical base of agriculture and the entire agro-industrial complex, allowing them to function without the effects of the devastating effects of war.

Economic security issues are directly related to food production issues. The general state of the economy largely depends on how successfully the agro-industrial complex operates. Rapid development of the agro-industrial complex, in particular, its leading branch - agriculture, is a decisive condition for the consistent development of the economy, not for increasing and improving the quality of food resources while reducing production costs. whole. In this regard, it is legal to use the indices of production volumes of the main sectors of the agro-industrial complex as indicators of the state of economic security, and the stagnation of agriculture can be considered a serious threat to the country's national security. in the economic sphere.

Direct or indirect way related to the destruction of components of the agro-industrial

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complex system as a threat to economic security, payments for the import of food products and means of production for the agro-industrial complex can be considered as losses. At the same time, the economic condition of the agro-industrial complex is largely determined by the state support of the agro-industrial complex, the size of which depends on the capabilities of the federal and local budgets, and is determined by the level of tax revenues. enterprises in the field of production.

An important aspect of socio-demographic security is population health, quality and life expectancy. The level of these indicators of national security is determined by how nutritious the diet of the members of society is, the resistance of people to diseases, the level of aggressiveness of behavior and the level of labor productivity.

Food and energy security are also interrelated. Thus, the US is the largest exporter of food and follows a policy of importing energy resources combined with a policy of protectionism regarding its natural resources. Income from food exports allows Americans to cover the costs of energy imports. At the same time, US agriculture is the largest consumer of energy resources, accounting for approximately 17% of all energy expenditures.

The relationship between transport and food security is that the insufficient development of transport infrastructure leads to crop failure, food spoilage during transport, pesticides, mineral fertilizers and agricultural products to agricultural producers. It is manifested in the fact that it can lead to a delay in the delivery of equipment. All this has a negative impact on both food production and consumption.

Environmental security problems are directly related to agricultural production, because with the development of production forces, the production of agricultural products, raw materials and food products is more and more subject to changing environmental factors under its influence. depends. The annual productivity of the planet's vegetation is estimated at 160 billion tons, of which humans use a little more than 5 billion tons, or 3% of all primary production.

Nevertheless, the economic and social development of society is clearly in conflict with the biosphere's limited resources to produce and sustain life. There is a decrease in land and ocean resources, irreversible loss of various plants and animals, man-made disruption of the biogeochemical cycle of substances, pollution of all components of the natural environment, simplification and degradation of ecosystems. In turn, the degradation of natural resources hinders the development of plant breeding and animal husbandry. A decrease in the quality of land resources leads to a decrease in productivity, a deterioration in the quality of products, which causes the problem of food security in the countries of the world to worsen.

As a result of the analysis of the place of food security in the national security system, it can be concluded that all the subsystems of the national security system are interconnected and interdependent.

The figure shows a diagram of the hierarchy of food safety objects developed by the author, in which the following safety levels are highlighted:

- 1) individual (personal);
- 2) local (households);
- 3) local (city, district, municipality, free economic zone, biosphere territory);
- 4) territorial (provinces);
- 5) regional;
- 6) national.

In turn, national food security is included as a subsystem of international food security and

global (planetary) food security of neighboring countries in a certain economic-geographical region.

We recommend the following system of measures for state regulation of the agro-industrial complex, which will help to solve the food problem:

- improvement of the system of economic relations in the field of production, purchase, primary and deep processing, storage, transportation and sale of agricultural products;
- an optimal combination of state and market regulation of prices for agricultural products in order to revive the effective demand of the population and increase the competitiveness of local food products in domestic and foreign markets;
- implementing flexible taxation of agricultural producers, giving tax incentives to producers investing in the development of priority industries and products or following the principle of sustainable development of production in compliance with environmental standards;
- conducting a moderate protectionist policy to protect the interests of domestic producers;
- constant monitoring of the domestic food market and food safety of Russia, creation of mechanisms of public control over appropriateness of imports and quality characteristics of imported food products;
- modernization and technical re-equipment of processing industry enterprises, introduction of advanced technologies and quality management systems (ISO 9000, ISO 14000);
- creating a data bank of innovative projects and advanced technologies in the agro-food complex and periodically informing food market participants about them;
- creation of conditions and activation of processes for domestic food products to enter foreign markets, promotion of export of grain and its processing products;
- promotion of import of machinery and equipment for enterprises producing means of production for agriculture and other parts of the agro-industrial complex; means of production for promising industrial technologies of production and processing of agricultural products; breeding animals of high-yielding breeds and seeds of high-yielding and high-protein crops; patents and licenses that help scientific and technical re-equipment of agricultural industries;
- to increase the investment attractiveness of the agro-industrial complex, to re-equip the material-technical base of the agro-industrial complex, including the urban wholesale food markets, and to introduce tax and other incentives that will help to form a logistics system. a network of training centers in large cities and rural settlements;
- development of equipment leasing system for processing industry enterprises;
- consistent implementation of the policy of import substitution, filling the domestic market with a wide range of high-quality and competitive products of local production, reducing the import of food products into the country that can be produced in the country;
- regulation of the main strategic types of food: grain, meat, milk imports;
- rational placement of agricultural raw material processing enterprises throughout the republic, expanding the practice of building enterprises, workshops and production facilities directly on farms;
- optimization of production capacities of processing industry enterprises;
- development and implementation of the "green revolution" mechanism in agriculture, which includes: introduction of new high-yielding varieties of local and foreign selection in order to dramatically increase food resources; mechanization and chemicalization of agriculture; land drainage and irrigation; restore the fertility of soils damaged by humus; stimulation of the

ecological and economic system of farming;

- to protect the population from low-quality food products by improving the work of standardization and certification services of goods.

Currently, there is no common point of view among local researchers on the criteria and indicators that comprehensively describe the state of the regional agro-industrial complex and the food market from the point of view of ensuring food safety. It should be noted that there are universally recognized criteria and indicators of food safety at the national level, but at the regional level, it is important to clarify the scope of such criteria and indicators, taking into account the specific characteristics of the region (of course, their composition). different from national).

In our opinion, it is appropriate to present a typical list of criteria included in the integrated indicator of food security in the region in the following form:

1. Physical presence of food.
2. Economic convenience of food.
3. Balanced diet.
4. Food quality and safety.
5. Sustainability of the food system.

Thus, the food security of the region is a complex feature, each of its criteria can be described using a number of indicators. For the quantitative assessment of the food security of the region, it is acceptable to use the method of combining a set of indicators describing the criteria of complex characteristics: physical and economic availability of food, nutritional balance, food quality and safety, stability of the food system. Of course, there is a certain interdependence between the above criteria of ensuring regional food security, and their recognition implies the need to consider the components of a complex characteristic in terms of their interaction. requires. However, this approach can significantly complicate the process of assessing food security in the region. In order to avoid the spread of data, it is necessary to exclude from their set the mutually interchangeable indicators that describe each criterion of food security in the region.

Let's describe each criterion we chose to assess the food security of the region.

In our opinion, the physical availability of food products is the ability of the population to purchase vital food products in the amount and range necessary to meet the physiological needs of a person in a trade network, market or on a personal basis. Goods that cannot be used for the normal life of the population and are characterized by the following are vital food products:

- cover the energy costs that occur during the life of the human body;
- to ensure the possibility of physiologically harmonious development of children;
- to support the natural and active longevity of the population;
- contributes to the prevention and treatment of various diseases.

The physical availability of food products implies their continuous delivery to places of consumption in volumes corresponding to effective demand and physiological norms. In addition, physiological standards mean a diet consisting of products in the volume and proportions in accordance with the modern scientific principles of optimal nutrition, taking into account the existing structure and dietary traditions of the majority of the country's population.

This criterion mainly describes the supply of food products and is primarily determined by the level of development of agricultural production. An important aspect of the physical availability of food is the extent of the trade network in the region where people can buy food.

The economic availability of food products implies the possibility of their use by all

segments of the population due to the existing effective demand. According to the doctrine, the economic convenience of food is determined by the possibility of purchasing food products at current prices in a volume and assortment not less than the established rational consumption norms, which is provided by the appropriate level of income of the population. This criterion of food security in the region is determined by the level of economic and social development of the state. It depends on the consumption of food products in the required volume and assortment of different population groups, their purchase at market prices, production on their farms, etc. There is a continuous deepening of the income stratification of the population in the country, as the difference between the extreme groups with the lowest and highest income levels is very large.

Increasing the economic opportunities of food products should be implemented primarily on the basis of positive economic changes manifested in the increase of incomes of the population, especially the poorest sections of the population, and reasonable retail prices of food products, as well as on the basis of a strong program. support them from the earmarked budget.

1. Balanced nutrition includes eating enough high-quality food for an active and healthy life with the appropriate composition of macro and micronutrients for a balanced diet.

A balanced diet is based on the fact that food consists of various nutrients: fats, proteins, carbohydrates, vitamins, fatty acids, mineral salts, trace elements, etc. Important substances that are not formed in the human body, but which enter with food, are of particular importance. These substances include essential amino acids (fatty acids (linoleic, linolenic, arachidonic)). The group of important substances also includes vitamins and mineral elements that maintain and balance the molecular composition of various tissues of the human body and cover their costs. life process. Based on the theory of balanced nutrition, daily norms of consumption of certain substances have been developed.

Humanity does not always follow a balanced, high-quality diet and prefer refined and light foods rich in vitamins. Low-income sections of the population are characterized by a monotonous diet, which also affects the availability of vitamins. All vitamins except vitamin D can be obtained from regular foods with a balanced diet.

Since food security is measured by the caloric content of the population's daily diet, nutritional balance includes the caloric content of food. Caloric content indicates the energy value of food products or diets: the amount of heat released when food or nutrients are oxidized in the human or animal body. The energy received by a person is used for the physiological functions of the body. The energy equivalent of food is the amount of energy released during the decomposition of 1 g of any substance.

According to FAO and World Health Organization (WHO), the average nutritional requirement for one person should be 2300-2400 kcal per day. This indicator varies depending on a person's gender, age, profession, as well as natural and climatic conditions. If this indicator is below 1800 kcal, then clearly defined malnutrition appears, and when this indicator exceeds the limit of 1000 kcal per day, open starvation (physical lack of food) appears .

According to the FAO, the diet should be complete and the amount of protein should be at least 100 g per day. A diet without not only calories, but proteins, primarily animal sources, as well as fats, vitamins and trace elements, is called incomplete. This is caused by constant poor nutrition and monotony of the diet (one type of product dominates consumption).

The real average calorie consumption in the world is 2700 kcal per day, in economically developed countries it is 3400 kcal per capita, and protein consumption is about 100 g per day. It

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should be noted that in developed countries there are social groups with consistently low levels of consumption, which constantly require state support.

The quality and safety of food products includes the provision of such a set of product characteristics that determine its suitability to meet certain needs in accordance with its purpose. This is done by achieving the full nutritional level of the population through the consumption of high-quality food products. In English, the term "food safety" is equivalent to the local concept of food quality and safety. Quality as an economic category is one of the main factors of competitiveness of agricultural products today, and the problem of increasing it is complex, because it includes scientific-technical, social and economic aspects.

The stability of the food system is determined by the ability to provide the population with food products of appropriate quality in the required amount (taking into account the formed state food reserves) both in normal conditions and in emergency situations (wars, natural disasters, man-made disasters). Sustainability refers to the development of a food system in an extended mode of reproduction. This is ensured by the high level of socio-economic development of the country, positive economic changes, stable operation of the agro-industrial complex.

The above criteria of regional food security should be expressed in a system of indicators that quantitatively represent its level in accordance with these criteria. For each of the main criteria, a number of indicators can be defined, one of which is the most important for describing the food security of the region according to this criterion. Thus, the main indicator for describing the nutritional balance is the calorie ratio. Such indicators can be calculated directly or be complex indicators consisting of several components.

The indicator of the level of food security in the region is combined both in substance and in the order of detection. A set of indicators is proposed to describe each criterion of the integrated indicator of food security in the region: physical and economic availability of food, nutritional balance, food quality and safety, food system sustainability, each of which has an internal hierarchy. :

Level 1: an integral indicator of food security in the region.

Step 2: criteria and indicators of food security in the region:

1) physical presence of food:

- volume of agricultural products per capita;
- yield/productivity;
- degree of openness of the food market of the region;
- food import coverage ratio;
- the level of development of the trade network of the region.

2) economic convenience of food:

- poverty level;
- population's purchasing power coefficient;
- the average price of a food basket;
- population income concentration coefficient (Gini index);
- consumer price index of food products.

3) nutritional balance:

- calorie consumption ratio;
- power structure coefficient.

4) food quality and safety:

- food quality coefficient;
 - food safety;
 - ecological purity of food.
- 5) sustainability of the food system:
- share of the population employed in agriculture;
 - the average salary of agricultural workers compared to the average salary in the region;
 - profitability of agricultural enterprises;
 - share of harmful agricultural enterprises;
 - volumes of food reserves.

Indicators describing the criteria of an integrated indicator of food security in the region were selected taking into account the ability to more fully reflect one or another criteria of such an integrated assessment of security.

Indicators used to assess the level of food security in the region can be quantitative and qualitative. All the quantitative indicators of regional food security proposed in this study make it possible to determine the level of phenomena that characterize food security and to compare its level in different regions, regardless of interregional differences in the composition and level of food production and consumption. will give. At the same time, it is necessary to supplement such indicators with quality indicators for a more complete analysis of the food security of the region. Analysis of the level of food security in the region according to the proposed criteria can be carried out in detail and by calculating the indicators describing the current state of food security in the region and the trend of changes for several years in these five directions. . in this case.

The most difficult task is the quantitative assessment of quality indicators for the assessment of regional food safety, for example, food quality, as a result of non-compliance with standards for the content of substances harmful to human health in food products or the results of non-compliance of products. can be recognized to assess the quality of the whole food supply with established standards. products with only a certain degree of error. In this case, the most used indicator (which only indirectly describes the overall quality of food) can be recognized by the control authorities as the ratio of the amount of products that meet quality requirements to the total amount of inspected products.

The system of indicators proposed in the study on the assessment of food security in the region meets the main requirements for indicator systems:

- it has an acceptable number of input indicators, which should not exceed 25;
- a reasonable balance was achieved between diagnostic and strategic indicators.

The proposed approach is based on understanding the food security of a region as a comprehensive indicator consisting of physical availability of food, economic availability of food, food balance, food quality and safety, as well as food system sustainability. Each of the criteria for food security in the region is characterized by a set of quantitative and proportional indicators that are acceptable for research purposes.

Conclusion

In conclusion, it should be said that the integrated indicator of regional food security, calculated on the basis of the proposed system of indicators, allows to analyze the dynamics of this indicator and to describe its level in order to compare the regions according to this level. The disadvantage of this indicator is that it is somewhat arbitrary to determine the safety or security of food security of a region based on it (it can be seen that the higher the indicator, the better the food security

situation in the region). On the basis of determining the problem areas with the lowest value of the total indicators calculated within the regional food safety criteria, the priority directions of state regulation, the goals and methods of achieving them within the framework of the food safety system should be determined. food security in the region should be established. Thus, the analysis of the indicators used to assess the food security of the region is an objective basis for the formation of strategies and tactics for its provision.

References

1. Гордеев А.В., “Продовольственное обеспечение России (проблемы и механизмы их решения)”// *дисс/ Москва – 2000/ 291 стр.*
2. Балдов Д.В., Развитие диагностики экономической безопасности в продовольственной сфере/автореферат/ Княгинино – 2019/ 28 стр.
3. Ибрагимов М.-Т.А, Дохолян С.В. “Методические подходы к оценке состояния продовольственной безопасности региона” статья, 3-25 стр.
4. Трысячный В.И., Пархоменко Т.В., Винокурова В.А., “Особенности рассмотрения категорий “продовольственное обеспечение” и “продовольственная безопасность”” статья, 358-364 стр.
5. А. А. Лысоченко, “Продовольственная безопасность в современных условиях глобализации”// *Угрозы и безопасность / 5 (26) - 2008. - с. 61-65.*
6. Муракаева, З. И., & Амирова, О. К. (2023). *НАУКА И АРМИЯ ГЛАЗАМИ ЖЕНЩИНЫ: ВЗГЛЯД ИЗНУТРИ. Herald pedagogiki. Nauka i Praktyka, 3(2).*
7. Usmonjon o'g, A. U. B., Alimjon o'g'li, A. A., Bobirovich, Y. A., & Jamshid o'g'li, X. M. (2023). *The State Authority System of the Republic of Uzbekistan and Its Organization. EUROPEAN JOURNAL OF BUSINESS STARTUPS AND OPEN SOCIETY, 3(8), 30-41.*
8. Said o'g'li, S. S., & Abdurasul o'g'li, R. S. (2022). *Psychological View of the Military Community. Pioneer: Journal of Advanced Research and Scientific Progress, 1(2), 5-12.*
9. Usmonjon o'g, A. U. B., Nishon o'g'li, T. D., Nodir o'g'li, B. J., & Shuhrat o'g'li, A. Z. (2023). *Management of Professional Promotion of Employees in Organizations. EUROPEAN JOURNAL OF BUSINESS STARTUPS AND OPEN SOCIETY, 3(8), 13-29.*
10. Usmonjon o'g, A. U. B., Ergashali o'g, T. U. A., Sadulla o'g'li, Z. S., & Ravshanbek o'g'li, Q. A. (2023). *Laws and Principles Of Management. Central Asian Journal of Innovations on Tourism Management and Finance, 4(6), 174-186.*
11. Usmonjon o'g, A. U. B., Raxmatullo o'g, T. X. N., Hakimovich, H. P., & Jahongir o'g'li, F. J. (2023). *Provision of Information to Management. Central Asian Journal of Innovations on Tourism Management and Finance, 4(7), 152-166.*
12. Olimjon o'g'li, O. O., & Shuxrat o'g'li, Z. I. (2022). *The Main Features and Signs of “Relations Contrary to the Charter”(On the Example of Russian Experience). Web of Scholars: Multidimensional Research Journal, 1(5), 17-21.*

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Abstract: this article describes the nature of the secret economy, the main forms and areas of the manifestation of the secret economy. In addition, the causes and factors of the development of the secret economy have been studied. The socio-economic consequences of the development of the secret economy are analyzed.

Key words: secret economy, secrecy, price of secrecy, unregistered, informal economy, hidden.

The existence of the underground economy was first noticed in the 30s of the 20th century. From the 70s of the 20th century, the scientific research of the secret economy began. The analysis of the underground economy was started by the English sociologist K. Hart among the first on the example of developing countries. He found out that many urban dwellers in the "third world" countries are not connected to the formal economy. He introduced the term informal economy into scientific circulation. The difference between formal and informal forms of income was explained as the difference between wages and income earned on the basis of self-employment. P. Gutman (USA) justified the need to pay attention to the scope and role of the informal economy.

Fernando de Soto in his book "Another Way" called the underground economy a spontaneous and creative reaction (response) of the people to the inability of the corrupt state to meet the basic needs of the impoverished population. He suggested the grouping of transaction costs based on the criteria of transparency (legality) and non-disclosure (illegality).

In the second half of the 70s and early 80s of the 20th century, scientists and politicians of developed countries found that the scope of the actual economy is greater than the scope of the official economy. E. Feig estimated that the scale of the secret economy at the end of the 1970s was one-third of the official GDP of the United States. This assessment was specially discussed in the Economic Committee of the US Congress. According to Feig, the definition of each particular type of informal economy is determined by the set of institutional rules that its representatives violate, that is, their activities go beyond or bypass the established system of rules and norms, and, in their own turn, it is not measured and is not taken into account socially.

In 1991, a conference of European statisticians dedicated to the hidden and informal economy was held in Geneva. Based on his materials, special instructions on the statistics of the secret economy in developed market economy countries were published.

In the economic literature, there are different definitions of the secret economy:

1. The secret economy is defined as activities prohibited by law.
2. Secret economy is an unobserved and hidden type of economic activity.
3. The secret economy is any economic activity that is not taken into account in official statistics for one reason or another, and the products and services produced in it are not included in the gross domestic product and are excluded from taxation.

Secrecy - evasion of the use of existing legal norms in the organization of daily activities of

individuals and deviation from the legal scope of resolving disputes arising from the unwritten law, that is, the norms recorded in traditions and customs, as well as the exchange and protection of property rights it consists of referring to outgoing mechanisms.

The secret economy is a complex socio-economic reality that includes not only economic and social structures, economic interaction in society, but also, first of all, the satisfaction of personal and group interests of those who make up part of the country's population, which cannot be controlled by society, i.e. is the criminal use of state and non-state property, economic wealth, and entrepreneurial ability, hiding it from the management and control of state bodies, with the aim of obtaining a large amount of additional income (profit).

Making exchanges in private mode is also associated with costs. Subjects operating in the secret economy, who have achieved savings in one type of costs, make more other costs - they are obliged to pay the "price of secrecy". Privacy assessment consists of several elements.

1. Costs associated with evasion of legal regulations include: paying tax and other financial advisors; production limitation and lost profits due to advertising (the bigger the company and the more active it is in advertising campaigns, the greater the chance of being caught by regulatory authorities); the costs of "double-entry" accounting and the resulting losses from accounting and control difficulties in the enterprise.

2. Expenses related to the transfer of income. All economic entities pay indirect taxes and inflation tax. However, unlike public economic entities, private economic entities cannot apply to the state for the protection of violated property rights. It is also necessary to add difficulties related to obtaining a loan.

3. Expenses related to refusal to write down taxes and wages. Avoiding mandatory payments to income tax, social security fund and pension fund allows the enterprise to save on wages, but it reduces the interest in replacing labor with capital and re-equipment. De Soto uses the term "animated capital" to describe confidentially recorded property rights: this capital cannot be used as collateral, invested in collateral, freely sold, and sometimes simply bequeathed.

4. Costs related to the impossibility of using the contract system. The confidential event of concluding contracts makes it difficult to implement long-term projects involving many economic entities. In cases where there is a need to revise the contract, they cannot apply to court or arbitration.

Costs related to the absolute two-way nature of the confidential transaction. The attempt to hide the activity and its results from the law encourages to limit as much as possible the circle of participants of the collusive transaction.

Costs of using confidential dispute resolution procedures. First of all, maintaining good relations with a large number of relatives, compatriots and other "ones" in order to resolve conflicts requires time and funds for exchange of services. Secondly, turning to mafia services, which perform the functions of courts and power structures, is conditioned by the need to pay a specific tax.

There are methodological approaches to the underground economy as a category, which are as follows:

- in the economic approach, the underground economy is studied at the global, macro- and micro-level, as well as institutional aspects;

- the legal approach takes into account the relationship to the normative system of regulation, that is, avoiding official, state registration and control;

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- *not registered and taken into account in accounting and statistical bodies;*
- *in the criminological approach, activities that harm the society and the individual are taken into account;*
- *the secret economy is researched on the basis of all approaches and criteria in a comprehensive approach;*
- *in the cybernetic approach, the secret economy is considered as a self-regulating and managing system, economic-mathematical models for forecasting the development of the secret economy are developed.*

The range of variability in the scale and nature of activities in the underground economy is very wide - it includes processes from large profits from criminal activities (for example, drug dealing) to "rewarding" a plumber with a bottle of vodka for a repaired faucet. Secret economic activity is divided into types of production and redistribution activities according to its effectiveness. In relation to the official economy, there are types of secret economy such as internal economy and parallel economy. The following types of secret economy are defined according to the stages of reproduction:

- confidential production;
- confidential distribution;
- confidential exchange;
- discreet consumption.

Secret production is manifested in illegal, unaccounted for, hidden, small-scale production, production of low-quality products, irrational use of production resources.

Secret distribution is expressed in illegal distribution of income, special distribution, theft, embezzlement of state property, encroachment on private property of citizens and crimes against it.

Secret exchange occurs in the form of illegal trade, deception of buyers, sale of illegally produced products.

Illicit consumption is the consumption of illegally obtained benefits, illegal use of services, consumption of products that are not accepted in society, designed to satisfy the destructive needs of people, and the use of services of a similar nature.

Types of confidential economic activities in the market of consumer goods and services by market types; in investment goods markets; in financial markets; in labor markets; will be available in other markets (information, technological, intellectual property).

The clandestine economic activity has long gone beyond the scope of the formal economy and has been parasitic in all spheres of society: from the household economy to large enterprises, influencing the state's activities and changing the standard of living and lifestyle of the country's population. All this allows us to conclude that the informal economy should be considered as a separate segment of the social economy with the following social characteristics:

- universality;
- integrity;
- the relationship with the external environment, which manifests itself through convergence with the official economy and legal economic structures, as well as state and community institutions;
- the composition of stable connections and relations in the Khufyan economy, the ability to ensure its integrity and uniqueness, and the ability to preserve its main features with various

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internal and external changes; hierarchy (as a special case of the structure) - arrangement of parts and elements of the private economy from top to bottom;

- self-organization and continuous development, the ability to organically join world economic relations; Expediency and the existence of a universal working mechanism consisting of the generality of the usual methods and methods for achieving practical goals;
- existence of two opposing principles - constructive (production sector) and destructive (criminal sector).

It should be said that different types of secret activities differ in quality. For this reason, in order to properly understand the problems of the underground economy, it is necessary to distinguish its main segments and sectors.

The famous economist E. Feig distinguishes four types of clandestine economic activities: illegal (secret, hidden), unaccounted for, unregistered and informal economic activities.

