



CENTER FOR TECH
AND MEDIA RESEARCH

ISSN: 2582-4686

ResearchBib Impact Factor: 8.848 / 2023
SJIF 2021-3.261, 2022-2.889, 2023-5.384

MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY



INDEX

INDEX COPERNICUS
INTERNATIONAL

GENERAL IMPACT FACTOR



<http://mjstjournal.com>



CENTER FOR TECH
AND MEDIA RESEARCH

ISSN: 2582-4686

ResearchBib Impact Factor: 8.848 / 2023
SJIF 2021-3.261, 2022-2.889, 2023-5.384

MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY



VOLUME 3 **ISSUE 5**

 <http://mjstjournal.com>

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

MULTIDISCIPLINARY JOURNAL OF SCIENCE
AND TECHNOLOGY

VOLUME-3, ISSUE-5, DECEMBER

Editor in Chief

Dr. Rajeev Ojha - Interdisciplinary Research in Basic Sciences, Jamia Millia Islamia, New Delhi -110025, India

Editorial Team

Sunita Sarawagi - Indian Institute of Technology Bombay, Mumbai, India.

Eshkaraev Sadridin Chorievich - associate professor of the Department of Analytical Chemistry of Termiz State University, Doctor of Philosophy Chemical Science, Termez, Uzbekistan. [ORCID esadir_74@rambler.ru](mailto:esadir_74@rambler.ru)

Furkat B. Eshkurbonov - Editor of chemical science, Termiz institute of engineering and technology, doctor of sciences in chemistry, Professor of technology of organic substance and materials on their basis. E-mail: furqateshqurbonov@gmail.com

Shakhlo Sh.Yuldasheva - Editor of pedagogical sciences Uzbekistan state University of World Languages Doctor of Philosophy in pedagogics, Professor of Theory and methodology of teaching and bringing up. <https://orcid.org/0000-0001-9797-8635>
E-mail: shahlondpi@gmail.com

Dr Manjunatha LH - Professor, REVA University, INDIA

Zilola I. Salisheva - Editor of pedagogical sciences Uzbekistan state University of World Languages Doctor of Philosophy in pedagogical science, Docent of Theory and methodology of teaching and bringing up. <https://orcid.org/0009-0002-2000-5135>
E-mail: salisheva_z@mail.ru

Asish Bera - Edge Hill University, UK, BITS Pilani, India

Fozilova F. Mokhigul - Editor of pedagogical sciences Uzbekistan state University of World Languages Doctor of Philosophy in pedagogical science. <https://orcid.org/0009-0001-9464-6480> E-mail: fozilova1204@gmail.com

Dr Sunildro LS Akoijam - Assistant Professor of Management, North Eastern Hill University, India

Rakhmankulov E. Jasur - Editor of technical sciences Termez institute of Engineering and Technology Doctor of Philosophy in technical science. E-mail: jasurer87@gmail.com

Madan Mohan Singh - Professor of Mathematics, North-Eastern Hill University, Shillong, India

Khamra D.Abdullaev - Associate Professor of the Department of Uzbek Language and Literature, Candidate of Philological Sciences, Karakalpak State University named after Berdak, Republic of Uzbekistan. E-mail: abdullaevxamro7173@gmail.com

Dr. Anupam Singh - Associate Professor-CSE, Graphic Era Hill University Dehradun, India

Nusratov.N.Anvar - Editor of pedagogical sciences, Bukhara State University Doctor of Philosophy in pedagogical sciences.

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

Dr. Sargam Bahl Walia - School of Management, Graphic Era Hill University, Dehradun, Uttarakhand, India

Abdurasulov A. Abdullajon - Editor of pedagogical sciences, Kokand State Pedagogical Institute Doctor of Philosophy in pedagogical sciences.

Narayan Pradhan - Indian Association for the Cultivation of Science

Nomozov K. Abror - Editor of technical science, Termez Institute of engineering and technology Doctor of Philosophy in technical science. e-mail: abrornomozov055@gmail.com

Ashok Kumar - Kumar Associate Professor E&CE National Institute of Technology. Hamirpur, India.

Misirov Kh. Zafar - Editor of technical science Termez Institute of engineering and technology Doctor of Philosophy in technical science. e-mail: zafarmisirov1986@gmail.com

Anjali Pal - Department of Civil Engineering, Indian Institute of Technology Kharagpur - 721302, India.

Karimova Zevara Xadjibayevna - Editor of medical science, Associate Professor of the Department of General Surgery, Pediatric Surgery and Pediatric Urology, Tashkent Medical Academy, Termiz Branch

Rajnish Joshi - Professor of Medicine, All India Institute of Medical Sciences, Bhopal, India

Gulnara S. Agzamova - Editor of medical science, Associate Professor of the Department of Hospital Therapy department, Doctor of science in medicine, Tashkent Medical Academy.

Mukul Kumar - IIT Mumbai (India); Meijo University (Japan); HEG Ltd. (India)

Diloram A. Urunbayeva - Editor of medical science, Associate Professor of the Department of Endocrinology, Doctor of philosophy in medicine, Tashkent Medical Academy.

Prof. Kuruvilla Joseph - Indian Institute of Space Science and Technology (IIST)

Prof. Yogesh C. Sharma - D.Sc., FRSC, FBRS, FIAPS; FISEES, Department of Chemistry, Indian Institute of Technology

Professor Indra Mani Mishra - Indian Institute of Technology (Indian School of Mines), Dhanbad; Formerly at India

Shaymardanova A. Mokhichekhra - Editor of technical science, Termiz institute of Engineering and Technology, doctor of philosophy in technical science. E-mail: mokhichekhrashaymardanova@gmail.com

Obstacle Avoidance Sensors: A Brief Overview

Amer Abu-Jassar¹, Svitlana Maksymova²

¹Faculty of Information Technology, Department of Computer Science Ajloun National University, Ajloun, Jordan

²Department of Computer-Integrated Technologies, Automation and Robotics, Kharkiv National University of Radio Electronics, Ukraine

Abstract:

The mobile robots development, which is extremely relevant at the moment, is not limited to the creation of the robot design itself. In order for the robot to perform tasks and achieve its goals, it is necessary to develop a control system for it. When it comes to mobile robots, and even more so about autonomous robots, the tasks of planning the path of movement of the robot and its parts, including actuators, come to the fore. To perform such tasks, a variety of sensor-based sensing systems are widely used. There are a huge variety of different types of sensors that are used to control a robot. However, there are no ideal summer cottages for all conditions. they all have their advantages and disadvantages. That is, to select certain sensors, it is necessary to take into account various parameters of the robot itself and its environment. This article provides an analysis of ultrasonic, laser and infrared sensors. their advantages and disadvantages are described, and recommendations are given in which cases and what type of sensors is best to use.

Key words: Mobile robot, Autonomous robot, Sensor, Ultrasonic sensor, Laser sensor, Infrared sensor

Introduction

In the modern world, the use of mobile robots, that is, robots that can move in space, is becoming more and more common [1]-[8]. They are used in completely different spheres of human life, ranging from various types of production to social support for people in various life situations.

At the same time, the key characteristic of a mobile robot is its movement in space. And very rarely such spaces do not contain some kind of obstacles. Consequently, there is a need to bypass these obstacles or avoid them. In general, we talk about the need to avoid collisions with obstacles.

To solve this problem, various approaches are used [9]-[16]. If the environment in which the mobile robot is located is deterministic, that is, its parameters such as the location of obstacles, including walls, as well as passages between them constantly, then it is possible to write a strict program for movement along a given trajectory. Otherwise, that is, in a changing environment, and also unknown in advance, writing such a program cannot certainly solve the problem.

For such cases, all kinds of sensors are used to identify an obstacle and, accordingly, adjust the robot's path of movement. Many works address this problem [17]-[21]. However, each type of sensors has its own advantages and disadvantages especially in changing conditions [22], [23]. That is, for each specific task it is necessary to analyze the operating conditions of the robot and select the most suitable type of sensors or their combination.

Thus, the task of determining the necessary sensors is extremely relevant.

Related works

Many works consider the problem of choosing sensors for mobile, including autonomous robots, taking into account the assigned tasks and environmental conditions. Let's look at just a small part of them.

Alatise, M. B., & Hancke, G. P. in [24] consider autonomous mobile robots. In [24] they unravel the current literatures, the challenges mobile robot is being faced with. A comprehensive

study on devices/sensors and prevalent sensor fusion techniques developed for tackling issues like localization, estimation and navigation in mobile robot are presented as well in which they are organised according to relevance, strengths and weaknesses.

Paper [25] proposes an autonomous mobile robot that has been developed with Light Detection and Ranging (LiDAR) sensor to avoid obstacle. Braitenberg vehicle strategy is used to navigate the movements of the robot.

In [26] authors use ultrasonic sensors HC-SR04. They used the step optimal method based on fuzzy control. And the results showed that using this method the spherical mobile robot completed the path planning.

Researchers also use 2D LiDAR in a nodding configuration in [27]. Using the proposed nodding LiDAR configuration, a strategy for navigation through occluded crop rows is presented.

Lee, J. and co-author in [28] suggest a method to classify human actions in real-time using a single RGB camera, which can be applied to the mobile robot platform as well.

Article [29] aims to design and implement the multiple adaptive neuro-fuzzy inference system architecture-based sensor-actuator (motor) control technique for mobile robot navigation in different two-dimensional environments with the presence of static and moving obstacles. In order to achieve this goal authors used three infrared range sensors that have been mounted on the front, left and right side of the robot, which reads the forward, left forward and right forward static and dynamic obstacles in the environment.

Scientists in [30] use 2D laser to avoid obstacles. And they note, that multi-sensor fusion plays a key role in 2D laser-based robot location and navigation. Here [30] they present a deep learning-based approach to localizing a mobile robot using a 2D laser and an inertial measurement unit.

Work [31] presents 2D laser scanner and a RGB-D camera using in order to navigate an autonomous self-learning robot in an unknown environment without a map or planner.

Thus, we see that scientists around the world are working on the problem of robot navigation using various sensors, as well as their various combinations. Later in this work we will look at several main types of such sensors, and also analyze their advantages and disadvantages.

Analysis of some types of sensors for avoiding obstacles

Mobile robots have become an integral part of modern robotics and are widely used to perform various tasks in the external environment. These tasks can include navigating through mazes, performing reconnaissance missions, and gathering information about the environment. To collect this information, mobile robots use different types of sensors, which allow them to receive different types of data about the environment. In addition to video cameras and laser sensors, infrared sensors and ultrasonic sensors are also used to collect information about the environment. Each type of sensor has its advantages and disadvantages, and the choice of a certain type of sensor depends on the specific task of the mobile robot and the characteristics of the external environment.

The main sensors for measuring distance include ultrasonic sensors, laser sensors, and infrared sensors.

An ultrasonic sensor consists of an ultrasound generator, a receiver, and an electronic circuit.

The ultrasound generator is responsible for creating high-frequency sound with a wavelength from 20 kHz to 200 kHz. These are sound waves that do not cause a harmful effect on people, but can be perceived by technical means.

The ultrasound receiver receives the ultrasound signal reflected from the object and converts it into an electrical signal. It can operate in high sensitivity mode to detect even weak echoes from objects at a considerable distance.

The electronic circuit is responsible for processing the signal generated by the ultrasound receiver. It can include noise filtering, amplification, and various signal processing operations such as noise reduction and signal amplification (Figure 1).

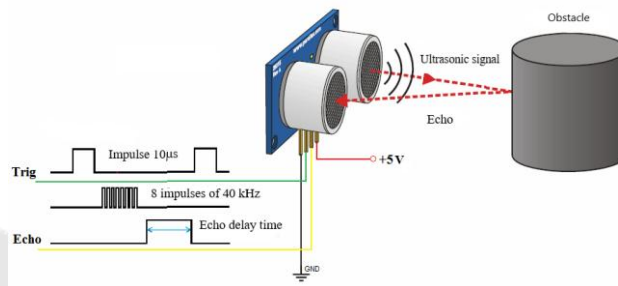


Figure 1: Ultrasonic Sensor Operation

The laser sensor consists of a light source - a laser emitter, a receiver and electronics for signal processing. A laser emitter emits a laser beam with a specific wavelength. This beam is directed to the object, and then reflected from it.

The receiver of the laser sensor consists of a special photodiode, which is able to receive the laser beam returning from the object. When a laser beam falls on a photodiode, it generates an electric current. This current is then amplified in an operational amplifier to obtain a sufficient signal level for further processing (Figure 2).

An infrared sensor consists of an emitting LED, a receiving photodiode, and optical components such as lenses and filters. An LED-emitter generates infrared light with a certain wavelength. This light is directed to the object, and then reflected from it.

The photodiode-receiver is used to register the infrared light that is returned from the object. The photodiode is sensitive to infrared light and generates an electric current that depends on the intensity of the light (Figure 3). The main element of such motion sensors is a sensitive pyroelement, which reacts to an increase in temperature in the control zone. Such sensors usually have a capture zone of 120° and react to an object moving at a distance of 12-15 meters horizontally. Infrared devices are equipped with a cellular Fresnel lens that forms several capture zones.

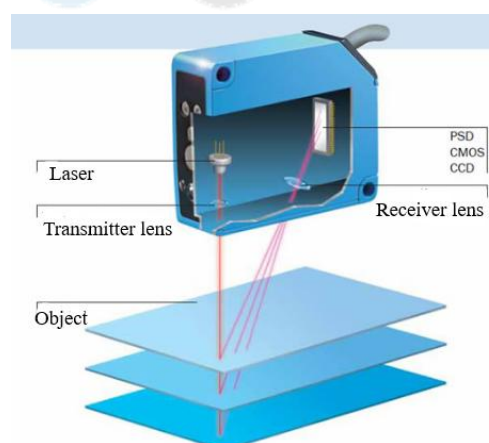


Figure 2: Laser Sensor Operation

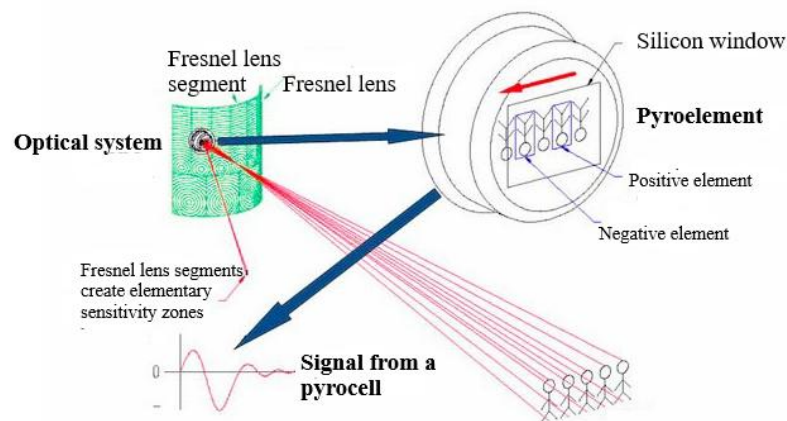


Figure 3: Infrared Sensor Operation

To compare the performance of the three distance sensors, we evaluated the accuracy, range, response time, and environmental sensitivity of each sensor.

To assess the accuracy of each sensor, we measured the distance to the object and compared it with the sensor's measurements. To do this, we used objects with known lengths, such as metal rulers and technical drawings. We compared the measurement results with the real length of the object, which allowed us to assess the accuracy of each sensor.

To estimate the range, we used objects at different distances from the sensor and measured the distance to them. For this, we used the distance to walls and other objects indoors and outdoors. The results of measuring the sensors at different distances allowed us to compare their range and accuracy at different distances.

The reaction time of each sensor was measured from the moment when the object appeared in the sensor's range to the moment when the distance to the object was displayed. Reaction time was measured under various conditions, including changes in lighting and speed of movement of objects.

To evaluate the sensitivity to environmental factors, we conducted tests in different conditions, including different levels of light and reflectivity of materials. For example, we tested the sensors on materials with different reflectivity, such as wood, metal, and glass. We also tested the sensors in conditions with dust, moisture and other factors that can affect their performance.

The results of our research showed that each of the three sensors has its own advantages and disadvantages.

The ultrasonic sensor was the most accurate of the three sensors, with a distance measurement accuracy of up to 1 mm. It also had the highest sensitivity to surface reflectivity, allowing it to detect objects up to 4 meters away. It also had a very high adaptability to pollution. However, its disadvantage was that it was less far-sighted than a laser sensor, that is, it could not detect objects at a distance of more than 4 meters. Also, its accuracy was dependent on temperature and air humidity, which reduced its reliability in some conditions.

The laser sensor was the most far-sighted of the three sensors, allowing it to detect objects up to 30 meters away. It also had high measurement accuracy and was less sensitive to environmental factors than an ultrasonic sensor. However, its drawback was that it was less sensitive to surface reflectivity, allowing it to detect objects up to 30 meters away on only some materials. Also, its sensitivity to temperature and humidity was slightly higher than that of an ultrasonic sensor. This is due to the fact that the laser sensor works on the principle of measuring the distance to the object using a laser beam that does not depend on weather conditions.

The advantages of infrared sensors include high accuracy. Infrared sensors typically have high measurement accuracy over small distance ranges, which is important for many

applications. It also has a wide temperature range, including high temperatures, making them ideal for use in high temperature areas such as metallurgy and glass manufacturing.

But they perform poorly at long distances: infrared sensors are not the best choice for measuring long distances due to their limited operating range. Infrared sensors can give an inaccurate result if they encounter obstacles in the environment, such as dust, smoke or fog. An infrared sensor needs visibility because it depends on the reflection of infrared radiation from the object it is measuring. If the object is too dark or does not reflect infrared radiation, the sensor will not work properly.

Thus, we can draw the following conclusions from the test results:

- the ultrasonic sensor has a fairly high distance measurement accuracy, but is very sensitive to various environmental factors such as wind, humidity and temperature. The range of the sensor reaches 4 meters, which ensures its effectiveness in large industrial premises with a significant number of obstacles.

- the laser sensor has a very high accuracy of distance measurement and a range of up to 40 meters, which ensures its effectiveness in most industrial conditions. However, it is very sensitive to surface reflectivity and lighting levels, so it requires a more careful approach to setup.

- the infrared sensor has a low accuracy of distance measurement and a range of up to 1 meter. It is less sensitive to environmental factors and surface reflectivity, but may be limited in industrial use due to limited range.

Conclusion

This article discusses three types of sensors that are used to navigate mobile robots to avoid obstacles. Ultrasonic, laser and infrared sensors are considered. Their advantages and disadvantages are given. Recommendations are also given on the use of certain sensors depending on the parameters of the mobile, or autonomous, robot itself, as well as on the properties of its environment.

It should be noted that we looked at these classes, each of which contains a huge variety of sensors. Moreover, they differ in size, weight, sensitivity, operating time, response distance, sensitivity angle, cost, and so on.

When choosing sensors, you need to not just choose the most sensitive one, you need to calculate the necessary and sufficient sensitivity, including taking into account the cost of the sensor itself.

Also, when using a combination of several sensors of one or more types, it is necessary to take into account the possible mutual influence of the sensors on each other.

So, depending on specific requirements and application conditions, each sensor can be effective in its field of application. For example, an ultrasonic sensor can be advantageous in rooms with many obstacles, where the required accuracy of the measurement is not critical. A laser sensor may be a better choice for open spaces with a higher level of measurement accuracy. Infrared sensors can work more effectively than laser and ultrasonic sensors in high temperature situations.

References:

1. Matarneh, R., Maksymova, S., Deineko, Z., & Lyashenko, V. (2017). Building robot voice control training methodology using artificial neural net. *International Journal of Civil Engineering and Technology*, 8(10), 523-532.
2. Nevliudov, I., Yevsieiev, V., Baker, J. H., Ahmad, M. A., & Lyashenko, V. (2020). Development of a cyber design modeling declarative Language for cyber physical production systems. *J. Math. Comput. Sci.*, 11(1), 520-542.

3. 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.
4. 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.
5. 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.
6. Sotnik, S., Mustafa, S. K., Ahmad, M. A., Lyashenko, V., & Zeleniy, O. (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.
7. Abu-Jassar, A. T., Attar, H., Lyashenko, V., Amer, A., Sotnik, S., & Solyman, A. (2023). Access control to robotic systems based on biometric: the generalized model and its practical implementation. *International Journal of Intelligent Engineering and Systems*, 16(5), 313-328.
8. 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.
9. Rabotiahov, A., Kobylin, O., Dudar, Z., & Lyashenko, V. (2018, February). Bionic image segmentation of cytology samples method. In *2018 14th International Conference on Advanced Trends in Radioelectronics, Telecommunications and Computer Engineering (TCSET)* (pp. 665-670). IEEE.
10. Al-Sherrawi, M. H., Lyashenko, V., Edaan, E. M., & Sotnik, S. (2018). Corrosion as a source of destruction in construction. *International Journal of Civil Engineering and Technology*, 9(5), 306-314.
11. Ляшенко В. В. (2007). Интерпретация и анализ статистических данных, описывающих процессы экономической динамики. *Бизнес Информ*, 9(2), 108-113.
12. Mousavi, S.M.H.; MiriNezhad, S.Y.; Lyashenko, V. An evolutionary-based adaptive Neuro-fuzzy expert system as a family counselor before marriage with the aim of divorce rate reduction. In *Proceedings of the 2nd International Conference on Research Knowledge Base in Computer Engineering and IT, Uttrakhand, India, 24–26 March 2017*.
13. Lyashenko, V., Mustafa, S. K., Sotnik, S., & Ayaz, A. M. (2019). Basic principles of decision making upon receipt of new nanomaterial. *International Journal of Advanced Trends in Computer Science and Engineering*, 8(5), 2680-2685.
14. Ahmad, M. A., Mustafa, S. K., Zeleniy, O., & Lyashenko, V. (2020). Wavelet coherence as a tool for markers selection in the diagnosis of kidney disease. *International Journal of Emerging Trends in Engineering Research*, 8(2), 378-383.
15. Ahmad, M. A., Lyashenko, V. V., Deineko, Z. V., Baker, J. H., & Ahmad, S. (2017). Study of Wavelet Methodology and Chaotic Behavior of Produced Particles in Different Phase Spaces of Relativistic Heavy Ion Collisions. *Journal of Applied Mathematics and Physics*, 5, 1130-1149.
16. Lyashenko, V., Sotnik, S., & Manakov, V. (2021). Modern CAD/CAM/CAE Systems: Brief Overview. *International Journal of Engineering and Information Systems (IJEAIS)*, 5(11), 32-40.
17. Nevliudov, I., & et al. (2023). Mobile Robot Navigation System Based on Ultrasonic Sensors. In *2023 IEEE XXVIII International Seminar/Workshop on Direct and Inverse Problems of Electromagnetic and Acoustic Wave Theory (DIPED)*, IEEE, 1, 247-251.
18. Basiuk, V., & et al. (2023). Mobile Robot Position Determining Using Odometry Method. *Multidisciplinary Journal of Science and Technology*, 3(3), 227-234.

19. Nevliudov, I., & et al. (2023). A Small-Sized Robot Prototype Development Using 3D Printing. In XXXI International Conference CAD In Machinery Design Implementation and Educational Issues, 12.
20. Shcherbyna, V., & et al. (2023). Mobile Robot for Fires Detection Development. Journal of Universal Science Research, 1(11), 17-27.
21. Yevsieiev, V., & et al. (2023). A Small-Scale Manipulation Robot a Laboratory Layout Development. International independent scientific journal, 47, 18-28.
22. Bortnikova, V., & et al. (2019). Mathematical model of equivalent stress value dependence from displacement of RF MEMS membrane. In 2019 IEEE XVth International Conference on the Perspective Technologies and Methods in MEMS Design (MEMSTECH), IEEE, 83-86.
23. Nevliudov, I., & et al. (2018). MEMS accelerometer in hexapod intellectual control. In 2018 XIV-th International Conference on Perspective Technologies and Methods in MEMS Design (MEMSTECH), IEEE, 146-150.
24. Alatise, M. B., & Hancke, G. P. (2020). A review on challenges of autonomous mobile robot and sensor fusion methods. IEEE Access, 8, 39830-39846.
25. Hutabarat, D., et al. (2019). Lidar-based obstacle avoidance for the autonomous mobile robot. In 2019 12th International Conference on Information & Communication Technology and System (ICTS), IEEE, 197-202.
26. Guo, J., & et al. (2019). A novel step optimal path planning algorithm for the spherical mobile robot based on fuzzy control. IEEE Access, 8, 1394-1405.
27. Iqbal, J., & et al. (2020). Simulation of an autonomous mobile robot for LiDAR-based in-field phenotyping and navigation. Robotics, 9(2), 46.
28. Lee, J., & Ahn, B. (2020). Real-time human action recognition with a low-cost RGB camera and mobile robot platform. Sensors, 20(10), 2886.
29. Pandey, A., & et al. (2019). Autonomous mobile robot navigation between static and dynamic obstacles using multiple ANFIS architecture. World Journal of Engineering, 16(2), 275-286.
30. Li, C., & et al. (2019). Deep sensor fusion between 2D laser scanner and IMU for mobile robot localization. IEEE Sensors Journal, 21(6), 8501-8509.
31. Surmann, H., Jestel, C., Marchel, R., Musberg, F., Elhadj, H., & Ardani, M. (2020). Deep reinforcement learning for real autonomous mobile robot navigation in indoor environments. arXiv preprint arXiv:2005.13857.

Emergence and modernization of metrology.

Qalandarova Madina Jo'rabek qizi

Denov Tadbirkorlik va pedagogika instituti
2-bosqich talabasi

[Tel:+99899 708 16 41](tel:+998997081641)

e-mail: qalandarovam05@gmail.com

Ruzibayeva Maftuna Normurodovna

Denov Tadbirkorlik va pedagogika instituti
2-bosqich talabasi.

e-mail: maftunanormuradovna40@gmail.com

Vaxobva Baxtigul Valijon qizi

Denov Tadbirkorlik va pedagogika instituti
2-bosqich talabasi

e-mail: vaxobovabaxtigul06@gmail.com

Raxmonova Madina Raxmatullayevna

Denov Tadbirkorlik va pedagogika instituti
2-bosqich talabasi

e-mail: madinarakhmanova53@gmail.com

Abstract: Through this article, you will get information about the emergence of metrology and its importance today. Every field needs thousands of years to develop and modernize. It took many years before the field of metrology became modern. Everyone who studies metrology should be aware of its origin and theory.

Key words: "king's cubit", foot, mile, yard, regulatory metrology.

Аннотация: Благодаря этой статье вы получите информацию о возникновении метрологии и ее значении сегодня. Каждой отрасли необходимы тысячи лет для развития и модернизации. Прошло много лет, прежде чем область метрологии стала современной. Каждый, кто изучает метрологию, должен знать ее происхождение и теорию.

Ключевые слова: «царский локоть», фут, миля, ярд, нормативная метрология.

Metrology is derived from Greek and means "measurement". Every process or thing in our life has its own definition and measure. All this is the task of metrology science. Through historical metrology, we get information about units of measurement that existed in ancient times. The emergence of measurement units dates back to the distant past. What was the measure used for in ancient times? In ancient countries, the development of trade and the achievements in the field of construction in the country also depended on metrology. In ancient Egypt, there was a unit of measurement called "King's cubit", which was 52.5 cm. The reforms of rulers are important in the development of metrology. The ancient ruler of Akkad, Sargon I, introduced uniform units of length, area, and weight for all cities in order to promote trade. The oldest branch of metrology that studies measurement units is antrometry.

Orgonoleptic measurements are said to receive approximate information about one or another physical property through one's sense organs.

The distance at which one person's voice can be heard by another in open field conditions.

Ladon is the width of the remaining four fingers without feeling the thumb.

Foot is the length of the base of the foot. Foot is the distance between the head and the index finger.

The English king Henry I (beginning of the 12th century) introduced the yard (~91.44 cm) unit of measurement. The yard is the distance from the tip of the king's nose to the tip of the middle finger of an outstretched hand. In ancient times, wheat grains, peas and similar things were used to measure weight. In Mesopotamia, silver, barley grain, cactus in America, wheat in Sumer, and leguminous plant in Africa were used as weights. Scholars of our country have made a significant contribution to the development of metrology. A number of information about Ochoy units are given in the works of Abu Abdullah Muhammad ibn Musa al-Khorazmi, while Ahmad Farghani was one of the first to discover Miqyas al-Nil in 861. By the 20th century, the science of metrology began to develop. In 1923, the "Rule on Weights and Scales" was approved by the decision of the Central Committee of the Republic of Turkestan, and the Bureau of Weights and Scales of Turkestan was established under the internal trade regulation committee. A few years later, the State Control Laboratory of Standard and Measuring Equipment of the Republic of Uzbekistan (UzRDNL) was established in Tashkent. In accordance with the decision of the President of the Republic of Uzbekistan dated April 28, 2017 "On measures to improve the activities of the standardization, metrology and certification agency in Uzbekistan" No. State enterprise "National Metrology Institute of Uzbekistan" ("UzMMI" DK) was established on the basis of the metrological units of the state enterprise "Demonstration Center" and the state institution "Research Institute of Standardization, Metrology and Certification". The modern metric system of the world was adopted on May 20, 1875 in Paris at a conference of representatives of 20 countries and was named "Metric Convention". The Metric Convention is the first international agreement on metrology. The Convention also established the International Bureau of Weights and Measures as a scientific institution for the maintenance and verification of metric standards. The founder of metrology, D. IMendeleyev, said about the role of measurements: "Science begins when measurement begins." Thomson, the founder of metrology in England, wrote: "Any thing is known only to the extent that it can be measured."

The science of metrology is developing day by day. Nowadays, the creation and use of various technologies leads to high accuracy in the measurement system. The system of model gauges made with the highest level of precision in the science and technology of metrology is called Etalons. There is also the concept of regulatory metrology. It is a part of metrology and is a state requirement for units and equipment and measuring laboratories related to the activities carried out by the national metrology body. The International Organization for Regulatory Metrology (IORM) has existed since 1956 and currently includes more than 50 countries. Its main task is to ensure the uniformity of measurements on an international scale, to develop recommendations on measurement error estimation, measurement methods, terminology and conditional designations. Its supreme body is the International Conference. This conference is MBMV - the International Bureau of Weights and Measures, on the practice of ensuring the unity of measurements at the international level. In order to improve cooperation between the countries of the modern world and achieve great achievements in the field of commerce, to coordinate the activities of national agencies, to eliminate technical barriers in trade, in 1992 the Inter-State Council on Standardization, Metrology and Certification of the CIS countries (except the Baltic countries) Council (DAK) was formed. On March 13, 1992, the heads of governments of the CIS countries signed the Agreement on conducting an agreed policy in the

field of standardization, metrology and certification. When developing interstate regulatory documents, their requirements are harmonized with international, regional and advanced national standards. This will create conditions for the maintenance of uniform regulatory and technical support aimed at eliminating technical barriers in the trade-economic and scientific-technical cooperation of the CIS countries, as well as help to introduce the products produced in the WAC member states to the international market.

Many laws related to metrology have been adopted in our country. According to the Law of the Republic of Uzbekistan "On Metrology" (Article 11), metrological services of economic entities are necessary to ensure the unit of measurement and perform work on the implementation of metrological control. in cases of

As a result of the emergence of the field of metrology and the formation of its modern image, the communication and commercial system in the countries of the world also developed. Everyone who studies metrology should be aware of its origin and theory.

Used literature.

1. A.Do'stov "Xronologiya va Metrologiya" T-2016 (9-13-betlar)
2. P.R.Ismatullayev, M.P.Malyakulova, Sh.A.Turayev "Metrologiya, Standartlashtirish va Sertifikatsiyalashtirish" T-2015 (12-bet)
3. <http://www.smsiti.uz> - Standartlashtirish, metrologiya va sertifikatlashtirish ilmiy tadqiqot instituti
4. Крылова Г.Д. Основы стандартизации, метрологии и сертификации. Учебник для студентов ВУЗ. - М.: Издательство стандартов, -1998.
5. Абдувалиев А.А. и др. Основы стандартизации, сертификации, метрологии и управления качеством продукции. Учебное пособие. -Ташкент:ТошГТУ, 2002. - 287 с.

ON THE CONCEPTS OF "FORGIVENESS" IN UZBEKI AND ENGLISH
LANGUAGES PHRASEOLOGICAL UNITS

Khazratqulova Ozoda Abdug'aniyevna

PhD of filology, teacher of Termiz university of economics and service

E-mail: ozoda0590@mail.ru

Tel: 996881303

Abstract. The theory of phraseology was first founded by the French linguist S.Bally. Grammatical, semantic, functional and stylistic aspects of phraseologisms can also be seen in the researches of Russian linguists. For example, V. Vinogradov classifies expressions as a lexical layer according to meaning groups. Phraseologisms in Uzbek linguistics are widely studied in the works of scientists such as Sh.Rakhmatullaev, M.Sodikova, I.Kochkortoev, A.Rafiev, B.Yoldoshev, A.Mamatov, Q.Hakimov, K.Bozorboev.

Keywords: emotionality, expressiveness, vocabulary unit, "excuse me", "I beg your pardon", "to err is human", let bygones be bygones.

**О ПОНЯТИЯХ «ПРОСТАНИЕ» В УЗБЕКСКОМ И АНГЛИЙСКОМ ЯЗЫКАХ
ФРАЗЕОЛОГИЧЕСКИЕ ЕДИНИЦЫ**

Аннотация: Теорию фразеологии впервые основал французский лингвист С.Балли. Грамматические, семантические, функциональные и стилистические аспекты фразеологизмов можно увидеть и в исследованиях российских лингвистов. Например, В. Виноградов классифицирует выражения как лексический пласт по смысловым группам. Фразеологизмы в узбекском языкознании широко изучаются в работах таких ученых, как Ш.Рахматуллаев, М.Содиқова, И.Кочқортоев, А.Рафиев, Б.Ёлдошев, А.Маматов, Г.Хақимов, К.Бозорбоев.

Ключевые слова: эмоциональность, экспрессивность, словарный запас, «извините», «прошу прощения», «человеку свойственно ошибаться», пусть прошлое останется в прошлом.

**O'ZBEK VA INGLIZ TILLARIDAGI "AFV ETISH" KONSEPTLARIDA
FRAZEOLOGIK BIRLIKLAR**

Annotatsiya: Frazеologiya nazariyasiga dastlab fransuz tilshunosi Sh.Balli asos soldi . Frazеologizmlarning grammatik, semantik, funksional-uslubiy jihatlarini rus tilshunoslarining tadqiqotlarida ham ko'rish mumkin. Masalan, V.Vinogradov iboralarni leksik qatlam sifatida ma'no guruhlariga ko'ra tasniflaydi . O'zbek tilshunosligida frazeologizmlar Sh.Rahmatullaev, M.Sodiqova, I.Qo'chqortoev, A.Rafiev, B.Yo'ldoshev, A.Mamatov, Q.Hakimov, K.Bozorboev kabi olimlar ishlarida keng o'rganilgan .

Kalit so'zlari: emotsionallik, ekspressivlik, lug'at birligi, "kechirasiz", "to err is human", let bygones be bygones.

The emergence and formation of phraseology is related to the figurative reflection of certain historical processes, social environment, life reality in Uzbek life and the ideas arising from it. During the formation period, phraseological units, like the lexicon, are subjected to the internal laws of each language, phonetic, lexical-grammatical requirements. They are used in an almost figurative sense and have the characteristics of emotionality and expressiveness by means of artistic images. Therefore, phraseology has a great impact not only on people's minds, but also on their emotions. Despite the fact that several words are included in the structure of phraseology,

they are united by a single common meaning and express an emotional-expressive meaning. Phraseologisms are used in fiction as a figurative and impressive tool.

A. Hajiyev in his "Annotated Dictionary of Linguistic Terms" defines phraseological units as "structurally equivalent to a word combination, a sentence, semantically a whole, meaning a generalized meaning, not created in the speech process, but included ready for speech as a unit, a figurative type of stable compounds with a figurative meaning.

Professor Sh. Rahmatullayev recognizes as phraseological objects the lexical units consisting of two or more lexical bases, equivalent to a compound or sentence in terms of structure, alternative to a word in terms of content, and having a superlative meaning as a whole. Linguists such as B. Yoldoshev and A. Mamatov have a broad understanding of phraseologisms and research compound, static, figurative expressions as phraseologisms.

Phraseologisms are "stable linguistic units consisting of two or more components, the sum of their values is not equal." For example, the Russian phrase "спустя рукава" cannot be translated literally, but it should be understood that it is used in the sense of "poorly executed work". In particular, in English, the phraseological unit "to look forward" is used in the meaning of "waiting".

B.A. According to Larin, "only word combinations are included in the study of paremia and become the subject of phraseology. However, not every phrase is a phrase. ... As the simplest form of synthesizing expression, phrases are syntactically related speech units. But the sentences that depend on the semantic unity and semantic integrity of the internal structural combination of words cannot be the object of the study of syntax - they are very close to the lexeme, like mixed lexemes, they can be studied independently - in phraseology from the point of view of lexicology or in lexicography. should be reviewed.

The volume of phraseologisms and its main signs are directly connected, leading to the expansion of the scope of phraseologisms. Deterioration of characteristics characteristic of all phraseological units; increases the set of private properties and vice versa.

Characteristics of phraseological units;

- repetition of speech;
- stability (content, structure and semantics);
- value integrity;
- waterproofing;
- separate design of the component (superverbalism);
- accentological separate design;
- volatility;
- lexical meaning;
- component composition;
- grammatical categories;
- complete or partial desmantization of components;
- generality (common knowledge);
- idiomatic;
- equivalence or synonymy of words.

Among the phraseological units with the meaning "forgiveness" and "forgiveness" in English dictionaries are the following:

I'm sorry phrase

used for politely asking someone to repeat something that they have said **pardon me phrase**
mainly american used for politely asking someone to repeat something **excuse me phrase**
mainly american used for asking someone to repeat something
come again? phrase used for asking someone to repeat what they said what adverb
determiner interjection predeterminer pronoun spoken used for asking someone to repeat what
they have just said because you did not hear it clearly

I beg your pardon phrase

spoken formal used for asking someone to repeat something because you did not hear them.
“Pardon?” or “Sorry?” are less formal ways of saying this run that by me again phrasal verb spoken
used for asking someone to repeat what they have just said again adverb spoken used for asking
someone to repeat something that they told you before, especially because you have forgotten what
they said

you what? phrase

used for asking someone to repeat what they have just said. This is not a polite expression.
It is better to say pardon. back up phrasal verb mainly american used for telling someone to return
to something that was said earlier .

In the analysis of phraseology in the Uzbek language, the main focus is on the relevance
of the phraseology to the speech situation:

Aybga buyurmaysiz – You don't blame (used in the sense of forgiveness, apology for
some work, behavior). I said, "You don't blame me, let my son learn architecture and not become
a bricklayer like his father." Now, guests, don't blame me, I have a lot of work to do and a husband
to go to.

Aybga qo'shmaysiz - To commit a crime, to commit a guilty, shameful act. Don't do that,
people will blame\ (you will not blame). The maid set the table and brought food. As he placed a
bowl of soup in front of Samandarov, he said: "You don't blame me, brother Maqsudali, my aunt
made carrot soup."

To repent of one's sin, to repent of one's sin, to forgive one's sin - to forgive the person who
has committed a sin or wrongdoing. Did you become a boyfriend for the aunt? Remember that
your sin is over.

Aybiga ko'z yummoq – forgive a fault, forgive a mistake:

To get rid of a spoonful of blood - to forgive, pardon. To forgive one's sin, to avoid death,
to pardon. I'll tell you if you'll take a spoonful of my blood. - I'm gone, tell me. Forgive me, khagan,
our wayward servant, pass a spoonful of my blood. Liver (or tongue, liver, heart) blood Grief-
stricken, crushed with grief.

When looking at the English texts, in the dialogic texts, it is first used in the context of
apologizing and eliminating an awkward situation. In a similar situation, the following situation
can be seen: “I do not think we were speaking at all . Sir William could not have interrupted
any two people in the room who had less to say for themselves. We have tried two or three
subjects already without success, and what we are to talk of next I can not imagine”.
“What think you of books?” said he, smiling. “Books oh ! no. I am sure we never read
the same, or not with the same feelings”. “I am sorry you think so; but if that be
the case, there can at least be no want of subject. We may compare our different
opinions”. “No—I can not talk of books in a ball-room; my head is always full of
something else.”

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-3, ISSUE-5

Formulas of thanks and apologies in the communicative mode are analyzed taking into account the factors that determine the choice of one or another level of politeness of the formulas of thanks.

Usually, the communicative situation plays an important role in the selection of vocabulary in Uzbek communication culture. Several factors influence the use of lexical items related to the concept of forgiveness.

In English, there is no phraseological unit that directly corresponds to the lexical unit "You will excuse me". However, the idioms "Excuse me", "I beg your, pardon" are very close in essence:

Phrase - excuse me

1. (Canada, US) Said as a request to repeat information.
2. (Canada, US) Said, as though as a request to repeat information, in order to indicate disbelief or indignation.
3. Said as a request for an individual's attention. quotations
4. Said as a request to pass somebody.
5. Sorry, as an apology.
6. (formal) Said as an expression of unexpected or early farewell .

Much of our private and public moral discourse takes place in apologizing, accepting, or demanding forgiveness, but we rarely make clear what we expect from a gesture of repentance. As a result, apologizing has become a vague, meaningless, and sometimes disgusting ritual. We intuitively understand that certain types of apologies can change the lives of both victims and offenders. However, some excuses can be worse than none at all. Sometimes empty gestures are like soul-searching apologies because it seems like the least onerous way to mend a relationship. In other cases, the offender may want to deliberately deceive or manipulate the victim into asking for forgiveness. Such hypocrisy occurs not only among enemies, but also among friends, relatives, and lovers. Whether an unrepentant leader instructs his lawyer to repent in order to settle a lawsuit, or an abusive husband who has no intention of reforming and tells his wife "sorry," we see him hurt.

Victims are more likely to be hurt if they give more meaning to an apology.

Please don't be mad at me. This is quite an informal phrase which we use when we've done something wrong and we don't want the other person to be angry with us. For example: "Please don't be mad at me but I have to cancel our plans this weekend".

1	Excuse me	Kechirasiz
2	Ever so sorry.	Har doim kechirasiz.
3	How stupid/careless/thoughtless of me.	Qanday ahmoq / beparvo / men haqimda.
4	I apologize.	Meni ma'zur tuting.
5	I had that wrong.	Menda xato bor edi.
6	I hope you can forgive me.	Umid qilamanki, siz meni kechira olasiz.
7	I owe you an apology.	Men sizdan kechirim so'rashga majburman.
8	I sincerely apologize.	Men chin dildan kechirim so'rayman.

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-3, ISSUE-5

9	I take full responsibility.	Men to'liq javobgarlikni o'z zimmamga olaman.
10	I want to apologize.	Men kechirim so'ramoqchiman.
11	I wanted to tell you I'm sorry.	Men sizga kechirim so'raganimni aytmoqchi edim.
12	I was wrong about that.	Men bu haqda xato qilganman.
13	I'd like to apologize.	Men kechirim so'ramoqchiman.
14	I'd like to apologize for how I reacted esterday.	Kechagi munosabatim uchun uzr so'ramoqchiman.
15	I'm (so/very/terribly) sorry.	Men (juda/juda/dahshatli) afsusdaman.
16	My apologies.	Uzr so'rayman.
17	My fault, bro (US)	Mening aybim, uka (AQSh)
18	Oh, my bad.	Oh, mening yomonligim.
19	Pardon (me)	
20	Please accept our (sincerest) apologies.	Kechirasiz (men)
21	Please don't be mad at me.	Iltimos, bizning (samimiy) uzrimizni qabul qiling.
22	Please excuse my (ignorance)	

Robert Allen's Dictionary of English Phraseologisms focuses on idioms rather than idioms. The classification of phraseological units proposed by Robert Allen can be summarized as follows:

Phrases according to form: idiom, collocation, quasi, idioms;

According to the content: phrases, paremias.

The reason for our classification in this way is that idioms, collocations and quasi-idioms differ from each other in terms of their formal structure. For example, units called collocation mean that certain verbs are combined with some prepositions and mean an additional meaning other than the basic meaning. In terms of content, paremias and phrasemes differ from each other. It can be seen in the examples of proverbs, articles, expressions analyzed above.

Bygone let bygones be bygones (O'tgan ishga salovat)

to forgive past offences - Bygone is a Middle English word, recorded first as an adjective in the meaning 'that has passed' (with reference to time). This is the meaning in Hermione's words at the beginning of Shakespeare's *The Winter's Tale* This satisfaction - The bygone day proclaimed. The phrase is 17th cent. in its current form .

Somerset Maugham *The Moon and Sixpence* 1919 I want him to come back. If he'll do that. we'll let bygones be bygones. After all, we've been married for seventeen ears.

According to the contextual meaning of this phrase, it means to forgive the mistake made before and to forget this mistake.

let bygones be bygones (O'tgan ishga salovat)

phrase - used to tell someone that they should forget about unpleasant things that happened in the past, and especially to forgive and forget something bad that someone has done to them .

Just let bygones be bygones and be friends again.

Why can't you let bygones be bygones and put it all behind you?

My mother thinks I should let bygones be bygones but I'm struggling with it.

After all these years, surely it's time to let bygones be bygones.

If she's willing, I'm willing to let bygones be bygones.

“to err is human” (Hamma xato qiladi/ beayb parvardigor) a justification for human error: in full to err is human, to forgive divine. The locus classicus in English is Alexander Pope’s Essay on Criticism, line: ‘Good nature and good sense must ever join; | To err is human; to forgive, divine.’ However, the phrase, and certainly the sentiment, are a lot older, and can be found in Chaucer and further back in Latin (humanum est errare). In the Roman dramatist Plautus the maxim appears in the form humanum amare est, humanum autem ignoscere est (Mercator II.ii.48 ‘It is human to love, and human also to forgive’).

Uzbek language phrases were created based on the rules of Islam. Most of the religious expressions in the Uzbek language are influenced by Arabic and Persian languages, and it should be mentioned that the religious phrases in the English language are copied from the Latin language.

Although the fund of language paremies from the point of view of linguistics is mainly limited to phraseological units, proverbs and sayings, in fact their scope is wide.

REFERENCE:

1. Балли Ш. Общая лингвистика и вопросы французского языка. М., 1955. – 416с.
2. Виноградов В.В. К истории лексики русского литературного языка / под ред. Л. В. Щербы. — «Русская речь», Новая серия, I. — Л.: Изд-во «Academia», 1927. — С.90.
3. Раҳматуллаев Ш. Ўзбек тилининг фразеологик луғати. — Тошкент: Қомуслар бош таҳририяти, 1992. — Б.3.;
4. Қўчқортюев И. Бадиий сўз устаси (А.Қаҳҳор ҳақида). — Тошкент, 1967. — 32 б.;
5. Маматов А. Ўзбек тили фразеологизмларининг шаклланиш масалалари: Филол.ф.доктр...дисс. — Тошкент, 1999. — 330б.;
6. Ҳожиёв А. Лингвистик терминларнинг изоҳли луғати. — Тошкент: Ўқитувчи, 1985. — 124 б.
7. Mirmuhsin. Me'mor. T.: „Sharq“—2001..
8. A.Qahhor “Qo’shchinor chiroqlari”. T.:”Sharq”.1996. —B.196.
9. Khazratkulova O.A. Pragmatic Interpretation of the concept of “Apology” in Uzbek and English Languages. Academic research in modern science, 2022-USA- 1(55-59) <https://doi.org/10.5281/zenodo.7069607>
10. <https://www.macmillanthesaurus.com/topics/ways-of-asking-someone-to-say-something-again>

THE ROLE OF III GENERATION CEPHALOSPORINS IN THE TREATMENT OF URINARY TRACT INFECTIONS

Toshpulatov To'liqin Aliyarovich-Termiz iqtisodiyot va servis universiteti Tabiiy fanlar kafedrasida katta o'qituvchisi

Boyqulov To'rabek Temirovich- Termiz iqtisodiyot va servis universiteti Tabiiy fanlar kafedrasida o'qituvchisi

ANNOTATSIYA

Sistit yoki asimptomatik bakteriuriya kabi pastki siydik yo'llarining infeksiyalarini davolash ko'pincha amalda birinchi qarashda ko'rinadiganidan ko'ra qiyinroq. Antibakterial preparatlarni tanlash klinik tadqiqotlarda tasdiqlangan samaradorligi, yon ta'siri, shuningdek, ularning narxi va mavjudligini hisobga olgan holda amalga oshirilishi kerak. Epidemiologik tadqiqotlarning ko'plab natijalari uropatogenlarning antibiotiklarga chidamliligining barqaror o'sishini ko'rsatadi, bu esa, o'z navbatida, davolanishning muvaffaqiyatsizligi va kasallikning takroriy shakllari sonining ko'payishiga olib keladi. Antibiotikni tanlashda chidamli mikroorganizmlarni tanlash xavfi past bo'lgan dorilarga ustunlik berish kerakligini hisobga olib, fosfomisin va nitrofuranlar birinchi darajali dorilar sifatida tavsiya etiladi. Amaldagi klinik ko'rsatmalarga ko'ra, uchinchi avlod sefalosporinlari pastki siydik yo'llari infeksiyalari uchun muqobil terapiya sifatida, shu jumladan homilador ayollarda, allergiya, patogenning sezgirligi yo'qligi yoki birinchi marta samarasiz davolashda foydalanish tavsiya etiladi. Maqolada pastki siydik yo'llari infeksiyalarini davolashda uchinchi avlod sefalosporinlarini qo'llash samaradorligi bo'yicha ma'lumotlar keltirilgan.