1. Illegal economy. The illegal economy is the legal form of commerce participates as a synonym of income earned by economic activity that defines the field of forms and violates legal norms. Illegal entrepreneurs participate in the production and distribution of prohibited goods and services (illegal production of narcotics, currency exchange by speculators, etc.).

2. Unaccounted economy. The unaccounted economy includes economic activity that bypasses or evades the fiscal rules that are institutionally established and recorded in the tax code. Income from the unaccounted economy is not reported to the tax authorities. In this case, there is a "tax gap" - the difference between the amount of tax revenue and the actual income.

3. Unregistered economy. The unregistered economy consists of a type of economic activity that bypasses the institutional rules established according to the requirements of government statistical authorities. Here, the amount of income not registered in the state national statistics system is the main indicator. According to E. Feig, unregistered income is the difference between the actual total income and the income recorded by the statistical system. In developing countries, home production is one of the important components of unregistered economic activity.

4. Informal economy. The informal economy includes economic activities that save individual expenses in violation of the rights established by the laws and administrative regulations regulating the social benefits and ownership relations, licensing, labor contracts, financial lending and social insurance relations. It is measured by incomes received by informal economic agents (Figure 1.2.2).

Secret economy as a threat to national security is a set of relations between individuals, groups of individuals, and institutional entities regarding the production, distribution, exchange, and consumption of material goods and services, and its results are not counted in official statistics and are not taxed.

The operation of the secret economy poses a potential and real danger and threat to the economic security of the state. It affects normal economic processes, the formation and distribution of income in the formal economy, international trade, investment, and economic growth.

In economic science, the following criteria are used to determine which sector of the economy belongs to the informal, criminal, fictitious, clandestine or open, official economy:

- fiscal (tax) interests of the state;
- real volume of GDP;
- legal parameters;

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- description of the interaction of pilgrim subjects.

The secret economy is manifested in the concealment of income from taxation. Tax evasion methods include:

- opening several account numbers in different banks and carrying out monetary transactions through them without being fully indicated in the accounting;
- use of trust, promissory notes and other accounts;
- keeping "double bookkeeping", dealing with cash, thereby concealing income and cash receipts from taxes;
- by registering an enterprise in one city, district, but opening an account number in banks in another city, district, they avoid paying taxes in the place where the enterprise is registered and in the place where it operates, that is, they evade;
- increase the cost of the products (services, works) sold at the expense of unaccounted costs;
- in the official accounts and payment documents, based on the agreement of the parties, the value of the work performed (rendered services) is shown at low prices, and the rest of it is distributed among themselves in the form of cash. Cash income is hidden from taxation.

The operations carried out in the secret economy can be divided into the following types:

- economic and financial transactions that are completely excluded from accounting and are not taken into account anywhere. Such operations are carried out by legally registered and unregistered enterprises;
- partially hidden operations. In this case, a part of the operations carried out by the enterprises, that is, a part of the received income, is not taken into account in accounting and is hidden from taxation.

The clandestine economy is divided into criminal, criminal or unmonitored clandestine economy sectors, depending on whether or not it contradicts the current legislation. Economic activity is generally hidden in the criminal, i.e. criminal, underground economy. In the unobserved, informal sector of the economy, spending or income is hidden or not taken into account at all¹³.

Three criteria are used to distinguish types of clandestine activities: their connection with the "white" ("first", official) economy, and subjects and objects of economic activity. From this point of view, the hidden economy can be divided into three sectors (fields) (Table 1.2.1):

- "second" ("white-collar workers");
- "grey color" ("informal");
- "black" ("secret") hidden economy.

Although the study and analysis of the shadow economy has been going on for about half a century, scientists and analysts still do not have a single approach to its analysis. For example, in English-language sources, you can find terms such as "informal economy", "underground economy", "shadow economy", "black economy". , and these terms mean different things to different researchers.

The "second" underground economy is the "white" economy, in which workers and employees of the "white" economy secretly engage in illegal economic activities at their workplaces, which lead to a hidden redistribution of previously created national income. This type of underground economy is called "white-collar" because this activity is mainly carried out by "reputable people" ("white-collar workers") in the management court. From the point of view of society, the "second" hidden economy does not create any new goods and services. In the "secondary" economy, a few people benefit (gain) from other people's losses. The "second" hidden

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economy is an independent economic relationship between individual citizens and their informal associations in order to satisfy personal needs and needs that are not taken into account and registered by the state. These relations are the reaction of citizens against mistakes in the economic mechanism of the state, the demands and wishes of the population are not taken into account.

These are primarily:

- a) financial and tax services are weak enough to encourage tax evasion;
- b) the absence of a developed market system to the extent that it forces to rely on illegal sources of resources;
- c) excessive and, including, illegal administration;
- g) Doubts arise that the current policy of the state in relation to non-state entrepreneurship is designed for a long period of time.

The "grey" economy is an economic activity that involves the production and sale of goods and services that are not prohibited by law, but are not registered. In contrast to the "second" hidden economy, which is inextricably linked with the "white" economy and lives gratuitously at its expense, the "gray" hidden economy operates relatively independently. In order to avoid license, tax, etc. costs, private producers deliberately do not register officially, or the report of this activity is not considered at all. In this sector, independent producers either deliberately avoid official registration by obtaining licenses, paying taxes, and other similar costs, or reporting such activities is not provided for at all.

"Black" underground economy (economy of organized crime) is an illegal economic activity related to the production and sale of goods and services prohibited by law. The "black" underground economy is more separated from the official economy than the "grey" economy. In a broad sense, all types of activities that do not correspond to normal economic life and disrupt it are included in the "black" underground economy. This activity includes not only redistribution based on violence (theft, robbery, extortion), but also the production of goods and services that erode society (drug trade, gambling, prostitution, racketeering). Criminal, clandestine economy consists of illegal production, clandestine production, and crimes committed with deliberate premeditated and malicious goals.

Illegal production includes activities organized in the form of business and entrepreneurship, which are strictly prohibited by law. Such activities include:

- production and sale of weapons;
- drug business;
- smuggling;
- organization of casino, gambling games;
- human trafficking;
- prostitution, etc.

These types of activities are organized in the form of clandestine, illegal enterprises, shops, clandestine businesses and business entities or officially operating enterprises (firms). Organized crime emerges and develops within the framework of the clandestine criminal economy. The criminal underground economy based on organized crime is often involved in the production and sale of goods and services prohibited by the above-mentioned legislation.

One of the forms of criminal organized economic activity is racketeering. Racketeering is a business based on intimidation and blackmail. Such types of activities include actions that are completely denied in the official economic life, which cannot be reconciled with them, and lead

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to the disruption of the official economy. This proposed classification should not be absolute. There is no sharp boundary between different forms of the underground economy. For example, organized crime groups may collect "tributes" from informal sector enterprises and use their connections with legitimate entrepreneurs to launder their profits.

The informal economy covers all goods and services, resource markets and all sectors of the economy. Also, enterprises that do not have the status of a legal entity, are not officially registered, and have the status of a legal entity can be subjects of the clandestine economy.

Economic entities with the status of a legal entity are engaged in clandestine production and exchange. Business entities that are not officially registered include:

- natural persons who are not officially registered as entrepreneurs engaged in the production and provision of services to households and enterprises on the basis of payments in cash or in kind;
- provision of paid housing and other services;
- secret enterprises and shops producing legal goods and services. Their activity is not taken into account in statistics and accounting.

The underground economy operates at the micro, meso, macro and mega economic levels. On a global scale, the secret economy is manifested in banking and corporate spheres in the form of financial and economic crimes, drug business, prostitution, human trafficking, porn business, secret arms trade, "money laundering", i.e., legalization of money obtained through crime, and forms of corruption.

The hierarchical structure of the economy of Khufionia is characterized by many relationships between components, the most characteristic of which is coordination and subordination. Coordination (horizontal order) and subordination (vertical order) are characteristic of modern informal economy, so informal economy is not only a hierarchical, but also a network structure. The exact structure of the economy of Khufionia allows us to draw a conclusion about the existence of a parallel state with a similar official system of administration in the country.

Khufyona's economy is organized according to the pyramid principle. The shape of the pyramid was not chosen by chance. First, it supports the verticality of the interaction of the subjects of the secret economy (the dependence of the "below" on the "above"). Second, the number of participants in each horizontal segment is clearly specified with a certain number of assumptions.

Usually, the pyramid appears to consist of three segments (the first being the top). Of course, for each meso-, micro-, and macro-level government, the composition of the pyramid will be different. With the more detailed construction of the pyramid at the federal level, each segment probably reflects a certain relief formed by the pyramids of the state structure and groups of elements when meso-micro combined.

The summit of the tetrahedral pyramid consists of: 1) the first persons of the executive power, as well as the assistants of the legislative bodies, the first representatives of the judicial, investigative, and financial bodies who have real opportunities to make the necessary decisions; 2) financial and industrial capital - entrepreneurs whose capital corresponds to the micro and mesoscale budget; 3) organized criminal association - on the one hand, representatives of big business, and on the other - criminal businessmen who are representatives of the criminal world; 4) the authoritarian hierarchical institution of the Orthodox Church is the largest owner of real estate with a large flow of money closed by state intervention.

The middle segment of the pyramid consists of entrepreneurs, businessmen, financiers, and industrialists. One thing unites these people - the desire and opportunity to become the basis of the

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middle class of a country with a simple market economy. This class also includes a number of "average" (in terms of influence) officials and criminal elements who use their positions for personal gain.

The potential allies of the undercover workers in the middle of the pyramid are, in our opinion, the extreme part of the third segment - the feet of the pyramid, represented by hired workers, ordinary civil servants, ordinary criminal elements.

- The symbol of levels and forms of activity of Khufonia can be as follows: official, oligarch, criminal element, entrepreneur, hired worker. Such distributions correspond to the definition of vague levels and forms of economic activity (except for criminal elements). The reason for this is that a large part of the country's population is engaged in clandestine activities.

- The development of the clandestine economy should be considered, first of all, as a response to the regulation of the economy by the state. The regulatory process is not without limitations, and the careless imposition of limitations creates non-compliance, especially if there is some benefit to be gained from doing so. Many types of underground economy (for example, tax evasion) arise due to shortcomings in the state regulatory process, for example, bureaucratization of management, high tax rates, etc. The development of Khufyan economy is, on the one hand, a reaction to the fact of state intervention. Regulation is impossible without restrictions, and unreasonable restrictions lead to their violation, especially when it is beneficial. Many types of shadow economy (for example, tax evasion) are largely explained by the shortcomings of state regulation:

- bureaucratization of management, excessive taxes, etc. However, even the best centralized management system can reduce the size of the shadow economy, but not eliminate it. And even if there is a minimum tax, some of the taxpayers will inevitably evade paying.

- on the other hand, the modern secret economy appeared not only as a result of attempts to limit market freedom, but also due to the specific nature of market relations. The market economy is built on the basis of profit and income distribution. Religious ethics and other forms of social behavior may satisfy the thirst for profit, but they cannot eliminate it. Therefore, when an opportunity arises to hit the jackpot, people (or groups of people) often sacrifice long-term social interests to pursue their own personal interests. In any case, the thirst for profit is characteristic of the "secondary" and "black" clandestine economy.

Confidential implementation of economic activity is primarily associated with legal action, that is, with high transaction costs. Based on the classification of transaction costs, it should be noted that it mainly involves high costs of concluding a contract, interpretation of ownership rights and protection from third parties. De Soto describes these costs as "the price of obeying the law." It includes:

- the costs of using the law (the costs of registering a legal entity, obtaining a license, opening bank accounts, obtaining a legal address and other formalities);

- expenses related to the need to continue activities within the framework of the law (paying taxes); fulfillment of legal requirements in the field of labor relations (length of working day, minimum wage, social guarantees); payment of court costs in resolving disputes within the framework of the public court system

It is worth noting that the size of the secret economy can be reduced, but even the country with the best centralized management system cannot completely eliminate it. Even when tax rates are at their lowest, some taxpayers avoid paying taxes.

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On the other hand, it cannot be said that the modern informal economy was created only as a result of restricting the freedom of the market, it was partly due to the nature of market relations. The market economy is formed based on the deification of profit and the worship of income. For this reason, some people or groups of people put their own interests above the interests of society when there is an opportunity to get a big profit at a moment's notice. The desire to acquire wealth is more characteristic of the "secondary" and "black" underground economy.

There are various reasons and factors for the emergence and development of the secret economy, the main of which are as follows:

1. Anthropological factors, that is, the conflicting nature of a person, the characteristics of the struggle between good and evil in him.

2. Economic factors: deficiencies in the state's tax policy, lack of market saturation with goods and services; lack of equilibrium and balance between economic sectors and sectors; cyclical fluctuations of the economy, low purchasing power of the population; high transaction costs;

3. Legal factors: legal framework
lack of improvement, the mechanism of combating economic crime is not perfect; inefficiency of law enforcement bodies;

4. Socio-political factors: socio-political situation, level of trust in the state; level of solving socio-economic problems in the society; socio-psychological mood of the population; the attitude of the state to private property and the sector;

5. Social factors: level of population stratification; unemployment rate; the extent of low-income population groups; the number of labor migrants; labor relations, working conditions, wage system; social guarantees, pension provision;

6. Administrative factors: deficiencies in the state administration system; the level of competence and responsibility of bureaucracy, civil servants; administrative pressure on enterprises, level of coercion to patronage, etc.

There are several other groups of factors of the organized secret economy. Reasons and conditions play a different role in the process of formation of confidential activity in the economic sphere. If the causes actually cause it, then conditions do not cause this phenomenon, but affect the processes of generation and participate in its determination. Hidden economy exists in any society where there is a state and an economy. The causes of illegal behavior in the economic sphere can be considered at two levels:

fundamental reasons related to the important features of a certain economic system: market, command-administrative, transition period;

- specific reasons related to the socio-economic policy being carried out.

Dysfunctions of its main institutions - the market and the state - are important factors of the secretive economic activity characteristic of the market economic system.

The market is one of the important mechanisms of coordination of economic activity and should ensure efficient distribution of limited economic resources. However, it has irreversible, built-in dysfunctions, which in economic theory are called defects, imperfections, or deficiencies.

Market failure is an internal manifestation of its activity, which encourages market subjects to make economic decisions that are not acceptable or desirable for society, that is, to make decisions that do not meet the criterion of Pareto Optimality.

Potential criminals face market distortions because they create situations where they can be

exploited or created with minimal cost and risks to gain illegal profits and avoid legal liability.

State failures can also be exploited in clandestine activities for illegal gain.

Thus, any information hidden from state control can become the subject of illegal transactions and create a criminal situation. In addition, the consequences of an illegal agreement on information can take different forms: market type (receiving a profit expressed in the form of money) or non-market type, where groups or collectives pay for non-disclosure of information. is obliged to perform any action or to comply with any informal rules. This process can also be described by the following mechanisms:

- hyperselectivity;
- crawling effect;
- dependence on the previous development trajectory.

In addition to the main reasons and conditions related to the deep features of the economic system, the set of reasons for secret economic activity is related to more specific conditions of the economic situation of individual countries, industries, markets, and enterprises. The most important reasons include:

- 1) inconsistencies in the development of the financial and credit system;
- 2) barterization of the economy;
- 3) structural imbalances in the economy;
- 4) monopolism in the economy;
- 5) social stratification of the population;
- 6) increase in the amount of allocated annuity;
- 7) deterioration of the financial situation of enterprises.

Conclusion

In conclusion, we should say that the market and the state have fundamentally irreparable flaws (imperfections) that create an opportunity to carry out socially dangerous activities in the economic sphere. The irremediable imperfection of the market and the state is exacerbated by the excessive strengthening of the role of the state and by unjustified exclusion of the state from the performance of its specific tasks.

Literature

1. Hart K. Informal Urban Income Opportunities and Urban Employment in Ghana //Journal of Modern African Studies.1973.Vol. 11. №1. P.61-90).
2. Gutmann P. The Subterranean Economy // Financial Analysts Journal. 1977. № 34. P. 20.
3. Файг Э. Определение и оценка подпольной и неформальной экономики: нео-институциональный подход. -М.: РТТУ, 2000. -147 с.
4. Абулдосимов Х..П., Абулдосимов М.Х., Идтисодий хавфсизлик: назария ва амалиёт. Удуд дулланма.-Т.: Ноширлик ёгдуси, 2019.-485-бет.
5. Беркинов Б.Б. Институционал шитисодиёт: укув кулланма / Б.Б. Беркинов; ТДИУ, Институционал ва шитисодий тадқиқотлар маркази. - Т.: Yangi nashr, 2011. - 66-68-бетлар.
6. Кормишкина Л.А., Лизина О.М. Теневая экономика: учеб.пособие для вузов /Л.А. Кормишкина, О.М. Лизина.-Саранск: Мордов. Ун-та, 2009.-С.11 asosida mualliflar tomonidan tuzildi.
7. Голованов Е.Б. Теневая экономика. Конспект лекций.-Челябинск, 2015.-
8. Файг Э. Определение и оценка подпольной и неформальной экономики: нео-

институциональный подход. -М.: РГТУ, 2000. -С.147-148; Беркинов Б.Б. Институционал иктисодиёт: укув цулланма / Б.Б. Беркинов; УзР олий ва урта махсус таълим вазирлиги, Тошкент давлат иктисодиёт ун-ти, Институционал ва иктисодий тадқиқотлар маркази. - Т.: Yangi nashr, 2011. - 64-65-бетлар.

9. Муминов Н.Г. Яширин иктисодаётнинг мохияти, сабаблари ва оқдбатлари: назарий ёндашув // Идтисод ва молия, №8, 2016. Б.3.

10. Латов Ю.В., Ковалев С.Н. Теневая экономика: Учебное пособие для вузов. / Под ред. д.п.н., д.ю.н., проф. В.Я.Кикотя; д.э.н., проф. г.М.Казиахмедова. - М.: «Норма», 2006. - С. 15.

11. Муракаева, З. И., & Амирова, О. К. (2023). НАУКА И АРМИЯ ГЛАЗАМИ ЖЕНЩИНЫ: ВЗГЛЯД ИЗНУТРИ. Herald pedagogiki. Nauka i Praktyka, 3(2).

12. Usmonjon o'g, A. U. B., Alimjon o'g'li, A. A., Bobirovich, Y. A., & Jamshid o'g'li, X. M. (2023). The State Authority System of the Republic of Uzbekistan and Its Organization. EUROPEAN JOURNAL OF BUSINESS STARTUPS AND OPEN SOCIETY, 3(8), 30-41.

13. Said o'g'li, S. S., & Abdurasul o'g'li, R. S. (2022). Psychological View of the Military Community. Pioneer: Journal of Advanced Research and Scientific Progress, 1(2), 5-12.

14. Usmonjon o'g, A. U. B., Nishon o'g'li, T. D., Nodir o'g'li, B. J., & Shuhrat o'g'li, A. Z. (2023). Management of Professional Promotion of Employees in Organizations. EUROPEAN JOURNAL OF BUSINESS STARTUPS AND OPEN SOCIETY, 3(8), 13-29.

15. Usmonjon o'g, A. U. B., Ergashali o'g, T. U. A., Sadulla o'g'li, Z. S., & Ravshanbek o'g'li, Q. A. (2023). Laws and Principles Of Management. Central Asian Journal of Innovations on Tourism Management and Finance, 4(6), 174-186.

16. Usmonjon o'g, A. U. B., Raxmatullo o'g, T. X. N., Hakimovich, H. P., & Jahongir o'g'li, F. J. (2023). Provision of Information to Management. Central Asian Journal of Innovations on Tourism Management and Finance, 4(7), 152-166.

17. Olimjon o'g'li, O. O., & Shuxrat o'g'li, Z. I. (2022). The Main Features and Signs of "Relations Contrary to the Charter"(On the Example of Russian Experience). Web of Scholars: Multidimensional Research Journal, 1(5), 17-21.

Concept and structure of food supply system

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Abstract: this article describes the concept and structure of the food supply system. Although the concepts of food supply and food security are used in the same sense. From the history of the origin of food supply to the current issues of food supply, it is covered.

Key words: food supply, category, food security, food independence, population food consumption, production, resources.

Currently, due to the decrease in the level of food supply in the countries of the world, the issue of food security has become more acute than ever, although a certain part of the country's politicians and scientists reject it and consider it unacceptable. -market, without economic content and too politicized.

At the same time, the problem of food security entered the agenda of world politics in the early 70s, when one of the UN organizations (FAO) developed its international strategy, and it became a topic of constant discussion at the intergovernmental level.

"Food security" is an officially accepted term in world practice, used to describe the state of the food market in an entire country or an integrated group of countries. It is provided with appropriate resources and capacity, regardless of external and internal conditions and threats, the state guarantees the ability to satisfy the population's need for food products in sufficient quantity, quality and assortment for their healthy physical and social development, and determines. Food safety. Also, all strata of the population are characterized by the level of effective demand that is sufficient to purchase certain food products.

FAO experts define international food security as the provision of guaranteed access to food products in the amount necessary for an active healthy life for all people at all times. One of the most important indicators of the state of food security of countries, as well as of the whole world (according to FAO categories), is the "dynamics of grain production per capita". The overall lower limit of food security for the country is 600 kg of production per capita per year.

Food security is the most important component of national security, and it describes not only the economic, but also the political independence of the existing system, the ability to meet the needs of citizens without compromising the security of the national state.

A country's ability to maintain food security as a result of a country's total or partial reliance on external food supplies determines its food independence.

The World Food Conference (Rome, 1996) decided on the principles of state responsibility for food security at the level of the individual, the region, the country and the whole world community. In recent years, effective national food security strategies have been developed and used in countries such as Japan, South Korea, and the European Union.

The problem of food security was a part of economic studies and domestic science. Many works consider the country's participation in international trade in food and protective measures [7, 14, 15, 18, 66, 61, 121, 128] - an important number associated with the growth of the food

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economy of the world's regions. global food crisis [8,66,101, 66 181, 139]: in developed countries - shortages associated with increased food production. The state of rural ecology attracts the country's scientific community in the context of mass access to modern technologies.

When scientists define the concept of food security, it is measured by the level and conditions of the country's agricultural products and the provision of conditions, taking into account self-management for the country, its development includes protecting manufacturers in the range of 80-85% and critical - in the range of 75%.

The analysis of the situation shows that it is necessary to formulate the principles of the current and future conditions for the development of the Russian food sector, because it is the basis for ensuring the well-being of the population. the objective for support should take into account the specific characteristics of the country arising from natural conditions.

The main provisions of the state strategy of the country's economic security, approved in April 1996, for this purpose, write down the system of the most important national interests, including: the possibilities of the country's national economy as far as possible independent of external influence; increase and maintain the standard of living of the population, which determines the socio-economic stability of the population; Maintaining a single economic space; Regulation of economic processes by the state. Food standards of national production are determined by a special agreement in 1995, including the volume and dynamics of imported goods and dynamics, including the share of turnover of the national market. employment dynamics with

A necessary condition for the food security of our country is "food independence", which includes meeting the main part of food needs due to local production.

Food independence is the ability to ensure the necessary level of the country's economy in case of complete or partial suspension of external food products. Food independence is ensured even if the share of food imports does not exceed 16% in the total volume of their consumption (according to FAO recommendations). The idea of self-management of food products, the growth of the production of the Domestic Agro-Sanifical complex, the development of many other sectors of the economy, the development of other areas of food are fighting against the crisis of the international market and other external threats.

The transition from the planning and distribution system to the market and the state's management of the economy, the food support of the country's population was provided by market elements and the power of food expansion. The loss of economic security in the total consumption of imported products creates a dependence on the global food market, which increases the instability of the domestic market. A sharp decrease in food imports in August 1998, which creates conditions for political and economic pressure on the country's exporters, is against their national interests. Therefore, there is an urgent need to formulate fundamentally different state policies in the field of food support, the need to justify the target attitude, strategic and tactical directions and tactics.

Quantitative assessment of the level or state of food security of the country can be done using the dynamics of two groups of indicators:

- the level of consumption of basic food products, taking into account their differences in groups of the population with different incomes;
- the degree of self-government of the country with food.

In both groups, real and deficient indicators are distinguished, i.e. Minimum (maximum) allowed. In the first group of indicators, medical standards can be previously used scientifically

based social standards. Current and forecast indicators of the financial and economic status of producers, including food imports, are used.

In January 1996, the State Duma of the country adopted a decision "On measures for the food security of the country and the supply of food products to the population." Based on it, the law "On Food Safety of the Country" has not yet been signed by the President of the country and has been reviewed by the State Duma. As part of the system of legislation on national security issues, the law regulates the state policy on the supply of food products to the population, as well as legal relations in the field of production, storage, processing and distribution of products. Protect the company in general and every a citizen separates threats and negative factors from threats and negative factors related to lack of consumption or low-quality food. The main purpose of the law is to guarantee the population's right to full nutrition as one of the conditions for the realization of human rights, for the realization of the rights to life, other non-citizen rights.

Due to the development of the above laws and doctrines on food safety, many researchers reduce the problem of food safety to the problems of food safety, but the food supply system includes a wide range of them.

The security of the food supply system or food safety defines the limiting parameters of the system, the violation of which creates threats to the security of the country. In other words, safety is one of the conditions or one aspect of the food supply system. This is the difference between the concepts of food safety and food security.

As for the term food supply, it has long been widely used in economic literature, but the food supply system has not been singled out as an independent research topic. As a rule, food problems were taken into account in the context of the general problem of agricultural development or the general problem of organizing the supply of food products to the food market.