Kalit so'zlar: sistit, pastki siydik yo'llari infeksiyasi, uropatogenlar, sefalosporinlar, sefiksim, bakteriuriya, klinik ko'rsatmalar.

THE ROLE OF III GENERATION CEPHALOSPORINS IN THE TREATMENT OF URINARY TRACT INFECTIONS

Toshpulatov To'liqin Aliyarovich senior lecturer at the Department of Natural Sciences of the Termiz University of Economics and Service

Boyqulov To'rabek Temirovich teacher of the Department of Natural Sciences of Termiz University of Economics and Service

ANNOTATION

Treatment of lower urinary tract infections, such as cystitis or asymptomatic bacteriuria, is often more difficult in practice than it appears at first glance. The choice of antibacterial drugs should be made taking into account the effectiveness, side effects, as well as their cost and availability, proven in clinical studies. Many results of epidemiological studies show a steady increase in the resistance of uropathogens to antibiotics, which, in turn, leads to an increase in the number of treatment failures and repeated forms of the disease. Fosfomycin and nitrofurans are recommended as first-line drugs, taking into account that when choosing an antibiotic, preference should be given to drugs with a low risk of selecting resistant microorganisms. According to the current clinical guidelines, it is recommended to use third-generation cephalosporins as an alternative therapy for lower urinary tract infections, including in pregnant women, allergy, lack of sensitivity of the pathogen or ineffective treatment for the first time. The article presents

information on the effectiveness of third-generation cephalosporins in the treatment of lower urinary tract infections.

Key words: cystitis, lower urinary tract infection, uropathogens, cephalosporins, cefixime, bacteriuria, clinical indications.

РОЛЬ ЦЕФАЛОСПОРИНОВ III ПОКОЛЕНИЯ В ЛЕЧЕНИИ ИНФЕКЦИЙ МОЧОВЫХ ПУТЕЙ

Тошпулатов Тўлқин Алиярович – старший преподаватель кафедры естественных наук Термезского университета экономики и сервиса.

Бойкулов Тўрабек Темирович – преподаватель кафедры естественных наук Термезского университета экономики и сервиса.

АННОТАЦИЯ

Лечение инфекций нижних мочевыводящих путей, таких как цистит или бессимптомная бактериурия, на практике зачастую оказывается более сложным, чем кажется на первый взгляд. Выбор антибактериальных препаратов следует производить с учетом эффективности, побочных эффектов, а также их стоимости и доступности, доказанных в клинических исследованиях. Многие результаты эпидемиологических исследований свидетельствуют о неуклонном росте резистентности уропатогенов к антибиотикам, что, в свою очередь, приводит к увеличению числа неудач лечения и повторных форм заболевания. Фосфомицин и нитрофураны рекомендуются в качестве препаратов первого ряда, учитывая, что при выборе антибиотика предпочтение следует отдавать препаратам с низким риском селекции резистентных микроорганизмов. Согласно действующим клиническим рекомендациям, цефалоспорины третьего поколения рекомендуется применять в качестве альтернативной терапии при инфекциях нижних мочевыводящих путей, в том числе у беременных, аллергии, недостаточной чувствительности возбудителя или неэффективности лечения в первый раз. В статье представлены сведения об эффективности цефалоспоринов третьего поколения в лечении инфекций нижних мочевых путей.

Ключевые слова: цистит, инфекция нижних мочевыводящих путей, уропатогены, цефалоспорины, цефиксим, бактериурия, клинические показания.

KIRISH

Sistit yoki asimptomatik bakteriuriya kabi pastki siydik yo'llari infeksiyalarini davolash ko'pincha amalda birinchi qarashda ko'rinadiganidan ko'ra murakkabroq vazifa bo'lib chiqadi. Antibiotiklarni qo'llashda patogenlarning spektri va ularning ma'lum bir antibiotiklarga sezgirligi/qarshiligi, birgalikda va yaqinda dori terapiyasi, takroriy xarakter, jarrohlik aralashuvlar va manipulyatsiyalar, homiladorlik, emizish, allergik reaksiyalar mavjudligi va boshqalarni hisobga olish kerak.

Antibakterial dorilarni tanlash ularning samaradorligi va xavfsizligi asosida, ular klinik tadqiqotlar davomida sinovdan o'tgan va tasdiqlangan, shuningdek ularning narxi va mavjudligini hisobga olgan holda amalga oshirilishi kerak. Epidemiologik tadqiqotlar natijalari uropatogenlarning antibiotiklarga chidamliligining barqaror o'sishini ko'rsatadi, bu esa o'z

navbatida terapiyaning samarasizligi va qaytalanish holatlarining ko'payishiga olib keladi. Aksariyat mualliflarning fikriga ko'ra, buning sababi so'nggi o'n yilliklarda keng tarqalgan shifokorlar va bemorlarning o'zlari tomonidan antibakterial preparatlarni asossiz, nazoratsiz qo'llash bo'lib, uropatogenlarning, ayniqsa **Escherichia colining** antibiotiklarga chidamliligini oshirdi.

Jahon sog'liqni saqlash tashkiloti (JSST) 2012 yildan beri ratsional farmakoterapiya va uning tamoyillari haqida gapiradi, bu birinchi navbatda antibakterial dorilarni qo'llash bilan bog'liq. Ratsional terapiyani amalga oshirish uzoq vaqtdan beri mavjud bo'lgan siydik yo'llari infeksiyalarini davolash stereotiplarini o'zgartirishni talab qiladi.

Siydik yo'llari infeksiyasi bilan og'riqan bemorlardan ajratilgan patogenlarga qarshi antibiotiklar faolligini o'rganishga qaratilgan 2018 yilda o'tkazilgan xalqaro Darmis (Antimiotik qarshilik dinamikasi: Multicenter Study natijalari) tadqiqotini o'z ichiga olgan ko'plab tadqiqotlar natijalariga asoslanib, Sog'liqni saqlash vazirligining klinik ko'rsatmalariga tub o'zgarishlar kiritildi. Bunday asosiy o'zgarishlardan biri asoratlanmagan siydik yo'llari infeksiyalari uchun ftorxinolonlar guruhining antibakterial preparatlarini qo'llashni taqiqlash edi. Bir necha yil oldin ushbu guruhning dori-darmonlari terapiyaning birinchi qatoriga kirgan bo'lsa-da, sistitni davolash bo'yicha tegishli klinik tavsiyalarda ular hatto muqobil terapiya dorilaridan ham chiqarib tashlangan. Darmis-2018 kabi epidemiologik tadqiqotlar ma'lumotlari mikroorganizmlarning ftorxinolon seriyali preparatlarga sezgirligini ularning ommaviy qo'llanilishi fonida pasayishini ko'rsatdi.

Siydik yo'llari infeksiyalari uchun ftorxinolonlarning asossiz qo'llanilishi 2016-yilda AQSh oziq-ovqat va dori-darmonlar sifatini nazorat qilish boshqarmasi (FDA) tomonidan qayd etilgan bo'lib, u qarshilik rivojlanishi va gipoglikemiya, yurak-qon tomir kasalliklari, tog'ay shikastlanishi xavfi yuqori bo'lganligi sababli ushbu dorilarni empirik terapiyadan chiqarib tashlashni tavsiya qilgan. Esherichia coli ning yuqori darajadagi barqarorligi penitsillinlar uchun (50% dan ortiq), shu jumladan amoksitsillin/klavulanat (40% dan ortiq), shuningdek trimetoprim/sulfametoksazol (35% dan ortiq) ham saqlanib qolmoqda, bu ham ularni empirik terapiyada qo'llashni cheklaydi. Shunday qilib, tadqiqotning natijalari siydik yo'llari infeksiyalarini davolashda ko'plab antibakterial dorilarni qo'llashni cheklash uchun asos bo'ldi.

Ayollarda asoratlanmagan sistitni davolash bo'yicha amaldagi klinik tavsiyalarda fosfomisin va nitrofurantoin birinchi darajali dorilar sifatida tavsiya etiladi. Bu, birinchi navbatda, E. coli uropatogen shtammlarining ularga nisbatan yuqori sezgirligini (90% dan ortiq) bir necha yillar davomida — 2012 yildan 2018 yilgacha saqlab qolish bilan bog'liq.

Shuni esda tutish kerakki, bemorlarning o'zlari ko'pincha qarindoshlari yoki tanishlari maslahati bilan shifokor retseptsiz antibakterial dorilarni qabul qilishadi. Bunday holatlarning aksariyatida na preparatning dozasi, na davolash kursining davomiyligi kuzatilmaydi. So'rov natijalariga ko'ra, siydik chiqarishda nuqsoni bo'lgan ayollarning taxminan 50 foizi alomatlar paydo bo'lganda shifokorlarga murojaat qilmagan. Ularning 17% dan ortig'i qarindoshlari va tanishlarining maslahati asosida dori — darmonlarni qabul qilgan, 25% dorixona xodimining tavsiyasiga binoan, 16% internetda ma'lumot qidirgan. Shu bilan birga, shunga o'xshash tarzda eng ko'p ishlatiladigan dorilar ilgari ishlatilgan yoki ilgari shifokor tomonidan tayinlangan va yordam bergan dorilar bo'lishi aniq: fosfomisin va nitrofurantoin. Bunday hollarda muqobil terapiyani, shu jumladan III avlod sefalosporinlarni qo'llash imkoniyati katta ahamiyatga ega.

TADQIQOT METODI VA NATIJALARI

III avlod sefalosporinlari *E. coli* ning uropatogen shtammlariga nisbatan yuqori samaradorligini saqlab qoladi, shuning uchun ular ayollarda asoratlanmagan siydik yo'llari infeksiyalarini davolash bo'yicha tavsiyalarga ham kiritilgan. Amaldagi klinik tavsiyalarga ko'ra, ular siydik yo'llari infeksiyalari uchun muqobil terapiya sifatida ko'rsatiladi, allergik reaksiyalar va terapiyaning birinchi darajali dori-darmonlariga nisbatan murosasizlik mavjud bo'lganda, ular homilador ayollarda ham, shuningdek patogenning siydikni bakteriologik tekshirish natijalariga ko'ra tanlangan dorilarga sezgirligi bo'lmasa yoki oldingi davolanish paytida ularning samarasizligi bo'lsa qo'llanilishi mumkin,.

Og'iz orqali qabul qilish uchun III avlod sefalosporin spektri unchalik keng emas. Eng yaxshi o'rganilgan dorilardan biri **sefiksim**dir.

Antibakterial preparatlarning tarqalgan shaklining eng muhim afzalliklari oshqozonda erishning yo'qligi va ichakning yuqori qismlarida maksimal so'rilishini o'z ichiga oladi. Tabletkalar ko'rinishidagi sefiksim plyonka bilan qoplangan tabletkalarga nisbatan barqaror eritma kinetikasiga va muhitning kislotaliligiga kamroq bog'liqlikka ega. Shunday qilib, tadqiqotda **sefiksim** preparatlarini dispersant tabletkalar va plyonka bilan qoplangan planshetlar shaklida eritishning qiyosiy kinetikasini o'rganish natijasida, plyonka bilan qoplangan tabletkalarni o'rganishda 1 soatdan keyin erigan sefiksim miqdori dispersant tabletkalardagi sefiksimga nisbatan 20-30% kamroq ekanligini aniqlash mumkin edi. Plyonka bilan qoplangan tabletkalardan faol moddaning 30% gacha eritmaga o'tmagan, bu in vivo sharoitda preparatning biomaslashuvchanligining pasayishi bilan birga bo'lishi va infeksiya markazida antibiotikning subterapevtik konsentratsiyasini yaratishga olib kelishi mumkin. Shu munosabat bilan, plyonka bilan qoplangan planshetlardan foydalanish klinik muvaffaqiyatsizliklarni rivojlanish xavfining oshishi va antibiotiklarga qarshilik darajasining oshishi bilan birga bo'lishi mumkin. Tabletkalarning yaxshilangan farmakokinetik xususiyatlari faol moddaning biomaslashuvchanligining va ichak mikroflorasiga minimal ta'sir ko'rsatishni ta'minlaydi, bu esa oshqozon-ichak traktidan salbiy reaksiyalarni rivojlanish xavfini kamaytiradi.

Adabiyotlarga ko'ra, disperslangan dozalar shakllarini og'iz orqali qabul qilishda qonda hosil bo'lgan konsentratsiyalar kasallikning yengil bo'lmagan shakllari bilan preparatni mushak ichiga yuborish bilan deyarli farq qilmaydi. Tabletkalardan foydalanish antibiotik qarshiligiga qarshi kurashish uchun zamonaviy antibiotik terapiyasi strategiyasining muhim jihatlardan biridir.

Sefiksim-bu bakteritsid effektiga ega bo'lgan keng spektrli og'iz orqali qabul qilish uchun III avlod yarim sintetik sefalosporin antibiotik. Ta'sir mexanizmi patogenning hujayra membranasi sintezini ingibitsiya qilish bilan bog'liq. Boshqa β -laktam antibiotiklari singari, sefiksim ham bakterial hujayra ichida lokalizatsiya qilingan o'ziga xos penitsillin-bog'lovchi oqsillar bilan bog'lanib, bakterial hujayra devori sintezining uchinchi va oxirgi bosqichini ingibitsiya qiladi. Bundan tashqari, hujayra lizisi autolizinlar kabi bakterial hujayra devori fermentlari vositachiligida bo'ladi. Sefiksim b-laktamazalar ta'siriga juda chidamli. Preparat ichakda so'riladi, bu molekulada vinil guruhi mavjudligi bilan bog'liq.

Sefiksim *Streptococcus pneumoniae*, *Streptococcus pyogenes*, *Haemophilus influenzae*, *Moraxella catarrhalis*, *E. coli*, *Proteus mirabilis*, *Neisseria gonorrhoeae* ga nisbatan faol. Preparat shuningdek, grammusbat (*Streptococcus agalactiae*, *Haemophilus parainfluenzae*, *Proteus vulgaris*, *Klebsiella pneumoniae*, *Klebsiella oxytoca*, *Pasteurella multocida*, *Providencia* spp.) ga

qarshi in vitro faollikka ega, Salmonella spp., Shigella spp., Citrobacter amalonaticus, Citrobacter diversus, Pseudomonas spp sefiksimga chidamli. Sefiksimning biomaslashuvchanligi oziq-ovqat va antatsidlarga bog'liq emas. Qonda sefiksimning maksimal kontsentratsiyasiga preparatni qabul qilganidan 3-4 soat o'tgach erishiladi va uning plazma oqsillari bilan bog'lanishi 65% ni tashkil qiladi. Preparatning eng yuqori kontsentratsiyasiga siydik va safroda erishiladi. Sefiksim jigarda metabolizmga uchramaydi, dozaning 50-55% siydik bilan o'zgarmagan holda chiqariladi, taxminan 10% safro bilan chiqariladi. Bundan tashqari, sefiksim nisbatan uzoq yarim yemirilish davriga ega ($t_{1/2}$). Bu 3-4 soatni tashkil qiladi, bu uning qabul qilish chastotasiga ta'sir qiladi. Sefiksim kuniga 1 maxal buyuriladi, bu bemorlar uchun qulay va ularning davolanishga rioya qilishlarini oshirishga imkon beradi. Shuni ham hisobga olish kerakki, buyrak etishmovchiligida $T_{1/2}$ ko'payadi [17-20].

Sefiksimning birinchi tadqiqotlari 1980-yillarda o'tkazilgan. Preparatning ta'sir qilish mexanizmi va uning patogenlarga nisbatan faolligi tavsiflangan. Hozirgacha asoratlanmagan siydik yo'llari infeksiyalarida sefiksim samaradorligini ko'rsatadigan ko'plab tadqiqotlar nashr etilgan. Bundan tashqari, sefiksim 2021-yilda ayollarda sistitni davolash bo'yicha, shuningdek, 2022-yilda homiladorlikdagi SYI davolash bo'yicha klinik ko'rsatmalarga kiritilgan.

Asoratlanmagan sistit bilan og'rigan ayollarni davolashda sefiksim, ofloksatsin va ko-trimoksazolni bir martalik qabul qilishning qiyosiy samaradorligi Germaniyada o'tkazilgan randomizatsiyalangan plasebo nazorati ostida o'tkazilgan tadqiqotda baholandi. Unda 18 yoshdan 35 yoshgacha bo'lgan 80 nafar ayol ishtirok etdi, ular 4 guruhga randomizatsiyalangan. 3 guruhda bemorlar mos ravishda 400 mg sefiksim, 200 mg ofloksatsin va 160/800 mg ko-trimoksazol, 4-guruhda esa plasebo qabul qilishdi. 14-17 kundan keyin natijalar baholandi, samaradorlik mezonlari kasallik va bakteriuriyaning klinik belgilari yo'qligi deb hisoblandi. Barcha dorilar plasebo bilan solishtirganda teng mikrobiologik samaradorlikni ko'rsatdi. Olingan natijalarga ko'ra, sefiksim terapiyasi 89,4% hollarda, ofloksatsin 89,4%, ko — trimoksazol 84,2% va plasebo 26,3% hollarda samarali bo'lgan. Asoratlanmagan SYI bilan kasallangan 565 ayolni o'z ichiga olgan ko'p markazli, plasebo o'tkazilgan tadqiqotda sefiksim va amoksitsillin samaradorligini qiyosiy baholash o'tkazildi. Olingan natijalarga ko'ra, sefiksim terapiyasi guruhidagi bemorlarning 92 foizida va amoksitsillin terapiyasi guruhidagi bemorlarning 84 foizida patogenning yo'q qilinishi qayd etilgan .

V. Rafalskiy va boshqalar siprofloksatsin va sefiksimning E. coli uropatogen shtammlariga nisbatan samaradorligini qiyosiy baholashni amalga oshirdi. Tadqiqot davomida olingan ma'lumotlar mikroorganizmlarning sefiksimga nisbatan yuqori sezgirligini ko'rsatdi. U sefiksimga 98,9% va siprofloksatsinga 88,9% ni tashkil etdi. Bundan tashqari, sefiksim uchun minimal bostiruvchi kontsentratsiya sezilarli darajada past bo'lib, siprofloksatsinning 6,4 mg/ml ga nisbatan 0,5 mg/ml ni tashkil etdi.

Sefiksimning bir va ikki marta qabul qilish samaradorligini qiyosiy tahlil qilish 528 bemorni qamrab olgan ikki tomonlama tadqiqotda o'tkazildi. Ushbu tadqiqot natijalari preparatni bir marta qabul qilishning kichik foydasini ko'rsatdi. Shunday qilib, kuniga 400 mg 1 marta sefiksim qabul qilgan bemorlarda samaradorlik 100% ni, kuniga 200 mg 2 maxal qabul qilgan bemorlar guruhida esa 97% ni tashkil etdi.

V. V. Galkin siprofloksatsin va sefiksim bilan 5 kunlik terapiya kurslarining samaradorligini baholagan klinik-iqtisodiy istiqbolli tadqiqot o'tkazildi. 104 bemor 3 guruhga randomizatsiyalangan: 1- ayollarda sefiksim bilan kuniga 400 mg 1 marta, 2-siprofloksatsin bilan

kuniga 250 mg 2 maxal, 3-siprofloksatsin bilan kuniga 500 mg 2 maxal terapiya o'tkazildi. Olingan natijalarga ko'ra, terapiyaning 8-kunida patogenning yo'q qilinishi 1-guruhdagi ayollarning 95,9 foizida, 2-guruhdagi ayollarning 55,6 foizida va 3-guruhdagi 71,4 foizida qayd etilgan. Bundan tashqari, 1-, 2-va 3-guruhlarda 3229,2 rubl, 7280,6 rubl va 4111,5 rublni tashkil etgan "samaradorlik-xarajat" koeffitsiyenti hisoblab chiqilgan, bu boshqa taklif qilingan terapiya sxemalari bilan taqqoslaganda sefiksimning qisqa kursining yuqori klinik-iqtisodiy samaradorligini ko'rsatdi.

Sefiksimning keng ta'sir doirasi, uning farmakokinetikasi va farmakodinamikasining xususiyatlari ushbu preparatni nafaqat asoratlanmagan siydik yo'llari infeksiyalarini davolashda ishlatishga imkon beradi. Buni bir necha tadqiqotlar natijalari tasdiqlaydi. Ushbu tadqiqotlarda siydik yo'llari infeksiyalarining asosiy patogenlari Enterobacteriaceae oilasining mikroorganizmlari edi. Taqdim etilgan ma'lumotlarga ko'ra, sefiksim terapiyasining 5-7 kunlik kursi fonida patogenning yo'q qilinishi 69-79% hollarda kuzatilgan.

Homiladorda siydik yo'llari infeksiyalari yuqumli kasalliklar tarkibida paydo bo'lish chastotasi bo'yicha yuqori o'rinlardan birini egallaydi. Ko'p markazli Best tadqiqoti natijalariga ko'ra, yuqumli kasalliklarga chalingan homilador ayollarning 40 foizida siydik yo'llari infeksiyalari tashxisi qo'yilgan. Shuni esda tutish kerakki, shifokorlar ushbu toifadagi bemorlarni davolashda ko'plab cheklovlar va taqiqlarga duch kelishadi. Uchinchi avlod sefalosporinlari, shu jumladan sefiksim, homilador ayollarda siydik yo'llari infeksiyalarini davolash uchun tavsiya etilgan antibakterial dorilar qatoriga kiradi. Bundan tashqari, ushbu guruhdagi dorilar, xususan sefiksim, pediatriklar tomonidan bolalarda eng ko'p uchraydigan yuqumli kasalliklarni davolashda faol foydalaniladi, bu nafaqat mikroblarga qarshi faollikning keng doirasi va yaxshi farmakokinetikasi, balki preparatning yuqori xavfsizlik profiliga ham bog'liq.

Xulosa

Shunday qilib, sefiksimni o'z ichiga olgan uchinchi avlod og'iz sefalosporinlari β -laktamaza faolligi va yuqori xavfsizlik profiliga ega bo'lgan patogenlarni o'z ichiga olgan mikroblarga qarshi faollikning keng spektriga ega bo'lib, uni ayollarda asoratlanmagan sistit va homilador ayollarda siydik yo'llari infeksiyasi terapiyasida muqobil terapiya sifatida samarali ishlatishga imkon beradi. Bemorlarning birinchi darajali antibakterial dorilarni nazoratsiz qo'llashini hisobga olgan holda, shuni ta'kidlash kerakki, III avlod sefalosporinlari, xususan sefiksim, kelajakda ko'payishi mumkin bo'lgan siydik yo'llari infeksiyalari bilan og'rigan ayollarni davolashda strategik ahamiyatini saqlab qoladi. **Sefixim** preparatining dispersiv shakldagi va pilyonka bilan qoplangan tabletkalar shaklidagi analoglarga nisbatan yuqori iqtisodiy mavjudligini hisobga olgan holda, preparatni ushbu toifadagi bemorlarda keng qo'llash tavsiya etilishi mumkin. Uni qo'llash qulayligi, yaxshi bardoshlik va yuqori klinik-iqtisodiy samaradorlik preparatni stasionar davolanish uchun ham bosqichli terapiya bosqichi sifatida, ham siydik yo'llari infeksiyalari bo'lgan ayollarni ambulatoriya sharoitida davolash uchun ishlatishga imkon beradi.

1. Клинические рекомендации. Цистит у женщин. 2021. (Электронный ресурс.) URL: https://cr.minzdrav.gov.ru/recomend/14_2 (2023).
2. Клинические рекомендации. Инфекция мочевых путей при беременности. https://cr.minzdrav.gov.ru/recomend/719_1?ysclid=libzfqd (2023).
3. Стратегия предупреждения распространения антимикробной резистентности в Российской Федерации на период до 2030 г. (Электронный ресурс.) URL: <https://static-0>. (2023).
4. World Health Organisation. Global action plan on antimicrobial resistance. Geneva: WHO; 2015.
5. Fluoroquinolone and quinolone antibiotics: PRAC recommends new restrictions on use following review of disabling and potentially long-
<https://www.ema.europa.eu/en/news/fluoroquinolone-quinolone-antibiotics-prac-recommends-new-restrict...> (2023).
6. European Medicines Agency. Disabling and potentially permanent side effects lead to suspension or restrictions of fluoroquinolone antibiotics. (2023).
7. Boyqulov T.T. va boshqalar. COVID-19 INFEKSIYASIDA ERKAKLAR BEPUSHTLIGI VA JINSIY ZAIFLIK. 2023, https://scholar.google.com/citations?view_op=view_citation&hl=ru&user=hJ-8kMMAAAAJ&authuser=1&citation_for_view=hJ-8kMMAAAAJ:roLk4NBRz8UC
8. Boyqulov T.T. va boshqalar. SIYDIK-TANOSIL TIZIMI VA COVID-19 HAQIDA BA'ZI BIR SAVOLLAR. https://scholar.google.com/citations?view_op=view_citation&hl=ru&user=hJ-8kMMAAAAJ&authuser=1&citation_for_view=hJ-8kMMAAAAJ:Se3iqnhoufwC
9. Boyqulov T.T. va boshqalar URUG 'SIFATI VA QONDAGI TESTOSTERONNING VARIKOSELEKTOMIYADAN OLDIN VA KEYINGI MIQDORI O'ZGARISHI https://scholar.google.com/citations?view_op=view_citation&hl=ru&user=hJ-8kMMAAAAJ&authuser=1&citation_for_view=hJ-8kMMAAAAJ:kNdYIx-mwKoC

PROBLEMS OF TEACHING GRAPHIC CAPABILITIES OF PYTHON PROGRAMMING LANGUAGE IN GENERAL SECONDARY SCHOOLS

Annakulov Makhmudjon Sadikovich,

Bukhara Innovation University

Annotation. This article presents the problems of teaching graphical capabilities of the Python programming language in general secondary schools, as well as suggestions and recommendations for their solutions.

Key words: Python, graphics, algorithmic programming, computer science and information technologies, creativity.

Today, in the continual education system, improving and modernizing the teaching methodology of subjects belonging to the category of informatics, on the basis of modern teaching technologies, students' working with practical, instrumental programs and media, graphic tools, as well as the use of cloudy, blocking, web technologies, special attention is paid to the issues of increasing creativity, cognitive thinking, forming and developing programming competence.

In this regard, that is, the methodology of teaching "Informatics and information technologies" in general secondary schools, increasing students' creative abilities related to information technologies, theory of forming their practical skills and competencies and researches related to practice were conducted in our country by A.A.Karshiyev, D.B.Sulaymonova, U.N.Taylakov and a number of other researchers.

Also, studies on the methodology of teaching informatics and information technologies in general secondary schools in Commonwealth of independent states, and the formation of students' competencies in information security and working with information were conducted by scientists such as E.V.Tanova, S.V.Charikova, O.M.Osokina, M.Y.Novikova, D.V.Gulyakin, I.N.Bejina, O.A.Tumanova, T.V.Yasyuk, D.D.Yashin.

In the studies of the above-mentioned scientists, the theoretical and practical aspects of the use of advanced pedagogical technologies, electronic learning resources and the creative ability of students regarding information technologies in improving the effectiveness of teaching "Informatics and information technologies" in general secondary schools, researches were conducted on the methodology of formation of practical skills and competencies.

However, their research did not pay attention to the methodology of improving the effectiveness of teaching programming languages.

Computer science and information technologies are one of the areas in high demand today.

Therefore, in order to train specialists in the field of informatics and information technologies, it is necessary to first improve the solid knowledge, skills and qualifications of general secondary school students regarding information technologies.

The task of the teacher is not only to give the graduate a set of knowledge, but also to prepare a person who can independently solve the problems and be responsible for his own well-being and the whole society.

For this, it is needed to create the necessary conditions for training a responsible, independent and active person with basic competencies.

One of the main competencies is the ability of students to create algorithms and programs for given problems and to prepare various practical projects.

According to Ye.F.Rodigin's opinion, in order to train specialists in the field of information technologies, it is necessary to form the creative abilities and competencies of schoolchildren

related to "Algorithmization and programming".[1].

Therefore, it is necessary to pay particular attention to the issue of teaching "Basics of Algorithms" and "Basics of Programming" in "Informatics and Information Technologies" in general secondary schools.

The "Fundamentals of Algorithm" and "Fundamentals of Programming" sections are considered one of the most complex subjects of learning "Informatics and Information Technologies".

Currently, there are many unsolved problems in the education system related to the issues of teaching algorithms and programming.

Therefore, in the continual education system, including general secondary schools, it is necessary to develop a methodology aimed at increasing the motivation of students regarding algorithms and programming, developing their creative thinking, and forming their competencies.

This, first of all, requires studying the work of scientists in the field. [2].

In this regard, the problems of formation of logical and creative thinking of schoolchildren regarding algorithmization, researches on the methodology of their elimination were studied by scientists such as T.N. Lebedeva, I.N. Slinkina, I.V. Gavrilova, A.I. Gazykina in the Commonwealth of Independent States.

At the same time, research on the theory and practice of teaching programming in general secondary schools, the methodology of teaching programming to high school students based on the systematic-activity approach, has been researched by scientists such as N.N.Zaripov, Y.N.Nilova, I.N. Slinkina, M.N.Misin, D.G.Jemchujnikov, Pardan'ats mr Marjana in our country and the Commonwealth of Independent States.

Such researches are also presented in A.N.Bobrov, Ye.F.Rodigin, A.A. Ilyupova, V.Y.Pirogov, Ye.I.Popova, M.Saeli, J.Perrenet, Jochems, V.M.G.m, B.Zvaned, S.Zvaned. Simon, M.Hamilton, J.Lonnberg, K.Sloan and C.Lin's articles and their works provide suggestions and recommendations for teaching programming languages in general secondary schools.

From the analysis of the research, it can be seen that the scientific research work carried out in general secondary schools mainly focuses on the formation of students' thinking about algorithmic examples and problems, as well as various teaching technologies in teaching programming languages such as Pascal, Delphi, CSS, C++, Python, electronic the method of using educational tools, network technologies and method of using computer games, as well as the development of students' practical skills, creative abilities and competences related to programming.

Despite the fact that some approaches to teaching the Python programming language have been advanced in the cited research works, teaching the graphical capabilities of the Python programming language in these scientific sources cannot be considered sufficient.

Therefore, the proposed research that is, improving the methodology of teaching the graphical capabilities of the Python programming language in general secondary schools is one of the urgent problems.

Since the previous research was focused on these issues, we first conducted observations in order to determine the attitude of general secondary school students to programming, the level of knowledge of programming technology.

The observation process is related to the Python programming language, which is taught in the 9th grade of general secondary schools.

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-3, ISSUE-5

We were sure that in the schools where observations were made, teachers effectively organize each lesson, approach it creatively, and use new pedagogical technologies.

According to the results of observation and analysis, it was found that there are some difficulties in teaching programming technologies in these schools.

It was found that the main reason for this is that the students struggle to create an algorithm of the given problems and analyze them from a mathematical point of view, and they cannot use the given operators correctly.

In the classes we observed, we were sure that the students could not prepare enough examples and tasks of in the lessons.

During the observation, we talked with the students.

During the interviews, we witnessed that the students told us, "It is not necessary to learn the Python programming language, although it was not possible recently, why should everyone be taught programming?" if it is needed for several students, isn't it enough for these students to learn?", "Most users who use computers do not write their own programs, and they do not need to know programming at all, the user should know how to work only with the necessary practical programs, they expressed their opinions and asked questions that "informatics and information technologies" should be taught to work only with practical programs.

According to the above interview results and the analysis of scientific and methodical resources related to the research problem, according to the situations in the school where the observation work was carried out, it was necessary to explain the nature of the graphical capabilities of the Python programming language to students in general secondary schools, to interest them and to introduce new approaches to programming technologies, research was found to be one of the current problems today.

To eliminate these problems, it is necessary to pay attention to the following:

- To fully convey to the students what success can be achieved using the graphical capabilities of the Python programming language;
- Using real-life examples to explain the programming language taught in general secondary schools, i.e., the graphic capabilities of the Python programming language;

Based on the given analytical data, it can be said that the graphical capabilities of the Python programming language for students in general secondary schools are one of the important issues today to increase the effectiveness of teaching and increase the motivation, creativity and competence of students can be noted.

Books

1. Родыгин Е.Ф. Методические рекомендации обучения программированию в школе // информатика как основа современного общества. – С. 20-22. [file:///C:/Users/Mirsanov/Downloads/metodicheskie-rekomendatsii-obucheniya-programmirovaniyu-v-shkole%20\(2\).pdf](file:///C:/Users/Mirsanov/Downloads/metodicheskie-rekomendatsii-obucheniya-programmirovaniyu-v-shkole%20(2).pdf)
2. Илюпова А.А. Основные возможности языка программирования PYTHON // <https://infourok.ru/statya-na-temu-osnovnie-vozmozhnosti-yazika-programmirovaniya-pyton-1106702.html>
3. Шапошникова С. [Основы программирования на Python. Учебник. Вводный курс](#). – версия 2. – 2011. – 44 с.
4. Россум Г. И др. Язык программирования Python. 2001. – 454 с.

Davronova Asila

4th year student of the Faculty of Foreign Philology of Termiz State University

Ibragimova Gulshana

4th year student of the Faculty of Foreign Philology of Termiz State University

Davlyatova Elvira Muradovna

Research leader, Head of the Faculty of Foreign Philology of Termiz State University, Phd

Abstract: Borrowed words are now available in a variety of fields. In particular, political, economic and others. In this article, we will consider the analysis and origin of some of the borrowed words found in the field of art.

Keywords: native word, culture, arts, borrowed, word meaning

INTRODUCTION

As to the origin English words may be classified into two large sets: native and borrowed words. A native word is a word which belongs to the original English word stock, as known from the earliest available manuscripts of the Old English period. A borrowed word or a borrowing is a word taken over from another language and assimilated in phonemic shape, spelling, paradigm or meaning, or at least in some of these aspects, according to the standards of the English language. The term borrowing belongs to diachronic description of the word stock thus the words 'wine, cheap, pound' were introduced by the Romans into all Germanic dialects long before the Angles and the Saxons migrated to the British Isles and nowadays they are not distinguishable from words of native origin.¹ Lexicology as a part of English language and science that studies words, aims to classify English words in various ways, however historically the English words can be considered anything but uniform. In general, the words consist of two groups - the native stock of words and the borrowed stock of words. In terms of numbers, the borrowed stock of words is considerably larger than the native stock of words and it comprises only 30 % of the total number of words in the English vocabulary, whereas the native words form the main part of the most frequent words, which are in fact used in speech and writing. Translation loans are words or expressions formed from the elements existing in the English language according to the patterns of the source language (the moment of truth - sp. el momento de la verdad). International words. There exist many words that were borrowed by several languages. Such words are mostly of Latin and Greek origin and convey notions which are significant in the field of communication in different countries. Here belong names of sciences (philosophy, physics, chemistry, linguistics), terms of art (music, theatre, drama, artist, comedy), political terms (politics, policy, progress). The English language became a source for international sports terms (football, hockey, cricket, rugby, tennis). Since English words are being used a lot in our language, naturally, everyone is interested in their etymological origin.

MAIN BODY

The development of cultural achievements of other ethnic groups, adapting them to their ethnic traditions and way of life, interests and aspirations promote interaction of different nations with a specific system of values and way of activity. In the course of evolution each culture addresses either to the past or to the experience of other cultures.

¹ <https://literature.academicjournal.io/index.php/literature/article/view/586>

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-3, ISSUE-5

Borrowings in the process of cross-cultural interaction are an important factor of cultural and social change. The synthesis of cultural elements defines the essence of the world of culture in general. The evolution of social and cultural systems, as well as the mechanisms underlying the conversion, determine the nature of the development of world culture.

As early as in the XVIII century the German philosopher Johann Gottfried Herder drew attention to the fact that the phenomenon of human history is explained by the deep relationship between cultures. The example is the continuity of ancient Greek and Roman culture.

"Culture" as a concept is highly-valued. The most common term describes culture as "a system of values, life views, patterns of behavior, norms, a set of techniques and methods of human activity, objectified in subject, physical media (means of labor, signs) and transmitted to future generations". The interaction, in turn, reflects the universal type of connection between the subjects of certain relationships, involves the one-time existence of these entities and influence on each other. The concept of "intercultural cooperation" was introduced into scientific circulation by G. Treyger and E. Hall, defining it as an ideal goal to which man should aspire in his desire to adapt to the world around him in the best possible and effective manner.²

Adopted words are mainly used in situations where a word that exists in one language has no alternative in another language. In particular, in the field of art, there are borrowed words in several departments. We will consider some of them. Opera; Symphony; Oratorio; Estrada ;³

Opera: OPERA (lat. opera - product of labor, work) is a musical dramatic art genre. Opera is a mixed (synthetic) genre that incorporates several art forms; in it, the forms of dramaturgy, music, visual art and dance art are connected in an integrated stage process. But music takes the leading place among them.

Symphony: Symphony (Ancient Greek: symphōnía - "harmony") is the leading genre of symphonic music, the highest form of instrumental music in the composer's direction. Designed for symphony orchestra performance;

Oratorio: Oratorio (lat. oratorium - chapel) is a large piece of music created for solo singers, choir and orchestra, usually based on a dramatic plot.

Estrada: Estrada (Spanish - taxasupa), pop art - 1) in a broad sense - general expression of entertainment, popular artistic (eternal, musical, dance, entertainment, etc.) genres and forms; 2) in the narrow sense - a type of professional stage art.

CONCLUSION

To sum up, nowadays we can come across catchphrases in every aspect of our life. We can encounter it not only in the field of art and culture, but also in many other fields such as commerce, trade, industry, and sports. As you know, this topic is very comprehensive. Therefore, it cannot be explained by one or two scientific works. Much more research and research can be conducted in this regard.

REFERENCES

1. <https://literature.academicjournal.io/index.php/literature/article/view/586>
2. Y. G. Volkov, V. I. Dobrenkov Sociology: Textbook / Ed. by prof. Y. G. Volkov. - M.: Gardariki, 2003, pp. 512.
3. <https://lex.uz/docs/-5849580>

² Y. G. Volkov, V. I. Dobrenkov Sociology: Textbook / Ed. by prof. Y. G. Volkov. - M.: Gardariki, 2003, pp. 512.

³ <https://lex.uz/docs/-5849580>

Spectrophotometric determination of Lead ions in solutions samples using Chromazurol S in the Surkhondarya region

Xolboyeva M., Smanova Z.

*Department of Chemical Technology, Termez Institute of Engineering and Technology,
Termez, Uzbekistan,*

Department of Analytical Chemistry, National University of Uzbekistan

Abstract. In this paper, the determination of lead ions in the waters of Surkhondarya was studied by the spectrophotometric method using Chromazurol S. The formation of a complex between lead and Chromazurol S in the ion exchange phase was studied. This formed phase allowed spectrophotometric determination of lead in drinking water. According to the obtained results, the detection sensitivity was 0.02 $\mu\text{g/ml}$, and this was proposed as one of the effective methods for determining lead in Surkhondarya waters.

Keywords: Surkhondarya, lead ions, Chromazurol S, complex compounds.

Introduction.

Lead is one of the most toxic metals; its concentration has to be obligatorily controlled in assessing the quality of drinking water, food products and raw materials, pharmaceuticals, etc. [1]. The threshold limit value for the lead concentration in water is 0.03 mg/L, while for various food products this value is in the range from 0.05 to 10.0 mg/kg of product [2]. Lead is widespread in natural substances, and almost everyone is exposed to this toxic heavy metal in different ways, either in the workplace or in homes[3].

Spectrophotometric methods are one of the greenest analytical methods because of the consumption of low solvent volumes and instrumental hazards [4]. On the other hand, according to the 12 principles of green analytical chemistry (GAC), a decrease in time and cost in the simultaneous determination of analytes can be an effective step toward the goals of GAC [5].

Chromazurol S is used in the spectrophotometric determination of trace amounts of Al, In, Pd, Be, Cd, Cu, Fe, Hf, Zr, Mg, Sc, Th, Ti, U(VI), Y [4, 12, 13]. It has not been used for the determination of lead[6].

Simple and sensitive spectrophotometric and spectrofluorimetric methods have been developed for the determination of hydrochlorothiazide (I), indapamide (II) and xipamide(III) based on ternary complex formation with eosin and lead (II) in the presence of methylcellulose as surfactant[7].

Lead (+2) was selectively adsorbed on a solid phase extraction (SPE) gel (molecular recognition technology, MRT), quantitatively extracted, and spectrophotometrically determined as the Pb(II)-PAR (4-(2-pyridylazo)-resorcinol) complex. The linear range was 0.01 to 0.75 mg L^{-1} and the detection limit was 6.4 $\mu\text{g L}^{-1}$. The MRT-SPE allows selective Pb(II) extraction from complex ion-rich matrices, which is difficult with other techniques. Interference from common matrix ions such as Fe^{2+} , Ni^{2+} , Cu^{2+} or Co^{2+} is minimized[8].

This work investigates the applicability of the anionic complex $[\text{NBu}_4]_2[\text{Zn}(1,3\text{-dithiol-2-tione-4,5-dithiolate})_2]$ on the simultaneous spectrophotometric determination of transition metals. Principal Component Regression was used in the data analysis. This method was used to determine Hg^{2+} , Cu^{2+} and Pb^{2+} in water solution, at $t=0, 20$ and 60 min of reaction[9].

2. Experimental part

Materials. A 0.1 M stock solution of $\text{Pb}(\text{NO}_3)_2$ was prepared by dissolution of a weighted portion of chemically pure $\text{Pb}(\text{NO}_3)_2$ in 0.1 HNO_3 and was standardized by

chelometric titration. Chroma zuro S (CAZ) was of analytical grade; it was prepared by dissolving a precisely weighted portion of the substance in water. Water was purified according to. Aqueous solutions of the reagents used were chemically pure or analytical grade. All working solutions were prepared by diluting the stock solutions before the experiment.

Methods. Absorption spectra of the solution were recorded on SF46 and SPECORD UV VIS spectro photometers. The transmittance of ionexchanger granules in water was measured on KFK3 in a 0.1 cm cuvette at the optimal wavelength (λ_{opt}), using the ion exchanger as the reference. The acidity of the solutions was controlled with an I160 potentiometer with a glass electrode.

Synthesis of ABHPT. Preparation of the modified ionexchanger for work.

The AB17 \times 8 anion exchanger (AB) with 0.30 mm grains were prepared for work according to the recommendations of [16, 17]: 10 g of AB were soaked in saturated solution of NaCl and left for a day. Then, the adsorbent was separated, and it was washed firstly with 0.5 M HCl until its negative reaction to iron (III) and then with water until its neutral reaction. The prepared ABCI was modified with aqueous solutions of CAZ. To do so, ~0.1 g of the colorant was dissolved in 150 mL of water, and then 10 g of airdry ABCI was introduced. Solid phase was separated by filtration, washed with water, and dried. The obtained solid phase reagent was in the form of transparent pink granules, which transmitted up to 50% of the light at 520 nm and could be kept for a long time in water in carefully closed dark glass containers.

Procedure for the adsorption of lead onto the modified anionexchanger. A 50.0mL portion of the solution of a lead salt was introduced into 150mL measuring beakers, and the required acidity was created using HNO₃ and NaOH; 0.3 g of a modified adsorbent were introduced, after which the solution was agitated with a magnetic stirrer and subjected to ultrasonic treatment (US).

The dependence of lead adsorption on the acidity of the medium was studied at constant concentrations of the lead salt and CAZ and different values of pH. A series of 2.0×10^{-5} M Pb(NO₃)₂ solutions with a volume of 50 mL and predetermined pH values was prepared. Then, the experiment was performed according to the procedure for the adsorption of lead onto modified anion exchanger.

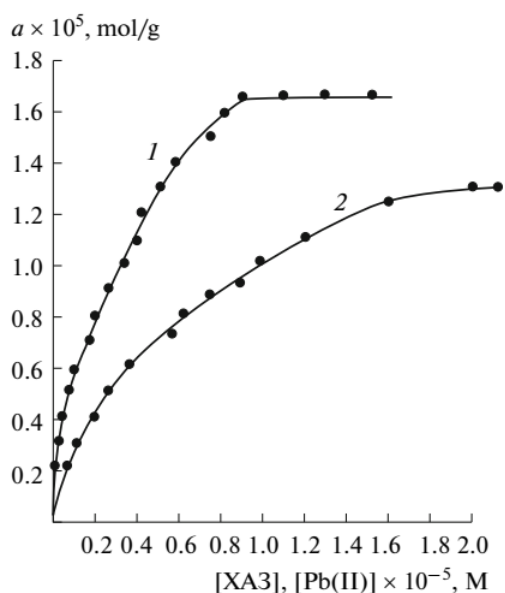


Fig. 1. Adsorption isotherms of CAZ onto AB (1), Pb (II) onto CAZ-AB (2). 1—pH 6, $\tau_{\text{agitation}} = 30 \text{ min}$, US—2 s; 2—pH 5, $m_s = 0.3 \text{ g}$, $V = 50 \text{ mL}$, $\tau_{\text{agitation}} = 20 \text{ min}$, $\tau_{\text{equilibration}} = 1 \text{ hour}$, $l = 0.1 \text{ cm}$, reference sample—AB.

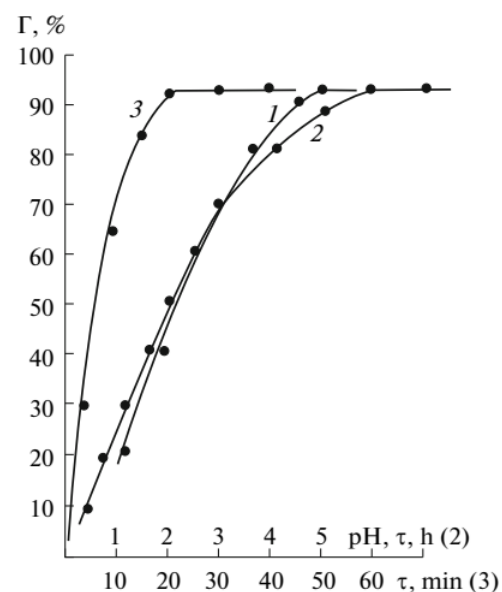


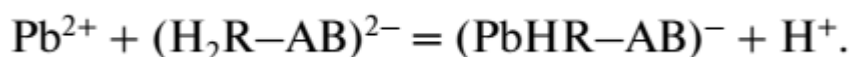
Fig. 2. Dependence of Pb (II) adsorption on pH (1) and τ (2, 3). 1— $m_s = 0.3 \text{ g}$, $V = 50 \text{ mL}$, 600 nm , $\tau_{\text{agitation}} = 20 \text{ min}$, $\tau_{\text{equilibration}} = 1 \text{ hour}$, $l = 0.1 \text{ cm}$, reference sample—AB; 2— $m_s = 0.3 \text{ g}$, $V = 50 \text{ mL}$, 600 nm , pH 5, $l = 0.1 \text{ cm}$, reference sample—AB; 3— $m_s = 0.3 \text{ g}$, $V = 50 \text{ mL}$, 600 nm , pH 5, $\tau_{\text{agitation}} = 20 \text{ min}$, US—2 s, $l = 0.1 \text{ cm}$, reference sample—AB.