Under the conditions of an open economy, the justification of the meaning of the food aspect in the country's economy and the development of the agro-industrial complex should be based on the political, socio-ecological goals of development and the skills of state priorities. The main importance of the state is the goals of the political tone, among which the leading place is occupied by food security, which is the provision of access to food in an unlimited amount of time for the state and society, and sufficient and extraordinary for the healthy and social development of everyone in personal conditions. the minimum necessary to maintain health and working capacity under the circumstances. It follows that in the development of agricultural policy, the state has a sufficient degree of ownership of the power of the population, at least in terms of stopping the population's energy imports. The need to ensure a certain level of production is determined by two main reasons. First, if the level of own production is not enough to electrify the government for the minimum standards, then there are negotiations on large-scale political and economic issues of the state, additional possibilities of pressure have been created in the country. complete suspension of food imports (trade embargo) to temporarily deny humanitarian aid in case of famine and other natural disasters. Secondly, the food market and most of the imports directed to the world market are the stability of the domestic market, therefore the whole economy is more volatile than the world markets in developed countries and there are almost no regulators. The second level is the goals of a socio-ecological character. Agriculture, in addition to production, performs a number of important functions: socio-demographic, cultural, ecological, recreational and spatial-communication. Therefore, when deciding to expand or reduce agrochemical production, it is necessary to take into account the damage caused, especially in the ecological and social spheres.

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These goals are mostly in nature. In accordance with these target devices, agriculture is based on the environmental technology of the area, its permissible technological loads, soil fertility and the standard of living of the population.

The third-level goal of economic development in the hierarchy of goals (other indicators of economic performance). They play a major role in developing development strategies, political and socio-economic goals in the form of restrictions. Thus, it is necessary to increase the economic efficiency of industries and enterprises in the implementation of restrictions of a political and socio-ecological nature in each place. The first group of goals dominates the federal level, the second is the provincial level, and the third is the level of individual enterprises.

It was considered that the food supply system consists of three subsystems: food consumption and nutrition of the population, actual production of food products, formation and distribution of food resources.

The goals and objectives of the bulk system of consumption of heat, approved by the government of the country in August 1998, can be justified on the basis of the concept of public policy in the healthy nutrition of the population, as approved in August 1998:

- human health is the most important priority of the state;
- food products should not harm human health;
- nutrition should not only meet the physiological needs of a person in food, but also perform preventive and therapeutic tasks;
- reasonable nutrition of children should receive special attention of the state;
- Nutrition should contribute to the protection of the human body from unknown environmental conditions;
- Healthy nutrition requirements are unified for all food products.

The criterion for assessing the nutritional level of the population is the level of meeting structural needs and the energy content of the food diet. The minimum nutritional level of the population in the amount and assortment of food, the minimum acceptable level in terms of the amount of nutrients and energy supply leads to the consumption of the consumer.

The main factors that reflect food safety are the absence of substances harmful to health in food or their concentration should not exceed the recommended level.

The subsystem of food production is mainly agro-industrial production. The level and pace of agro-horizontal production industries, their potential for expansion determine the country's food resources and food security.

The main field of agriculture is agriculture. First, the country's food production capabilities depend on the natural and economic conditions of its activity. A prerequisite for food security is food independence, which includes meeting food needs through local production. The idea is that the growth of the production of local Agro-Sanif Complex stimulates the development of many sectors of the economy.

To increase the interests of increasing the level of food supply for the population and the development of the agrochemical complex, it offers to use the opportunities of the International Labor Department and the world market. Based on the circumstances that alleviate the situation in the import food market, it helps to replace the shortage of local food, improve the range and quality of the population, and also plays a certain positive role in the formation of a competitive environment in the domestic market. However, it is not allowed to subsidize the subsidized goods of the exporters of domestic producers in the domestic market. Based on the interests of ensuring

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food security, it is necessary to increase the dependence of agriculture, food and processing industry on the import of material and technical resources, as well as agriculture, food and processing industry.

One of the important conditions for the country's food independence is the effective operation of domestic tractors and agricultural machinery, mineral fertilizers, plant protection products, veterinary drugs, and technical means of the processing industry.

However, self-sufficiency for food, calculated as the ratio of domestic production to domestic consumption, does not indicate a country's level of food security and is therefore a generalization indicator. It should be noted that in some countries, the export of food and agricultural raw materials leads to poverty, and in other countries, on the contrary, the import of food contributes. At the same time, both groups are not dependent on food, because in the first case, the basis of food imports, as well as the export of economically highly developed countries, allows to guarantee the payment of food and raw materials necessary for them.

The subsystem of formation and distribution of food resources describes the level of physical and economic supply of food to different categories of the population, the state of the food market, the state of the food market, the size of the state food reserves.

The physical freedom of food means that it is not included in the corresponding payment capacity and is distinguished by its quantity and the population required in the retail network and food markets. As the volume and structure of food supply and the structure of rules adopted for them.

Economic use is the possibility of purchasing by purchasing different segments of the population, as well as by means of payment for the supply of food products by the state. In the country, as in a number of other countries, the economic availability of food is determined not only by the availability of market supply and the ability to produce it in private plots and in the garden (for own consumption in the summer. Sottakas)

Indicators describing the economic availability of food are indicators of the size and composition of food products purchased by different groups of the population in relation to the norm.

Food security refers to the state and society's compliance with food and food security due to natural disasters and other emergencies. For this, it is necessary to create continuously renewable strategic and operational food products and their distribution systems. The size of the operational federal and regional food reserves is determined by the supply and delivery in the food market, market conditions.

Adequacy of the state's strategic food reserves is the ability to provide the population with food in the amount of the minimum consumption basket in emergency situations.

When it fails to import food, world and domestic experience shows that a country that cannot pay for food imports becomes food dependent. At the same time, countries with self-sufficiency, calculated as the ratio of national product to the amount of domestic food production, may have high levels of consumer demand due to their lack of products. Food procurement significantly increases domestic food production. Each country determines its dependence on imported food based on its economic potential, international positions, foreign and exchange resources, the level of development of agro-industrial production, satisfaction for satisfaction, and other factors of internal and external order. For example, in Japan, the nutrition of food corresponds to the level of

food consumption of the population.

In addition, food products and food consumption are relatively poorly developed countries, as well as countries related to food consumption, and because hunger is not widespread, food products should be kept in mind when writing. . In the second case, Country i, food security, their food security depends on the import of food and raw materials for the production of their own products. In the loss of these external food products and food insecurity, their growth trends become a reality.

The country's high and unjustified dependence on some food products significantly reduces its economic security, because the purchase of food and raw materials for their production puts pressure on foreign exchange resources in addition to foreign exchange resources Debt . Increasing food production leads to the fact that the country is forced to pay with natural resources that it does not have and its role in the global economy is weakened. Import of food as a result of the sale of natural resources, natural resources, non-local, but foreign producers to some extent.

Taking into account the size and diversity of the country's regions, the issue of food support for regions is of particular importance, their objectively developed division is related to their export, self-sufficiency and import. liq. The first is characterized by natural conditions and agricultural land favorable for per capita food production, while the second has the least favorable conditions for agriculture.

In solving the problem of self-management of territories, its priority types are distinguished by food. The criteria for inclusion in the number of certain products are as follows: their satisfaction with the necessary components of the food diet in meeting the needs of the population; Transport, which ensures redistribution of commodity resources among commodity resources; stability of consumption and price stability in the food market and long-term shelf-life to create securities for price stability. Taking into account the priority of priority in ensuring food safety, it concerns grain, sugar, vegetable oil, milk and meat products, fish. Meeting the need for this type of products should be the subject of special care of the state legislative and executive authorities. The priority of grain production is explained by the country's consumption structure, where bread and bakery products occupy a very large specific gravity in the population's diet. The strategic value of grain in food nutrition is determined by the technological features of this product, which allow creating a reserve fund, especially in the event of crop and crop failure. Their importance is to guarantee market prices in the domestic market, for food purposes in the country and abroad, and emergency situations, emergency situations, food purposes, as well as livestock needs.

The high amount of food products of our country determines the priority of the grain industry in the state measures to support local agricultural products.

The country is one of the countries that has increased the consumption of sugar, which constitutes an important part of the necessary energy content of the food diet. Due to its preservation potential, sugar is an indispensable raw material component in the processing of fruit and berry products. With its high transportability and long-term shelf life, this product is widely redistributed and distributed between regions and is important in the formulation of food products.

The priority of the country's food is vegetable oil, two-thirds of which is used for food purposes. In the diet of the population, this product has a relatively small share compared to developed foreign countries, and its consumption is 2.5-3 times lower. However, animal fat, the resources of production, increase the need for mayonnaise, sauces, and the need for vegetable oil in the future is less taken into account. In addition, vegetable oil has a high transport capacity, for

which its non-losing funds can be redistributed between regions.

In the food supply, milk, milk products, and especially the country, which occupies one of the first places in the country, milk, dairy products, especially animal fat, because it occupies an important place, which occupies one of the first places in the world, occupies an important place. Dairy products, primarily cheese, milk powder and canned milk, are very portable and suitable for storage.

The importance of meat and its processing products in the food supply is determined by the increased consumption in the last three decades. Meat products with high energy and protein content are of great importance, especially in Northern regions and industrial occupations. In addition to cooked meat and chilled meat, meat products are also suitable in frozen form, especially for long-distance transportation and stockpiling.

A number of other very important products - potatoes, vegetables, fruits, berries, eggs are mostly self-sufficient. However, as they take initiative and respond to longevity, their value in resource reallocation and food creation increases.

Solving the problem of food support requires a combination of national and federal entities. All regions, first of all, to deal with poorly restored food products, self-intermediate product types, potatoes, vegetables, fruits, berries, eggs.

The problem is that there is sustainable food production in cities with a population of more than a million people, where 18 percent of the country's population lives today. Currently, the markets of these cities are mainly filled with imported food products and products produced by local food enterprises, including imported raw materials. It is necessary to restore limited agricultural products and restore long-term contractual relations for the city to order and use the financial resources that provide it, to supply the city with agricultural products and cheap products from other regions. The development of the market infrastructure allows to attract a large volume of products above the city order when it exceeds the city order.

Conclusion

In conclusion, it should be said that a special problem is the development of food products in the northern regions, the minimal opportunities for the development of agricultural production, limited to dispersion, fishing, fisheries, greenhouse plants and animal husbandry in imported feed. Away from the highly efficient commodity production zones, their food supply (including imports) is increasingly used for food and raw materials production (including imports) and for further development of secondary stocks. in order to develop more. For the northern regions, traditional food sources that supply agricultural products, seeds, fodder, young animals, so used "backyard" agricultural enterprises.

List of used literature

1. Новожилова Ж.С., “Совершенствование продовольственного обеспечения учреждений уголовно-исполнительной системы”/ **дисс**/ Москва – 2016/ 164 стр.
2. Карпузов В., Кривчанский И., Окрут С., Пантелева О.. Продовольственная безопасность и контроль качества продовольствия: Учеб. материалы. Серия обучающих пособий "RUDECO Переподготовка кадров в сфере развития сельских территорий и экологии“. М., 2012 – 238 с.
3. Марченко А.В. Проблемы доступности продуктов питания и уровень продовольственной безопасности в мире // Электронное сетевое издание - Международный правовой курьер - 2020. - № 10. - с. 25-29.

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-3, ISSUE-3

4. Муракаева, З. И., & Амирова, О. К. (2023). НАУКА И АРМИЯ ГЛАЗАМИ ЖЕНЩИНЫ: ВЗГЛЯД ИЗНУТРИ. Herald pedagogiki. Nauka i Praktyka, 3(2).
5. Usmonjon o'g, A. U. B., Alimjon o'g'li, A. A., Bobirovich, Y. A., & Jamshid o'g'li, X. M. (2023). The State Authority System of the Republic of Uzbekistan and Its Organization. EUROPEAN JOURNAL OF BUSINESS STARTUPS AND OPEN SOCIETY, 3(8), 30-41.
6. Said o'g'li, S. S., & Abdurasul o'g'li, R. S. (2022). Psychological View of the Military Community. Pioneer: Journal of Advanced Research and Scientific Progress, 1(2), 5-12.
7. Usmonjon o'g, A. U. B., Nishon o'g'li, T. D., Nodir o'g'li, B. J., & Shuhrat o'g'li, A. Z. (2023). Management of Professional Promotion of Employees in Organizations. EUROPEAN JOURNAL OF BUSINESS STARTUPS AND OPEN SOCIETY, 3(8), 13-29.
8. Usmonjon o'g, A. U. B., Ergashali o'g, T. U. A., Sadulla o'g'li, Z. S., & Ravshanbek o'g'li, Q. A. (2023). Laws and Principles Of Management. Central Asian Journal of Innovations on Tourism Management and Finance, 4(6), 174-186.
9. Usmonjon o'g, A. U. B., Raxmatullo o'g, T. X. N., Hakimovich, H. P., & Jahongir o'g'li, F. J. (2023). Provision of Information to Management. Central Asian Journal of Innovations on Tourism Management and Finance, 4(7), 152-166.
10. Olimjon o'g'li, O. O., & Shuxrat o'g'li, Z. I. (2022). The Main Features and Signs of "Relations Contrary to the Charter"(On the Example of Russian Experience). Web of Scholars: Multidimensional Research Journal, 1(5), 17-21.



SOCIO-PSYCHOLOGICAL ASPECTS OF THE CRIME OF TRAFFICKING IN MINOR CHILDREN

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Abstract: V state consideration of the problem, directions and areas of prevention of criminal transactions in the Republic of Uzbekistan and ix liquidation, as well as the negotiation process in our Republic, implementation of warnings and transactions, children, existing regulations in regional mechanisms and their adoption. Suggestions and recommendations regarding legal and psychological situations are given in detail.

Key words: human trafficking, child trafficking, forced labor, crime, adoption, orphanage, guardianship and trusteeship.

Аннотация: В статье рассмотрены проблемы, возникающие в сфере предотвращения преступлений торговли детьми в Республике Узбекистан и их ликвидации, а также процесс борьбы с торговлей детьми в нашей Республике, реализуемые меры по предотвращению торговли детьми, существующие нормативные акты в в области механизмов отдачи и усыновления детей даются предложения и рекомендации относительно правовых и психологических ситуаций.

Ключевые слова: торговля людьми, торговля детьми, принудительный труд, преступность, усыновление, детский дом, опека и попечительство.

There are a number of global problems on our planet, including transnational crimes such as child trafficking. Every year the number of people suffering from this disease and becoming its victims is increasing. Each of these crimes, which know no territory or borders, poses a serious threat to the development of society and the country. Such a serious crime as child trafficking is so disgusting that it violates the life, freedom and rights of a person, tramples on his will, destiny and future. It should be said that the growth of child trafficking, that is, the use of a person as a commodity, so to speak, an object of trade, and the violation of his rights and freedoms causes the following: the illegal activity of a child, such as human trafficking becomes a source of income for groups consisting of one or more members, that is, they are trying to earn a lot of income without any hard and persistent work; in simplicity, indifference and indifference to the fate and future of persons who are victims of child trafficking. That is, because of their easy and careless attitude towards the concept of a free life, considered the highest good, these children become prey for criminals, or rather, their easy source of income; when criminals involved in child trafficking act against their friends and close relatives, i.e. gaining their trust and forcing them to become victims of child trafficking.

The fight against child trafficking in human history At the end of the 19th and beginning of the 20th centuries, there was a large-scale migration of women from Europe to the American and North African continents, and the phenomenon of women being sold to Europe was observed. To put an end to this phenomenon, two conferences were held in Paris in 1902 and 1910 and the World Convention for the Suppression of the White Slave Trade was adopted.

This convention was later supplemented by the Global Conventions “Eliminate Trafficking in Women and Children” and “Eliminate Trafficking in Adult Women”. Further historical processes to combat the problem of child trafficking developed gradually, and in 1948 the

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Universal Declaration of “Human Rights” was adopted. After this, the European Convention on Human Rights, the Slavery Convention, the Supplementary Convention for the Abolition of Slavery, the Convention on the Rights of the Child, the Convention on the Rights of Women, and the Convention against All Forms of Discrimination were adopted. accepted and used in many countries around the world.

On November 20, 1989, the Convention on the Rights of the Child was adopted, which entered into force for the Republic of Uzbekistan on July 29, 1994. In 2013, the United Nations designated July 30 as World Day against Trafficking in Persons. Currently, this type of crime, which is an integral part of transnational organized crime, is spreading throughout the world. According to the analytical conclusions of UN experts and the International Organization for Migration, the number of victims is several million. It is alarming that the majority of victims of human trafficking are women and children.

It would be wrong to consider child trafficking only as a problem of the Republic of Uzbekistan, since currently crimes related to child trafficking are widespread in many countries and are of concern to the entire world community.

The saddest thing is that crime associated with child trafficking is widespread: sections of the population in need of social protection are unemployed citizens, women experiencing many difficulties in family life, and minors left without the attention and care of their loved ones. parents or that they use it for their own selfish purposes, pretending that they are solving their problems.

A trafficker attacks victims by preventing them from exercising their rights and freedoms as reflected in the Constitution and laws. Such criminals abuse people physically, mentally and sexually, hold them by force, and neglect personal safety and a healthy lifestyle. It is very sad that these crimes mainly involve children and women. The Republic of Uzbekistan is implementing a number of measures to prevent and combat child trafficking, which is one of the most pressing problems today. At the same time, given that child trafficking is transnational, that is, a crime that does not choose territory and borders, in our country on December 12, 2003, the UN General Assembly adopted in 1950 “On the fight against the use of children and prostitution by third parties” joined to the Convention.

Convention for the Suppression of Transnational Organized Crime, adopted by the UN General Assembly on November 15, 2000, and to prevent and suppress the sale of children, especially women and children, and for this purpose the Additional Protocol on Punishment. was also ratified. Also, during the years of independence, a number of treaties and agreements were signed with foreign countries to combat organized crime, including dangerous forms of child trafficking.

The Law of the Republic of Uzbekistan “On Combating Trafficking in Persons” was adopted on April 17, 2008, and in order to further improve this law and adapt it to modern requirements, changes and additions were made to it. A new edition was adopted. August 17, 2020 The need to develop a new version of the law is due to the fact that today there are no specific provisions on the issues of protection and assistance to victims of child trafficking and the specifics of combating child trafficking and forced labor, including identification. The legal status of activities, assistance and protection is explained by a clear definition. Article 11 of this Law is devoted to the issue of “Assistance to children affected by human trafficking,” and it is necessary, in cooperation with all authorities, to develop precautionary measures in order to ensure the rights of children affected by human trafficking and socio-psychological protection. When placing

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children who have been victims of human trafficking in specialized institutions, it is necessary to organize psychological trainings, classes, and conversations in order to put their spiritual and mental state under the supervision of specialists, restore impaired mental processes and improve mental health. If children who are victims of human trafficking are not in the care of their parents or do not know about their family, then it is necessary to find parents or their surrogates and constantly improve the child's new situational skills, and his adaptive characteristics must be monitored. It is known that more than 9 thousand non-governmental non-profit organizations operate in our republic, about 100 of them are engaged in the fight against child trafficking. The law defines non-governmental non-profit organizations among the organizations providing assistance to government bodies carrying out activities in this direction, and clearly discloses their powers and responsibilities. At the same time, in contrast to the current Law, the new version of the Law establishes the procedure for ensuring social rehabilitation and adaptation of victims of child trafficking, the procedure for ensuring the confidentiality of information about victims, as well as security measures and other guarantees provided to them. Behind the crime of child trafficking are illegal acts such as forced labor, modern slavery, forced donation, use in military and terrorist conflicts, and forced prostitution. Every year, more than 4 million people are affected by child trafficking in more than 150 countries, 80% of them are women and children. Today, our country is carrying out systemic reforms to combat child trafficking, prevent and completely eliminate forced labor. President of the Republic of Uzbekistan Sh.M. Mirziyoyev emphasized that at the 46th session of the UN Human Rights Council, in cooperation with the International Labor Organization and the World Bank, effective reforms were implemented to eradicate forced and child labor. Our republic is implementing a number of practical and organizational measures to increase the effectiveness of efforts to combat child trafficking and prevent crime in this regard.

An analysis of the process of combating child trafficking in our republic, measures taken to prevent child trafficking, mechanisms for giving and adopting a child, as well as current regulatory documents in this area shows that child trafficking and the emergence of child trafficking are influenced by a number of factors. committing crimes. Firstly, the child's family is not socially protected, needs financial support, or uses financial benefits from the unborn child to hide the pregnancy of unmarried girls. Secondly, there is a great need in society for the adoption of a newborn and healthy child from childless families. Thirdly, cases of organization of trafficking in children with the aim of obtaining large financial benefits from trafficking in children. Secondly, there is a great need in society for the adoption of a newborn and healthy child from childless families. Thirdly, cases of organization of trafficking in children for the purpose of obtaining large financial benefits from trafficking in children. Fourthly, there is no effective comprehensive interdepartmental state system and a perfect regulatory framework to prevent the sale of a pregnant woman from the moment the fetus is discovered until the birth of the child. The complexity of the current adoption procedure in our country causes certain difficulties when adopting a child. One of the saddest cases is that employees of government agencies, through their illegal actions, participate in the crime of child trafficking. The main reason for this is the fact that healthcare workers receive a large financial allowance. In the course of investigations conducted by the investigative authorities, it was established that the doctors of the maternity hospitals for criminal purposes concealed the fact that the woman was pregnant, that the woman who came for the child prepared false documents about her pregnancy, or that the maternity hospital employees killed her child, additional crimes related to forgery of documents. Based on the above problems, there are a

number of systemic shortcomings in the effective functioning of mechanisms to prevent child trafficking, adoption and adoption. First of all, it is necessary to determine the social and psychological causes of these situations. First of all, there is no comprehensive system of mutual cooperation between government agencies and their work with public organizations in order to prevent and combat child trafficking. Secondly, there is a lack of knowledge and experience among relevant employees of internal affairs bodies in the early detection of crimes related to child trafficking, consideration of applications for this type of crime, investigation and referral to court. Thirdly, the reason for the growth of this type of crime is the imposition of light sentences on the perpetrators of crimes related to child trafficking, especially on intermediaries. Fourthly, the development of an automated information system for recording women of childbearing age and maintaining records from early pregnancy to the birth of a child has not been completed. Also, through this system it is impossible to identify pregnant women who have not applied to a medical facility. Fifthly, there is no effective system of interaction between general practitioners and patronage services operating in the regions to identify pregnant women and organize their medical supervision in cooperation with public gathering workers and a prevention inspector. At sixth, there is no system of transparency in the activities of guardianship and trusteeship authorities related to the adoption of a child. The abundance of documents in this process forces applicants to wait in line for years. In this regard, it is necessary to simplify the adoption procedure and ensure transparency of this process. At the same time, it is necessary to develop and approve an interdepartmental procedure for interaction with public organizations, clearly defining the tasks of each government body in the field of combating child trafficking. It would be advisable to take effective punitive measures against perpetrators of crimes related to child trafficking, especially intermediaries, and ensure the inevitability of punishment.

Literature:

1. Constitution of the Republic of Uzbekistan-T.: Uzbekistan, 2021.
2. Additional Protocol to Suppress and Punish Trafficking in Persons, Especially Women and Children, supplementing the UN Convention against Transnational Organized Crime, 2000.
3. Law of the Republic of Uzbekistan “On Combating Trafficking in Persons”. 2008
4. Atazhonov A.A. Crimes against the person: Textbook. – T.: Academy of the Ministry of Internal Affairs of the Republic of Uzbekistan, 2012. — P. 214—215.
5. <https://dunyo.news/uz/news>

THE EFFECT OF THE INTERNET ON CHILDREN'S THINKING

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Annotation. The 21st-century world is changing and rapidly developing in colorful fields. It's no secret that new changes and new ways are being appended to people's commerce and trade of ideas, mastering and serving business. Most of the new techniques are mainly in the hands of our youth. The majority of the population is also young people, and they communicate with each other through social networks, exchange ideas, and share their creations with others.

Keywords: youth, knowledge, social, active, cerebral, knowledge, Islam, culture and tradition, Internet, individual, society, evolution, art:

Youth activity refers to the manifestation of internal and external trends in social life. Social activity is the main expression of a person's position as a person and is a quality index. Consequently, gregarious exertion is an important and native portion of a person. Youth exertion is related to the operation of his life and the incarnation of valuations. Social activity is the main expression of the position of a person as a person, a system of satisfying his high requirements and a quality index. In this reference, the activity of a person is studied in political broad and fragile (narrow) Social activity situations. The study of a person in similar situations acquires methodological significance.¹

Every stage of human life is vital. Among these important stages, the youth stage of life is of personal significance. Youth is the most sensitive period in a person's life. Youth is the time when a person is full of dynamism and has swelled mobility. At the same time, the period of youth is also the time when a person stands at the crossroads of life paths. If at that crossroads, a person enters a good path, he will turn to a great good for himself, his family, relatives, people, and country. However, if this path is a bad path for his family and surrounding people, as well as for his people and country, he has taken a step towards an extremely disappointing event².

If we take into account that young people are the future of every country, the importance of paying attention to them has increased even more. The identity of each person becomes clear from his youth, and his majority begins from his youth. Social activism is currently developing rapidly and intensively. Today, the level of social activity of our youth has changed over the past five years, and the period of social depression and indifference to reforms has passed. In a word, social networks have strengthened social activity and attracted the population to youthful people. As a result, youthful people are invariably exposed to colorful foreign ideas.

Discussion and results.

The social activity of young people makes up a large part of society compared to other layers. As a result, it causes various problems. First of all, this is because the situation of youthful people in society is not completely formed. youthful people enter social structures, that is, they

¹ Tursunova N. Social activity of young people: concepts and qualities. "Social opinion". 2004. No. 3. Pages 149-150.

² Sheikh Muhammad Sadiq Muhammad Sadiq Muhammad Yusuf "Social manners" 2023 page 153.

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witness the process of socialization. Social activism can be understood as a person's trouble to contribute to the evolution of society and its future, regardless of what profession or situation a person holds. Social activism is a complex process that can be completed in one day or the first stages of social activity begin in kindergarten, and the most important period is the period of social formation during the pupil period when it is delicate for him to take a professional and detect his position moment.

Today, modern tools based on information and communication technologies have occupied an important part of our lives. In particular, social networks have become the most important and indispensable means of communication between humanity, along with the acceleration of globalization processes. Currently, 63% of the entire population uses the Internet.

The number of Internet users has increased by 200 million in a period of almost 1 year. The majority of Internet users (92.4%) use the Internet through mobile devices. 4.65 billion users actively use social networks. These figures show once again how important the online world is. There are further than 3 billion people utilizing couriers worldwide.

The platforms with the most users are Facebook and WhatsApp exercised by further than 2.5 billion users. Inactivity and public couriers are also exercised in several advanced nations. involving Line in Japan, KakaoTalk in South Korea, and WeChat in China.

Statista.com published a list of the most popular couriers

WhatsApp has further than 2 billion users

Weixin/ Wechat(China) — around 1.3 billion users

Facebook Messenger — has 988 million users

QQ — 574 mln. users

Snapchat — 557 mln. users

Telegram — 550 mln. users

More than 100 billion messages are sent from the messenger in one day;

On average, the app is used for 38 minutes per day via mobile devices;

The share of users aged 26–35 is 27%;

46.1% of users are women;

The list of the most popular messengers in Uzbekistan is as follows:

Telegram — 80% of users

WhatsApp — 22% of users

Facebook Messenger — 6% of users

According to datareportal.com, about 70% of the population of Uzbekistan are internet users. 18.3% of the population use social networks.³

Instagram is the most used social network by users in our country. Currently, the number of users of this network is more than 4.8 million. 34.4% of users are women. The majority of users are young people (18–35 years old).

In Uzbekistan, various works have been carried out on the creation of national messengers and social networks. According to [Kun. uz](https://kun.uz), the national social network [davra. uz](https://davra.uz) was created in 2016, and the number of its subscribers today is 22,500. This indicator of 6 years shows that the network has not been popularized. In addition, in 2016, a network called «Uchar» appeared and

³ <https://datareportal.com/global-digital-overview>

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was not popular. In addition, in 2018, the UzChat messenger belonging to «UMS» LLC was launched, but it did not become popular. In 2011, the messenger «diaysuk.uz» was also created and discontinued in 2018. The main reasons for the lack of popularity of national messengers are the lack of cyber security, reliable data storage, and stable performance. Many created platforms are installed on home or office servers, and when the number of users reaches several thousand, there are interruptions in operation. Nowadays, special attention is paid to these factors when creating social networks.

A total of 24.1 million in our country. there are internet users. These numbers are growing by an average of 1.4% per year. In addition, 28.5% of the population is between 18–35 years old and actively uses social networks, including messengers.⁴ The rapid-fire evolution of the country, the acquirement of certain accomplishments, the substance of the people, the confidence in the future, and the bold way taken by the head of the country towards a thing are the possessors of the future of that country, that is, the instruction and parenting of the youth. and depends on the position of concentration paid to the future. Youth effects and their cases are one of the most priority directions of the country procedure of Uzbekistan. The first socialization of a child starts from the child's kindergarten period. He falls into a new environment away from his parents and loved ones. In this terrain, the child doesn't join anyone in the first days and behaves like a stranger, and this period begins the period of compliance. During the observation period, he also learned about the environment and behavior. Gradually, communication and friends among children begin to increase. If children cannot find friends around them, then they may be facing psychological problems. The child will be separated from his peers. Educators must observe children and organize games to solve their problems. A psychological and pedagogical approach is necessary. Interest in studying the social activity of adolescents as a psychological and pedagogical phenomenon is connected with the presence of representatives of this age group due to their psychophysiological characteristics, desire and desire to perform socially significant actions. The mobility of the value system, promotion of the need to expand the social space, self-defense among peers and attention to the approval of others, self-awareness as a personality, and other characteristics characteristic of adolescents, children of this age school, make the family the weakest and most attractive part of society. The future begins moment. In our country, all the conditions have been created for young people to get and become ripe individualities in all aspects. This composition aims to reflect on the conditioning, social mores, and mores of utilizing the Internet network, which is formed as a result of applying theoretically acquired knowledge to exercise. We set it as a thing. The conception of social activism is nearly related to the conception of civil society. The main thing in studying citizenship and civil knowledge is studying civil activism to erect a civil society. After all, civil society is established not only by employing conscious subjects with citizenship characteristics but also by active subjects It is this activity that allows us to understand the general and private laws of the establishment of society.

Civic consciousness serves to unify the society, it serves to create an agreement between citizens in the way of common interests. Finds the contrary. currently, we can know movable bias similar to phones, tablets, computers, and analogous particulars in the hands of each of our young people. The Internet networks have helped boost the position of social activity among youthful people and speed up the process of collective message and news viewing. The word« Internet» is

⁴ <https://mininnovation.uz/ru/news/post-745>

an abbreviated judgment in a foreign language, which means «transnational data network» in our language. It is not limited, but it has become useful for carrying out more voluminous-scale work. In all areas of our lives, the advantages of release, stinginess, and celerity are discerned with the help of the Internet. The Internet also works both ways it is getting commodities that can serve both good and bad. Our task is to educate youthful people on the good sides and mores of utilizing it. We should give non-identical exemplifications of the bad sides. To help young people from bordering on colorful foreign ideas, it is necessary to develop their unsubstantial knowledge, to be under the supervision of their parents, and to help them from bordering on terrorist groups. A person who wants to exercise the Internet should first of all have a good intention and set the right thing. Why do I want to pierce the Internet and how will it affect my future? Before accessing the Internet, one should save time for unnecessary things, learn the necessary knowledge and skills, and news, remember the value of one's life, think that every moment counts and this period will never return. It is precisely because of the lack of these qualities that many of our young people spend hours and hours of their precious lives on the Internet looking at unnecessary things. In addition, playing for hours on end makes young children forget their daily lifestyle, causing various health problems. Distances are appearing between friends, parents, and relatives. Mobile communication tools have brought In extension, rollicking for hours on end makes young children forget their diurnal life, causing colorful health cases. Distances are appearing between musketeers, parents, and cousins. Mobile message tools have brought us closer, but the passion for love between people has also dropped. Before accessing the Internet, you should make a well-budgeted work plan. As in any job, you should work on the base of a well-budgeted plan when utilizing the Internet. The intended area must be clear and the time of use must also be easily indicated. This in turn saves practice and time. «What should I do?», «What news is there in the world?» Who bought what sort of new auto?» will reduce perturbation. Thus, we should form the chops of utilizing social networks in our youth from a youthful time. In conclusion, the moment Internet networks have become a portion of our lives, it is necessary to seek a useful purpose in communicating with others through the Internet and shake unworkable conditioning. We must be around him more, to support breaking our child's accomplishments and cases together.

List of used literature

1. H.R.Turobova, M.U.Eshbekov. Improve children online safety//The multidisciplinary journal of science and technology. volume-3, issue-3. 2023. <https://mjstjournal.com/index.php/mjst/article/view/190/523>
2. Wurtele, S. K. Sexual interest in children among an online sample of men and women prevalence and correlates
3. . K.Wurtele, D. A. Simons. T. Moreno // Sexual Abuse A Journal of Research and Treatmentruen-2014-Vol 26, no. 6-P 546-568-
3. datareportal.com,
4. Kun.uz
5. «diaysuk.uz»
6. <https://www.theonespy.com/uz/>
7. <https://uzbekistan.ureport.in/>

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Annotation. Rye bread was the staple food. For example, at the beginning of the twentieth century, over 1.1 kg of rye bread per day. But during the twentieth century, the consumption of rye bread gradually decreased and already in the years, the average person ate 600 g of bread per day, of which 450 g of rye.

The area under winter rye began to be reduced, since this crop was less productive compared to winter wheat.

Key words: rye bread; dry sourdough; accelerated method.

In our time, the total consumption of bread has sharply decreased and for the average resident it is about 200 g per day? mainly made from wheat flour. The first significant restructuring in the structure of bread consumption and its assortment. Due to a shortage of rye grain, the production of seeded and peeled rye flour was practically stopped and, as a result, peeled rye bread, previously its most popular variety, disappeared from store shelves [1,2,3].

Restriction of rye flour production in the early 60s. The twentieth century led to an increase in the production of products from a mixture of rye and wheat flour. During that period, varieties such as Oryol, table, etc. appeared[1,4].

The second significant wave of changes in the technology and range of bakery products has been characteristic of the last 20 years and continues now.

These additives significantly facilitate technological processes and help level out deviations in the quality of the main raw material. Traditional methods of preparing bread, based on long processes of alcoholic and lactic acid fermentation, are being replaced by accelerated methods that exclude lactic acid fermentation and intensify alcoholic fermentation through the use of a significant amount of yeast [1,5,6,7].

Wheat flour cannot be considered justified in rye flour, since, although both cereals are similar in nutritional value, rye flour has a higher yield and contains significantly more peripheral parts of the grain. The nutritional value of rye bread is higher and it contains significantly more dietary fiber. [2,8,9]

Rye bread, familiar to consumers, can only be obtained with the use of biological starters, which contribute to the formation of a characteristic taste and aroma. In this case, acid formation is of great importance for the complete swelling of rye proteins and for increasing the ability of the dough to better loosen. The resulting lactic acid prevents the development of other fermentation processes, and the acidic environment creates favorable conditions for the formation of flavor-forming compounds during the baking process[2,10,11].

With the development of small-scale bakery production, as well as the transition of enterprises to a one- or two-shift mode, the issue of promptly producing starter cultures or a method for preserving them becomes relevant.

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Research has been carried out aimed at improving the technology for preparing sourdough rye bread, in relation to the conditions of low-power enterprises [12,13,14].

The traditional preparation of rye dough is divided into two cycles: breeding and production. The breeding cycle is intended to obtain the main starter and is carried out from time to time, in the event that there is a need to refresh the production starter. The production starter is used continuously for a long time, using part of it to knead a portion of dough, and the remaining part to renew the starter by adding flour and water to it [15,16,17,18].

A significant technological difficulty is the production of the main starter. You can obtain the main starter by using pure cultures of lactic acid bacteria using a special patented technology or use a starter delivered from another enterprise as a source of fermentation microflora.

An alternative to this solution may be to obtain the main starter at the enterprise itself through the breeding cycle due to spontaneous (spontaneous) fermentation. The use of hops, the bacteriostatic properties of which are well known, makes it possible to increase the efficiency of souring and ensure the necessary composition of the microflora of the sourdough [3,19,20].

Discrete technology for preparing rye bread paid special attention to spontaneous fermentation starters. Thick biological starters of spontaneous fermentation were chosen for the research (the ratio of peeled rye flour to liquid is 1:0.7, humidity 50-56%), since they contain more acid-forming bacteria and acids compared to liquid starters. Acids improve the structure of rye dough and slow down the dextrinization of starch. By using thick starters, it is easier to obtain bread with an elastic and dry crumb.

During the development of spontaneous fermentation starter, refreshment was carried out after 12 hours, using the accepted ratio of flour and liquid. A hop decoction with a hop concentration of 23 g per 1 liter of water was used as a liquid phase [21,22,23].

The activity of lactic acid bacteria in the starter stabilized at a high level on the fifth day and amounted to 30-35 minutes, subject to a temperature regime of 23...25 0C, the acidity reached 16 degrees.

Using starters of spontaneous fermentation, we baked plain rye bread GOST 2077-84 (Table 1).

Table 1

Index	Meaning
Specific volume, cm ³ /g	1,77
Humidity, %	49
Acidity, hail	9,5
Porosity, %	60
Organoleptic evaluation	
Appearance	The shape is correct, the color of the crust is dark brown, the surface is smooth
State of the crumb	Elastic, uniform porosity
Chewability	Chews well, does not crumple
Aroma	Expressed
Taste	Nice

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Production baking showed that when kneading dough for rye varieties, the use of spontaneous fermentation as a source of fermentation microflora ensures the production of bread that meets the established requirements in terms of physical and chemical parameters and has a unique taste and aroma –vol.

To maintain the microflora of starter cultures in an active state, they must be constantly refreshed. For enterprises of small capacity, violations of the rhythm of selection and interruptions in work are characteristic, these factors worsen the quality of the starter - it becomes unsuitable for preparing dough [24,25,26].

Given the relevance of preserving the technological properties of the starter, it becomes necessary to preserve the starter with its subsequent activation. To this end, we have studied methods for preserving the starter of spontaneous fermentation.

Dry starter activation was carried out by reduction by adding water. Defrosting of the frozen starter was carried out at a temperature of 20.25 0C with further refreshment with a water-flour mixture. The chilled sourdough was brought to a temperature of 28 0C by introducing a water-flour mixture.

The fermentation properties of the reduced starter cultures were evaluated based on the results of trial baking of plain rye bread. In all cases, the leaven was introduced in the amount of 25% of the total amount of flour introduced.

The results of test baking are given in table. 2.

table 2

Influence of sourdough preservation methods on the quality of plain rye bread weighing 0.3 kg

Level of quality	The value of bread quality indicators		
	Dry sourdough	Frozen sourdough	Chilled sourdough
Humidity, %	50,0	51,2	50,8
Acidity, hail	11,0	8,0	11,2
Porosity, %	59	50	57
Volume, cm3	620	530	575

The analysis of the data obtained shows that simple rye bread with the use of dry sourdough was characterized by the best physical, chemical and organoleptic parameters compared to bread with chilled sourdough. Bread with the introduction of frozen and defrosted sourdough has low characteristics, probably because the microflora of the bred sourdough could not withstand the effects of negative temperatures [27,28].

In the production of bread from rye and a mixture of rye and wheat flour, one of the main trends in the development of bread baking has recently been associated with the development and practical implementation of accelerated methods of making bread, which make it possible to produce bread in enterprises with a discrete production cycle and small production. vigilance. For bread made from rye and a mixture of rye and wheat flour, the preparation of which is based on the use of a continuously renewable sourdough phase, the implementation of this trend faces a number of difficulties.

To solve the problem of organizing the discrete production of rye bread, dry sourdoughs based on pure cultures of lactic acid bacteria and yeast, as well as acidifiers based on organic acids, have recently been used.

The use of dry starter cultures greatly facilitates and speeds up the process of making bread, since lactic acid bacteria and yeast are already in the optimal ratio, aromatic substances and acids have been accumulated, and in conditions of small production, the problem of its continuity and limited production areas [4,29].

Studies on the production of dry rye sourdough have shown that it is expedient to use a sourdough of spontaneous fermentation using hop broth as a starting material. The dosage of dry sourdough is 5-10%. When using rye flour, fermentation is carried out to an acidity of no more than 14 degrees, when using a mixture of rye and wheat flour - to an acidity of no more than 12 degrees. It is possible to carry out a preliminary race of the rack of test pieces for 5-20 minutes. Then the dough pieces are sent to the final proofing, which is carried out until the dough pieces are ready for baking, and the bread is baked [4,30].

The low moisture content of dry sourdough allows for a long time to preserve its properties and transport it to any distance.

The use of dry rye biological sourdough makes it possible to produce bread identical in quality to that produced by continuous sourdough production.

Literature

1. Аманов Б. Н., Исабаев И. Б., Аманова З. М. и Хайдар-Заде Л. Н. (2021). Способы применения пробиотических бактериальных препаратов при производстве ржаного хлеба. *NVEO-Журнал О ПРИРОДНЫХ ЛЕТУЧИХ ВЕЩЕСТВАХ И ЭФИРНЫХ МАСЛАХ* | *NVEO*, 8152-8165.
2. Аманов Б. Н., & Нодиров А. А. (2022). Ржаной хлеб на сухой пароварке по дискретной технологии. *Пионер: Журнал передовых исследований и научного прогресса*, 1 (6), 45-49.
3. Аманов Б. Н., Амонова З. М., Хайдар-Заде Л. Н. и Файзуллаев А. Р. (2021). Перспективы использования продуктов переработки томатов в производстве ржаного хлеба. *Анналы Румынского общества клеточной биологии*, 1009-1022.
4. Аманов, Б. Н. (2013). Функциональное питание как основной фактор гармоничного развития личности. XXI аср-интеллектуал-инновацион ғоялар асри республика илмий-амалий семинар материаллари. *Материалы республиканского научно-практического семинара «XXI век-интеллектуально-инновационных идей»*. Ташкент, 64-69.
5. Аманов Б. Н., Исабаев И. Б., Аманова З. М. и Хайдар-Заде Л. Н. (2021). Способы применения пробиотических бактериальных препаратов при производстве ржаного хлеба. *NVEO-Журнал О ПРИРОДНЫХ ЛЕТУЧИХ ВЕЩЕСТВАХ И ЭФИРНЫХ МАСЛАХ* | *NVEO*, 8152-8165.
6. Аманов Б. Н. и Нодиров А. А. (2022). Ржаной хлеб на сухой пароварке по дискретной технологии. *Пионер: Журнал передовых исследований и научного прогресса*, 1(6), 45-49.
7. Аманов Б. Н., Исабаев И. Б., Атамуратова Т. И., Садыков И. С. (2021). Влияние продуктов из томатного пресса на эффективность технологического процесса и качество

ржаного хлеба. *Европейский журнал безопасности и стабильности жизнедеятельности* (2660-9630), 6, 12-20.

8. Аманов, Б. Н. ИССЛЕДОВАНИЕ ПОКАЗАТЕЛЕЙ НАЦИОНАЛЬНЫХ ХЛЕБЦЕВ. *ББК 36.81 я43 Т38 Редакционная коллегия: д. т. н., профессор Акулич АВ (отв. редактор) к. т. н., доцент Машкова ИА (отв. секретарь)*, 30.

9. Аманов Б. Н. М., Рахмонов К. С., Исабаев И. Б., Атамуратова Т. И., Олтиев А. Т., и Николаевна М. Е. (2021). Применение натуральных добавок-подкислителей и пробиотических бактериальных препаратов для профилактики кретоза ржаного хлеба. *NVEO-Журнал О НАТУРАЛЬНЫХ ЛЕТУЧИХ ВЕЩЕСТВАХ И ЭФИРНЫХ МАСЛАХ* | *NVEO*, 5976-5988.

10. Аманов Б. Н., Исабаев И. Б., Аманова З. М. и Хайдар-Заде Л. Н. (2021). Способы применения пробиотических бактериальных препаратов при производстве ржаного хлеба. *NVEO-Журнал О ПРИРОДНЫХ ЛЕТУЧИХ ВЕЩЕСТВАХ И ЭФИРНЫХ МАСЛАХ* | *NVEO*, 8152-8165.

11. Аманов Б. Н., Исабаев И. Б., Атамуратова Т. И., Садыков И. С. (2021). Влияние продуктов из томатного прессы на эффективность технологического процесса и качество ржаного хлеба. *Европейский журнал безопасности и стабильности жизнедеятельности* (2660-9630), 6, 12-20.

12. АМАНОВ, Б. Н. (2016). РАСШИРЕНИЕ АССОРТИМЕНТА НАЦИОНАЛЬНЫХ ХЛЕБОБУЛОЧНЫХ ИЗДЕЛИЙ. In *Наука молодых-будущее России* (pp. 331-334).

13. Аманов, Б. Н. (2013). Методологический подход к проектированию рецептур хлебобулочных изделий с использованием композитных смесей. *Ўзбекистон Республикаси фанлар академияси. Ёш олимлар ахборотномаси илмий журнал*, (1-2), 39-44.

14. Аманов Б. Н., И Маджидов К. Х. ФУНКЦИОНАЛЬНЫЕ СВОЙСТВА АЛЬБУМИНОВ ИЗ ПШЕНИЧНЫХ ОТРУБЕЙ. *КОМПЛЕКСНЫЕ СОЕДИНЕНИЯ НИКОТИНАТА КАЛЬЦИЯ С АМИДАМИ*, 83.

15. Аманов, Б. Н. МОДЕЛИРОВАНИЕ ХИМИЧЕСКОГО СОСТАВА КОМПОЗИТНЫХ СМЕСЕЙ ДЛЯ ХЛЕБОБУЛОЧНЫХ ИЗДЕЛИЙ. *ББК 36 Т38 Редакционная коллегия: д. т. н., профессор Акулич АВ (отв. редактор) к. э. н., доцент Козлова ЕА (отв. секретарь)*, 194.

16. Аманов, Б. Н. ДИЕТИЧЕСКИЕ ХЛЕБОБУЛОЧНЫЕ ИЗДЕЛИЯ ДЛЯ ПИТАНИЯ НАСЕЛЕНИЯ. *ТЕХНИКА И ТЕХНОЛОГИЯ ПИЩЕВЫХ ПРОИЗВОДСТВ*, 76.

17. Аманов, Б. Н. (2017). Новое хлебобулочное изделие с повышенными показателями качества. *Хлебопечение России*, (3), 20-22.

18. Аманов Б. Н. и Бакоева С. С. (2023). Оценка биологической ценности тыквенного порошка при использовании в производстве. *Важное приложение: Международный журнал новейших исследований в области передовых наук*, 2(1), 18-22.

19. Аманов Б. Н. и Нурматов Дж. Дж. (2023). Пищевая ценность хлебобулочных изделий увеличивает ее. *Жизненно важное приложение: Международный журнал новейших исследований в области передовых наук*, 2 (1), 165-169.

20. Б. Н. Аманов, З. М. Амонова, *ДИСКРЕТНАЯ ТЕХНОЛОГИЯ ПРОИЗВОДСТВА РЖАНОГО ХЛЕБА НА ОСНОВЕ СЫРЬЯ*, *Procedia of Теоретические и прикладные науки: Том 3 (2023): Procedia of Теоретические и прикладные науки (2795-5621)*

21. М. Е. Мухамедова, Б. Н. Аманов, ПРИМЕНЕНИЕ НОВЫХ ВИДОВ СЫРЬЯ В ПРОДУКТАХ ИЗ МУКИ ГРУБОГО ПОМОЛА, *Procedia of Теоретические и прикладные науки*: Том 3 (2023): *Procedia of Теоретические и прикладные науки* (2795-5621).

22. Ergasheva K.B., Current State of Processing of Seed Wheat in the Republic //Yuldasheva S.J., Khuzhakulova, N.F., Ismatova S.N., Ruziyeva Z. //Journal of Pharmaceutical Negative Results, 2022, Vol.13, Special Issue 08, pp 2381-2386.

23. Ergasheva, H., Khujakulova, N.// Enrichment of Wheat Flour with Shorts at Flour-Milling Enterprises// Journal of Pharmaceutical Negative Results, 2022, 13, pp. 2359–2363

24. Akabirov, L., Narziyev, M., Khujakulova, N.//Research of impact of discharge parameters of electric impulse on the damage of tissue cells of the fig and the drying process and determination of its parameters// Journal of Physics: Conference Series, 2022, 2388(1), 012180

25. Эргашева, Х. Б. (2002). Исследование технологических свойств пшеницы местных сортов (Doctoral dissertation, -Ташкент: ТХТИ.

26. Мухамедова М. Е. и Аманов Б. Н. (2023). Использование пищевых добавок при производстве сухариков. ЕВРОПЕЙСКИЙ ЖУРНАЛ ИННОВАЦИЙ В НЕФОРМАЛЬНОМ ОБРАЗОВАНИИ, 3(2), 96-100.

27. Бакоева С. С. и Аманов Б. Н. (2023). Использование тыквенной муки при производстве полуфабриката для печенья. ЕВРОПЕЙСКИЙ ЖУРНАЛ ИННОВАЦИЙ В НЕФОРМАЛЬНОМ ОБРАЗОВАНИИ, 3(2), 101-105.

28. Аманов Б. Н. и Адизова Н. Б. (2023). Пищевая ценность хлеба из муки сорта Веда. ЕВРОПЕЙСКИЙ ЖУРНАЛ ИННОВАЦИЙ В НЕФОРМАЛЬНОМ ОБРАЗОВАНИИ, 3(3), 45-50.

29. Мухамедова М. Е., Аманов Б. Н. (2023). Лечение пуллороза у цыплят биологического контроля инкубационного яйца. ЕВРОПЕЙСКИЙ ЖУРНАЛ ИННОВАЦИЙ В НЕФОРМАЛЬНОМ ОБРАЗОВАНИИ, 3(6), 169-176. Извлечено из <http://inovatus.es/index.php/ejine/article/view/1823>

30. Бакоева, С. С., Аманов, Б. Н., & Амонова, З. М. (2023). Биологическая ценность тыквенного порошка при использовании в производстве. ЕВРОПЕЙСКИЙ ЖУРНАЛ ИННОВАЦИЙ В НЕФОРМАЛЬНОМ ОБРАЗОВАНИИ, 3(4), 133-137.