RESULTS AND DISCUSSION

As shown in Fig. 1 (curve 1), the isotherm of CAZ adsorption on the anionexchanger belongs to the L type. The maximal capacity of the anionexchanger towards the modifier is a max = $16.7 \mu\text{mol/g}$; $k = 9.99 \times 10^5 \text{ L/mol}$. Under optimal conditions for the extraction of lead (II), CAZ, which is immobilized due to the ion exchange, can exist in the form of $\text{H}_2\text{R}_3\text{-AB}$. Assuming that the immobilization of CAZ occurs due to the deprotonated sulfo group, its solidphase analytical form can be presented as $(\text{H}_2\text{R-AB})^{2-}$.

To determine the optimal conditions for interaction between lead and solidphase CAZ, dependence of lead adsorption on the pH of the solution was investigated. The maximal recovery of lead (90%) is achieved at pH 5. For this reason, the further investigations in the solidphase system were carried out at this value of pH (Fig. 2). According to the calculations and taking into account literature data, at pH 5 lead was considered to be in the form of Pb^{2+} . Fig. 2 presents the results of the investigation of the extraction velocity on the time for which the phases were in contact. An adsorption equilibrium is established within 1 hour. Ultrasonic treatment for 2 s allows the reduction of the time for the establishment of equilibrium down to 20 min and an increase in lead recovery up to 92%.

Taking into account the topics discussed above and the results of the data treatment with the slope method, the formation of a complex with a 1 : 1 ratio of the components can be assumed in the solid phase according to the following scheme:



The investigation of the dependence of lead recovery on the volume of the solution and the mass of the adsorbent has shown that concentrating

from $V = 50.0\text{--}500.0$ mL is possible ($m = 0.3$ g). In this case, the distribution coefficient is $D_{max} = 1.50 \times 10^4$ mL/g. After subjection to US $D_{max} = 1.77 \times 10^4$ mL/g. The average value of the conditional stability constant is $\log \beta_{cond} = 5.49 \pm 0.04$ at $\alpha = 0.1$.

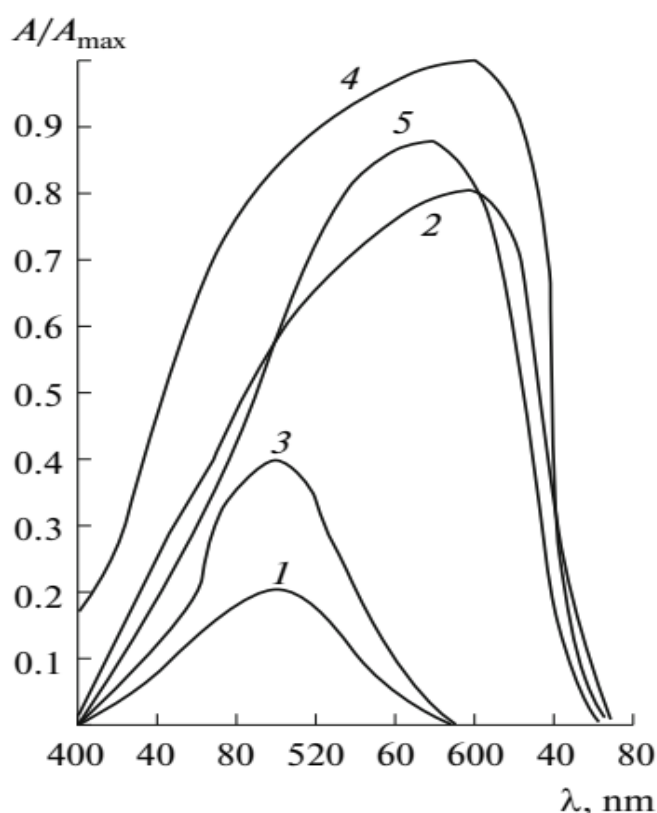


Fig. 3. Absorption spectra of CAZ-AB (1, 3), Pb-CAZ-AB (2, 4) and Pb-CAZ (5). 1—pH 6; 2—pH 5, $m_s = 0.3$ g, $V = 50$ mL, $\tau_{agitation} = 20$ min, $\tau_{equilibration} = 1$ hour, $l = 0.1$ cm, reference sample—water; 3—pH 6; 4—pH 5, $m_s = 0.3$ g, $V = 50$ mL, $\tau_{agitation} = 20$ min, US—2 s, $l = 0.1$ cm, reference sample—AB; 5—pH 5, 2×10^{-5} M Pb, 4×10^{-5} M CAZ, $l = 1$ cm, reference sample—water.

The experiment was carried out as follows. Three samples of water were collected; the volume of each sample being 1.0 L. In two samples, standard additions of $Pb(NO_3)_2$ were introduced. Then each of the samples was divided in two 500.0 mL parts and pH 5 was created. In the first portion of water, 0.3 g of solid phase CAZ was introduced; then it was agitated with a magnetic stirrer for 15–20 min and subjected to US for 2 s; after which the granules were separated with a pipette, and transferred to the second portion of the same sample, where similar procedures were performed. The granules were separated, put into a cuvette ($l = 0.1$ cm) and their absorbance at maximal ratio $\epsilon K/\epsilon R$ ($\lambda_{opt} = 600$ nm) was measured, using the anion exchanger as the reference. The experiment with the second sample was carried out in a similar way.

The lead concentration was determined from the calibration curve or in the graphical variant of the standard addition method. The accuracy of the obtained result was checked by the standard addition method. The agreement between the results, obtained using the new procedure

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-3, ISSUE-5

and the standard one, confirms their reliability. The results of determining lead and their statistical treatment are presented in the Table.

Determination of lead in drinking water (Kiev) using (A) the proposed method (A) and (B) polarographic analysis after evaporation (P = 0.95; n = 3).

Tested solution	Added Pb, μg	Found Pb, μg (A)	RSD, %	Found Pb, μg (B)	RSD, %
Sample-1	-	5.0 ± 0.3	2	5.0 ± 0.6	5
Sample-2	5,0	10 ± 1	4	10 ± 1	5
Sample-3	50,0	55 ± 10	7	55 ± 18	6

Thus, a procedure for the solidphase spectrophotometric determination of lead using CAZ has been developed. It is characterized with satisfactory accuracy and reproducibility of the results.

References

1. Polyanskii, N.G., *Analiticheskaya khimiya svintsa (Analytical Chemistry of Lead)*, Moscow: Nauka, 1986.
2. GOST (State Standard) 287482: *Drinking water. Hygienic requirements and quality control*, Moscow, 1985.
3. Shayesteh, T.H., Khajavi, F., Khosroshahi, A.G. *et al.* Development and validation of a novel, simple, and accurate spectrophotometric method for the determination of lead in human serum. *Environ Monit Assess* **188**, 7 (2016). <https://doi.org/10.1007/s10661-015-4921-8>
4. Zarei, A., Mardi, K. Development of Derivative Ratio Spectrophotometric Method for Simultaneous Determination of Copper β -resorcyate, Lead β -resorcyate, and Lead Oxide in Double base Propellants. *J Anal Chem* **77**, 1247–1255 (2022). <https://doi.org/10.1134/S1061934822100161>
5. Gałuszka, A., Migaszewski, Z., and Namiesnik, J., *TrAC, Trends Anal. Chem.*, 2013. vol. 50, p. 78.
6. Omar, M.A. Spectrophotometric and Spectrofluorimetric Determination of Certain Diuretics Through Ternary Complex Formation with Eosin and Lead (II). *J Fluoresc* **20**, 275–281 (2010). <https://doi.org/10.1007/s10895-009-0551-2>.
7. Rahman, I.M.M., Furusho, Y., Begum, Z.A. *et al.* Determination of lead in solution by solid phase extraction, elution, and spectrophotometric detection using 4-(2-pyridylazo)-resorcinol. *cent.eur.j.chem.* **11**, 672–678 (2013). <https://doi.org/10.2478/s11532-013-0203-x>.
8. Tsuchiya, M., Iwanami, Y. Spectrophotometric Determination of Cobalt(III) with 2-Diethyl-amino-5-nitroso-1,4,5,6-tetrahydropyrimidine-4,6-dione. *ANAL. SCI.* **8**, 869–872 (1992). <https://doi.org/10.2116/analsci.8.869>.
9. Barreto, W.J., Barreto, S.R.G., Ruiz, L.D. *et al.* Simultaneous Spectrophotometric Determination of Hg^{2+} , Pb^{2+} , and Cu^{2+} by Zn(dmit) Using the Multivariate Calibration Method. *ANAL. SCI.* **21**, 549–552 (2005). <https://doi.org/10.2116/analsci.21.549>.
- 10.

SCIENTIFIC BASIS OF DEVELOPMENT OF CREATIVE SKILLS OF
PRIMARY SCHOOL STUDENTS

Azimova Mukhaye Barotovna

Bukhara State University, associate professor

ABSTRACT. The article presents the practical significance of fine arts in the development of artistic and creative abilities of schoolchildren, research and scientific views on this subject of famous artists-teachers.

Key words: creativity, ability, creative activity, methodology, image, school of painting, academic training, teacher-artist.

The system of training and professional production of the future artist-pedagogue should be on a clear and scientific basis. Implementation of primary education and training in this direction on the basis of comprehensive schools. In the school, first of all, to study the voluntary obedience of students to this system and textbook methods, scientific knowledge acquisition, methodical work, precision and practical experience of artistic creativity. we pay attention. The experiences of artists who created in ancient times and inherited great works of art from themselves are based on the art of young people in the modern art system, in various art schools. For this purpose, an artist who wants to learn fine art and who has just entered the world of fine art, first of all studies and analyzes the classic works of artists who created in ancient times, and based on his knowledge and vision, he creates his own personal creative work. it is necessary to choose a path and develop creative development.

Among the famous artists and theorists of modern European Art Academies, Leonardo da Vinci, Micheladello Buorotti, Peter Micheladello Santi, Al. Scientific and creative works of Dürer and others can be cited. The creative and scientific works of I. Ye. Repin, N. Savrasov, Pavel Chistyakov, who created in the 19-20 centuries, are among the representatives of Russian fine art. Uzbek scientists B.B. Baymetov, S.S. Abdullayev, B.B. Azimov, N.Kh. Tolipov, Q.Q. Qasimov, R.Kh. Khasanov and others took part. The development of any educational subject is directly related to the historical process. The theoretical rules of academic painting in the 17th century are an image expressed in the paintings of Renaissance artists. In the XVIII century, the theory of academic teaching was introduced, and now it is implemented in new practical conditions.

Active research on the comprehensive solution of educational issues in the theory and practice of academic painting in the 19th century. Education of students in the field of art school is not only to equip them with knowledge and academic school, but also to participate in creative activities. The unique school characteristics of teaching fine arts in primary grades, first of all, the content of education in these grades depends on the youth characteristics and psychology of young children, their opportunities, their existing knowledge, needs, and abilities. It is known that children's passion for visual activity and painting begins very early. It is known from history since 2-3 years old. It is characteristic that children like reading and drawing more than that. the thing is that the pictures they draw are very short, they finish any picture in 1-2 minutes, at most 4-5 minutes. Although children's drawings are not literate, they depict a scene, an event or an object according to their abilities, documenting characteristic characters. They do not like to send goods because of the certain burdens associated with working with paints. But different products create a big load on things painted with children. They quickly come back from their work without the pictures coming out well. In such conditions, it is not without benefits for the

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-3, ISSUE-5

teacher to provide quick help to the children and try to raise their mood. Another feature from the characteristic movements of elementary school students is the movements to simplify their drawings. They depict the front view of some objects (man, book, watch, briefcase), close-up of some objects (car, crows, birds, fish, flag, etc.), and others from above (butterfly, leaf, dragonfly, beetle, etc.). The main reason for this is that these children do not yet understand light, perspective reduction and software. There is another aspect of children's creativity, which is not to depict images (items) blocking each other (or partially). Because children always perceive as a whole. These features of the above-mentioned visual activities are connected with the fact that children's thinking is concrete, figurative and emotional. Now, if we are going to talk about the specific features of the methodology of conducting art classes in safety classes, it should be arranged in four ways: 1. Perception. 2. Artistic construction. 3. Representation according to nature (painting according to nature, sculpture according to nature). 4. Composition activity. Before seeing the image, the beginning artist creates an imaginary image of the image that he wants to put on paper at each stage: when the idea of the shape of the object, its characteristics is not yet clear, he is limited to a general schematic form, after that, As the teacher observes and re-understands what the teacher explains, he gets closer to the real and emotional-meaningful expression of the visible nature. Today, some pedagogues do not pay attention to seeing and analyzing the nature in the image. They do not use such a method, they point to the fact that "schematism" and legal regulations in its influence on artistic creation hinder artistic development. They are opposed to the academic depiction, simplifying the complex form, opposing the schemes, rules, they believe that depicting in methodical stages in the depiction is an obstacle to creative development. Over the centuries, art schools have accumulated a great pedagogical experience in the field of developing the creative abilities of young artists.

The more scientific knowledge an artist has, the more perfect his assessment of a realistically depicted work, the richer the level of his technical skill, the more expressive and bright the product of his creative activity. The principle of scientism in the art school as an active factor in the development of creative abilities consists first of all in mastering the system of scientific knowledge, which helps the beginning artist to correctly understand the law of seeing natural phenomena in their true form, thereby creating realistic art. It also helps to master drawing techniques. This was well understood by artists-pedagogues of the Ancient Greek Renaissance and European Academies in the XVII-XIX centuries. According to historians, there was a sign on the door of the Sion art school: "People who do not know the rules of painting are not allowed here." The great painter and pedagogue of the English Academy of Art, Joshua Reynolds, said: "Our art is not only a gift given by God, but it is not a mechanical craft, it is based on exact sciences." As we mentioned earlier, the work of the artist in the school environment takes place in solving a specific problem, which arouses aesthetic demands in him, and at the same time arouses a demand seeking satisfaction with natural power.

The solution to the given problem is easy and simple, if it does not go beyond the scope of knowledge that has been solved several times before and is well known to the student. In short, the writer expresses his attitude towards his country, Motherland, and Mother Nature through the depiction of natural scenery. The image of nature is one of the components of the plot, and it performs tasks such as increasing the ideological and aesthetic power of the work, speeding up or slowing down the development of the plot, and revealing the inner world of the

hero. With this, the landscape helps to more fully express the characters participating in the artistic work.

Literature

1. Adizov B.R. Boshlang'ich ta'limning ijodiy tashkil etishning nazariy asoslari: pedagogika fanlari doktori ilmiy darajasini olish uchun yozilgan dissertatsiya.–Т., 2003
2. Сулаймонова, М. Б., Азимов, Б. Б., Азимова, М. Б., & Тухсанова, В. Р. (2021). ДОСТИЖЕНИЕ ЭСТЕТИЧЕСКОЙ И НРАВСТВЕННОЙ ЗРЕЛОСТИ ОБУЧАЮЩИХСЯ ИЗОБРАЗИТЕЛЬНОМУ ИСКУССТВУ. *European science*, (3 (59)), 53-56.
3. Азимов, Б. Б., Азимова, М. Б., Тухсанова, В. Р., & Сулаймонова, М. Б. (2021). ПЕДАГОГИЧЕСКИЕ, ПСИХОЛОГИЧЕСКИЕ И МЕТОДИЧЕСКИЕ ОСНОВЫ ПРОВЕДЕНИЯ БЕСЕД ОБ ИСКУССТВЕ. *European science*, (2 (58)), 38-40.
4. Азимова, М. Б. (2016). Роль композиции и цвета в холодном батике. *Молодой ученый*, (12), 959-961.
5. Азимова, М. Б., Азимов, Б. Б., & Тухсанова, В. Р. (2021). ИСКУССТВО РОСПИСИ ТКАНЕЙ. *European science*, (2 (58)), 41-43.
6. Авезов, Ш. Н., Жумаев, К. Ж., Азимова, М. Б., & Ишанкулов, Ш. Ш. (2021). ИЗУЧЕНИЕ ПРОИЗВЕДЕНИЙ ИСКУССТВА. *European science*, (2 (58)), 20-22.
7. Азимова, М. Б., & Авезов, Ш. Н. (2017). Костюмы в миниатюрах Мавераннахра. *Евразийский научный журнал*, (2), 373-378.
8. Азимова, М. Б. (2016). Искусство росписи тканей. *Евразийский научный журнал*, (6), 478-481.
9. Азимова, М. Б., & Ибадуллаева, Ш. И. (2017). XIX аср охири-XX аср бошларида Бухоро аҳоли турар жойлариинтерьер беагаи (Файзулла Хўжаев уй-музейи мисолида). *Евразийский научный журнал*, (2), 379-383.
10. Тухсанова, В. Р., Азимов, Б. Б., & Азимова, М. Б. (2021). ИЗВЕСТНЫЕ МАСТЕРА ЗОЛОТОГО ШИТЬЯ УЗБЕКИСТАНА. *European science*, (2 (58)), 65-68.
11. Omonov D. A. O. G. L. Tasviriy san'at yo 'nalishi talabalarini axborot texnologiyalari orqali o'qitish usullari //Oriental renaissance: Innovative, educational, natural and social sciences. – 2022. – Т. 2. – №. 10-2. – С. 36-40.
12. Shodiyeva S. B. THE OLDEST FINE AND APPLIED ART OF UZBEKISTAN // " ONLINE-CONFERENCES" PLATFORM. – 2022. – С. 292-295.
13. Umedullaevna S. S. Problems of Computer Technology Integration With Drawing //Middle European Scientific Bulletin. – 2021. – Т. 9.
14. Ibadullaeva S. I. The Role of Art in the Development of Junior Schoolchildren //European Journal Of Innovation In Nonformal Education. – 2022. – Т. 2. – №. 2. – С. 130-133.
15. Avliyakov, M. M., Rafieva, N. A., & Shodieva, S. B. (2022). Methods of organizing independent work of students. *Journal of Positive School Psychology*, 8721-8727.
16. Ибадуллаева, Ш. И., & Амонова, Р. Ж. К. (2022). Коммуникативные Основы Художественной Культуры. *Miasto Przyszłości*, 28, 169-173.
17. Аминов, А. Ш., Мамурова, Д. И., Маматов, Д. К., & Собирова, Ш. У. (2021). Проблемы организации самостоятельной работы студентов в высших учебных заведениях. *European science*, (2 (58)), 77-79.
18. Djalolovich, Y. N., Kodirovich, M. D., Ruziboevich, S. A., & Islomovna, M. D. (2021). Improving the professional training of fine art teachers. *European science*, (2 (58)), 44-46.
19. Kodirovich, M. D., & Barotovna, A. M. (2021, January). The soul of the artist. In *Euro-Asia Conferences* (Vol. 1, No. 1, pp. 121-123).



Kayumov Ibrahim Fayzullayevich

Bukhara State University

Senior lecturer at the Department of Musical
Performance and Culture

kaumovibrohim50@gmail.com

Abstract: This article attempts to show that one of the origins of the emotionality of musical art is its ability to model the essential properties of an emotional phenomenon in the sound itself. As a methodological basis for the study of this problem, we have chosen the concepts of classical psychologists - the unified theory of mental processes by L.M. Vekker and the theory of emotions by V. Wundt.

Keywords: music, emotion in music, emotion properties, musical and sound objectification of emotion.

In a number of works, musical emotions are explored in a broad context - in the context of musical activity, the psyche, musical pedagogy, or through the prism of musicology and musical art. In foreign science, the emotional component of musical consciousness is the cornerstone of research related to musical content, as well as musical perception, thinking and activity.

Despite the fact that in musical literature there are opuses without opposition "relief - background", as indicated by E.A. Ruchevskaya [19; 57], relief-background relations are generally inherent in musical-sound matter. As you know, they manifest themselves at various levels of music organization. For example, at the level of homophonic texture, these relations declare themselves as melody and accompaniment; at the level of compositional drama - as "main and secondary sections" at the level of melody - as a layer of foundation and an ornamentation layer [2; 68-126]. In this regard, it can be assumed that the listener's distinction between relief and background is one of the factors of the emotional impact of music.

As shown by psychological studies carried out back in. Moreover, in emotion there is a special connection between the subject (associated with the experience itself) and the cognitive (associated with the object of emotion) elements. This connection manifests itself as the dependence of the experience on the cognitive (informational) element. In other words, the experience (its nature, intensity) depends on the characteristics of the sensory system - on the cognitive information that the subject acquires upon contact with the object of emotion, on how the subject of emotion is reflected at the sensory-perceptual level of the psyche. If the position of the two-component emotional gestalt is projected onto music, then the dependence of the experience on the level of development of musical hearing becomes obvious.

The ambiguity of emotions is expressed in the opposite nature of the experience: in the existence of positive and negative emotions, which are found at any level of the organization of the emotional phenomenon and which are based on elementary feelings of pleasure and displeasure.

still in. Wundt, in his simple but very instructive experiments, revealed the regularities of the genesis of these elementary emotional feelings in connection with the alternation of tension

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-3, ISSUE-5

and discharge (relaxation), excitement and calming that arise under the influence of changes in the velocity of metronome strikes. At the same time, the researcher drew attention to the fact that neither tension nor excitement (however, like their opposites) are uniquely associated with pleasure or displeasure. It can be assumed, and there are grounds for this, that the oppositionality of a major and a minor (two musical modes) is a reflection of the ambiguity of emotion. Exploring this opposition.

L.A. Mazel wrote: "Since the chord is felt as unity and the tonic of the fret has become a consonant triad, which is possible in two variants, these variants have become the discriminator of frets and there were only two frets. But the opposition in question was formed together with the entire system of harmonic thinking, with its meaningful (aesthetic-psychological) meaning and social purpose. Since the juxtaposition of joy and sadness, light and shadow, good and evil (and not earthly and heavenly) was relevant for the musical and artistic worldview that arose under the influence of Renaissance ideas, the formal opposition of the two modes formed together with just such a circle of emotional and semantic oppositions..." (my italics - NG) [11; 128]. At the same time, the scientist reveals the prerequisites of oppositionality and the triads themselves [11; 126].

D. Cook proposed to consider as pairs of opposites (in emotional and figurative terms) some typical melodic turns for major and minor. As such, he investigated the moves on various stages of frets (such moves can be conditionally called "lado-lilac intonemes", i.e., original musical words). So, for example, a move along the stable steps of a major with a clear articulation in an ascending movement is interpreted by him as an intonation of an "active, affirmative" outward "feeling of joy" [23; 115]. And the course along the stable minor steps with clear articulation in the upward movement is like the intonation of protest, tragedy, masculinity and firmness of spirit in the struggle (with fate, with misfortune, with the enemy) [23; 122-129]. If a move along the foundations of a major with smooth articulation generally embodies optimism, "joyful consolation" or "passive joy" (with a downward orientation), then the same move in a minor, according to the scientist (and this opinion is confirmed by numerous examples), expresses sadness, suffering, "passive mental pain", and in the downward movement - hopelessness, hopelessness [23; 130-143].

Generality does not only apply to the emotional structure as a whole,

Musical and artistic emotions always include a positive characteristic (generated, for example, by the alternation of excitement and calm, tension and relaxation), and therefore acquire a certain greater generality of the subject component, which is naturally compensated by the concreteness of the object-subject component associated with the sound form of the artwork itself. If this is taken into account, it becomes clear that any element of the musical whole must be adequately heard. And that is why the well-known principle of "a little bit" is so important in art, suggesting a subtle distinction between the features of the artistic form. As such, in music, as is known, the entire "musical-sound body" of the work acts.

The above material, concerning the generality of emotion, testifies in favor of the need to develop musical hearing not only for professional musicians, but also for ordinary listeners. At the same time, and it should be mentioned, excessive attention in the perception of music to its "sound body" (and this generates concreteness of the cognitive component) necessarily leads to a generalization of the emotional component. Indirectly, this was proved in experiments conducted by L.J. Dorfman [9; 201-213].

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-3, ISSUE-5

Turning to the analysis of the temporal-spatial features of emotions, it should be noted that all the characteristics of emotional processes are based on a temporary organization. This was clearly reflected in the experiments of V. Wundt, based on various (in terms of rhythm) beats of the metronome and causing the subjects a corresponding sensual tone of pleasure or displeasure associated with tension and relaxation, arousal and calming. In particular, the researcher demonstrated that when the speed of the metronome beats changes, not only states of pleasure and displeasure, tension and discharge, arousal and calm arise, but also their relationship is rebuilt [7; 589], [8; 101-104]. It should be noted that V. Wundt described in great detail all the main characteristics of emotional phenomena, revealing the significance and role of their rhythmic-temporal and rhythmic-motor organization.