THE ROLE OF THE CULTURE OF COMMUNICATION IN MODERN EDUCATION
AND EDUCATION

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Abstract: In the article, one of the important and urgent issues of this day is the culture of people's behavior. At the same time, its unique aspects in the educational process are highlighted. The importance of the culture of interaction in improving the quality of education has been thoroughly analyzed.

Key words: Politeness, culture, relation, attitude, mode of thinking, rithorics, society, person, the culture of communication, good deeds, the culture of etiquette.

Human is considered the glory and honor of the whole being. In this sense, man stands on a higher status than all the creatures in the universe with his beauty and honor. All the blessings in this bright world are created for man. He was given a mind, a language, thinking, speech, understanding, insight.

A spiritually perfect person has been the eternal dream of our great grandfathers since ancient times and has reached today. President of the Republic of Uzbekistan Sh. Mirziyoev said, "The tomorrow and well-being of our planet depends on how our children become human beings and mature. Our main task is to create the necessary conditions for young people to show their potential, to prevent the spread of the "virus" of the idea of violence.

The human race acquires knowledge by means of its mind, understands and controls the world thanks to knowledge. "Abdullah Awlani says with wisdom that the oldest of people is perfect, murshidi, the only one, the one who works the soul, the one who starts the mind. Man is distinguished from animals by his speech and mind. At this moment, under the shadow of human intelligence, he is protected from harm and oppression. It is the mind of the people who captured the animals of the earth, tied them by their necks, and put the ends of the ropes in their hands. [2,63].

His behavior manifests itself depending on the harmony of his inner and outer world. As Fitrat says, "A person should be as he shows himself, or show as he is" [5,2]. In this respect, his culture, behavior, actions in the system of relationships stand out as the basis of his spiritual image. The spiritual image of a person is expressed in his behavior, character traits, his behavior and communication culture.

He can express his inner world, feelings, and hopes only in the process of dealing and communication. According to the rules of etiquette, everyone should respect others if they want to be respected and respected by others. After all, the spoken word or phrase has a positive or negative effect on a person depending on the tone. It is important to know that having some wealth, a high position, even old age or mental disorder does not give the right to be rude to others. As Ibn Sina stated: "In order for a person to always be kind and patient, he should not offend other people, should not spoil his language, and should be good-natured" [3,109].

As the First President of the Republic of Uzbekistan, Islam Karimov, noted, "For us, the transaction society is a social space, in this space the law prevails, and it does not prevent a person from self-improvement, on the contrary. helps. The interests of a person help to fully

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realize his rights and freedoms. At the same time, the rights and freedoms of other people cannot be discriminated against. That is, freedom and obedience to the law apply at the same time. complement each other and require each other" [1,554].

In fact, the stability of the society in every way depends on the system of mutual relations of its inhabitants, mutual relations, and the dialectic of behavior and relations. If we paint nature, we can feel the interaction of every creature in it. If the flowers spread their pleasant radiance around and delight the heart, the birds give a special charm to the nature through their chirping and create a way of communication. And in people, this process occurs in relation to the members of the society surrounding them, based on their inner world, mental state, and character traits. Considering communication culture as a work in progress, it is only up to the creators to ensure that to what extent it warms to the heart and gives sincerity. Pleasant communication also goes straight to the human heart. In this respect, a person should strive to have his own creativity, that is, his own culture of behavior, for his behavior at one or another level. Everyone working in the education system should take this issue seriously. Because today's demand for knowledge requires good behavior every day. Any soul that wants knowledge will definitely be attracted to beautiful manners, beautiful speech and expression.

In modern education and training, it is important for every teacher-coach to have a speech culture. The speech of the teacher is important in ensuring the thorough mastering of subjects by students during the educational process. The correct pronunciation of each letter and sound in the teacher's speech has its own significance. A loud student, student feels like he is being cheated during an individual conversation. This can create a feeling of distrust towards the teacher. Some experts say that sound is an innate quality. But current experimental physiology confirms that it is possible to change the quality of sound. Today, several training complexes have been developed for speech technique. They are mainly based on the experience of theater pedagogy and improve the skills of breathing, sound generation and meaningful expression during speaking, which allows the teacher to convey the content of his speech to the students more fully.

In this respect, a person with a high culture of behavior:

- loves and serves his country, people, motherland with loyalty;
- preserves the material and spiritual wealth of the society like the apple of an eye and increases them;
- learns, appreciates and observes the teachings and traditions of our ancestors;
- follows the holy books, laws and decisions with duty and responsibility.
- values himself, his family, relatives, comrades, people.

The culture of interaction is an important link and key of universal culture.

It appears in the following cases:

- ensures the well-being and social awareness of every citizen, the social well-being of the whole society, personal awareness;
- teaches citizens to observe equality before the law, regardless of their race, nationality, social origin, religion, social status;
- culture of dealings - preservation of all the material and spiritual wealth created in the course of the entire historical development of mankind, leads to their increase;

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- it nourishes the culture, spirituality, education, traditions of the citizens of the country formed over the centuries, the immortal heritage of our ancestors;
- serves to preserve the ideas of human duty, responsibility, justice and truth, freedom and independence;
- teaches to actively use the achievements and successes achieved in the course of the democratic development of culture in order for citizens to have a conscious attitude to them.

As long as we live as a member of a certain society, while we work in it, our interaction with each other is the basis for all-round spiritual development of the society in which we live. It is necessary to establish the types and culture of interaction and communication between people who are members of our society today. First of all, the specific behavior of each historical period, as well as the rules and norms of the law, forms a specific culture of communication and communication between teachers and students, parents and children, young men and women, and determines the spiritual image of a person. The main goal is to adapt the behavior and communication between today's youth to the moral requirements of society.

With the emergence of human society, the need for communication between people was felt. Mutually appropriate communication of members of society with each other became the basis for comprehensive development of this society. Communication culture is a concept that does not belong to which nationality a person belongs to, but on the contrary, it refers to a certain country and the geographical area where a person lives. Communication is actually a mirror of the human heart that determines the relationship between people. Behavior is considered a form of morality, and it is possible to see what kind of worldview each person has, and his knowledge from his behavior. In addition, communication is a means of communication between people. The main tool in communication is language, and language can be considered as a "communication tool" in a positive sense. Communication is considered an information process, in which two-way information transmission and reception occurs between the speaker and the listener. The transaction takes place within the framework of mutual relations.

In order to improve visibility in relationships, a person should have a high level of communication culture. A perfect study of the culture of communication will lift the spirits not only of the speaker but also of the listener.

In fact, etiquette is a component of moral culture. "Culture" is derived from the Arabic word and in ancient times it meant Medina, urbanity, education, upbringing. Today, in the encyclopedic dictionary, philosophy is defined as "a unique method of human activity reflected in nature and interactions", and in the explanatory dictionary of the Uzbek language, education is defined as "education, intelligence and enlightenment" [4,63].

Therefore, an enlightened and cultured person is understood as a person who can provide material and spiritual nourishment for the society and contribute to their development, physical and spiritual development due to his education and training. Culture is a creative spiritual activity of humanity mobilized to rebuild nature, society and its self, based on the assimilation of experiences expressed in one or another cultural wealth in all spheres of being and consciousness. Recognizing the unity of material and spiritual factors of culture can be understood as looking at it from an individual perspective.

If we look at it from the point of view of the individual, the material needs of citizens are satisfied with the help of spiritual factors, and spiritual factors are formed on the basis of materiality. This is an epistemological view of culture. Academician E. Yusupov gives the

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following description of culture: The culture of interaction accelerates the process of human civilization as a process that improves a person spiritually and materially. A person can learn the culture of treatment not only in the family, in kindergartens, schools and universities, but also throughout life. As a person grows and develops, the culture of communication grows and discovers new aspects.

The process of forming a culture of behavior in students ensures that they are followed, it is effective and effective. Research shows that there are several principles in this regard: First, the principle of idealism and goal orientation. It is known that the strategic goal of our country is to build a strong democratic legal state with an open foreign policy and a transactional society, the development of such a society is inextricably linked with the transactional culture. Society relies on national ideas and ideology. The role of the culture of behavior in creating the principle of idealism is incomparable.

Secondly, on the principle of social orientation, any education comes from the rule of preparing a person for a social and happy life. It is known that the educational institution is considered a social institution and aims to meet the educational and educational needs of the state. This principle also requires the socialization of the process of forming a culture of behavior.

Thirdly, in the principle of striking the old ideological views and distortions in the content of consciousness and behavior, it is envisaged to fundamentally reform the field of education, to completely free it from the distortions left over from the past. In this regard, various activities are carried out, and in the process of preparing students for inter-ethnic communication, they are faced with the tasks of forming citizenship qualities in them, clarifying the fundamental nature of the culture of behavior in their minds. Therefore, the culture of behavior is considered an important link and key of universal culture, and it is a sign of spiritual perfection of a person.

One of the characteristics of transactional culture that is manifested in the signs of perfection is its unity with moral and legal culture. It is known that any state separately controls the activities and discipline of its citizens. The culture of treatment shows a person's spiritual maturity and education. That is why a cultured person is respected among the people. The culture of treatment is a valuable quality that increases human qualities and human value. Education is the true fruit of education. The culture of behavior, which is considered as the support of the mind, is a valuable quality that increases human qualities, the value of a person, it is the honor and wisdom of all qualities.

The culture of treatment is manifested in the homeland, society, nation, history, language, customs, and actions. Looking after the interests of society, being responsible, realizing responsibility, is a characteristic of a person who has a culture of dealing. Because responsibility defines a specific standard of conscious activity, society, family and life. The more a person strives for a life of dealing in his imagination, the more he realizes and understands his own defects. The culture of communication is a reflection of a person's inner world. A person shows his identity through this mirror and sees himself.

oday, there are different views on spiritual perfection and the education of individuals, and its reflection can be observed in the extent to which the culture of behavior has been acquired.

The formation of a culture of behavior in the upbringing of a morally mature person, the social and professional qualities of the teacher's readiness for innovative activities are directly related not only to the economic and financial situation in the educational institution, but also directly to the demand for these qualities and the culture of behavior. Educators who have formed

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a culture of dealing with innovative ideas, the main basis of management of the educational institution is education in the classroom or auditorium, i.e., proper management of the lesson process, making clear decisions.

As the construction of civil society is considered as today's task, its main basis is the members of the society with a culture of dealing. Abu Nasr Farabi states that "spirituality is a sign of development, real development is not in the wealth or the size of the city, the abundance of wealth, the abundance of crops, but the cultural image of a person who has matured in this environment."

To sum up, it is easy for a person who has matured the culture of communication to get his place in society, because in any situation, sweet words light up the sleepy imagination of a person, awaken sincere feelings for him.

List of references

1. Avloni Abdullah. Turkish culture or morality. Tashkent: 2008. - B. 25.
2. Nuriddinov J. A decent person. Tashkent: Publishing house named after Gafur Ghulam. 2017. - B. 164.
3. An explanatory dictionary of the Uzbek language. Tashkent: OME. - 2006. B. 346.
4. Phytrate. Bedil. Tashkent: A. Qadiri publishing house. - 1996. B.48.
5. Khalikov A. "Pedagogical skills" Tashkent "ECONOMY-FINANCE" 2011.
6. Xalilova Shaxlo Ravshanovna. (2023). Bo'lajak o'qituvchi pedagogik muloqot usullarini rivojlantirish texnologiyasining zamonaviy modellari va ularni qo'llash metodlari. *Journal of Universal Science Research*, 1(9), 223–234. Retrieved from <https://universalpublishings.com/index.php/jusr/article/view/195>
7. Xalilova Shaxlo Ravshanovna. (2023). PEDAGOGIK MULOQOT O'QUV JARAYONI SAMARADORLIGINI OSHIRISHNING MUHIM OMILI. *Journal of Universal Science Research*, 1(8), 131–139. Retrieved from <https://universalpublishings.com/index.php/jusr/article/view/1717>
8. Isomova, F. A. T. Q. (2022). МАКТАБГАЧА ТАЛИМ ТАШКИЛОТЛАРИДА БОЛАЛАРНИ МАКТАБ ТА'ЛИМИГА ТАЙЙORLASHDA NUTQ O'STIRISH MASHG'ULOTLARINING AHAMIYATI. *Oriental renaissance: Innovative, educational, natural and social sciences*, 2(1), 947-949.
9. Xalilova Shaxlo Ravshanovna. (2023). PEDAGOGIK MULOQOT O'QUV JARAYONI SAMARADORLIGINI OSHIRISHNING MUHIM OMILI. *JOURNAL OF UNIVERSAL SCIENCE RESEARCH*, 1(8), 131–139. <https://doi.org/10.5281/zenodo.8239719>
10. Ravshanovna, X. S. (2022). BO 'LAJAK O 'QITUVCHILAR VA O'QUVCHILAR O 'RTASIDAGI MULOQOT JARAYONI VA UNGA QO 'YILADIGAN TALABLAR. *Лучший инноватор в области науки*, 1(1), 814-819.
11. XALILOVA, S. (2021). JAHON PEDAGOGIKASIDA ZAMONAVIY PEDAGOGIK MULOQOT VA MILLIY PEDAGOGIK MULOQOT USLUBLARIGA TRANSFORMATSIYASI. *ЦЕНТР НАУЧНЫХ ПУБЛИКАЦИЙ (buxdu.uz)*, 1(1).
12. Mustafoyev, K. (2023). LOOPER MECHANISM OF THE SEWING MACHINE. *Евразийский журнал академических исследований*, 3(4), 16-18.

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-3, ISSUE-3

13. Ikromova, S. (2023). INTERPRETATION OF THE PSYCHOLOGICAL SAFETY FACTOR IN RELATION TO DESTRUCTIVE INFORMATION IN ADOLESCENTS. *Modern Science and Research*, 2(9), 390-394.
14. Ikromova, S. (2023). CONCEPT OF IDEOLOGY AND FORMATION OF IDEOLOGICAL IMMUNITY IN YOUTH STUDENTS. *Modern Science and Research*, 2(6), 1223-1226.
15. Bahodirovna, H. N. (2023). TA'LIM JARAYONIDA BOSHLANG 'ICH SINFLARDA TEXNOLOGIYA FANINI O 'QITISH MUAMMOSINING YORITILISH MAZMUNI. *PEDAGOGS jurnali*, 1(1), 209-209

Internet sites

- <https://universalpublishings.com/index.php/jusr/article/view/1950>
- <https://universalpublishings.com/index.php/jusr/article/view/1717>
- <https://doi.org/10.5281/zenodo.8239719>
- <https://doi.org/10.5281/zenodo.8356270>
- http://journal.buxdu.uz/index.php/journals_buxdu/article/download/31/31
- <https://www.amazon.com/Muloqot-uslubining-%60quvchilar-motivatsiyasigata%60siri/dp/6200608032>
- https://scholar.google.com/citations?view_op=view_citation&hl=ru&user=7q7CudgAAA&AJ&citation_for_view=7q7CudgAAA&AJ:9yKSN-GCB0IC
- <https://www.in-academy.uz/index.php/lion/article/view/649>
- <https://in-academy.uz/index.php/ejar/article/view/11848>
- <https://doi.org/10.5281/zenodo.7796933>

**EXPERIENCES OF INTERNATIONAL COOPERATION IN STUDYING,
RECOGNITION AND IMPROVING THE IMPACT OF SINGAPORE'S SOCIAL
POLICY ON MODERN EDUCATION AND PEDAGOGICAL PROSPECTS.**

Asadova Ruxsara Ergash qizi

Abstract: Today, education is a decisive factor of economic and scientific-technical development, formation of the social structure of the society, distribution of social statuses in it mechanism. At the same time, this is the educational system in foreign countries personnel with high knowledge and skills through development and improvement it can be understood that special attention is paid to preparation. For example, Singapore is one of the countries that invests heavily in education and achieves high results. This article provides information on the experiences of international cooperation in studying, recognizing and improving the impact of Singapore's social policy on modern education and pedagogical perspective.

Key words: education system, Singapore, miracle, cluster, special, express, academic, higher education, result.

Singapore's education system aims to bring out the best in every child. We seek to nurture the whole child and develop them into lifelong learners, with an enduring core of competencies to thrive in the 21st century. Our multiple educational pathways cater to the different strengths and interests of every student. Our schools provide a rich diversity of learning experiences for our students. On top of building a strong foundation in literacy and numeracy, we also cater to their educational needs in physical, aesthetic, moral, social and emotional aspects, and develop them holistically. Besides academic learning, students can develop their interest and talent in music, arts, and sports through co-curricular programmes and outdoor education. These learning experiences also give them opportunities to hone their leadership skills, as well as social and emotional competencies. There are also opportunities for our students to contribute to communities through various Values-inAction programmes, which are an integral part of school life as well as Applied Learning experiences, which allows them to (i) learn by doing; (ii) learn about the real world; and (iii) learn for life. In addition, our schools offer education and career guidance to help our students discover their interests and strengths and choose the pathways that allow them to achieve their fullest potential.

Due to the great emphasis on public schools in Singapore, they are not inferior to private schools in terms of quality and modernity of education. According to information, 20 percent of the country's budget is spent on education development. Therefore, local residents are not very interested in private schools, on the contrary, they prefer to educate their children in public schools with all the conditions. The secondary education system in the country includes schools, technical schools and colleges. In 2000, Singapore's parliament passed a law on compulsory education for school-aged children. According to it, primary education is free and compulsory for all citizens of the country. Children are admitted to the school from the age of 6. Secondary education is divided into primary, secondary and pre-university stages. Primary education includes 4 years of basic training (grades 1-4) and 2 years of specialized training (grades 5-6). At the foundation stage, students are taught English, mother tongue (Chinese, Malay or Tamil) and mathematics. According to the choice of boys and girls, ethics, aesthetics, work, music and physical education lessons are

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also held. From the 3rd grade, natural sciences are added to the curriculum. After 4 years of education, children are divided into groups according to their ability to learn the mother tongue, English and mathematics, after entering a specialized training stage. In schools, students are given the opportunity to develop a personal examination system. This ensures that each child shows his abilities better. At the end of the exams, children will receive one of the elementary, standard and advanced levels in English and mother tongue, and one of the basic and standard levels in mathematics and natural sciences, depending on their ability. At the end of their studies, students take the final exam and receive a PSLE (Primary School Leaving Examination) certificate to move on to the next level of education.

Debate. Regarding the general education system in Singapore it is necessary to pay attention. Education in Singapore is at the forefront of public policy stands One of the main goals of Singapore Ministry of Education is students to identify their talent, to realize their potential, throughout their life It consists in helping to develop interest and striving for knowledge. Singapore Education System - Education is not preparation for life, but life itself based on the principle. Singapore's general education system consists of three levels. The country is administrative. It is divided into 4 educational regions, each region consists of 7 school clusters consists of. The bilingual policy, a cornerstone of our education system, requires students to offer two languages: English Language and an official Mother Tongue Language. This enables them to connect with people from different backgrounds in a multi-cultural environment, and allow them to thrive in a diverse, globalised world. It also equips them with the language and cultural competencies to appreciate their culture and heritage.

Teachers form the core of Singapore's education system. We are committed to nurturing and motivating our teachers to grow and reach their personal and professional best, in line with their aspirations and interests. Our teachers receive rigorous and evidence-based pre-service training at the National Institute of Education, and have many opportunities for in-service development to build up their competencies. Teacher academies, language institutes, and HQ divisions foster a strong culture of professional excellence underpinned by a philosophy of teacher ownership and teacher leadership. Another peculiarity of Singaporean education is the unusual evaluation system. In most educational institutions, students' learning level is measured on the basis of nine-point assessment criteria - A1 - (the highest), F9 - (the lowest). It includes A1/A2 (excellent), B3/B4 (good), C5/C6 (satisfactory), D7 (minimum score for subject mastery) and E8/F9 (unsatisfactory). The final rating results in schools are determined based on the accumulated points. In Singapore, the most gifted students can take the Integrated Program (IP). In this case, secondary school students in the country will be given the opportunity to take the A-level exam as soon as they complete 6 years of secondary education without having to pass the O-level exams. This opens the way for students to have more free time and study their chosen subjects more deeply.

Contract money paid for higher education in Great Britain, USA or Compared to Australia, it is several times cheaper in Singapore. But here it is the quality of education provided is not inferior to that of any European country. That's why many foreign young people study in educational institutions in Singapore. Continuing higher education in Singapore is not as complicated as many people think. For this, it is necessary to have a deep knowledge of the English language. Also from Singapore universities that he received primary and secondary education from foreign applicants who want to study in one of them certificate or diploma, IELTS confirming

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knowledge of the English language or TOEFL certificate is required. If there is no certificate, an applicant to get it He can study in one of the language teaching schools in Singapore. Singapore also has a wide range of educational grants for students. This Apply for any gifted student scholarship or grant can do. Grants from the state, educational institutions or employers financed. Read the amount of payment allocated to the students who won them fully covers expenses.

That is why Singapore's HEIs occupy high places in the world rankings Stands Having studied the dynamics of the development of the Singapore education system, we came to the following conclusion: social problems of Uzbekistan's education, universal, national and individual factors in education, developed countries classification using educational achievements, theory of education and choosing the universal advanced experience of practice, modern pedagogical ideas and development technology, the ability to use advanced experience and teaching technologies in the educational process, the world and our republic based on universal human values to be able to diagnose the development of education; compare the development of education in the world and in our republic analysis; to be able to see the advantages in the development of education of our republic and its acquisition of skills to predict future development, pedagogical work with literature; creating the necessary methodical instructions; effective pedagogy conducting research, being able to use the method of comparative analysis, in the process of comparative analysis skills to take into account the peculiarities in the development of world countries we need to have it.

References:

1. Anvar Khojaev, Singapore education system: becoming a leading brand in world education, Marifat newspaper, 11.01.2019
2. PISA. <http://www.education-medelle.com> (PISA Program of the International Monitoring System). Retrieved 18.09.2016
3. Pedagogy / Textbook / Prof. Under the general editorship of M.Kh. Tokhtakhodjayeva. - Tashkent: "National Society of Philosophers of Uzbekistan" publishing house, 2010.
4. Wolfson B.F. Sravnitel'naya pedagogika M.: "Prosveshchenie", 2003.

THE CULTURE OF USING THE INTERNET BY CHILDREN

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The rapid use of mobile devices and global networks, such as the internet, among young people due to the development of the economy and technology is increasing. While the internet provides useful information, it can also have negative effects on users due to the spread of harmful information that can affect their behavior. The number of websites with adult contents has increased to 4.2 million, with 42% of children and teenagers using them.

38% of young people worldwide are affected by materials that promote violence and aggression, while over 9,000 websites encourage suicide. In recent years, the number of websites promoting terrorist activities has exceeded 7,000, which poses a threat to national security.

It is important to teach young people how to obtain necessary information safely on the internet. Cybercrime, cyberbullying, and technical hacking are becoming more common, and users need to be aware of the risks. First, the ability to filter information and exchange ideas should be taught in the family and then in educational institutions. Therefore, it is recommended to hold discussions on internet safety and promote the use of free resources for young people and families in local communities and educational institutions. Experts should also provide special TV and radio programs and analytical articles on public information channels. It is also important to prohibit the distribution of untested computer games and films in internet cafes and clubs, and to hold competitions for the "Best Internet Blog" among students. Finally, it is necessary to place banners and posters in residential areas to raise awareness of internet safety.

The internet has become an integral part of our lives, and the number of users in Uzbekistan is increasing rapidly, especially among young people. Although most young people do not have a clear idea of life, they are still attracted to the internet for research, music, shopping, and forums.

The internet is a great tool for learning, socializing, and communicating with friends, but it is important to remember that it is not a substitute for real life. Thus, if we look at life with a realistic eye, the internet is not free from danger: it has its own unique risks, criminal world, harm, and disadvantages. Virtual communication can also be a source of harm to children. In recent times, there have been many cases of cyberbullying and social media threats. It is important for adults to pay attention to their children's use of the internet to protect them from these dangers.

Today, we need to know enough information about the news that happened in one part of the world, and a few seconds is enough to do so. We can manage any topic by controlling the electronic device in front of us. The internet has become a global network within a few decades, bringing together the entire community of information exchange, and has become an important factor in the acceleration of globalization around the world.



The internet is a product of human thought. We cannot simply look at the computer on our desk as an electronic device. The internet is the most effective and convenient means of obtaining, exchanging, and disseminating information. Its multimedia (image, sound, text) service and other conveniences are transforming humanity into a virtual world. However, there is also a second, completely different aspect that requires attention. In some countries, it is not uncommon for people to become accustomed to the virtual world and to harm themselves or others. Or, in some countries, hospitals are being established to treat mentally ill patients who have been transferred from real life to virtual life.

Users of computer services are becoming a wide range of people who do not care about their time, money, or health. Today, is it correct to compare the use of the internet by our youth, especially children and adolescents, with these two situations?

Unfortunately, there are many situations that are disturbing to the heart in recent times.

- Today, internet users can be divided into two categories. The first category is those who use the internet for their profession or to obtain necessary information and knowledge, while the second category is those who are simply curious and visit pornographic or dating sites or spend their time playing online games.



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The virtual world manipulates people. Manipulation means to influence someone through mental coercion. Now, it is not uncommon for children or adolescents to turn internet cafes into their "second home." Studies show that online game players are mostly adolescents. Adolescence is a unique period in a person's physiological and social development. If a boy or girl is given aggressive online games during this period, it can lead to negative consequences. The time perception system of a person is disrupted in the virtual world, and social activity decreases.