However, in the organization of emotional processes, temporal components are organically connected with spatial components. And this can be considered an absolutely proven fact. "Different researchers," writes L.M. Vekker, "used different methodological techniques, studied different emotional states, but all somehow came to the conclusion that temporal and spatial characteristics are a necessary sign of the internal structure of emotional states and that the initial structure of emotional units is the temporal organization on the basis of which spatial syntheses are formed. These basic empirical conclusions can be considered confirmed by a fairly wide array of experimental and life facts" [6; 415].

In music, the connection of time (rhythm) with space (height) is revealed with full evidence. The musical sound itself, being a complex phenomenon, is a system of vibrations - movements in a certain rhythm. Hence, the pitch of the sound can be considered as a reflection of movement. Therefore, the rhythm permeates all levels of musical and sound organization. It reveals itself not only in the elements of temporal organization, such as rhythmic pattern, meter, tempo, musical syntax, composition, but also in the spheres of pitch, fret, harmony, as well as timbre and dynamics.

It is also noteworthy that for the emergence of emotional phenomena based on musical and auditory sensations, not only those means that are able to provoke sensations coming from the muscles of the body are important, but also those that carry, first of all, information from the outside. The latter include, for example, timbre. It is not by chance that V. Wundt analyzed the emotionogenic capabilities of various musical instruments. The scientist also considered consonances and dissonances as modal embodiments of the corresponding emotional states [7; 497-507]. There are also a variety of perceptions (visual, tactile, temperature) that arise during the perception of music, the nature of which lies in synesthesia and which contribute to the holistic polymodal picture of musical emotion.

Note that musical emotion reveals a deep connection with the elementary feelings discussed above, since they (these feelings) are the physiological basis of emotional experiences. Moreover, the same feeling can be included in the structure of a variety of musical emotions. For example, excitement is characteristic of both musical modeling of joy and modeling of anger or enthusiasm. And relaxation (relaxation) is characteristic not only of musical images of sadness, but also of contemplation, pacification. Therefore, with the help of the same musical means, music can simulate a variety of, and sometimes diametrically opposite emotions.

Literature:

1. Becker L.M. Psychological processes. In 3 t. t. 3: Topic. Experience. Action. Conscience. L.: Leningrad University Publishing House, 1981.
2. Becker L.M. Psyche and reality: a unified theory of mental processes. M.: Sense, 1998.
3. Wundt V. Fundamentals of physiological psychology. M.: H.A. Abrikosov, 1880.
4. Wundt V. Essay of psychology. St. Petersburg: Edition F. Pavlenkova, 1896.
5. Каюмов И. Ф. Психологические истоки музыки //Academy. – 2020. – №. 11 (62). – С. 56-58.
6. Каюмов И. Ф., Жураева М. Место музыки в воспитании духовно-нравственных качеств учащихся 5-7 классов общеобразовательных школ //Проблемы педагогики. – 2020. – №. 3 (48). – С. 17-19.
7. Kayumov I. F. Values and aesthetic factors in the formation of culture and art //International Engineering Journal For Research & Development. – 2020. – Т. 12. – №. 1. – С. 10.
8. Fayzullaevich Q. I. Culture and art values and aesthetics in formation factors. – 2021.
9. Kayumov I. F. XALQ QO'SHIQLARI ASOSIDA BOSHLANGICH SINF O'QUVCHILARINING NUTQIY MALAKASINI O'STIRISH USULLARI //Scientific progress. – 2021. – Т. 1. – №. 5. – С. 635-640.
10. Каюмов И. Ф. Санъатнинг турлари ва уларнинг тарбиявий аҳамияти //Science and Education. – 2022. – Т. 3. – №. 1. – С. 849-854.
11. Kayumov, I. F. (2021). Formation of composing art in uzbek music. *Researchjet journal of Analysis and Inventions*, 2(12), 61-65.
12. Каюмов И. Ф. ВАЖНОСТЬ ВНЕКЛАССНЫХ ЗАНЯТИЙ В РАЗВИТИИ МУЗЫКАЛЬНЫХ СПОСОБНОСТЕЙ //Academy. – 2021. – №. 3 (66). – С. 51-53.
13. Каримов О. И. Значение специфических особенностей и воспитательных возможностей узбекских народных инструментов //Academy. – 2020. – №. 3 (54). – С. 78-80.
14. Karimov O. J. I. Tanbur sozining paydo bo 'lishi va milliy cholg 'u ijrochiligidagi o 'rni //Scientific progress. – 2021. – Т. 1. – №. 5. – С. 767-771.
15. Каримов О. И. Профессиональные музыкальные взгляды будущего учителя музыки //Вестник науки и образования. – 2020. – №. 22-2 (100). – С. 17-20.
16. Каримов О. И. Садриддин Айни-знаток и любитель народной музыки //Вопросы науки и образования. – 2021. – №. 13 (138). – С. 21-24.
17. Ходжаев Р. Р., Каримов О. И. Подготовка будущих учителя музыки. Тренировка на скрипке для рефлексии мышц //Science and Education. – 2022. – Т. 3. – №. 2. – С. 1419-1423.
18. Каримов О. И. Бўлажак мусика ўқитувчиларида маънавий-ахлокий сифатларни шакллантириш //Scientific Impulse. – 2022. – Т. 1. – №. 2. – С. 377-381.
19. Каримов О. И., Шарипова С. Ш. К. Место искусства музыки в формировании идеальной личности человека в дошкольном заведении //Science and Education. – 2022. – Т. 3. – №. 1. – С. 692-698.

20. Islamovich K. O., Shukhrat S. S. The Role of Music in Forming a Perfect Human Personality //Miasto Przyszłości. – 2023. – Т. 33. – С. 72-75.
21. Камолов Ш. Х., Бомуродов Ш. Ш. Педагогический характер студенческой молодежи и психологический подход //Academy. – 2021. – №. 3 (66). – С. 60-62.
22. Камолов Ш. Х. Приёмы и методы преподавания музыки в общеобразовательной школе //Science and Education. – 2022. – Т. 3. – №. 1. – С. 602-607.
23. O'quvchi-yoshlarni mumtoz musiqa asarlari va xalq og'zaki ijodi namunalari bilan tanishtirishning ahamiyati SX Kamolov, Scientific progress, 2021
24. TALABALARDA MUSTAQIL TA'LIMNI TASHKIL ETISH Sh/ KAMOLOV, PEDAGOGIK MAHORAT. Ilmiy-nazariy va metodik jurnal. 2022, Maxsus son, 2022



Взгляды восточных мыслителей на узбекскую народную музыку.

Старший преподаватель

Рамазонава Угиллой Холмуродовна.

Бухарский Государственного Университета
кафедры Музыкальное исполнение и культура

oramazonova@gmail.com

АННОТАЦИЯ: В данной статье описаны уникальные особенности традиционного пения.

КЛЮЧЕВЫЕ СЛОВА: Традиционный певец, музыка, певец, метод, исполнение, мастерство.

ABSTRACT: This article describes the unique features of traditional singing.

KEY WORDS: Traditional singer, music, singer, method, performance, skill.

Обучение молодого поколения, подрастающего поколения, а точнее, привитие его мышлению произведений композиторов и национальных песен, созданных на основе статусов и их народных песен, с каждым днем становится все более важным. Как отметил Президент, не зря говорили, что если мы хотим продвигать искусство и культуру, то, прежде всего, мы должны продвигать искусство классического статуса.

В музыковедении народов Средневековья Ближнего и Среднего Востока статусным представляет, главным образом, понятие аккордовых структур и создаваемых в соответствии с ними мелодий и песен. В ранний период макамы развивались в разрозненных формах, а в XIII веке Сафуддин аль-Урмави превратил их в теоретическую систему, состоящую из двенадцати основных макамов.

После XVII века система двенадцати статусов пришла в кризис, и на ее основе стали возникать народы Востока. В частности, в середине XVIII века в городе Бухаре, одном из крупных культурных центров Средней Азии, в творческом исполнении придворных музыкантов, певцов и композиторов сформировался Шашмакам, его еще называли Бухарским статусом, Бухара Шашмакам.

Шашмакам, созданный на основе музыкального богатства узбекского народа, в свою очередь оказал эффективное влияние на развитие современной музыки. Композиторы и композиторы Узбекистана продолжают широко использовать Шашмакам в своих произведениях.

Среди них М. Ашрафий, М. Бурхонов, К. Джаббаров, Т. Джалилов, Д. Зокиров, С. Калонов, Ю. Раджаби, Т. Содиков, Ф. Содиков, М. Тоджиев, О. Хотамов и другие добились значительных успехов в повышении потенциала статусов в песнях, романсах, хорах, симфониях и операх.

В 1972 году на студии «Узбектелефильм» под руководством Т. Акрамова был снят фильм «Шашмакам».

Историко-теоретические эстетические вопросы макама всесторонне изучаются музыковедами с далекого прошлого и по сей день.

В частности, в музыкальных трактатах средневековья приводятся аккорды и аккордовые структуры, характерные для восточной классической музыки, а также даны комментарии о построении звуковых линий и приемах, характерных для макамата и народной музыки.

В начале и середине XIX века появился специальный письменный сборник стихов о Шашмакаме - байозы.

Они включают в себя тексты газелей к макамам, показывают порядок рядов песен, в которых исполняются названия макамов и ответвлений.

Статусы Хорезма, записанные Камилем Хорезми и его сыном Мухаммадом Расулом с использованием линии танбура, также предоставляют ценную информацию о образцах Шашмакама XIX века.

В песнях Шашмакома, среди классиков узбекских и персидских поэтов Рудаки, Джамии, Лутфия, Наваи, Бабура, Физули, Хафиза, Амири, Надира, Зебуниса, Агахи и других, встречаются романтически-лирические, философские, наситатумуз, религиозные газели, а также , участвуют фольклорные квартеты.

Список использованной литературы:

1. Holmurodovna R. U. I., Oqila S. Makom art is a priority in the musical culture of Uzbekistan //Проблемы педагогики. – 2020. – №. 2 (47). – С. 87-88.

2. Kholmurodovna R. U., Obidovna R. M. Social norms, sanctions and personality //Вестник науки и образования. – 2020. – №. 21-2 (99). – С. 115-118.

3. Рамазонова У. Х., Сайфуллаева О. М. Развитие чувства ритма у детей //Проблемы науки. – 2021. – №. 1 (60). – С. 49-51.

4. Ramazonova U. X., Esanova M. J. An'anaviy xonandalik rivojida maqomlarning o'rni //Science and Education. – 2022. – Т. 3. – №. 1. – С. 496-501.

5. Raxmatova M. O., qizi Aslonova N. I. Today's Makom Traditions Spiritual Significance //EUROPEAN JOURNAL OF INNOVATION IN NONFORMAL EDUCATION. – 2022. – Т. 2. – №. 1. – С. 340-342.

6. Ramazonova O. K., qizi Mustaqimova G. G. Formation and Development of National Musical Traditions //european journal of innovation in nonformal education. – 2022. – Т. 2. – №. 1. – С. 336-339.

7. Рамазонова Ў. Х. ТАЛАБАЛАРДА МАЪНАВИЙ-АХЛОҚИЙ ТУШУНЧАЛАРНИ ШАКЛЛАНТИРИШ, ГУРУҲ БИЛАН ИШЛАШ ВА УНИ БОШҚАРИШ ТАМОЙИЛЛАРИ.

8. Kholmurodovna U. R. Formation of publicistic performing skills in singing. – 2021.

9. Рамазонова У. Х., Эсанова М. Ж. ПОДГОТОВКА МОЛОДЫХ ПЕВЦОВ К АНСАМБЛЕВОМУ ВЫСТУПЛЕНИЮ //Наука, техника и образование. – 2021. – №. 2-1. – С. 88-91.

10. Ramazonova U. H., Muhamadova M. The spiritual impact of traditional sound exercises on the minds of students. – 2022.

11. Ramazonova O. K., Shukurov M. Historical development of status. – 2022.

12. Features of Sound Recording in the Uzbek Singing Art

U H Ramazonova.Procedia of Philosophical and Pedagogical Sciences ISSN 2795 (546X),



Каримов Олимхужа Исломович

доцент кафедры музыкальное
исполнение и культура Бухарского
государственного университета
karimovolm1982@gmail.com

Аннотация: Статья посвящена роли махала в социально-культурной жизни узбекского народа. Также показывается основные функции махаллы в современном обществе Узбекистана.

Ключевые слова: махалла, семья, образование, культура, взаимосвязь, ремесло, функция, задачи.

В древности махалля (от арабского слова «местность») формировалась из объединения крупных патриархальных семей (по Авесте «нмана») (1.2010. 11) и составляла социально – экономическую основу общества. В системе управления зороастризма она (по Авесте «вис») (1.2010. 11) была основой развития родоплеменных отношений в обществе. Высший орган «вис» была «собрание народа» (по Авесте «ханжамана») (2.1989. 11-17) которую возглавлял глава рода (по Авесте «виспати») (1.2010. 11). В средние века в эволюции махаллы прослеживается феодальная – теократическая тенденция развития. Из налогооблагаемых доходных земель создаётся новые единицы феодальных общин. Для централизованного управления этих общин в крупных общинах создавали «минбари» (соборные мечети пятничных молитв) (3.1991.84-86).

Система образования махаллы в городах средневековья Средней Азии был связан с образованием разных ремесленных кварталов. В Бухаре, как и в других древних городах Узбекистана до наших дней существует кварталы «телпакузов-шапошников», «темирчи-кузнецов», «куллол-гончаров», «бофанда-ткачей» и т.д. До Октябрьского переворота 1917 года развития махаллы был непрерывным. Она обеспечивала социально-экономическую и культурную развитию народов Средней Азии. Махалля была фактором устойчивости в эпоху феодальных междоусобных войн.

В советское время махалля был заменен системой местных советов. Местные советы на основе идеи марксизма отвергали многовековые традиции самоуправления народа на местах. Они были своего рода «справочное бюро» для партийных органов и силовых структур государства. Через них был создан крупная коррупционная система непосредственного ограбления народа. В результате идеологического и бюрократического давления махалля окончательно потеряла свою общественную сущность самоуправления.

В годы независимости в Узбекистане на основе традиционных народных ценностей была создана система самоуправления махалля и их деятельность законодательно обосновано в 11-статье Конституции Республики Узбекистан. Для управления махалля на местах были сформированы центры Гражданского собрания. 1993 год была создана правовая основа системы местного самоуправления и благотворительный фонд «Махалля». В 2012 год в Узбекистане функционировал 1449 местных Гражданских

собраний. Глава местного самоуправления избирается из местных граждан с 21 год на 2,5 года. Функция махаллы в современном обществе Узбекистана прослеживается в следующих направлениях:

1. Социальная функция. Организация помощи малообеспеченным семьям осуществляется через обсуждение вопроса в комиссии из пяти человек. При этом доход семьи делится на количество членов семьи. Если средний показатель ниже минимальной зарплаты для этой семьи определяется материальная помощь в размере не ниже минимальной зарплаты и до триста процентов минимальной зарплаты. Кроме этого махалла осуществляет пенсионные, декретные платы и помощь инвалидам.

2. Экономическая функция. Помощь в организации местных экономических структур состоит из определения энергетических источников для торговых и производственных организаций, арендных платёж и суммы для благотворительных мероприятий.

3. Духовно-воспитательная функция. Организация культурно– просветительских мероприятий состоит из благотворительных мероприятий: концерты, праздничные мероприятия, помощь детдомам, помощь ветеранам войны и труда, помощь в охране общественного порядка на местах. В национальных и религиозных праздниках (Навруз – древнеперсидский новый год, Ураза хайит, Курбан байрам – мусульманские праздники, Мехржон – праздник урожая) махалла с участием всего населения организует «Катта сайил» - Большой праздник. В этих праздниках устраивается театральные, спортивные, кулинарные представление с участием представителей нескольких махалля.

4. Церемониальная функция. Все церемониальные акты (праздник малыша, обрезание, мулжал - 12 ление, свадьба, хашар - взаимопомощь, гап-гаштак - малчишник, поминальные мероприятия) в жизни человека с детской колыбели до последних дней обязательно происходит в большом круге махаллы.

Все функции махаллы тесно взаимосвязаны и охватывает все сферы жизни членов данной местности. Махалла связующая звено между школой и родителями.

Формы участия махаллы в воспитании учащихся довольно многообразны. Работа представителей махаллы может быть организована по месту жительства учащихся, по месту работы родителей и школе. Основная форма участия махаллы в воспитании подрастающего поколения является родительские комитеты класса в школе. Здесь махалля выполняет следующие задачи:

- помощь школе в реализации целей и задачи всего воспитательного процесса;
- помощь в поддержание посещаемости на должном уровне;
- активизация родительского комитета;
- организация объяснительных работ среди родителей;
- помощь в укреплении связи школы с общественными организациями;
- предупреждение подростковой безнадзорности и правонарушений;
- организация досуга юношей и девушек по месту жительства;
- посещение семей трудных подростков;
- организация коллективных мероприятий;
- организация краеведческих походов;
- организация встречи с ветеранами войны и труда;
- посещение семей трудных подростков;

- помощь нуждающимся и.т.д.

Особенна роль махаллы в воспитании молодежи в духе гуманизма, патриотизма, в сфере уважения старших, бережное отношение к детям и родителям, товарищества и взаимовыручки. Воспитания молодежи в махалле основывается на взаимодействии и взаимопомощи в вопросах формирования личности семьи и местных жителей определенного пункта. Система воспитания в махалле включает в себе все сферы деятельности и воспитания человека. Она прослеживается в умственной, нравственной, физической, эстетической, трудовой, экологической, правовой и экономической воспитании нового поколения детей махаллы. Умственно развитая, нравственно чистая и физически здоровая молодежь – это основной цель воспитания махаллы в современном Узбекистане. Эти направления воспитания имеет глубокие корни просветительского и практического характера. Основа воспитания Зороастризма, традиции Ислама классическая литература Востока, произведения ученых энциклопедистов Средней Азии, идеи ученых просветителей джадидов является нерушимым фундаментом воспитания молодежи в махалле.

В городах средневековья ребенка с детства (6 – 7 лет) отдавали мастеру определенного направления. В свою очередь мастер был членом «цеховой управления» данного направления. В итоге ребенок с малых лет попадал в атмосферу общественного влияния группу людей данной профессии. Его мировоззрение формировался под контролем «цеховой воспитания». На Востоке это называется системой «устоз – шогирд» или система «мастер - подмастерья» на Западе. Все мероприятия связанных с ростом ребенка в профессиональной иерархии проводился непосредственно с участием жителей махаллы. Обычно к 16 – 18 лет юноша становился мастером своего направления и имел право голоса в махалльнских собраниях. В динамике роста «ребенок – юноша – взрослый человек» путем трудового обучения и воспитания в махалле сыграла основную роль.

В XX веке отрицание многовековых традиций воспитания в махалле, раскрепощение и политизация народа привели к отчуждению друг к другу внутри махаллы. Был нанесен большой урон на межличностных отношениях внутри махаллы. В этот период с процессами общенародного объединения в борьбе за светлую жизнь параллельно прослеживается рост политиканства, доносительства, взятки - подкупа, воровства и индивидуализма в сфере жизни махаллы. В итоге это привело застою и распаду общественного строя того периода.

В современном мире, в эпоху глобализации воспитания в махалле можно проследить новые черты влияния. Без преувеличения можно сказать, что некоторые влиятельные круги фундаменталистов через огромный поток информации и влиянием высокотехнологических СМИ формирует сознание молодежи в нужном для себе направлении. На основе фальсификации истории, «восстановление истинного Ислама» под «маской демократии» фундаменталисты и псевдо либералы в начале разъединяет народ махаллы на своих и чужих, потом дезорганизует населения именно этой местности.

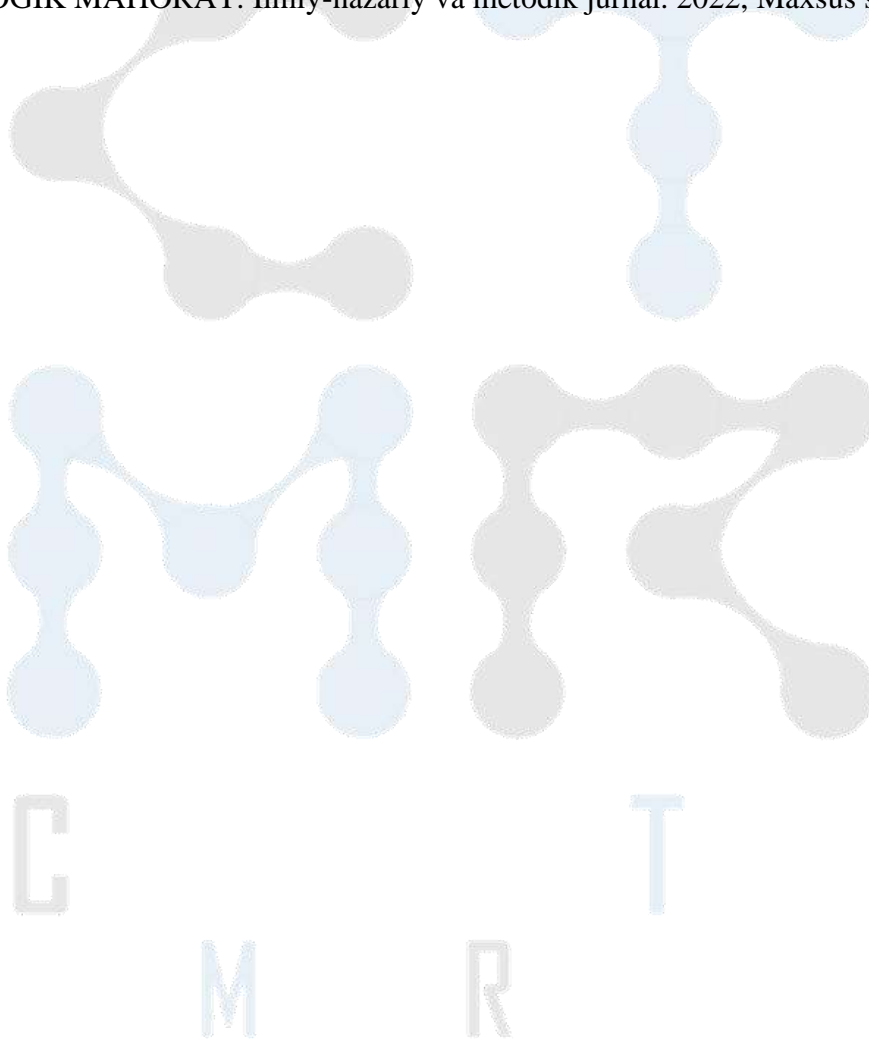
В этих непростых условиях воспитания и учебы роль махаллы в формирование мировоззрения нового поколения имеет особенную ценность профилактического характера. Где нет такого влияния, там молодежь попадает под пресс «чужой воли» радикальных направлений. Воспитание в махалле с участием школы и семьи охраняет молодежь от таких отрицательных влияний чужой воли. Только систематическая и

интересная работа с молодыми людьми, трудоустройства и создания возможности жизнеобеспечения их в махалле приводит к результатам положительного характера в этом направлении.