The negative effects of virtual tools do not stop at moral and ethical degradation, but also weaken the immune system, causing eye and neck diseases.



- Five or ten years ago, children used to play in playgrounds around their homes. Now, they spend more time in internet cafes that are everywhere. Children are more interested in computer games than in active games. Of course, it is pleasing that our children's knowledge and skills related to modern information technology are developing. However, this does not mean that it is not causing certain losses.

During our student years, we used to spend a lot of time searching for books in the library. Nowadays, students can easily find electronic copies of the books they need on the internet, without wasting too much time and effort. This is a worthy achievement.

By monitoring internet users, it can be concluded that the internet enhances a person's ability to develop their thinking, observation, analysis, research, and memory skills. Our previous generations, such as Navoi and Fuzuli, memorized hundreds of lines of poetry, while today's youth cannot even remember four lines without relying on their personal computer's memory. Computers, especially the internet, do not teach our children how to think and live, which is a concern.

In my opinion, the main responsibility falls on parents and educators to teach students how to use the internet wisely and to shape their cultural attitudes towards internet usage. In today's information age, there is no such thing as a completely safe or reliable service. Therefore, we must rely on our own strength, abilities, national values, and beliefs to work together in a complex world where different countries' economies, cultures, and people are interconnected.

In conclusion, it should be noted that the internet has both benefits and drawbacks for humanity. Although having all the necessary antivirus and other security programs can help ensure internet safety, one's online activity can never be 100% secure. In the information age, young people need knowledge and experience to use information sources correctly, especially reliable ones, and to protect their spiritual and mental well-being from harmful influences.

List of used literature

1. A. Abduqodirov "Information Technologies" Tashkent 2003
2. "Ziyonet" information education portal.
3. M.M.Kadirova . "Potentials of quest technology in the development of students' economic skills". Berlin Studies Transnational Journal of Science and Humanities ISSN 2749-0866 Vol.2 Issue 1.5 Pedagogical sciences <http://berlinstudies.de/>
4. M.M.Kadirova . "Opportunities to use electronic resources in the development of economic skills of students in the independent educational process" Berlin Studies Transnational Journal of Science and Humanities ISSN 2749-0866 Vol.1 Issue 1.5 Pedagogical sciences <http://berlinstudies.de/>
5. H.R.Turobova, M.U.Eshbekov. Improve children online safety//The multidisciplinary journal of science and technology. volume-3, issue-3. 2023. <https://mjstjournal.com/index.php/mjst/article/view/190/523>

EFFECTIVE USE OF INNOVATIVE EDUCATIONAL TECHNOLOGIES IN TEACHING PRACTICAL CLASSES OF THE SUBJECT "LATIN LANGUAGE AND MEDICAL TERMINOLOGY"

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Abstracts: this article will consider innovative technologies for training students, which will give the most accurate effect and coefficient of mastering new material by students, as well as form professional skills. This article describes modern innovative technologies that have manifested themselves in pedagogical practice, including in my professional activities. It is possible to expand the range of teaching methods used using innovative technologies.

Key words: innovative technologies, knowledge and skills, critical thinking, cooperation pedagogy, professional activity.

The use of innovative methods of teaching in practical classes of the Latin language. "Not knowing - not scary, but scary - not learning". Chinese wisdom.

I. Introduction. Currently, changes are taking place in the educational system of the Independent Republic of Uzbekistan, which leads to the need to develop competency systems based on competencies. There are many examples of innovative technologies for teaching students in the pedagogical literature, but in my opinion, not all of them can be used in practical classes in Latin. In the modern conditions of modernization of education, the goals and objectives facing the teacher are being changed. Emphasis is shifted from "knowledge acquisition" to "skill formation". Innovative pedagogical technologies are being introduced that ensure the accounting and development of individual characteristics of students. Modern educational technologies can be considered the main condition for improving the quality of education, reducing the burden on students and making the most of the study time.

Speaking about the use of innovative teaching methods, attention should be paid to the development of critical thinking of students and the organization of independent work in practical classes in Latin. I mean a set of methods, techniques and tools that not only increase the quality of education, but also help to form professional and general cultural competencies of medical students. Critical thinking as creative, analytical thinking helps students solve the following tasks in learning: - setting priorities; - acceptance of personal responsibility; - increase the level of work with information. The independent work of students is inextricably linked with the development of critical thinking. The organization of independent work of students involves the participation of the teacher in the planning of the lesson and the assessment of the results. The problem with teaching and learning Latin is that it has evolved from the languages of science, culture, jurisprudence and religion into the pure professional language of medical workers. This reduced his opportunities for development and teaching, and also reduced his interest in learning this remarkable and rich language. For this reason, I believe that the use of innovative methods of teaching in practical classes on the subject of "Latin and medical terminology" will improve the teaching and perception of medical students.

It should be noted that Latin is the basis of modern languages such as French, Portuguese, Spanish, Italian, Romanian, Moldovan, Catalan, retro-roman, Provençal. Also, knowledge of Latin makes it easier for students to learn these languages.

II. Examples of the Latin language on the use of innovative technologies in practical training. To improve the quality of education, it is necessary and necessary to use active innovative educational technologies that allow students to convey the necessary knowledge and

skills. Innovative methods cannot completely replace traditional methods, but my experience shows that they increase students' interest in learning, as well as expand the amount of data they remember. There are several groups of innovative teaching methods. These include: - problem education; - technology for the development of "critical thinking"; -ICT; - design methods in teaching; - technology of using game methods in teaching; - collaborative training (collective and Universal work).

Problematic teaching method. This method helps to develop creative thinking to the maximum, teaches students to think about the essence of phenomena and look for a relationship between them. Problem Education requires students to have certain intellectual abilities, thinking actions, forcing them to fight difficulties. The basis of problem education is a system of ready-made knowledge and skills obtained both in practical classes in Latin and independently. In order to successfully use problem education, you need to clearly understand the requirements for this teaching method: - the problem must be expressed clearly and clearly; - the problem must have a certain complexity; - the problem should be interesting for students; - there must be enough training materials to find a solution to the problem. From my practice, I can give examples of such training. For example: I give students a task on the topic: "recipe" with mistakes made in advance. Task: to find and correct errors, analyze answers.

Method of technology for the development of "critical thinking". The purpose of developing "critical thinking" is to form a culture of reading and encourage independent creative activity. The constructive basis of the" technology of critical thinking "is the main model of three stages of the organization of the educational process:"challenge-feedback". At the "call" stage, existing knowledge and ideas on the topic under study are called and updated from memory. The situation of difficulty is skillfully created by the teacher with a question. At the stage of "understanding", acquaintance with new information and its systematization are carried out. Students will have the opportunity to understand the information received, as well as the opportunity to formulate questions when old and new information are interconnected. In the thinking phase, students consolidate new knowledge and incorporate them into new concepts. Students' methods of "opposing thinking" include the following methods:

"Ask questions" method. The teacher asks a question, offers to consider and discuss the answer. The question should be such that the answer involves reflection and analysis. Frequently asking questions becomes a debate, where students learn to ask questions themselves and formulate them correctly. I use this technique in practical training in the "morphology" section. Methods of" critical thinking "include" 'mental attack", "cluster", etc. "Mental attack" is one of the most popular ways to stimulate creative activity, allowing you to find solutions to complex problems by applying special discussion rules. It is widely used in audiences to find unconventional solutions to various tasks. The mental attack method was developed by Alex Osborne in 1953. The method is based on the assumption that one of the main obstacles to the emergence of new ideas is "fear of evaluation": students often do not speak out loud, fearing skepticism from the teacher and other students. The purpose of the application of mental attack is to exclude the evaluation component during the practical training of the Latin language. The classic mental attack technique proposed by Osborn is based on two basic principles: - "delay judgment"; - "quality is born from quantity".

This approach involves applying several rules. Criticism of any mistakes of students during classes is excluded. Students who work in interactive groups must make sure they are evaluated on their work. There should be many questions: each student is given the opportunity to ask the

maximum number of questions and answer them. At the final stage, the best answers are selected. In recent years, “electronic brainstorming” (online brainstorming) using Internet technologies has become widespread. This allows you to eliminate the “fear of evaluation”, since it provides anonymity, allows you to solve a number of problems of a traditional brain attack.

Information and communication technology method. The implementation of this method can be defined as technologies used to access, collect, manipulate, present or report data. ICT (henceforth referred to as ICT in the text) includes both technical tools and software. The main tool of ICT for the information environment of any educational system is the capabilities of a personal computer and software installed on it. Currently, there are many opinions on whether to use a computer when teaching Latin. Some believe that a computer can replace a teacher, others believe that a computer cannot provide material because the teacher does so. In my opinion, the computer serves only as a learning tool. It should be remembered that the computer has many advantages: it combines video-audio data, text data, and the computer also offers great opportunities for testing the level of knowledge of Latin or the subject with the participation of a teacher, which reduces the time of checking the results. The tests can be very diverse: Joker characters, selected, template. I use tests in practical training:

- using multiple choices (with one or more correct answer options);
- with passes (with different capabilities to support the user);
- linguistic games (crosswords).

So, for example, the electronic version of the test allows students to place objects inside the document in the necessary places, delete them, group them, in accordance with the task, enter the necessary items and like etc. Thus, the use of a computer for a teacher provides the opportunity to constantly improve educational materials, as well as introduce new organizational forms of teaching. There are other types of act. For example, TV, but we do not have centralized TV capabilities. In the practical training of the Latin language, the main method of ICT is presentations. They differ in the types of speech activity (in reading, writing, learning to speak), aspects of speech (in teaching vocabulary, grammar or phonetics), types of support (meaningful, semantic and illustrative). I use presentations that facilitate the use of different language and speech exercises in the practical classes of Latin. Presentations allow students to reveal their creative abilities thanks to the computer, the introduction of ICT - significantly diversified the process of perception and development of information, and then analysis and sorting are possible.

III. The technology of using game methods in teaching. This is perhaps the most favorite method of students among the innovative technologies that we use in practical classes in Latin. It is worth paying attention and focusing in detail on examples of phonetic, lexical and grammatical games in practical classes. The consolidation of phonetics is promoted by:

a) a puzzle game. The student pronounces words in which the same sound occurs, and the other students must guess it and write it on the blackboard. For example:

- arteria (arteria) – artery,
- dens (dens) – tooth,
- nomen (nomen) – name, title,
- medicina (medicine) – medicine.

b) the game is a competition. I write diphthongs (double-voiced) on the blackboard. There are four of them: ae, oe, au, eu. I give students a task - to write as many words with diphthongs as possible, pronounce them, paying attention to the stress and pronunciation of sounds. For example:

-diphthongs –ae-, -oe- – are pronounced as one sound. –ae- pronounced as the Uzbek or English "e".

Student "A" - writes words with diphthongs –ae- on the blackboard, pronounced as Uzbek or English "e". Example: gangraena (gangrene) – necrosis, aeger (eger) – patient, praeparatum (preparatum) drug.

Student "B" -writes words with diphthongs –oe-, which are pronounced as the Uzbek or English "e". Example: Foeniculum - fennel, drugstore dill, Synoestrolum - synestrol. Uzbek or English diphthong –au- pronounced as a Uzbek or English "av" (monosyllabic) Student "B" -writes words with a diphthong –au-, pronounced as a Uzbek or English "av". Example: Aurum (avrum) – gold, Daunomycinum (davnomycinum) – daunomycin. Uzbek or English diphthong –eu-, pronounced as Uzbek or English ev (monosyllabic) Student "C" -writes words with diphthong –eu-, pronounced as Uzbek or English "ev" (monosyllabic). Example: Eucalyptus (evkalyptus) – eucalyptus, Eucommia (evkommia) – eucommia

c) imitation game. Students try to repeat tongue twisters or proverbs. The winner is the one who repeats the tongue twister or proverb the fastest. For example: Ego eo cum ego eo; Paulus Paulam amat, sed Paula alium amat; Bella femina habet femina bella.

d) lexical games - aimed at working out new terminologies, mastering the mechanisms of word formations, phraseological units. And I offer such tasks to students during practical classes in Latin:

1) "Color pictures". Students form small groups of three or four people, each group is given a task, they receive two sets of colored cards. On the blue cards – phrases in Uzbek or English; on the red cards – their equivalent in Latin. The team that made these pictures the fastest wins.

2) "Fight in the ring". Students work in pairs under the supervision of a judge. Each of them prepares a written list of terms in Uzbek or English and also their equivalent in Latin. Student "A" reads out the terms written down by him to student "B" in Uzbek or English, student "B" within three to five seconds must name these terms and give an explanation in Latin. This happens alternately.

3) "Snow avalanche". I give the students a task: to identify the known term elements, explain their meaning, write the terms in Uzbek or English transcription. For example: dystrophia Student "A" identifies a well-known term element -trophia (Greek. trophe). Student "B" explains its meaning (nutrition). Student "C" gives a translation of the term – eating disorder. For example: stomatologia. Student "A" identifies the well-known term element stomat- (Greek stoma) Student "B" explains its meaning (hole, mouth). Student "C" gives a translation – teaching about diseases of the oral cavity.

4) "Lotto". Each student receives a lotto card with a medical term written in Latin on the topic. I give an explanation of a term, and the student must find its equivalent in the card.

5) "Ping Pong". Students work in pairs and very quickly. Student "A" calls the word-forming element in Latin or Greek. Student "B" gives the appropriate translation in Russian and gives an example of a medical term based on this word-forming element. The roles change in turn. Student "A": angi(o) – (Greek, angeion) -> Student "B" – vessel , angiography. Student "B" somat – (Greek soma) Student "A" – body, somatoscopy. Lexical games can also include: riddles, puzzles, crosswords. But the biggest opportunities for the development of cognitive activity of students are professional games related to the future profession of a physician, where students play the role of: nurse-patient, doctor-patient, doctor-nurse. Collaborative learning method (team and group work) This method is not yet widespread enough in pedagogical practice, due to certain

professional and psychological difficulties, both on the part of the teacher and on the part of students. Group work of students stimulates close communication of students with each other, which leads to the formation of social behavior skills, the assimilation of collaboration technologies. A distinctive feature of a teacher who uses this method is that he speaks little, but listens and observes a lot. The introduction of this method of teaching "in cooperation" team and group work in the educational process is important for both the teacher and the student. It is important for a teacher to discover the hidden talents and abilities of his students. As my practice suggests, students are grouped into groups of five or six people and each group should have a well-prepared student. Everyone is given one task, while the role of each is specified. Each student is responsible not only for the result of his work, but also for the result of the whole group, so weak students try to find out from the strong what they do not understand, and strong students strive for the weak to figure out the task. And the whole group benefits from this, because by joint efforts gaps in knowledge are eliminated. The task should not be large in volume, but clearly formulated. Students should be given some time to lapping up inside the group. My task is to monitor the work of the groups and provide advice if necessary. And also, not to pay attention to the noise that arises in the process of work and to settle emerging conflicts, if necessary, as practice shows – students perceive this method with great interest and it helps to reveal their creative abilities. I have tested several more methods of innovative teaching, both at the level of a group of students and at the intergroup level. First of all, these are: "Brain-ring", "Entertaining quiz". For the quiz, I selected topics: "Entertaining anatomy using term elements", "Winged Latin expressions". "Brain ring". The group is divided into two teams or each group becomes a participant in the competition. On the "Brain ring" I offer such contests: 1. black box; 2. add a phrase; 3. questions in envelopes; 4. finish or fill in, etc. Students are happy to take part in the "Brain Ring" and "Quiz".

IV. Conclusions:

1. The use of innovative technology methods allows you to expand the capabilities of the teacher, as well as increase interest in the subject being studied by students.
2. The use of innovative methods does not replace the old classical methods of teaching the subject, but only complements and expands this process.
3. Innovative methods make it possible to create conditions for a more complete disclosure of students' capabilities.
4. Such innovative methods as the project method, group work, identify weaknesses and gaps in students' knowledge in time, which allows the teacher to analyze it and focus on these gaps.
5. Innovative methods contribute to the expansion of methodological knowledge and skills of the teacher, as well as to the disclosure of his organizational abilities.
6. Independent work, as one of the innovative methods, fruitfully affects the quality of students' knowledge, as well as their ability to expand their skills and abilities to work with literature and the possibilities of ICT.

It can be concluded that information technologies will continue to improve, new technologies and new ICT capabilities will appear, which will require the teacher to constantly be in the mainstream of pedagogical science.

Literatures

1. Maxmudov, Z., Sharipov, B., & Bo'riyev, D. (2023). Tibbiyot universitetlarida lotin tili va tibbiy terminologiya fanini o'qitishning o'ziga xos xususiyatlari. *Science and innovation in the education system*, 2(1), 5-10.

2. Mardanovich, M. Z., Aliaskarovna, S. U., Kenjaevna, B. M., Genjebaevna, A. P., & Salimovich, S. B. (2021). Some Considerations about Legal Solutions and Practices of Certain Problems Writing Recipes. *Annals of the Romanian Society for Cell Biology*, 5341-5352.

3. ZAFAR, M., BOBUR, S., & DILMUROD, B. R. (2021). Scientific and pedagogical basis of teaching the theory of decisions in school chemistry. *International Journal of Philosophical Studies and Social Sciences*, 1(3), 192-196.

4. Maxmudov, Z. M., & Sharipov, B. S. (2021). LOTIN TILI VA TIBBIY TERMINOLOGIYA FANINI O'QITISHDA INNOVATSION TEXNOLOGIYALARDAN FOYDALANISHNING DIDAKTIK TAMOYILLARI VA UNING ASOSI HAQIDA FIKRLAR. *Academic research in educational sciences*, 2(6), 1028-1033.

5. Sharipov, B., Makhmudov, Z., & Buriyev, D. (2023). The role of teaching latin in the course of subject training of future foreign language teachers. *Science and innovation in the education system*, 2(1), 11-14.

6. Mardanovich, M. Z., Salimovich, S. B., & Arzimurodovich, B. D. (2021). Modern Methods of Teaching Latin and Medical Terminology in Uzbekistan. *International Journal of Development and Public Policy*, 1(5), 190-192.

7. Sharipov, B., Makhmudov, Z., & Buriyev, D. (2023). Features of teaching latin to students medical universities studying in english. *Theoretical aspects in the formation of pedagogical sciences*, 2(1), 21-25.

8. Sharipov, B., Makhmudov, Z., & Buriyev, D. (2023). Influence of the latin language on the formation of medical terminology. *Theoretical aspects in the formation of pedagogical sciences*, 2(1), 16-20.

9. Maxmudov, Z. M. Lotin tili va tibbiyot terminologiyasi fanini o'qitishda zamonaviy pedagogik texnologiyalardan unumli foydalanish istiqbollari. *Urganch davlat universiteti, "Ilm sarchashmalari*, 118-120.

10. Mardanovich, M. Z., Salimoviche, S. B., & Arzimurodoviche, B. D. (2021). Reviews of effective use of educational methods in teaching latin and medical terminology. *ACADEMICIA: An International Multidisciplinary Research Journal*, 11(4), 381-386.

11. Maxmudov, Z. M. Retsept yozishda duch kelinadigan ayrim muammolarning qonuniy yechimi va amalda qo'llash haqida ba'zi mulohazalar, "O'zbekistonda ilmiy-amaliy tadqiqotlar" mavzusidagi.

12. Maxmudov, Z. M. (2022). Teaching correct pronunciation of latin as an international language of medicine in medical education institutions, Global Technovation 5th International Multidisciplinary Scientific Conference Hosted From Paris, France. *March 30th*, 30-31.

13. Mardanovich, M. Z., & Salimovich, S. B. Auditoriyadan tashqari ta'lim-tarbiyaga *Ташкентского государственного стоматологического института по адресу: Республика Узбекистан, 100047, г. Ташкент, ул. Махтумкули, 103. Цель конференции—знакомство и обмен опытом в обучении и в работе с цифровыми данными, технологиями их применения в гуманитарных* (p. 455).

14. Omonova, M., & Makhmudov, Z. (2023). Modern signs of using the quince plant in folk medicine. *International Bulletin of Medical Sciences and Clinical Research*, 3(4), 41-45.

15. Qurbonova, Z., & Maxmudov, Z. (2023). LOTIN TILIDA KLINIK TERMINLARNING TO'G'RI QO'LLANISH YUZASIDAN FIKRLAR. *Евразийский журнал академических исследований*, 3(3 Part 3), 23-27.

16. Махмудов, З. М., & Шарипов, Б. С. Талабаларнинг фанни яхши ўрганишлари учун психо-эмоционал таъсир этишда халқ мақол ва маталларидан тўғри фойдаланиш (лотин тили ва тиббий терминология фани мисолида). *Zbiór artykułów naukowych recenzowanych*, 112.

17. Maxmudov, Z. M. (2022). Lotin tili va tibbiy terminologiyani o'rganishda o'zbek tili grammatikasining o'rni. *Science and Education*, 3(11), 756-759.

18. Mardanovich, M. Z. (2022). The place of problematic and heuristic methods in the process of teaching latin and medical terminology.

19. Mardanovich, M. Z., Salimovich, S. B., & Arzimurodovich, B. D. (2021). Developing Students Attitudes Towards the Environment When Teaching a Foreign Languages. *Texas Journal of Multidisciplinary Studies*, 1(1), 199-201.

20. Maxmudov, Z. (2022). RETSEPTURADA ERITMALARNING QO'LLANILISHI YUZASIDAN AYRIM MULOHAZALAR. *Евразийский журнал академических исследований*, 2(6), 524-527.

21. Makhmudov Zafar Mardanovich, Tuychiyev son of Nadir Khudoyberdi, Usmanov is the son of Sardar Fame. (2023). SOME OF THE MOST USED FORMS OF MEDICINE IN MEDICAL PRACTICE - THE USE OF TABLETS AND SOLUTIONS. THEORETICAL ASPECTS IN THE FORMATION OF PEDAGOGICAL SCIENCES, 2(13), 20-26. <https://doi.org/10.5281/zenodo.8008614>

22. Maxmudov Zafar Mardanovich, & Normurodova Sohiba Mallaevna. (2023). LOTIN TILINING ZAMONAVIY TILLARGA BEVOSITA VA BILVOSITA TA'SIRI. <https://doi.org/10.5281/zenodo.8034739>

23. Makhmudov Zafar Mardanovich, Tuychiyev son of Nadir Khudoyberdi, Usmanov is the son of Sardar Fame. (2023). SOME OF THE MOST USED FORMS OF MEDICINE IN MEDICAL PRACTICE - THE USE OF TABLETS AND SOLUTIONS. THEORETICAL ASPECTS IN THE FORMATION OF PEDAGOGICAL SCIENCES, 2(13), 20-26. <https://doi.org/10.5281/zenodo.8008614>

METHODS OF INNOVATIVE ORGANIZATION OF PRIMARY EDUCATION
THROUGH THE SAMPLES OF FOLK ORAL CREATIVITY

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Annotation:

In this article, a number of methods on the effective use of folk oral samples, which is a factor that develops children's thinking in the organization of innovative and integrational primary education, are cited. The results of the school observations as well as the results of these observations are also included in this article. Research and literature analysis on this topic will also be cited in the article. The research on the development of children's thinking during the same primary school and the examples of folk oral creativity included in elementary school textbooks will help to expand the thinking of students is reflected in this article. At the end of the article, conclusions and suggestions on the topic will be drawn.

Keywords: research, ability, literature, integration, innovation, literary genres, mental activity, folklore, ethnography, poetics.

INTRODUCTION. The main and only means of keeping up with the rapidly growing period in today's globalisation process is to educate the younger generation, which has a broad worldview, can approach any issue from its point of view and pursue independent thought. Literally, in this process, samples of folk oral creativity come to our aid. While the teaching of samples of folk oral creativity in primary education can serve as the basis for the Integrative Organization of primary education, it was determined during the study that the formation of student thinking, worldview is the basis for the innovative organization of primary education. At this point, let's get acquainted with folk oral creativity. Folk oral creativity is considered a manifestation of literature. Folk oral creativity appeared much earlier than written literature and served as the basis for the emergence of written literature.

Works of art created orally and thus disseminated orally, created by folk poets, folk Bakhshi and passed orally from mouth to mouth, from generation to generation, are called folk oral creation or "folklore".[1] Analyzing the word folklore according to its components, from the meaning "folk" – folk , "lore" – wisdom comes the combination "folk wisdom". Uzbek folklore is a component of the artistic life of our people, an oral type of verbal art. It has a long and complex history, stages of development. With the formation of human speech, verbal creativity also arose.[2]

Examples of folk oral creativity embody the ethnography, history, culture, traditions and values of the same people. Our ancestors, who made a great contribution to world civilization with their rich and ancient national culture, were the creators of rich folklore aanas, which include a wide variety of genres. These masterpieces of thought, which have glorified goodness for several centuries, embody the most noble views of our people, directed at Glorious goals. Examples of folk art "educate a perfect person, a harmonious person who has an independent worldview, lives on the invaluable heritage of our ancestors and modern thinking", serve the majestic Proverbs.[3] Touching on the components of folk oral creativity, under this name we can combine Proverbs,

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matals, riddles, fairy tales, epic, narration, myths, songs and myths. Elementary school textbooks give examples of folk oral creativity, such as Proverbs, matals, riddles, fairy tales, narratives, and they are aimed at growing the child's mind at the moment, expanding his worldview, realizing national and universal values, and such noble goals.