Литература

1. Каюмов И. Ф. Психологические истоки музыки //Academy. – 2020. – №. 11 (62). – С. 56-58.
2. Узбекистон тарихи (История Узбекистана). –Тошкент.: Давр Пресс, 2010.
3. Гафуров Б.Г. Таджики. –Душанбе: Дониш, 1989.
4. Мерос (Наследие). –Тошкент: Камалак, 1991.
5. Каюмов И. Ф., Жураева М. Место музыки в воспитании духовно-нравственных качеств учащихся 5-7 классов общеобразовательных школ //Проблемы педагогики. – 2020. – №. 3 (48). – С. 17-19.
6. Kayumov I. F. Values and aesthetic factors in the formation of culture and art //International Engineering Journal For Research & Development. – 2020. – Т. 12. – №. 1. – С. 10.
7. Fayzullaevich Q. I. Culture and art values and aesthetics in formation factors. – 2021.
8. Kayumov I. F. XALQ QO'SHIQLARI ASOSIDA BOSHLANGICH SINIF O'QUVCHILARINING NUTQIY MALAKASINI O'STIRISH USULLARI //Scientific progress. – 2021. – Т. 1. – №. 5. – С. 635-640.
9. Каюмов И. Ф. Санъатнинг турлари ва уларнинг тарбиявий аҳамияти //Science and Education. – 2022. – Т. 3. – №. 1. – С. 849-854.
10. Kayumov, I. F. (2021). Formation of composing art in uzbek music. *Researchjet journal of Analysis and Inventions*, 2(12), 61-65.
11. Каюмов И. Ф. ВАЖНОСТЬ ВНЕКЛАССНЫХ ЗАНЯТИЙ В РАЗВИТИИ МУЗЫКАЛЬНЫХ СПОСОБНОСТЕЙ //Academy. – 2021. – №. 3 (66). – С. 51-53.
12. Каримов О. И. Значение специфических особенностей и воспитательных возможностей узбекских народных инструментов //Academy. – 2020. – №. 3 (54). – С. 78-80.
13. Karimov O. J. I. Tanbur sozining paydo bo 'lishi va milliy cholg 'u ijrochiligidagi o 'rni //Scientific progress. – 2021. – Т. 1. – №. 5. – С. 767-771.
14. Каримов О. И. Профессиональные музыкальные взгляды будущего учителя музыки //Вестник науки и образования. – 2020. – №. 22-2 (100). – С. 17-20.
15. Каримов О. И. Садриддин Айни-знаток и любитель народной музыки //Вопросы науки и образования. – 2021. – №. 13 (138). – С. 21-24.
16. Ходжаев Р. Р., Каримов О. И. Подготовка будущих учителя музыки. Тренировка на скрипке для рефлексии мышц //Science and Education. – 2022. – Т. 3. – №. 2. – С. 1419-1423.
17. Каримов О. И. Бўлажак мусиқа ўқитувчиларида маънавий-ахлоқий сифатларни шакллантириш //Scientific Impulse. – 2022. – Т. 1. – №. 2. – С. 377-381.
18. Каримов О. И., Шарипова С. Ш. К. Место искусства музыки в формировании идеальной личности человека в дошкольном заведении //Science and Education. – 2022. – Т. 3. – №. 1. – С. 692-698.

19. Islamovich K. O., Shukhrat S. S. The Role of Music in Forming a Perfect Human Personality //Miasto Przyszłości. – 2023. – Т. 33. – С. 72-75.
20. Камолов Ш. Х., Бомуродов Ш. Ш. Педагогический характер студенческой молодежи и психологический подход //Academy. – 2021. – №. 3 (66). – С. 60-62.
21. Камолов Ш. Х. Приёмы и методы преподавания музыки в общеобразовательной школе //Science and Education. – 2022. – Т. 3. – №. 1. – С. 602-607.
22. O'quvchi-yoshlarni mumtoz musiqa asarlari va xalq og'zaki ijodi namunalari bilan tanishtirishning ahamiyati SX Kamolov, Scientific progress, 2021
23. TALABALARDA MUSTAQIL TA'LIMNI TASHKIL ETISH Sh/ KAMOLOV, PEDAGOGIK MAHORAT. Ilmiy-nazariy va metodik jurnal. 2022, Maxsus son, 2022



THE MAIN CRITERIA OF CULTURAL CENTERS IN THE FORMATION OF
CREATIVE ABILITY

Bukhara State University

Teacher of the department of music performance and culture

Sh.K.Urinov

Key words: talent, ability, instinct, balance, creativity, pedagogue, artistic creativity, art school.

Key words: talent, ability, instinct, balance, creativity, pedagogue, artistic creativity, art school.

In the formation of creative feelings, it is necessary to pay attention to two important individuals. Teacher and student. The formation of creativity in both individuals will have a different appearance. In the first case, in the formation of this feeling in the student, attention is paid to his opportunities, interests, and free time, while the formation of the creative feeling in the pedagogue employee has been proven in practice.

When we hear the word "creative", we immediately think of areas of human activity such as marketing and advertising. This is because the work of specialists in these fields is directly related to the creation of new ideas.

At the same time, creativity has become an important quality that a candidate must have in the fight for a high-paying position. Someone says that it is like a genius and cannot be developed. someone, on the contrary, offers to develop this quality and guarantees success for any person. Nowadays, you can come across hundreds of trainings aimed at developing creative thinking everywhere.

If we imagine creativity at the everyday level, it can be called invention, that is, the ability to achieve set goals and find a way out of an existing difficult situation, to use objects and equipment in a non-standard way. On the surface, it may seem like a wonderful, but also simple thing. The thought arises: "Why didn't I think of this before?" A non-trivial approach to problem solving is creativity.

Translated from English, this word looks like "creating" or "inventing", but it refers not only to material things. As you can see, this is a very useful process. But where does it come from? According to American psychologist Maslow, this ability of a person is inherent in nature, but it can be lost in the process of education and external influence. Various tests, personal questionnaires and simulations of various situations are used to assess the level of a person's creative abilities.

Let's take a closer look at the process of creating ideas yourself. Maybe smart ideas don't come out of nowhere and just pop into your head. English psychologist Graham Wallace distinguished 4 stages of creative problem solving.

The first is preparation. At this stage, a task or problem is formed and the first attempts are made to solve it. Next comes the incubation stage. Here, a person, as a rule, is distracted by other objects or actions and confuses the ways of intuitively getting to the heart of the problem. At the final stage - this is verification, that is, they implement the solution. In fact, in order for the creativity of thinking to manifest, it is necessary to turn off the mind and fully trust the subconscious. That's why the second step is so important. Most of the time, we interfere with ourselves, we try to consciously find a solution in situations known to us, but this does not help us

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-3, ISSUE-5

to find something new. Our complexes or psychological blocks, the fear of looking stupid can also become a problem of creativity. All this makes creative thinking difficult.

Criteria of creative thinking.

Many tests are aimed at evaluating the criteria of creativity in a person. At the moment, the most famous test was created by psychologist Paul Torrance. This will allow you to determine this starting level. Here are a few criteria:

fluency;

originality;

flexibility (allows to identify false identity);

metaphor, that is, the ability to see the complex as simple and vice versa;

sensitivity;

development;

satisfaction.

Creative methods.

Creativity techniques are methods and techniques designed to facilitate the process of creating new ideas and solutions. They are designed to help clarify problems, speed up the process of finding solutions, increase the number of ideas, and expand the industry of the problem. But it should be noted that this is not an algorithm, as a result of which you will definitely find a solution. Methods only increase the probability of good and correct ideas, they organize the search process itself and make it more effective.

What is creativity? It is primarily a tool to get something new and original. Stimulation techniques are used in all areas of life, for example, engineers and inventors successfully use methods such as morphological analysis and TRIZ (theory of invention problem solving). Lateral thinking techniques are widely used in advertising and marketing, and the SCAMPER technique is used to create completely new products. Also available globally. These include Brainstorming and The Walt Disney Method. They have found applications in almost all areas. Sometimes graphic images are also used, for example, the method of mind mapping, which is aimed at further development of creativity.

The golden rule for not breaking out of the shell of creativity and developing it regularly is this - First of all, you need to get rid of stereotypes in your thinking and acquire the ability to think outside the box. This can be helped by exercises that should become a habit for you.

For example, travel home or work. It usually follows the same path. Try walking back to the bus stop or part of the bus journey. Try to change the path and find new options every day.

Everything new and untried is useful: places, menus, actions, clothes and even thoughts. Creativity, whose meaning is directly related to creativity, can help develop art or craft lessons. Exercises such as reading backwards (from bottom to top or from right to left) are also very useful and uplifting at the same time.

Try suggesting 10 exotic names like Diosthenes, Hematina or Eyergestio. Draw a non-existent animal, name it, think about where it lives and what it eats. Take any word and imagine it is an abbreviation, open it. All these exercises are simple and fun, but they will help you develop creativity.

Creativity is divided into five important types:

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-3, ISSUE-5

1. Scientific creativity - involves the search for things that already exist, but do not correspond to our consciousness. It is characteristic of the study of phenomena in the world and various forms of development.

2. Technical creativity is close to scientific creativity, and in fact implies the creation of practical changes, discoveries and discoveries. In its process, new material values were created for the society.

3. Artistic creativity is the creation of aesthetic values, images that evoke spiritual experiences in a person. When you discover something objective and for yourself - in the process of creation it is important to separate the subjectivity from which you create something for society.

4. Co-creation is a level of perception that allows the viewer or listener to understand the deep meaning of the work behind the event, that is, the subtext that the author wants to convey to the viewer.

5. Pedagogical creativity is a new discovery in the field of pedagogical activity. It can be innovation - an unconventional way of solving problems, and innovation - the use of old methods of teaching in a new environment. Finding an unexpected pedagogical decision and applying it to specific situations is called improvisation and is common.

Let's consider the factors that form a creative node in a child or student.

As it is known in childhood, a child's dreams and fantasies play a very important role. But how many people think that children's creative abilities should be developed. Unfortunately, most adults do not pay enough attention to the development of a child's imagination, which significantly limits the opportunities of children in the future. Creativity plays a very important role in everyone's life. Imagination and fantasy help people in both relationships and work, but most importantly, creative people can express their own identity that helps them succeed in any business. Thus, even if the child does not suffer from a lack of imagination, parents should pay attention to the development of their creative abilities.

Identification and formation of creative abilities.

The main development of creative abilities in everyday life is carried out through play. In the game, children will probably like games that are able to determine the most interesting range of activities for children. Therefore, the game is one of the main ways to identify creative abilities. Psychologists have developed special tests in the form of a game that allow you to determine the level of development of your imagination and the way of thinking of a child. Some children act on the power of imagination, while others tend to capture images from memory. Sometimes children refuse to participate in such games, which indicates the need for a special approach to the child. Creating the necessary conditions for the development of children's creative abilities also plays a big role. Parents should not only give the child the opportunity to develop, but also actively participate. In no case can you put pressure on the child, allow him to play the game or participate in practical arts. In particular, this error is allowed with the development of musical abilities. Since the child's interest in music is not enough, parents are in a hurry to send him to a music school. In order to develop any creative ability in children, it is necessary not only to determine the inclination of the baby, but also to carry out serious work that will strengthen the desire to develop in the right direction.

The development of artistic abilities can begin up to 1 year. At this age, children learn about objects and their properties. It is recommended to come across a variety of things for paper, bright pencils and markers in the child's view. By the age of 2-3, the introductory period begins, children

make arbitrary lines and shapes and are very interested in colors. First, parents should monitor the child's safety. When children turn 3, parents participate. First, it is recommended to draw lines, for example, a circle is like an apple, a line to a path. It comes down to drawings with children's drawings, there is a transition from arbitrary drawings on paper to the desire to produce a meaningful picture. During this period, it is important to encourage and support the baby, to give him freedom in his work. It is recommended when a child develops enough interest in drawing to be sent to an art school.

The level of development of personal abilities is divided into two types:

- reproductive, when a person demonstrates the ability to successfully acquire various skills, acquire and apply knowledge, as well as perform activities based on a previously suggested model or idea;
- creative, if a person has the ability to create something new, original.

In the process of successfully acquiring knowledge and skills, a person moves from one level of development to another.

In addition, according to Teplov's theory, abilities are divided into general and special. General ones are those that appear in any field of activity, special ones appear in a certain field.

The following levels of development of this quality are distinguished:

- ability;
- talent;
- talent;
- genius.

To form a person's talent, there should be an organic combination of general and special abilities, and their rapid development is also necessary. A person is called a genius if his activity left a clear mark on the development of society. Genius is the highest level of development of abilities possessed by several. This quality is inextricably linked with a great personality. Unlike other levels of development of abilities, genius is characterized by the fact that it usually exhibits its own "profile". Any side of the monstrous personality will inevitably dominate, which will lead to the manifestation of certain abilities. Identifying abilities is still one of the most difficult tasks of psychology. At different times, many scientists have proposed their research methods for this quality. However, at present, there is no methodology that allows to determine the ability of a person with absolute accuracy, as well as to determine its level.

The main problem is that abilities were measured quantitatively, the level of development of general abilities was deduced. But in fact, they are a quality indicator that should be looked at with dynamic indicators. Different psychologists have put forward their own methods to measure this quality. For example, L. S. Vygotsky proposed to assess the child's ability through the zone of proximal development. This involves a dual diagnosis, when the child first solves the problem together with an adult, and then independently.

The level of intellectual development of a person refers to his ability to use his mind for thinking, understanding, listening, making decisions, observing relationships, perceiving and other mental operations. One of the most used methods for determining the level of development of this quality is IQ-tests, which offer a certain set of tasks and set time for their completion. The scores earned by taking this test range from 0 to 160 and range from weak to genius. IQ tests are designed for people of all ages.

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-3, ISSUE-5

Another popular technique - SHTUR also reveals abilities. The level of development of intellectual abilities in schoolchildren is to diagnose this method. It includes 6 subtests, each of which includes 15 to 25 tasks of the same type.

The first two subtests are aimed at determining the general consciousness of schoolchildren, and the rest show the following:

- the ability to find similarities;
- logical classifications;
- logical generalization;
- finding the rule for building a series of numbers.

The method is designed for group studies and is limited in time. High statistical indicators of SHTUR methodology allow to assess the reliability of the determined results.

A universal method of measuring the level of creativity is the Guilford technique, which is available in various modifications. Creative qualities that can be determined using this method:

- originality in forming associations;
- semantic and semantic flexibility;
- the ability to create new ideas;
- level of development of figurative thinking.

In this study, the subject offers various situations, which can only be solved by a non-standard approach that assumes the presence of creative abilities.

Qualities that the respondent must have in order to successfully pass the test:

- perception and correct understanding of proposed tasks;
- working memory;
- divergence - the ability to find the original in something simple;
- convergence - the ability to identify an object based on qualitatively different characteristics.

A high level of development of creative abilities, as a rule, implies intellectual development at an appropriate level, as well as the presence of self-confidence, a sense of humor, fluent speech and impulsivity.

The main difference between tests to determine creative abilities and similar tools designed to determine intellectual abilities is the absence of a time limit for solving tasks, a complex structure that offers the possibility of finding several solutions, as well as indirect sentence construction. Each task successfully completed in the test indicates the presence of abilities for a specific area of creative activity.

Other methods of diagnosing the level of development of abilities

Human abilities can manifest themselves at any age. However, the sooner they are identified, the greater the likelihood of their successful development. Therefore, at the moment, work is required in educational institutions from childhood, during which the levels of development of abilities in children are determined. According to the results of working with schoolchildren, trainings are held on the development of the determined inclination to a certain area. Such work cannot be limited only to the school, parents should also take an active part in the work in this direction.

The most commonly used methods for diagnosing abilities, both general and specific:

- "Everyone's Problem", designed to assess the appropriateness of thinking, that is, the extent to which a person can focus on the task at hand.

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-3, ISSUE-5

- "Study of memory using the technique of memorizing ten words" aimed at identifying memory processes.
- "Verbal imagination" - to determine the level of development of creative abilities, first of all, imagination.
- "Remember and make a point" - diagnostics of attention.
- "Compasses" - studying the features of spatial thinking.
- "Anagrams" - the definition of combinatorial abilities.
- "Analytical mathematical ability" - identifying similar tendencies.
- "Abilities" - determining the success of performing activities in a certain area.
- "Your creative age", aimed at determining the compatibility of passport age with psychological age.
- "Your creativity" - diagnosis of creative possibilities.

The number of techniques and their exact list is determined depending on the goals of the diagnostic examination. In this case, the final result of the work is not to determine the ability of the person. The level of development of abilities should be constantly increased, therefore, after diagnosis, work should be carried out to improve some qualities.

Conditions are one of the most important criteria for improving this quality. Talent refers to a set of various abilities that are sufficiently highly developed and enable a person to successfully master any type of activity. In this case, the ability to master is clearly implied, because, among other things, a person must directly master the skills and abilities necessary for the successful implementation of the idea.

Talent is of the following types:

- artistic, implying great achievements in artistic activity;
- general - intellectual or academic, if the levels of development of human abilities are manifested in good results in learning, mastering various knowledge in various scientific fields;
- creative, offering the ability to create new ideas and demonstrate inventiveness;
- social, providing high social intelligence, identifying leadership qualities, as well as having the ability to establish constructive relationships with people and organizational skills;
- practical, manifested in the ability to use one's intelligence to achieve the goals set before a person, to know the strengths and weaknesses of a person and to use this knowledge. In addition, there are types of giftedness in various narrow fields, such as mathematical giftedness, literary giftedness, etc.

Talented people have been of interest for a long time. Some see it as a gift from God, and some see it as a talent that works hard and works on its own. Is it possible to develop certain abilities and what is the gift of a person?

What is talent?

Talent is inherent from birth. They develop by gaining experience and being oriented in the right direction, building skills. Simply put, a person's ability to do better than others. When and how does the ability manifest itself?

A person can be gifted from birth and demonstrate his incomparability from childhood (Mozart is a great example).

A person can express himself with older people like Van Gogh or Gauguin.

There is no less controversy among scholars and critics about what talent is and whether it is unique to any individual. Here the opinions are divided into opposites:

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-3, ISSUE-5

- Everyone has talent, because everyone is good in a certain area. You can use your amazing skills and develop them through practice.

- Any kind of hard work and daily exercise. A person's abilities manifest themselves over time, with experience.

It is very easy to distinguish gifted people in others, and the observant person must not lose focus.

- Creative people have a lot of energy in their field of interest and they have thoughts all day long.

- Talented people are both introverts and extroverts.

- The peculiarity of gifted people is that they are modest and self-confident at the same time.

- Such people are ready to sacrifice their careers for their loved ones.

- Extraordinary individuals are not always talented in any field, and often in any of them.

Talent and genius should not be confused, because in the second case, a person is considered talented in all areas. In other words, genius is the highest stage of creative manifestations of personality.

There are many talented people in society. History also testifies to this. It is possible to compile a list of outstanding personalities who have made a great contribution to the development of mankind:

William Shakespeare is the genius of world literature, the greatest English playwright and poet.

Leonardo da Vinci - the brightest representative of Renaissance art - the greatest genius of all time.

Isaac Newton is an English physicist who developed the theory of relativity.

A. Navoi is a great thinker and writer.

Z.M. Babur - king and poet, statesman.

Abu Ali ibn Sina is the Sultan of medical science.

Talented individuals lived and worked among our ancestors in the field of art and culture.

Mutal Burkhanov is a great composer.

Mukhtar Ashrafiy is a composer and composer.

Yunus Rajabi is a genius of Uzbek status art.

Botir Zakirov is the founder of Uzbek Estrada art.

Luftkhonim Sarimsokova is a popular actress.

Obid Yunusov - People's Artist.

If we continue the list, there are countless art dargahs, owners of this unique talent and talent.

List of used literature:

1. <https://uz.everaoh.com/>
2. uz.drunkentengu.com – Laura McKinney “Ijodkorlikni rivojlantirish masalalari.”, 5.04.22 y.
3. <https://uz.drunkentengu.com/> – Charles Brown “Inson qobiliyatlari. Qobiliyatni rivojlantirish darajalari: diagnostika usullari, rivojlanish”, 3.02.2021 y.
4. <https://uz.tierient.com/> – “Psixologiyada qobiliyat va daho nima?”

5. Olimov Sh.Sh. Sinfdan tashqari ta'lim-tarbiyaviy ishlar o'quvchilar axloqiy-estetik idealini shakllantirishdagi o'rni. Xalq ta'limi jurnali. 2000 yil 5-son.
6. Pedagogika. A.Q.Munavvarov tahriri ostida.-Toshkent.: O'qituvchi, 1996.
7. Ne'matullayeva, Sh. "MADANIYAT MARKAZLARINING PROFESSIONAL JAMOALAR BILAN HAMKORLIKNI TASHKIL ETISH MASALALARI." *Педагогика и психология в современном мире: теоретические и практические исследования* 2.3 (2023): 25-29.
8. KO, Sh, and S. Sadullayeva. "SSENARIYDA SAN'AT VOSITALARINING O'RNI." *IJODKOR O'QITUVCHI* 3.26 (2023): 102-105.
9. KO'rinov, Sh, and S. Sadullayeva. "MUZEYSHUNOSLIK ISTIQBOLLARI." *IJODKOR O'QITUVCHI* 3.26 (2023): 97-101.
10. Orinov, Sh K., and S. Rozimurodova. "Maqom San'atiga E'tibor Milliy San'atimizga E'tibor." "ONLINE-CONFERENCES" PLATFORM. 2023.
11. O'rinov, Sh K., and G. Halimova. "HAVASKORLIK BADIY JAMOALARI TUSHUNCHASI VA FUNKSIONAL VAZIFASI." *INTERNATIONAL CONFERENCES*. Vol. 1. No. 2. 2023.
12. KOrinov, Sh, and M. Ismoilova. "BOSHQARUV KONSEPSIYASI VA ASOSIY TUSHUNCHALAR." *PEDAGOGS jurnali* 26.2 (2023): 62-64.
13. KOrinov, Sh, and M. Hasanova. "BOSHQARUV MADANIYATI TARKIBI FUNKSIYALARI MEZONLARI-MADANIYAT MARKAZLARI MISOLIDA." *PEDAGOGS jurnali* 26.2 (2023): 65-66.
14. KOrinov, Sh, and M. Habibullayeva. "ART MENEJER-MARKETING FAOLIYATINING ASOSIY YO'NALISHLARI SIFATIDA." *PEDAGOGS jurnali* 26.2 (2023): 59-61.
15. Xolmo'minov M. Z. O. L. PROFESSOR AZAMAT HAYDAROV KITOBLARIDA MA'NAVIYMA'RIFIY ISLOHOTLAR TAHLILI //Oriental Art and Culture. – 2022. – T. 3. – №. 2. – C. 255-263.
16. Kholmuminov M., Qolqanatov A. The Formation of the First Libraries in Uzbekistan and the Role of Increasing the Cultural and Educational Awareness of the Population //International Journal on Integrated Education. – 2021. – T. 4. – №. 12. – C. 146-151.
17. Nilufar M., Kholmuminov M. Requirements for Young Leaders in Culture and Arts Management //Web of Semantic: Universal Journal on Innovative Education. – 2023. – T. 2. – №. 3. – C. 5-9.
18. Mo'Minmirzo Zokir O. G. L. et al. TEATR FAOLIYATIDA BOSHQARUV JARAYONLARINI TASHKIL ETISH USULLARI //Oriental Art and Culture. – 2022. – T. 3. – №. 2. – C. 57-62.
19. Xolmo'Minov M. M., Qolqanatov A. O'ZBEKISTONDA MADANIY-MA'RIFIY ISHLAR VA KUTUBXONALAR FAOLIYATI (XX ASR TAJRIBALARIDAN) //Oriental Art and Culture. – 2022. – T. 3. – №. 1. – C. 281-290.

VOLUME-3, ISSUE-5

FOLK DECORATIVE AND APPLIED ARTS OF UZBEKISTAN

Bakaev Sh.Sh.,

Associate Professor of the Department of Fine and Applied Arts.

(Bukhara State University, Uzbekistan)

Annotation

This article talks about the folk decorative and applied arts of Uzbekistan, the history and factors in the development of craft culture, creativity and technology of master artists.

Key words: artisans, ceramics, applied arts, wood carving.

НАРОДНОЕ ДЕКОРАТИВНО-ПРИКЛАДНОЕ ИСКУССТВО
УЗБЕКИСТАНА

Бакаев Ш.Ш., доцент кафедры изобразительного и прикладного искусства.

(Бухарский государственный университет, Узбекистан)

Аннотация

В данной статье рассказывается о народном декоративно – прикладном искусстве Узбекистана, истории и факторах развития ремесленной культуры, творчества и технологий мастеров -художников.

Ключевые слова: ремесленники, керамические изделия, прикладное искусство, резьба по дереву.

In the centuries-old history of the Uzbek people, folk arts and crafts are the most amazing and popular part of our rich and colorful cultural heritage. The types of art that originated on Uzbek soil are known throughout the world for their incomparability and uniqueness. If you think about such stages of development, you can witness that the roots of the applied arts and crafts of the Uzbeks go back to the childhood of humanity, that is, to the primitive system.