MAIN PART. It has been found that readers are limited to reading Proverbs, fairy tales and narratives. To understand the Nazmun of proverbs, to draw conclusions from fairy tales, to realize the true nature of narratives, the lack of development of logical thinking in most readers was reflected by observations. And now the problem of forming students' thinking is facing us crosswise. We are looking for a solution to this problem using the observation method. O. Madayev and T. As given in the book "Folk oral poetic creativity", where the scientific research of the sotidovas is concentrated, "the formation of information on epics, fairy tales, songs and other genres created by our people, the formation of an independent opinion about them is the tasks of the science of Uzbek folk oral creativity". It is these proverbs, riddles, fairy tales and narratives that have a positive effect on the reader, what qualities are in the reader, as well as in the formation of knowledge.

Initially researching the pedagogical and psychological effects of Proverbs on the reader, the smallest example of folk oral creativity, it was found that the samples of this genre are distinguished from other genres both by their tonality and by their rich content. The results of observations made in elementary students see that the thinking of students who not only memorized the proverb, but were able to call their magics will be sharp compared to other students, and their worldview will be wider. The main focus here is on the bite of Proverbs, on logical thinking. A similar analysis of fairy tales and narratives was made. In fairy tales and narratives, what is actually going on, what are the benefits of these fairy tales in domestic life, and how a student who has read these fairy tales and narratives can draw conclusions for himself is currently a pressing issue, and as a solution to this issue, it is permissible to recognize the rich knowledge of the teacher about samples of folk According to a survey of students in the 3rd grade of the 23rd General Secondary Education School of the gurlan District of the Khorezm region, 35% of the students of the class were found to be able to understand the main purpose and main content of Proverbs, fairy tales and narratives. This indicator should be adapted to the Advanced period, when the current innovative technologies are pressed.

We can use almost all examples of folk oral creativity in the innovative and integrative and integrative Organization of the lesson in the elementary grades. In addition to Proverbs, riddles and quick sayings develop the child both mentally and psychologically. As a clear proof of this, we can cite experiments carried out in students. As all teachers know, in elementary grades, children's speech organs will not be well developed yet. In the course of the study, a group of students was selected, and in them the minutes of quick recitation were repeated every day. After a period of time, the witness was divided that these students were pronouncing sounds very fluently. From this, we can say that the samples of folk oral creativity are of great importance in the introduction of innovation in education.

CONCLUSION. Therefore, it is our main goal that we have set ourselves to cultivate the thinking ability, mind and logical thinking of students. A student who does not have the ability to think, Mind, independent thinking will remain a mental dependence even in the future, and as a result, the observation of certain violations of norms in society was determined during studies. First of all, it was determined that the teacher himself should be able to gnaw on the samples of folk oral creativity and deliver it to the students in a full-fledged, full-fledged way, putting all his skills to work. In place of the conclusion, it is worth saying that the samples of folk oral creativity are an integral, full of wisdom of our life. Students should be taught and not taught these proverbs alone. This is the main and effective way to grow logical and independent thinking, which has now become an urgent problem, was determined during our observations and studies.

LITERATURE USED:

1. B. Sayimov, G'. Mouminov. Epic genres of Uzbek folklore. - Tashkent: 1981.
2. Mamatqul Zhurayev. Fundamentals of folklore studies. - Tashkent: "Science", 2009.
3. I. A. Karimov. Free and prosperous homeland, free and prosperous Eid-our ultimate goal. - Tashkent: "Uzbekistan", 2000.
4. O. Madayev, R. Sabitova. Folk oral poetic creation. - Tashkent: 2010.
5. M. Zhurayev, J. Eshangulov. Introduction to folklore studies. - Tashkent: 2017.
6. A. Musurmanova, H. Ibragimov, O. Jamoliddinova, K. Riskulova, S. Yolandeve, A. Zhumayev, F. Babashev, P. Isamova, S. Sharipova, G'. Salahiddinova, K. Todjibayeva. General pedagogy. - Tashkent:" youth publishing house", 2020.
7. R. A. Mavlonova, N. H. Rakhmankulova, K. O. Matnazarova, M. K. Shirinov, S. Hafizov. General pedagogy. - Tashkent: Science and Technology, 2018.
8. <https://lex.uz/docs/-4312785>
9. <https://fayllar.org/>
10. B. S. Abdullayeva. Umuniy pedagogy (pedagogical skill). Textbook. - Tashkent: "Innovats.

INNOVATIVE APPROACHES TO ASSESSING AND IMPROVING THE QUALITY OF
EDUCATION

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Annotation: *This article briefly describes the role of education in the country's development, the importance of innovative approaches to improving the quality of education and its evaluation.*

Keywords: *innovative methods, education system, pedagogy, technologies, innovative approaches, education quality, state educational standards.*

Introduction: In the modern world, issues of ensuring its quality take priority in determining the tasks of education development and reform. In terms of modern trends of modernization of society, improving the quality of education is important in the problem of managing the quality of education of students, and its relevance is increasing year by year. It should be noted that the problem of the quality of education is a complex and comprehensive issue. To reveal this problem, it is necessary to refer to the main concepts of research - "education" and "quality".

The concept of "education" is interpreted very broadly. Also, education is considered at different levels of its organization - personal, institutional, regional, state. In his concept, E. Gusinsky defines the concept of education as follows: "Education is the process of teaching a person to culture, acquiring literacy in its languages and orientation in its texts." Another definition of it is as follows: "Education is the process and result of creating, forming and developing a system of concepts and ideas about the world, which makes it possible to pursue a goal."

In the pedagogical dictionary, the interpretation of the concept of "education" is defined as "systematic knowledge, the process and result of mastering skills; a necessary condition for preparing a person for life."

A.O. Tatur considers education as a social institution that can be expressed in the form of basic systems:

- ❖ educational content formation system (what do we teach?);
- ❖ educational activity organization system (how do we teach?);
- ❖ educational quality assessment system (what will we achieve as a result?).

It is known that the speed of learning of students is individual. Some students acquire knowledge quickly, others slowly, but their achievements can be characterized by the same indicators (amount of knowledge, creative activity, independence).

The person-oriented paradigm of education has led to an increase in the quality of education. The essence of this approach is the ability of students to solve problems grouped according to certain criteria in a new way:

- problems with making independent decisions in selected situations;
- problems related to the information base for making decisions based on the ability to search, select, analyze and evaluate the necessary information;
- problems related to the legal basis of decision-making and implementation, taking into account the norms and rules, sometimes taking into account actions of a situational nature;

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- problems related to the realization of goals and self-organization of one's activities or the implementation of a decision made on the basis of interactions with other people;
- problems related to the assessment of activity results and, first of all, the ability of a person to assess them independently based on the skills formed to determine the assessment criteria.

At the same time, due to the constant variability of the specified parameters, it is clear that it will be difficult to evaluate the quality of education according to them. In this regard, G.N. Serikov expresses the following opinion: education aimed at the development of the individual achieves its goal to the extent that it creates a situation in which the individual and his self-development forces are required. Therefore, a person should be considered, first of all, as a person who knows his own identity, among others, for others, and thus for himself.

Currently, there are three blocks of basic personal functions:

- 1) responsibility (function of moral choice, motivational justification of life activity, etc.);
- 2) self-awareness (creativity, freedom, independence, overcoming various life obstacles, development of individual provision of the spiritual level of life);
- 3) reflection (a function that provides meaning-search activity, development of the image of "I", autonomy of goal formation).

In general, when evaluating the quality of education, the following indicators can be distinguished:

- quality of pedagogical personnel;
- the state of the material and technical base of the educational institution;
- motivation of teaching staff;
- quality of training programs;
- quality of students;
- infrastructure quality;
- quality of knowledge;
- innovative activity of management;
- introduction of technological innovations;
- demand for graduates;
- graduate success.

Thus, among the indicators of the quality of education, it is appropriate to include the value orientations of students, among which it is necessary to emphasize the readiness to consciously choose a profession. A condition for the formation of such preparation is to encourage students' study activity.

Unfortunately, the indicators of personal growth of students have not yet been clearly defined. Therefore, to evaluate the quality of education, it is suggested to use such indicators as the high level of education, the developed system of educational differentiation, the availability of educational services, and the breadth of the sphere of life activities that meet the needs of children. Perhaps, only the first indicator can describe the quality of education of students, the rest of the indicators can actually be included among the conditions that ensure the achievement of this result.

The scale of changes in the education system shows that they can be implemented according to social needs and can be considered strategic directions of the state policy in the

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field of education. This concept of education reform is reflected in the Law "On Education" of the Republic of Uzbekistan.

The implementation of educational standards ensures the unity of the state educational space and guarantees the right of students to complete education. It is always appropriate to use monitoring as a means of monitoring the implementation of educational standards.

All this implies not only updating the content, but also focusing on the new educational result, the new quality of education in students, in particular, the formation of competencies, the ability to independently acquire knowledge and apply it in practice. This, in turn, requires the creation of new models for managing the quality of student education. Here we are talking about the existence of a connection between the result and the quality of the educational process organized in the educational institution in terms of programmatic, information-technological and competency-based approaches that help to achieve a positive result. All of the above includes the development and implementation of new forms and methods of management that ensure the achievement of the predicted result.

Conclusion: In short, the quality of education is a multifaceted concept that includes a set of important characteristics of education that meets the requirements of modern education, is able to meet the educational needs of the individual, society and the state. There are many things that need to be done to improve the quality of education, and among them the most important ones, in our opinion, are the following:

- try to distribute highly qualified teachers as evenly as possible in the education system.
- increase the motivation of teachers by changing the professional status and working conditions.
- preparing future teachers for practical activities through specialized training courses and teaching practice during their studies.
- enable teachers to use effective and appropriate pedagogical technologies using different approaches based on the needs of students of different natures and different materials.

In general, this list can be continued for a very long time, but it would be appropriate to start with these.

REFERENCES:

1. Abdurahmanova, M., & Malikova, Z. (2022). O 'ZBEK TILIDA SOTSIOLEKT. FAN, TA'LIM, MADANIYAT VA INNOVATSIYA, 1(2), 104-107.
2. Turdievna, K. Z., & Tursunaliyeva, A. M. (2023). Problems of Understanding and Translating Homonyms in the Artificial Intelligence System. INTERNATIONAL JOURNAL OF LANGUAGE LEARNING AND APPLIED LINGUISTICS, 2(5), 63-67.
3. Zulkhumor, K. (2021). Semantics and lingu-culturological features of old uzbek lexemes. ACADEMICIA: An International Multidisciplinary Research Journal, 11(8), 488-497.
4. Ismadiyarov, Y., Nabiulina, L., Matnazarova, M., Mullahmetov, R., Suleimenova, U., & Satimbekova, A. (2021). Multicomponent Structural and Logical Model of Innovative Management in Higher Education and the Mechanisms for its Implementation. Известия высших учебных заведений. Технология текстильной промышленности, (3), 187-195.
5. Tursunaliyeva, A. M. (2021, August). OCCASIONALISM AND THEIR ARTISTIC AND AESTHETIC FUNCTIONS. In " ONLINE-CONFERENCES" PLATFORM (pp. 19-23).
6. Сабирова, Н. Э. (2022). ПОСЛЕДОВАТЕЛЬНОСТЬ РАЗВИТИЯ ИСКУССТВА БАХШИ ХОРЕЗМА. Universum: филология и искусствоведение, (4 (94)), 36-40.
7. Abdurahmanova, M. (2021). LEGAL FUNDAMENTALS OF LAND RESOURCES OF USANCE TO ACHIEVE ECONOMIC EFFICIENCY. Экономика и финансы (Узбекистан), (Спецвыпуск 4), 187-189.
8. Turdiyeva, K. Z., & Ruzimovna, K. G. (2021). The role of zoonyms in the expression of axiological content. Asian Journal of Multidimensional Research, 10(10), 1430-1434.
9. Ruzimovna, K. G., & Xolmanova, Z. Formation and Development of Axiolinguistics. International Journal on Integrated Education, 3(9), 128-131.
10. Ergashevna, S. N. (2021, November). Traditions of khorezm caliphate and their peculiarities. In Archive of Conferences (pp. 120-123).
11. Сабирова, Н. Э. (2017). Поэтические символы: становление и эволюция. Молодой ученый, (3), 684-686.
12. Siddikov, R., & Amanbayev, M. (2021). Main Characteristics and Space Structure of A Moving Industrial Robot. International Journal on Orange Technologies, 3(12), 225-225.
13. Amanbaev, M. (2022). INNOVATIVE TECHNOLOGIES FOR THE DEVELOPMENT OF PROFESSIONAL COMPETENCES BASED ON NATIONAL VALUES IN AUDIENCE TRAINING. Science and Innovation, 1(6), 831-835.

THE ROLE OF HISTORICAL MONUMENTS IN THE DEVELOPMENT OF OUR
CULTURE

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Annotation: *This article talks about the role of historical monuments in the development of our culture from today's point of view. Some comments are given on the topic of attention to our cultural heritage, which keeps our historical culture invisible.*

Keywords: *tourist areas, historical monuments, region, historical-cultural tourism, cultural heritage, mosque.*

Introduction: Cultural heritage is a factor that strengthens the foundation of society, the spiritual values and traditions of our people that are passed down from generation to generation. Historical and cultural monuments show their influence on each person, fascinate and make them proud. Therefore, we think that their preservation, first of all, should become the duty and goal of not only the state, but everyone. After Uzbekistan gained independence, attention to the cultural and historical heritage left by our ancestors increased, historical monuments were brought under state control. In the years of independence, in cities such as Bukhara, Samarkand, Termiz, Khiva, Tashkent, Kokand and Shahrisabz, the monuments built by the great talent of our great ancestors have found their true value, and their repair and restoration to their original form has become one of the priorities of our state's policy.

The development of tourist regions, first of all, improves the lifestyle of the local residents, creates new jobs, brings foreign currency into the country, and changes the outlook of the local population. Within the scope of the topic under consideration, especially in the years of independence, it expanded and accelerated the solution of this problem, because tourism is considered one of the leading links of economic sectors.

As society develops, the spiritual relationship and relations between people, peoples, and nations continue to develop. Spirituality can be divided into four groups:

The first is personal spirituality.

The second is national spirituality.

The third is regional spirituality.

The fourth is universal spirituality.

Personal spirituality belongs to every person and includes his inner state of mind, actions, relationships and other aspects. The personal spirituality is to protect the soil, water, air - the total resources of the Motherland, to respect the rights and freedoms of every citizen, to respect the dignity a concept that means the set of the inner spiritual and mental world aimed at carrying out activities with sincerity, faith, belief, loyalty, trust, honesty, kindness, altruism, respect, devotion and intellectual depth.

National spirituality is an extremely valuable spiritual wealth characteristic of a certain people, nation, and its ancestors. The history of national spirituality is related to the process of spiritual development of the nation, in which sometimes centuries can be equal to days, and days can be equal to centuries. National spiritual maturity occurs in time, that is, throughout the entire history of the nation. One thing is clear for the historical process of humanity, that historical events, persons, events pass away, elements of material culture are eroded, but spirituality grows, enriches, and acquires a wider scope and deeper content.

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Regional spirituality is the spiritual wealth common to the nations of a certain geographical region. For example, if we consider the spirituality of the peoples of Central Asia or the Slavic peoples, or in a wider context, we can find the commonality and similarity between the spirituality of the East and the West. Regional spirituality shows the common unity of different peoples, their closeness to each other, the common aspects of their lifestyle and material life conditions.

Universal spirituality is the spiritual and moral wealth that belongs to all mankind and the peoples of the world. Universal spirituality - spiritual phenomena, cultural assets, literature, science, artistic achievements, religion, politics understanding of outcomes in the field of law. The essence of universal spirituality is explained in detail with examples and evidence in President Islam Karimov's work "High spirituality is an indomitable power".

Conclusion: In conclusion, it can be noted that the above-mentioned shrines, regardless of the meaning of the views related to their origin, these places are important as a means of preserving the ecological landscape of a certain region, increasing people's respect for historical settlements, and learning customs and traditions that have been preserved for thousands of years. After all, it is well known to us from the experience of human historical development that if which country, which nation appreciates and honors its cultural heritage, if citizens are encouraged to honor the national-cultural traditions, historical monuments, architectural monuments that exist in it, if the spirit of respect for the people who created material and spiritual wealth is formed, then cultural-spiritual, economic and political development and stability will prevail in that country and society.

REFERENCES:

1. *Abdurahmanova, M. (2021). LEGAL FUNDAMENTALS OF LAND RESOURCES OF USANCE TO ACHIEVE ECONOMIC EFFICIENCY. Экономика и финансы (Ўзбекистан), (Спецвыпуск 4), 187-189.*
2. *Abdurahmanova, M., & Malikova, Z. (2022). O 'ZBEK TILIDA SOTSIOLEKT. FAN, TA'LIM, MADANIYAT VA INNOVATSIYA, 1(2), 104-107.*
3. *Atadjanova, M. A. (2016). Animatic mythology and its functional nature in the current Uzbek prose. Молодой ученый, (1), 290-294.*
4. *Ergashevna, S. N. (2023). NARRATIVE REPERTOIRE AND ITS INFLUENCE ON THE EPIC TRADITION. ANGLISTICUM. Journal of the Association-Institute for English Language and American Studies, 12(3), 33-43.*
5. *Israilova, S. (2023). TARIXIY MANBALARDA RANGLAR TALQINI. MIRZO ULUG'BEK NOMIDAGI O'ZBEKISTON MILLIY UNIVERSITETI ILMIY JURNALI.*
6. *Otajanova, M. (2021). A UNIQUE ARTISTIC INTERPRETATION OF THE ETHNOCULTURAL VALUES OF THE TURKIC PEOPLES. CURRENT RESEARCH JOURNAL OF PEDAGOGICS, 2(06), 108-115.*
7. *Nurumbetova, S. (2023). MODERN OPPORTUNITIES AND PROSPECTS FOR DEVELOPMENT EXPERT-CRIMINALISTIC ACTIVITY. Modern Science and Research, 2(9), 415-419.*
8. *Otajanova, M. (2022). Mythopoetic interpretation in the artistic work. ACADEMICIA: An International Multidisciplinary Research Journal, 12(7), 98-108.*
9. *Kayumov, N., Uzokov, J., Alyavi, B., Bekzod, K., Madjidov, I., & Mukhamedova, M. (2022, June). Circulating exosomal biomarkers in patients with coronary artery disease and*

metabolic syndrome. In *European journal of clinical investigation* (Vol. 52). 111 RIVER ST, HOBOKEN 07030-5774, NJ USA: WILEY.

10. Otajanova, M. O. (2016). *NEW APPROACH TO THE TRADITIONS. Theoretical & Applied Science*, (11), 8-12.

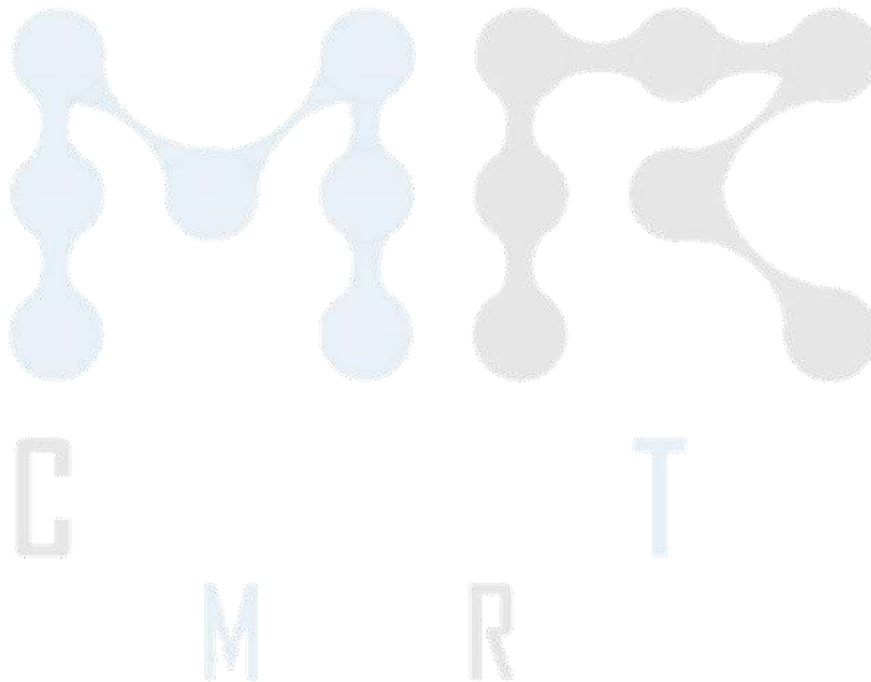
11. Turapovna, I. S. (2021). *Semantics of the lexeme "green". ACADEMICIA: An International Multidisciplinary Research Journal*, 11(9), 440-448.

12. ОТАЖОНОВА, М. (2017). ХУДОЖЕСТВЕННАЯ ЭВОЛЮЦИЯ МИФОЛОГИЧЕСКИХ СЮЖЕТОВ В УЗБЕКСКИХ ПРОЗАИЧЕСКИХ ПРОИЗВЕДЕНИЯХ. *Научное обозрение Саяно-Алтая*, (2), 85-88.

13. Jindal, L., Sharma, A., Prasad, K. D. V., Irshad, A., Rivera, R., & Karimovna, A. D. (2023). *A machine learning method for predicting disease-associated microRNA connections using network internal topology data. Healthcare Analytics*, 100215.

14. Азларова, А. (2022). ЎЗБЕКИСТОНДА РАҚАМЛИ БАНКЛАРНИ РИВОЖЛАНТИРИШ ИСТИҚБОЛЛАРИ. *Economics and Innovative Technologies*, 10(5), 22-30.

15. Kosumi, A., & Poposka, K. (2022). *TECHNOLOGICAL CHANGE AND FINANCIAL INNOVATION IN BANKING. Economic Development Економски развој*, 57.



**РАЗВИТИЕ ТЕХНИЧЕСКОГО ТВОРЧЕСТВА БУДУЩИХ ФИЗИКОВ ПРИ
ОБУЧЕНИИ ФИЗИКЕ С ПОМОЩЬЮ НАНОТЕХНОЛОГИЧЕСКИХ УСТРОЙСТВ**

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Аннотация: В этой статье анализируются и обсуждаются последние и новейшие нанотоплива в двигателях внутреннего сгорания с использованием нанотехнологий. Эмиссия различных наночастиц, добавленных в дизельное, биодизельное, бензиновое, спиртовое и смешанное топливо, была изучена на предмет результатов повышения эффективности двигателей и увеличения коэффициента полезного действия двигателей внутреннего сгорания.

Ключевые слова: техническое творчество, нанотехнологии, технологии, современная среда.

Развитие технических навыков в то время, когда необходимо современное производство и важность изучения современных технологий в современном образовательном процессе науки, необходимо не только для представителей этой отрасли, но и для учащихся, которые не предполагают связывать свою профессиональную деятельность с современными методами и технологиями, поскольку наличие таких навыков важно для решения задач, связанных с современными инструментами, используемыми в повседневной жизни имеет значение. Развитие технического творчества учащихся во всем мире осуществляется на основе современной техники, инновационных технологий. Современное знание приобретает большое значение в профессиональной деятельности человека на протяжении всего жизненного пути, личного опыта, а также в становлении как гармоничной личности.

Роль физической науки в ускоренном развитии современных технологий в XXI веке информационных технологий считается важной. Пришло время перейти от мегагабаритных устройств к наноразмерным, которые могут позволить проводить эксперименты и получать результаты с высокой точностью при наблюдении за физическими процессами. День за днем наноматериалы вытесняют традиционные материалы из потребления. Высокие технологии-наноматериалы, созданные с использованием нанотехнологий, дешевле, легче и прочнее, чем материалы, которые в настоящее время широко используются. По своим физическим, химическим и механическим свойствам они превосходят обычные материалы [2; стр. 33-34].

Воспитывать в учебных заведениях интерес учащихся к технике и технике в духе уважения к изобретателям нанотехнологий, когда они объясняются созданием наноразмерных устройств и достижениями, достигнутыми с помощью этих наноустройств, а также обучать их решению практических задач, с которыми они сталкиваются в повседневной жизни, осознавая закономерности функционирования технических средств в развитии своих способностей к техническому творчеству, необходимо обладать компетенциями в области эффективного использования природных ресурсов и защиты окружающей среды.

Новые изобретения в этой области при объяснении следующих тем физики как в средних школах, академических средних школах, так и в высших учебных заведениях

приведут к повышению технического творчества учителя при объяснении с помощью наноустройств, а также к повышению интереса учащихся к нанотехнологиям:

1. Взаимодействие частиц;
2. Капиллярные явления;
3. Рабочий процесс тепловых машин и их коэффициент полезного действия (фик).
4. Конденсаторы
5. Электропроводность
6. Использование инноваций в области нанотехнологий по темам дисперсионных явлений еще раз доказывает, что физическая наука студентов необходима в обществе.

На уроках физики считается важным развивать мировоззрение учащихся в области нанотехнологий, формировать у них навыки работы с наноустройствами, повышать их интерес к инновациям в области нанотехнологий, делать осознанный выбор профессий в области нанотехнологий, изучающих их в науке.

При обучении физике следует обращать внимание на то, что при развитии технического творчества учащихся с помощью нанотехнологических устройств информация о наноустройствах предоставляется на основе определенной системы.

Коэффициенты полезной работы тепловых машин в физике можно объяснить с помощью следующих выражений.

Фик тепловой машины всегда меньше 1 и определяется с помощью следующего выражения:

$$\eta = \frac{A_{\text{полезный}}}{A_{\text{общий}}} = \frac{Q_1 - Q_2}{Q_1}$$

или в процентах

$$\eta = \frac{A_{\text{полезный}}}{A_{\text{общий}}} \cdot 100\% = \frac{Q_1 - Q_2}{Q_1} \cdot 100\%$$

Можно с уверенностью сказать, что КПД бензинового двигателя колеблется от 20 до 25%, и причин тому немало. Если мы возьмем поступающее топливо и пересчитаем его в процентах, мы получим “100% энергии”, которая будет передана двигателю, и тогда потери уйдут:

1. Топливная экономичность. Не все топливо, впрыскиваемое в двигатель внутреннего сгорания, сгорает, лишь небольшая его часть остается с выхлопными газами, на этом уровне мы уже теряем до 25% КПД. Конечно, сейчас совершенствуются топливные системы, появился инжектор, но это далеко не идеально.

2. Потери тепла. Двигатель прогревает себя и многие другие элементы, например радиаторы, свой корпус, циркулирующую в нем жидкость. Кроме того, часть тепла уходит вместе с выхлопными газами. Потеря эффективности до 35% при всем этом.

3. Механические потери. Всевозможные передачи движения - во всех местах, где есть трение. Сюда входят потери от нагрузки генератора. Смазочные материалы, конечно, тоже сделали шаг вперед, но опять же, никто не преодолел трение полностью - потеря еще

Таким образом, в сухом остатке КПД составляет около 20%! Конечно, в зависимости от типа бензина у них этот показатель увеличивается до 25%, но их не так много. Это означает, что если ваш автомобиль расходует 10 литров топлива на 100 км, то только 2 литра из них идут прямо на работу, а остальное-потери!

При использовании нанотоплива в двигателе внутреннего сгорания достигается увеличение полезного коэффициента работы двигателя внутреннего сгорания до 20% за счет уменьшения объема выбросов в окружающую среду в результате сгорания нанотоплива на 14-16%, выделения большого количества высокотемпературного тепла и создания высокого давления под поршнем.

Кроме того, в настоящее время используются малогабаритные суперконденсаторы большой емкости с использованием нанотехнологий или суперкомпьютеры с высокими параметрами малой емкости с использованием наноматериалов с высокой пропускной способностью.

Основная цель этой статьи-изучить применение наночастиц и нанотоплива в двигателях внутреннего сгорания. С этой целью три основные части использования расходуемых наночастиц в двигателях (а именно топливо, смазочные материалы и охлаждающая жидкость) - это сбор цифровых и экспериментальных исследований. В этой части обзора будут представлены наножидкости, основным топливом которых может быть дизельное, биодизельное, бензиновое, спиртовое или смешанное топливо. Посредством полного обзора обсуждается влияние этого нанотоплива на производительность двигателя, выбросы и, наконец, наиболее эффективные нанотоплива служат для формирования точки зрения снижения выбросов или повышения эффективности двигателей.

Нанотехнологии-одна из основных и актуальных тем в новой области двигателей внутреннего сгорания. Нанотехнологии в двигателях внутреннего сгорания имеют широкий спектр применения, включая наножижения, нанокompозиты, нанокаучуки, Наноматериалы и т. д. Основываясь на экспериментах по применению наножидкостей в теплопередаче [3], они обладают очень хорошими свойствами. Эффективность процесса теплопередачи и смазки побудила исследователей рассматривать его как нано-хладагент и нано-смазку в двигателях внутреннего сгорания. Кроме того, горючие свойства некоторых наножидкостей делают их пригодными для использования в качестве нанотопливных присадок, что служит достаточным повышением эффективности двигателей внутреннего сгорания. Благодаря своим преимуществам двигатели внутреннего сгорания могут использовать множество основных видов топлива. Например, из экспериментов газихани и др. [4] использовали добавки этанола в бензиновые двигатели для уменьшения выбросов и улучшения рекуперации энергии. Согласно опыту hatami et al. [5] он использовал дизельные двигатели для рекуперации тепла, такие как комбинированные схемы отопления и питания, с использованием различных конструкций теплообменников.

В заключение, в этой статье были проанализированы и обсуждены последние и новейшие нанотоплива в двигателях внутреннего сгорания с использованием нанотехнологий. Эмиссия различных наночастиц, добавленных в дизельное, биодизельное, бензиновое, спиртовое и смешанное топливо, была изучена на предмет результатов повышения эффективности двигателей. Можно сформулировать следующие основные моменты:

1. Наночастицы выполняют множество функций: кислородный буфер, высокое отношение поверхности к объему, микровзрывные свойства, анти-износ и коррозия, высокая теплопроводность и каталитическая активность. Кроме того, в статье также упоминается большая смазка для наночастиц и циркуляция/турбулентность в топливе.

2. Внедряя инновации в области нанотехнологий в сознание студенческой молодежи при развитии технического творчества учащихся с помощью нанотехнологических устройств при преподавании физики, мы уменьшаем количество выбросов, которые могут быть вызваны высокой эффективностью технологий, создаваемых молодежью нашего будущего. В то же время считается, что он также защищает окружающую среду.

Список использованной литературы

1. Параграф 3 Постановления Президента Республики Узбекистан от 19 марта 2021 года № ПП-5032 О мерах по повышению качества образования и развитию научных исследований в области физики. <https://lex.uz/docs/-5338558>
2. Камиль Мукимов “что такое карликовые строители или нанотехнологии?” Издательство “Камолот”, Ташкент-2017. С. 33-34.
3. M. Hatami, D. Song, D. Jing, Optimization of a circular-wavy cavity filled by nanofluid under the natural convection heat transfer condition, Int. J. Heat Mass Transf. 98 (2016) 758–767.
4. Mohsen Ghazikhani, Mohammad Hatami, Behrouz Safari, Davood Domiri Ganji, Experimental investigation of performance improving and emissions reducing in a two stroke SI engine by using ethanol additives, Propulsion and Power Research 2 (4) (2013) 276–283.
5. M. Hatami, M. Jafaryar, D.D. Ganji, M. Gorji-Bandpy, Optimization of finned-tube heat exchangers for diesel exhaust waste heat recovery using CFD and CCD techniques, International Communications in Heat and Mass Transfer 57 (2014) 254–263.
6. КА Самиев, КС Саидов, А Аминов “Теоретическое исследование процессов тепло-и массообмена в солнечных опреснительных установках” - Молодой ученый, 2015.

Подготовка будущих учителей начальных классов к творчески-методической деятельности на основе интегративного подхода

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Аннотация. В статье говорится о качествах, необходимых для подготовки будущих учителей начальных классов к творческой и методической деятельности на основе интегративного подхода. Указаны пути формирования качеств, свидетельствующих о готовности учителя начальных классов к профессиональной деятельности.

Ключевые слова: компетентность, профессиональная деятельность, педагогика, творческая деятельность, интегративный подход, принцип, социализация, интеграция.

Прежде чем изучать педагогические условия эффективной реализации интегративного подхода в подготовке будущих учителей к творчески-методической деятельности, рассмотрим основные принципы, отдающие приоритет реализации педагогической интеграции, составляющие основную основу интегративного подхода, а вопросы, связанные с их значением в конкретном уроке, нам предстоит рассмотреть.

Для того чтобы педагогическая интеграция успешно выполняла задачи, указанные в предыдущей главе, ее структура как процесса должна состоять из следующих компонентов:

А) Определение целей интеграции: этот компонент представляет собой осознанное восприятие образовательных потребностей любой формы обучения и объектов, подлежащих интеграции (предметов, тем, кафедр, методов, средств и форм обучения и т. д.), призван выявить его важнейшие свойства. Необходимость данного компонента заключается в том, что в связи с увеличением учебных предметов содержание традиционных предметов целенаправленно сокращается, а информация и данные, относящиеся к вводимым учебным предметам, сжимаются, то есть в результате максимальное увеличение их плотности за определенный период времени, наблюдаются изменения целей. При этом ставятся цели, к которым относятся повышение скорости обучения, пересмотр порядка приоритетности понятий, максимальное сближение теоретических знаний и области практического применения [1].

Б) Выбор объектов, предназначенных для интеграции: объекты содержания, выбранные для интеграции (курс, конкретный предмет, раздел, глава или связанный предмет), тщательно анализируются со всех сторон, и в результате этого объекта интеграции выделяются переменные и инвариантные компоненты. выдающийся. Следует сказать, что инвариантные компоненты составляют основу интеграции, переменные компоненты используются как дополняющие элементы темы. Выбор объектов интеграции осуществляется исходя из определенных целей. Если целью является устранение многопредметности, то соответствующие предметы в предметы, относящиеся к изучаемому предмету, интегрируются [2].

В) Выявление системообразующих факторов (интеграторов): для осуществления интеграции необходимо определить факторы, служащие основой гармонизации объектов и установления связей между ними. К системообразующим факторам относятся понятия, мысли, идеи, события, обладающие следующими характеристиками:

- возможность соединить все компоненты системы в единое целое;

- таргетинг системы;
- положительный эффект от использования всех компонентов в целом;
- поощрять свободное использование всех компонентов на своих местах;
- обеспечение самоуправления и развития вновь созданной системы в результате интеграции.

Никакая интеграция знаний или других элементов невозможна без системообразующих факторов. Определить факторы, образующие систему, значит определить доминирующие компоненты в упорядоченном наборе определенных компонентов, имея четкие знания о характеристиках всех возможных связей между ними. В качестве системообразующего фактора можно принять любое понятие, категорию, понятие, факт, явление, конкретную тему, целый раздел конкретного учебного предмета. На приведенных примерах мы уясним функции, задачи и сущность факторов, образующих систему [3].

При анализе системообразующих факторов (интеграторов) наряду с факторами, имеющими собственное содержание, используются факторы, имеющие педагогическое содержание.

Г) Создание новой структуры (тезауруса) изучаемого курса: следующий компонент педагогической интеграции также является одним из важных этапов внедрения интегративного подхода. Дело в том, что системообразующие факторы существенно меняют содержание изучаемого предмета (или конкретного предмета), то есть каждый элемент предмета меняется от причинного содержания к последовательному содержанию, либо в основную основу поступают второстепенные элементы. в базу. Иными словами, в ходе реализации интеграционного процесса мы сталкиваемся с неожиданными закономерностями реализации образовательного контента. Создавая новую структуру изучаемого курса, мы пересматриваем исходный тезаурус (то есть словарь структурно-логических понятий) ресурсов конкретного предмета (предмета, курса, темы, кафедры). вне. Обработка содержания предмета представляет собой самостоятельный сложный процесс, имеет вариативный характер и поэтому требует от учителя начальных классов широкого диапазона воображения, знаний, аналитических и исследовательских навыков. При создании новой структуры курса необходимо извлечь важные понятия, понятия и категории из указанных источников, из учебных предметов, которые предполагается гармонизировать, из существующих источников, которые изучаются. Там же формируется механизм педагогической интеграции, и этот механизм служит основой внедрения интегративного подхода [4].

Д) Создание сложной системы путем принятия измененного содержания образовательного предмета (или конкретного предмета) на основе сформировавшихся новых интегративных свойств: новое содержание на основе связей между его компонентами при гармонизации образовательного содержания, создающих систему раскрывается сущность методов реализации интегративного процесса. Коммуникация – это локальное (специфическое только для определенной темы) взаимодействие компонентов содержания образования, происходящее объективно или в результате вмешательства педагога. Именно в результате взаимодействия компонентов образовательного контента увеличивается объем и усваиваемость передаваемой информации. При создании новой системы содержания, обладающей интегративными свойствами, учитываются способы взаимодействия компонентов, составляющих образовательное содержание, и типы связей между ними.

Существуют виды межкомпонентных отношений, классифицированные по происхождению, по управлению, по уровню воздействия на контент, по развитию контента [5], и мы учитываем их значение в создании контента, обладающего интегративными свойствами. Ограничимся этим замечанием, поскольку классификация межкомпонентных связей, образующих содержание обучения, не является предметом нашей исследовательской работы.

Е) Проверка уровня эффективности интегрированной системы, созданной на основе полученного содержания: она основана на объективном факторе, но влияние интегрированной системы на объем интегрированных учебных предметов, способность обучающегося освоить содержание В составе новой интегрированной системы также учитываются такие факторы, как способности, эмоционально-психологические аспекты, влияние на мотивацию обучающегося. Этот компонент педагогической интеграции предполагает длительный процесс, поскольку результаты освоения интегративного содержания не являются быстрыми показателями. Однако не следует забывать, что любой интегративный курс (интегративный предмет) может внести изменение в учебную деятельность конкретного обучающегося, проявляющееся в определенный период времени. В любой ситуации эффективность интегративного курса должна основываться на затрачиваемом на него времени, энергии, затраченной преподавателем и учениками в педагогическом процессе, уровне утомляемости, наблюдаемых мотивациях и психолого-эмоциональных ресурсах [6].

Ж) Внесение соответствующих изменений в сложную систему исходя из необходимости: основой служат результаты компонента проверки эффективности сложной интегративной системы.

Основываясь на законах целостности и единства педагогического процесса и принципах системности, последовательности, последовательности и непрерывности обучения, путем определения основных требований к практике внедрения интегративного подхода в подготовке будущего учителя начальных классов к творческую и методическую деятельность, этот процесс мы будем рассматривать как вопрос создания педагогических условий, необходимых для эффективной организации.

Реализация интеграции содержания обучения является наиболее эффективной составляющей интегративного подхода, которую можно использовать в любой ситуации.

Взаимная интеграция наук:

- отдельные части наук (например, темы, важные факты, законы);
- целостная наука (теории, представляющие взгляды на мир с точки зрения интегрированной науки);
- мотивационный, содержательный и деятельностный компоненты, образующие науку;
- осуществляется путем объединения рационального и эмоционального содержания

При осуществлении интеграции на любом уровне, в том числе междисциплинарном, «связующим звеном» служат принципы системности, последовательности, непрерывности и последовательности образования. Если да, то остановимся на сути этих принципов и выделим их место в педагогических условиях, необходимых для внедрения интегративного подхода в подготовке будущих учителей начальной школы к творчески-методической деятельности. работа. Как мы упоминали в первой главе данной работы, требования интегративного подхода требуют организации этого процесса на основе логики,

последовательности, последовательности и преемственности. Как мы видим, между требованиями применения интегративного подхода и принципами реализации интеграции на разных уровнях четко просматриваются общие черты.

СПИСОК ИСПОЛЬЗОВАННЫХ ЛИТЕРАТУРЫ.

1. Берулава М.Н. Теоретические основы интегрированного образования. М.: Совершенство, 1998. - 192с.
 2. Чапаев Н.К. Теоретико-методологические основы педагогической интеграции. Дисс. .доктор.пед.наук. Екатеринбург, 1998. — 560 с.
 3. Тализина Н.Ф. Деятельный подход к механизму обмена // Вопросы психологии. 2000. - №3. - С. 3 - 16.
 4. Семин Ю.Н. Интеграция содержания профессионального образования // Педагогика, 2001. № 2. - С. 20-25.
 5. Данилюк А.Ю. Теоретико-методологические основы интеграции в образовании (опит теоретической дидактики). Дисс. кандидата пед. наук. Ростов-на-Дону, 1997.-232с.
 6. Асадуллин П.М. Формирование личности учителя как субъекта педагогической деятельности. Дисс.докт.пед.наук. М., 2000. – 389с.
 7. Шахноза, Д. Уралова М. (2021). Пути формирования творческой активности учащихся начальных классов. НАУЧНЫЙ ЖУРНАЛ ОНЛАЙН-ИССЛЕДОВАНИЙ В ОБЛАСТИ УСТОЙЧИВОГО РАЗВИТИЯ И ЛИДЕРСТВА, 1 (6), 85-92.
 8. Уралова, М. (2022). Роль технологии в формировании творческой активности студентов. Общество и инновации, 3(2/S), 356-361.
- Babayeva, M. A., & Samatova, M. N. (2023). TA'LIMDA KREATIVLIK VA UNI
- Бабаева, М. А. (2023). ТАЪЛИМДА ФАНЛАРАРО АЛОҚАДОРЛИКНИНГ АҲАМИЯТИ.

SOME QUESTION ABOUT ADMINISTRATIVE PREJUDICE

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Abstract: The legislative consolidation of the institution of administrative prejudice is inconsistent. This creates difficulties in defining its boundaries in the understanding and application of the relevant rules. Itself administrative collateral estoppel deserves a critical eye. It violates the principle of non bis in idem; shifts the basis of criminal responsibility towards the personality of the offender; blurs the boundaries between crime and administrative offence. Its existence is actually allocated among administrative offences special group of torts, which occupies its public danger an intermediate position between administrative great-wonarishinani and crimes. This result unnecessarily complicates the system of public offences.

Keywords: administrative prejudice, repeatability, non bis in idem, danger of personality, crime, administrative offence.

Administrative prejudice is one of the most debated problems in criminal law. Critical remarks concern both the technical implementation of the norms with administrative prejudice, and the very fact of its existence. Thus, the circle of criminal law norms fixing administrative prejudice is not clearly defined. Without a doubt, it includes provisions where the legislator directly indicates that the subject is brought to administrative responsibility or the imposition of administrative punishment on him as a condition for bringing to criminal responsibility.

In the criminal law of the Republic of Uzbekistan, one of the important tools for ensuring justice and legality is the concept of administrative prejudice. An administrative prejudice is a document that contains information about previously prosecuted persons and provides information for decision-making by courts and law enforcement agencies.

The concept of administrative prejudice in the criminal law of Uzbekistan was introduced in order to ensure legality and fairness in criminal proceedings. It allows you to evaluate previously committed offenses of a person and make more informed decisions about punishment or a measure of restraint.

As A.G. Bezverkhov points out: "the essence of administrative prejudice consists in the recognition of administrative offenses repeatedly committed by the guilty person within a certain period of time after the imposition of administrative responsibility for the first (first) of them by a legal fact that generates criminal consequences. These consequences consist in assessing the last of the criminally non-punishable offenses as a crime and, accordingly, imposing criminal responsibility on the offender" [1].

An administrative prejudice is a document that contains information about previously convicted persons, including information about the crimes for which they were convicted, the terms of punishment, as well as court decisions and decisions on early release. This document is created and maintained by law enforcement agencies, and it can be used when making decisions on the admissibility of commutation of punishment or on the application of additional preventive measures.

Administrative prejudice plays an important role in the implementation of the principle of justice in criminal justice. It allows courts and law enforcement agencies to take into account

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previously committed crimes when imposing punishment and determining a preventive measure. This helps to prevent the recurrence of crimes and provides more effective rehabilitation of convicts.

However, it should be noted that administrative prejudice should be used with caution and in compliance with legal norms. Its use should not lead to arbitrary decisions or violation of the rights of the accused. It is important that judicial and law enforcement agencies observe the principles of justice, legality and equality before the law when making decisions based on administrative prejudice.

It should be noted that the return of the institute of administrative prejudice to the criminal law among the scientific community has found many opponents. In general, their comments boil down to the following.

First of all, opponents of administrative prejudice note that the commission of two or more administrative offenses are not able to change their social essence and transform into a crime. Thus, D.S.Chikin notes: "an administrative offense, no matter how many times it is repeated, does not acquire the essential, material properties of a crime" [2].

In this regard, I would like to note that an act constructed with the help of an administrative prejudice is not equal in terms of the level of public danger to the preceding offense, since the crime is a unity of objective and subjective signs. The subject of an administrative offense, after bringing him to administrative responsibility, being warned about possible criminal consequences in case of repeated commission of the same violation, demonstrates not only a more persistent antisocial orientation, but also subjectively evaluates the act committed repeatedly as a crime, realizing its criminal wrongfulness.

Another argument of the opponents of administrative prejudice is the assertion that the use of this construction leads to the artificial unification into a single crime of independent administrative offenses that are not related to each other, do not have meaningful unity, and, accordingly, are not able to act as a single crime [3].

The next position of opponents of the introduction of crimes with administrative prejudice is that this construction violates the principle of "non bis in idem", since an administrative offense for which a person has already been brought to administrative responsibility receives a double legal assessment and entails repeated criminal liability [4].

For example, A.V. Ivanchin notes: "The reflection in the criminal law of the properties of the increased danger of the individual during the construction of basic or undifferentiated structures (primarily with administrative prejudice) should occur in cases where such an engineering solution is necessary and sufficient to reflect the public danger of prohibited behavior [5].

It seems to us that the fact that administrative offenses do not have a public danger is not a generally accepted opinion that does not require proof. The authors-lawyers refer to the concept of an administrative offense in the legislation to justify the fact that administrative offenses do not carry social risk [6]. Taking into account article 10 of the Code of the Republic of Uzbekistan on Administrative Responsibility, which gives the concept of an administrative offense, an administrative offense is defined as an act or omission committed in accordance with the law that encroaches on the person, on the rights and freedoms of citizens, on property, on state and public order, on the natural environment [7].

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If we analyze the established norms of the Code of the Republic of Uzbekistan on administrative responsibility for offenses, it will become known how correct this opinion is. In this context, we can say that administrative offenses will also be considered socially dangerous and have a lower social risk in relation to crimes [8].

Moreover, the public danger of an act is determined not only by the consequences in the form of harm, but also by other symptoms. The social danger is repeatedly influenced by the object of aggression, the constant negative influence of transmission, time, place, method of aggression, form, motive and purpose of guilt. In some cases, public danger will depend on the special characteristics of the subject, such as the commission of a crime by officials.

Thus, the intellectual element of the guilty person's consciousness when committing a crime consisting of violating special rules, along with awareness of the public danger of the act, should include awareness of its illegality. In such a case, the use of the construction of administrative prejudice in compositions with a blank disposition in criminal legislation will ensure full compliance with the principle of guilt, since, having committed an administrative offense, and having been subjected to administrative punishment, the person will know for certain about the nature of the ban and the negative criminal consequences of its repeated violation.

We also believe that the legislator, when constructing norms with administrative prejudice, needs to uniformly determine the multiplicity of administrative offenses underlying criminal liability. It seems that the construction of a single administrative prejudice should be used in the Criminal Code of Uzbekistan, since in the case of multiple prejudice, indeed, it becomes unclear what lies at the basis of criminalization of the act. As already mentioned earlier, the construction of the administrative prejudice does not represent a mechanical outgrowth of the number of offenses into a new quality, but assumes the acquisition of the essential property of the crime from the repeated, i.e. the second offense, due to the manifestation of a more persistent antisocial orientation by the offender, and changes in the subjective component of the act committed by him.

Summing up, it can be summarized that the use of constructions of crimes with administrative prejudice as a means of criminalizing acts seems justified, especially with regard to compositions with a blank disposition, but at the same time the legislator needs to abandon the use of double prejudice, and develop a unified approach to determining the time interval for preserving the legal force of the constituent offenses.

In conclusion, administrative prejudice in the criminal law of the Republic of Uzbekistan plays an important role in ensuring justice and legality. It allows you to take into account previously committed crimes when assigning punishment and determining a preventive measure, which contributes to a more effective fight against crime and law enforcement. It is important that the use of administrative prejudice is carried out in accordance with the law and with respect for the rights of the accused in order to prevent violations of their constitutional rights.

List of used literature

1. Bezverkhov A.G. The return of administrative prejudice to the criminal legislation of Russia // Russian justice. – 2012. – No. 1. – p. 52.
2. Chikin D.S. Crime with administrative prejudice as a type of complex single crime // A Russian investigator. - 2012. – No. 23. – p. 17.
3. Lopashenko N.A. Administrative prejudice in criminal law – no! // Bulletin of the Academy of the Prosecutor General's Office of the Russian Federation. - 2011. – No. 3. – p. 68.
4. Yamasheva G.V. On the issue of restoring the institution of administrative prejudice in criminal law // Journal of Russian Law. - 2009. – No. 10. – p. 71.
5. Ivanchin A.V. Conceptual foundations of the construction of the corpus delicti: Abstract. diss. ... doct. jurid. Sciences. – p. 14.
6. Rustambaev M.H. Course of Criminal Law of the Republic of Uzbekistan. General part. Volume 1: the doctrine of crime. Textbook for OTM. - T.: "Tdyui" publishing house, 2010. - P. 386.
7. Kabulov R., Atajanov A. A. and arch. Criminal law. General part. - T.: Academy of the Republic of Uzbekistan, 2012.-B.373.
8. Usmanaliev M. Criminal law. General part. Textbook for higher education institutions.- T., "Generation of the new century", - B.16.
9. Kholikov F. PROBLEMS OF DECRIMINALIZATION OF CRIMINAL NORMS WITH ADMINISTRATIVE PREJUDICE IN CRIMINAL-LEGAL POLICY - 2023. - T. 3. – no. 3. - S. 192-199. (Холиков Ф. ЖИНОЯТ-ҲУҚУҚИЙ СИЁСАТДА МАЪМУРИЙ ПРЕЮДИЦИЯГА ЭГА БЎЛГАН ЖИНОЯТ НОРМАЛАРИНИ ДЕКРИМИНАЛИЗАЦИЯ ҚИЛИШ МАСАЛАЛАРИ //Евразийский журнал права, финансов и прикладных наук. – 2023. – Т. 3. – №. 3. – С. 192-199.)

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