When we talk about ancient applied art, we certainly think about applied art, which formed the basis of folk crafts. Because folk art forms the basis of folk crafts.

The historical roots of the crafts of the Uzbek people are a cultural heritage formed on the basis of the practical art of the people, based on a very ancient, classical and destructive centuries-old experience that surprised everyone at the same time. It became the responsibility of each era to produce objects created by scientists of everyday life, everyday life and household, tools needed for daily needs, and create them in various types and forms.

These items are easy to use, simple and do not require much effort, since over time their adaptation to the students of that time, the creation of new specimens and designs required creative research and mobilization on the part of the masters of their time.

Our cultural heritage includes magnificent architectural monuments, ornaments embodying beauty and grace, various handicrafts, textiles made of thread and silk, pottery and porcelain vessels made of clay and plaster, humms and humdons (stove), ceramic products, all of which relate to the material. the wealth of our people, cultural heritage.

Therefore, we pay more attention to masterpieces created by folk craftsmen. Studying the life and creative path of our great-grandfathers, knowledge of their fruitful traditions, further improvement of the styles and methods they created, deepening their aspirations for beauty is a requirement of the time.

Folk arts and crafts centers.

From the research of our archaeologists and historians it is clear that centers of applied crafts of all types were created, developed and formed on the territory of Uzbekistan.

In these centers, as we said above, necessary consumer goods were produced and sold in markets. Such centers include Margilan, Kukan in the Fergana region, Chust in the Namangan region, Shahrikhan in the Andijan region, Gijduvon in the Bukhara region, Karshi in the Kashkadarya region, Urgut in the Samarkand region, Boysun in the Surkhandarya region.

As a result of the fact that artisans lived in these cities separately or together, each quarter was named after a specific professional craft. These are copper, weaving, blacksmithing, woodworking, knife making, jewelry, carpentry, woodworking and dozens of other types of craft names can be cited.

When we received information about our grandfather Amir Temur, we thought that after his campaigns abroad, this nobleman brought more than 150 thousand people of different professions and artisans to Samarkand and founded craft villages and several villages for them in the cities. Such a step and long-term development are certainly a plan aimed at further improving the material and cultural development of Movaraunnahr.

This tradition continues today and bears fruit with the creation of new vocational schools. Of course, he also put forward the goal of relying on such community traditions, living in special neighborhoods and having close professional and creative contact with each other, supporting the personal interests of his colleague, and, if necessary, scolding him when the time came.

In the past, we see that the conditions of historical and ethnic development of some regions of our republic had their own territorial characteristics, and this led to the creation of a number of local schools, unique in folk art and crafts. There are many examples of this.

For example: both in the past and now we cannot be free from this, looking at a flower on the head or clothes on it, night clothes in many cases, which one is a man, or when we enter a house, when we decorate rooms, embroidery on the walls, flowers hanging on the walls, or even decorative flowers in the hair, we can find out where the owner or the women living in that house are from.

We bring to your attention samples of products from Bukhara, Karshi, Samarkand, and Kukon embroiderers. We see that such local-territorial features are still preserved. These samples are a product of creativity aimed at reflecting the lifestyle, customs and national traditions of our people.

In expressing our thoughts above, we used expressions such as craftsmanship, artisan, folk art. A question may arise before us.

So, who is a craftsman and what scope and activity does a craft profession include, but what about practical art?

Let's try to answer these questions together.

Craftsmanship is the field and profession of making various products from raw materials using simple craft tools.

From our history it is known that it was widespread until the emergence of large-scale industrial production; some of its branches have survived to this day, and over time they have been improved and separated into various specialties. For example, we can list pottery, carpentry, blacksmithing, coppersmithing, goldsmithing, painting, construction, stonework, woodworking, embroidery, jewelry, degreasing, metalworking, jewelry making, flower embroidery, tinsmithing and thousands of others .

Of course, in the great history of our people, in the practical art and cultural development of all peoples of the world, the heritage of the creativity of this people is still honored. This classic heritage is as timeless as our nation.

If we find the original meaning of the phrase "artisan", we will have to analyze and define it in two ways.

1. A craftsman who makes a product at home or in a professional shop.
2. A master who has mastered his craft well.

Let's pay attention to this again. Due to the simplicity of the tools of folk craftsmen and their incomplete technical support, most branches of folk craft began to be considered as a practical profession that creates examples of high art.

Undoubtedly, each industry determined its effectiveness in internal and external market relations by the level of product quality.

We should all know that applied art is the most popular, most vital creative effect. People's natural desire for beauty is a prime example of innovation based on beauty conventions.

Works of practical art and objects serve to clarify the material environment and spiritual worldview of a person, enrich the psychophysiological concepts that awaken aesthetic thought.

According to our cultural experts, the first step towards civilization in the life of primitive people began with practical art. One of the reasons for this is the creation of various forms and designs of household items necessary for life in all aspects of modernity. It should also be noted that these items are suitable for any environment and are characterized by simplicity and elegance.

If the original household utensils were created by their simplicity and some lack of refinement, then in later periods they copied new styles and forms, were enriched with patterns and picturesque decorations, and were decorated with homemade and mysterious decorations, becoming practical.

Thus, applied art became an integral part of folk art and for centuries was the golden heritage of monuments of material culture.

The most widespread type of applied art in Uzbekistan is pottery, and this branch of art dates back to primitive times. Ceramics found during archaeological excavations testify to the true genius of ancient masters.

Glass containers, plates, chocolates, bowls, vases, bowls created from their ashes surprise us with their shapes, neatness and compactness of decorations. For this reason, it should be noted that currently the population and foreign representatives who have visited our republic are in great need of such ceramic products created by masters of this art.

High mastery of creativity, beauty of forms, charm of patterns, unique imagination, caution in the use of paints are the reward of folk art workers.

Uzbek ceramics are divided into two types: glazed and unglazed ceramics. By our time, there were several pottery centers in our republic, such as: Samarkand, Shakhrisabz, Kitab, Gijduvon, Bukhara region, Uba. Samarkand (Urgut), Surkhandarya (Denov) and Tashkent red-brown-yellow products are produced.

By our time, the art of coppersmithing and engraving has also developed in the creativity of our craft people.

Such items have been used as decorative items in the home since ancient times. These items celebrate the national symbols of a particular place through their unique shapes, craftsmanship and artistic style.

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-3, ISSUE-5

At the same time, the styles of Samarkand, Bukhara, Kukon, Khiva and Tashkent differ from each other. Let's pay attention to the following examples.

From ancient times to the present day, flat images of applied folk art in the Islamic style have been used on traditionally shaped items such as pants, teapots, mugs, bowls, umbrellas and robes.

Our nation is an artistic nation and has inherited this classical heritage from ancient times as a product of creativity. Therefore, artistic patterns occupy a special place in folk art. This ancient art form developed from the requirements of the people's lifestyle and was used to decorate houses, premises, public and administrative buildings.

In the culture of life of our people, the art of needlework has acquired great importance. Wood carving is a type of applied art, widely used as a decorative element in architecture. Wood carving - decoration of columns, naves, doors, gates, pillars, etc., carving of small images - an example of culture that has come down to us from the 1960s.

Residence of the Bukhara emir "Sitorai Mohi-Khosa" 18-19 centuries. (Let us pay attention to examples of khanch embroidery and decorative patterns).

Amir Olimkhan plans to build a summer residence for him and decorate it in a single copy; he entrusts the decoration of Sitorai Mohi-Khosa to master Shirin Murodov and orders him to make a rough copy.

Usta Shirin shed is in great demand because it does not look like a decoration for a rich person's house and looks great. After 2 months, the decorator will draw a rough copy of the house with a window frame.

Master Shirin Murodov brought Amir Olimkhan a plan he had drawn and a draft version of the house. The Emir of Bukhara agrees and orders work to begin immediately. Master Shirin himself begins to work with three masters and their students. Draws painting compositions and trims them.

Shirin Murodov performs the most important work "White Hall". At this time, Usta Shirin invited the famous woodcarver Usta Abdugofir and the artist Hasanjon into another room. Master Shirin Murodov attaches great importance to the quality of furniture so that the color of the room stands out.

The master uses all his experience and knowledge to decorate the palace. It is performed according to the highest rules of mountain art. Finally, the Sitorai Mohi Khosa Palace is completed. Master Shirin creates a copy of the "mirror decor" by placing flowers from the khancha on the mirrors on the walls of the "Beliy Hall". The tall and large hall is flooded with light from wide windows. The soft white color gives the room a feeling of elegance and solemnity.

Along with architectural elements in the decoration of the residence, the art of national embroidery also advanced along the path of development. Over hundreds of years, not only local artistic styles have formed in this area, but also dozens, maybe even hundreds of large centers have emerged.

The creative activity of Bukhara, Samarkand, Urgut, Fergona, Shakhrisabz, Namangan and other centers is remarkable. Look, the embroidery images glorify in poetic images the beautiful landscapes of the nature that surrounds us.

If you look at works of art and the spiritual world, you will feel the nature of the artistic world, the musical melody of the spiritual world!

Among the works in the painting, objects such as suzana, palak, gulkupra, parda, takhman, joypush covering the shelves and bricks are part of our material and cultural heritage.

Thus, ancient folk crafts and applied arts, originating in the distant past, are widely developed to this day.

In its development, this creative and cultural heritage, starting from ancient forms, the Renaissance of the 14th century, passed through the wonders of the more developed periods of the 14th and 16th centuries, bringing to the whole world magnificent works in the form of magnificent monuments, skillfully decorated by folk craftsmen.

Therefore, it will not be an exaggeration to say that elements of folk crafts and practical art have become an integral part of the ethnoculture of the Uzbek people and have made a significant contribution to the flourishing of world cultural development.

Over the years of independence, creative masters and artisans from almost all centers of practical art in our republic, newly created firms and joint ventures have mastered dozens of types of folk art, such as needlework, painting, embroidery, carpet weaving, wood carving, and jewelry making.

In the regions and districts of our republic, in vocational and other educational centers, public works are carried out in traditional competitions, the formation of aspirations among young people for professions and crafts, the introduction of talented youth to folk arts and crafts, the direction of talented youth in professions are in the center everyone's attention.

The preservation of our national heritage, traditional national talents, and care for artisans were raised to the level of state policy. Now, according to the decrees and regulations adopted by our government, one of the most important tasks is to train the youth in practical art in accordance with the principles of national art.

References

- 1.S.S. Abdullaev, Sh.Sh. Bakaev, G.R. Ostonova, Sh.Sh. Sharipov. Ornamental symbolism in the folk arts and crafts of Bukhara. *European science*, 17-19
2. VR Tukhsanova, ShSh Bakaev. The art of gold embroidery in the city of Bukhara. *Academy*, 62-65
"Science and Education" Scientific Journal / www.openscience.uz November 2023 / Volume 4 Issue 11 ISSN 2181-0842 / Impact Factor 3.848 277
3. Sh.Sh. Bakaev, Sh.N. Avezov. Development of the creative potential of students through folk art // *EUROPEAN SCIENCE*. – 2020. – No. 4 (53).
4. Sh.Sh. Bakaev. Creativity of folk craftsmen of Uzbekistan. *Young scientist*, 641-644
5. Sh.Sh. Bakaev. The art of gold embroidery in the city of Bukhara. *Academy*, 62
6. JS Botirov, SS Bakayev, MM Avliyakov, AL Shirinov, SS Abdullaev. The same goes for art classes in private schools specific properties. *Journal of Contemporary Issues in Business and Government Vol 27 (2)*
7. B.S Sobirova Sh. U., Aminov A. Sh. Methodology of using new pedagogical technology in teaching the fundamentals of projection. *international journal of special education*, 16592-16602
8. Sh. Sh. Bakayev, S Ramazonov, J Batirov, N Ibatova, S Avezov. Content of innovation and innovative activity of the teacher. *International Journal of Psychosocial Rehabilitation*, 585-590
9. Jakhongir batirov, Nigora Ibatova, Sherali Avezov, Sh Bakayev, S Ramazonov. Content of innovation and innovative activity of the teacher *International ...*
10. Sh.Sh. Bakaev, Sh.N. Avezov. Development of the creative potential of students through folk art // *EUROPEAN SCIENCE*. – 2020. – No. 4 (53).

**IMPROVEMENT OF COGNITIVE COMPETENCIES OF STUDENTS IN THE
TEACHING OF DRAWING SCIENCE**

Mamatov Dilshod,

professor of Bukhara State University, doctor of philosophy in Pedagogical Sciences
(PhD).

Abstract: In the following article the modern methods of perfection of the cognitive competencies of the students in teaching the lesson of drawing are analyzed based on the available data. The article provides information about the Department of drawing and drafting Sciences.

Keywords: drawing, painting software, project, design, positioning, updated cognitive, digital, autopsychological competencies

**СОВЕРШЕНСТВОВАНИЕ ПОЗНАВАТЕЛЬНЫХ КОМПЕТЕНЦИЙ
УЧАЩИХСЯ ПРИ ОБУЧЕНИИ РИСОВАНИЮ**

Маматов Дилшод, профессор Бухарского государственного университета, доктор философии (PhD) по педагогическим наукам.

Аннотация: В данной статье проанализированы современные методы совершенствования познавательных способностей учащихся при проведении урока черчение на основе имеющихся данных. Также представлена информация по разделу рисование и начертательной геометрии.

Ключевые слова: рисунок, программа рисования, проект, дизайн, позиционирование, обновленные когнитивные, цифровые, аутопсихологические компетенции

Introduction. The future of drawing science is a field of science that is important and mandatory in classes for technical specialists taking shape in secondary and higher educational institutions. Currently, there are many different drawing programs, among which professional (paid) and simplified (free) programs can be distinguished. For you, we have prepared an overview of the most popular and multifunctional of them. Nowadays, in their tool it is possible not only to draw complex sketches, but also to print a ready-made drawing, see and correct as needed, but also to create their own projects. Drawing projection reflects on some methods of applying innovative technologies.

Methods. Graphite (general application). Designed to create two-and three-dimensional drawings, organigrams and diagrams of various levels of complexity and detail. The program has several functions and tools for quickly and accurately creating drawings. There is a spatial binding system, the ability to create special libraries, flexible dimensions, etc. This program is suitable for students of technical-oriented universities, engineers and ordinary users. This allows you to create multi-page PDF documents and provides accurate import and export of images in the popular CAD format.

The principle of operation is to build a drawing project from 2D and 3D components. This allows us to create the simplest drawing and complex mechanism. It works with three formats: DXF, DVG and DXF [1].

Unlike its predecessor, AutoCAD does not work with the ESCD system formed in Western Europe, only offering an international program. In addition, its disadvantages include the high cost of the full-featured version.

The most important conceptual position of the Innovation Platform uses the student as an active participant (subject) activating the process of professional formation of a person with general and professional competencies included in the state educational standard and additionally with updated cognitive, digital, autopsychological competencies. All this is noted in the Adaptive model of the teacher's future of an innovative type, developed in schools.

Cognitive competence refers to critical, systematic, strategic, creative thinking skills in terms of the concept of lifelong learning (lifelong education), as well as the design skills of individual educational trajectories. Information and communication (digital) competence includes: educational portals, skills for working with online course platforms, project communication skills in online groups, skills for creating adaptive electronic textbooks taking into account the cognitive styles and types of thinking of students, skills for programming educational games, as well as from digital technologies for education use skills in self-development [2, 45].

Autopsychological (regulatory) competence includes the acquisition of physical and psychophysiological resource management skills, emotional and motivational-volitional self-management, time and stress management skills in professional activities, as well as Psycho-hygiene skills of Information work ("digital sketch", "introduction of the necessary information for drawing science").

Art (artistic) projects are essentially universal: they can be high-tech classes on artistic topics, educational activities among students, as well as a form of school career guidance work among high school students of the city. The main advantage of the Art project is that students are its active partners. Each art project takes a long time to develop and implement in the audience. Below are the daslabki qualification requirements required in drawing science.

1. Formation of a creative group of students for drawing work, the formation of the theme, goals and objectives of an art project in drawing;
2. Work on the Information Project: collection, classification, analysis, processing and generalization of information on the topic;
3. Identifying the main problems on the topic of the Art project, developing problematic issues for discussion with listeners;
5. Creation of an art project structure;
6. Selection of projects for drawing work, processing and belching the composition;
8. Development of a detailed scenario of an art project;
9. Creation of an electronic support system for an artistic project: selection, processing and creation of audio and video materials, creation of presentations;
10. Creating costumes and props;
11. Distribution of drawings in the lesson and their study;
12. Selection and study of drawing compositions, miniatures, etc.;
13. Individual, differentiated, group and consolidated artistic project exercises;
14. Creating advertising for an art project (advertising posters, booklets, calendars);
15. Implementation of an art project among students.

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-3, ISSUE-5

Each of the listed stages of work contributes to the formation and development of most of the skills of students that make up cognitive, digital and autopsychological competencies – the main components of the Adaptive model of the teacher of the future innovative type.

The most important stage in working on a drawing project is the so-called “generation of ideas”, identifying the main problems on which its structure will be built, as well as developing problematic issues for discussion with the audience during an art project (the most difficult universal problem usually becomes a mini-discussion problem).

This stage of drawing work forms critical thinking – the most important component of cognitive competence. Critical thinking is also formed at the initial stage of working on an art project, in the collection, classification, analysis, processing and generalization of information on the topic.

When working on drawing projects, the creative, systematic and strategic thinking of students is formed, which are important components of cognitive competence for them.

An artistic project is a special system of presenting new knowledge, the formation of a specific educational and educational environment with high information and emotional saturation, rich semantic potential and relative freedom of communication. Systematic and strategic thinking skills develop primarily in the construction of the structure and scenario of an art project.

The most important component of cognitive competence is the formation of creative thinking. Artistic design opens up a wide range of opportunities for the manifestation of creative abilities of each student.

When creating an art project, students can: adapt the source texts for the intended audience, draw up a script for an art project.

Draw a certain miniature, describe it in words, perform exactly this miniature in computer technologies, create costumes and props, create an ICT accompaniment, create an advertisement for an art project, organize an audience (develop and conduct Games, quests), communicate with the audience, conduct dialogue (mini - conversations), formulate and argue their point of view, develop and conduct mini-discussions, etc.

One of the important conditions of the drawing lesson is that during the lesson, the most creative students can also participate in collaboration with the teacher in order to create sketches, sketches and templates for miniature and still life.

Another component of cognitive competence is the ability to design individual educational trajectories. In artistic design, students are grouped into small groups of 7-10 people, each of whom is working on their own artistic project. In the process of work, each student can choose a business “at his discretion”, in accordance with its capabilities and abilities, each person makes a worthy contribution to the overall work.

In the process of working on projects for a drawing lesson in senior classes, self-study and mutual preparation, mutual assistance, mutual assistance in various activities are of great importance. Many students master almost all the necessary types of activities in artistic design.

As a result, the students themselves evaluate the contribution of each member of the group to collective work on the creation and implementation of an artistic project. Thus, artistic design allows the formation and implementation of individual educational trajectories of students, including such important stages of this process as interaction, mutual assistance and reflection.

This competence is formed during the work on artistic drawings. This happens both at the initial stage of artistic design when creating an Information Project (collection, classification,

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-3, ISSUE-5

analysis, processing and generalization of information on the topic), and at the next work - when creating ICT support for an art project (system). presentations and videos that are often filmed and edited by students are subject using a bridge). The purpose of using ICT in the process of artistic design is to achieve a deeper perception of material through imaginary perception, to strengthen its emotional impact, to ensure “immersion in drawing”.

The lesson begins primarily with the definition that the methods of drawing technical drawings correctly, as well as the science of the correct Organization of all areas of the drawing industry, are called drawing.

We use innovative technologies in drawing when performing educational drawings in geometry, Projective Drawing and construction drawing.

Before making a drawing project in the audience, students create advertising posters, booklets, calendars in order to attract an audience and reward the most active listeners-participants of the art project. Students' project communication skills are also developing in online communities, as the process of working on art projects requires constant communication not only in the classroom, but also between creative team members and the teacher.

Creativity is one of the most” important " activities. The ability to regulate its physical, psychophysiological, cognitive, emotional, volitional resources (autopsychological competence) in the process of complex and long-term project activities is an important aspect of the formation of an innovative type of future teacher. The information obtained during the study of the basics of psychology on the types of personality and ways of thinking, mechanisms of psychological protection and strategies for behavior in conflicts will help students maintain a positive “self-image” in the process of preparing and conducting artistic projects.

To improve the skills of managing the physical and psychophysiological resources of students, trainings are held on the formation of a team and the development of creative thinking. Emotional and motivational-voluntary self-management skills are formed through the detailed planning of all stages of the preparation of conversations, role-playing games, drawing projects. In order to master the skills of managing time and artistic composition, a system of Quick reports is used in specially created communities (“conversations”) on social networks, in the game it makes sense to support “flow activities”(the logic of Level achievements).

Autopsychological (Regulatory) Authority also includes the use of “digital drawing”. This is not only a temporary refusal to use gadgets during classes and classes, but also the formation of students' ability to find proven information on internet sites, which is checked in terms of reliability and scientific data. In general, working on the “skills of the future” included in the autopsychological competence of the future teacher activates the processes of self-knowledge and self-development of the student.

Thus, in a comprehensive school, artistic design is an effective means of forming the personality of an innovative type of teacher. In the disciplines of drawing and drawing geometry, auxiliary projection of graphic processes, design functions and motivational-value, practical-activity, reflexive-evaluation components are determined by prioritizing the logic of optimal support for creative activities aimed at finding a creative solution to educational and cognitive tasks;

By teaching auxiliary projective methods, the model for the development of creative competence of students is improved on the basis of pedagogical design of a technological structure

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-3, ISSUE-5

that strictly defines methodological conditions, such as maximizing individual characteristics, ensuring the stability of the creative environment, accelerating dialogical joint activities;

In the disciplines of drawing and drawing geometry, auxiliary projection of graphic processes, design functions and motivational-value, practical-activity, reflexive-evaluation components are determined by prioritizing the logic of optimal support for creative activities aimed at finding a creative solution to educational and cognitive tasks;

By teaching auxiliary projection methods, the model for the development of creative competence of students is improved on the basis of the pedagogical design of the technological structure, which strictly defines methodological conditions such as maximizing individual characteristics, ensuring the stability of the creative environment, accelerating dialogical joint activities;

In the disciplines of drawing and drawing geometry, the methodology for the development of creative activity is improved by increasing the level of feedback with the organizational and technical inclination of heuristic methods aimed at finding the elements that will be needed in auxiliary projection (construction, projection, technical-design,) relying on associative, intuitive and logical ascetic in search of the unknown [3, 234].

The pedagogical mechanism for the development of creative thinking of future teachers is improved on the basis of expanding the positive dynamics of compositional-creative activity on the systematic correction of the state of reflexivity with the individual educational trajectory of the subject-subject relations system, aimed at demonstrating the student's personal potential.

Discussion. The problem of developing spatial thinking at a qualitatively new level can be solved by modern computer-aided design systems. Since architectural and construction drawings are studied by students of the Faculty of Arts and graphics at the end of the course “fundamentals of drawing and drawing geometry”, the logical continuation of this course is the study of computer tools for displaying graphic information, which, in our opinion, is more visible. dynamism, high speed of execution of various images, convenient and intuitive graphical interface.

A special influence on the formation of positive motivation is exerted by: the information saturation of the curriculum, its relationship with previously studied material, a clearly realized perspective of the educational work of future teachers, the use of the “success methodology”, instilling in the student faith in their abilities and strength, the use of a rating system for assessing students' knowledge.

Modern software used in chess lessons.

The following programs are used for use in drawing classes: Adobe Photoshop CC; MyPaint; DrawPlus; Clip Studio Paint; CorelDRAW; Affinity Designer; Autodesk Sketchbook; YouiDraw Drawing; Mybrushes Paint for Mac; Epic Pen; Flame Painter; ChemDoodle; Paintstorm Studio; MyPaint; Mischief; DrawPlus; Clip Studio Paint; Krita; MediBang Paint Pro; procreate.

In addition to these broad-spectrum applications, there are also narrow-focus applications. For example, for drawing electrical circuits: DSSim-PC, sPlan, Circuit program, for computer — aided design of diagrams and microcircuits-ExpressPCB.

Conclusion. A positive motivational attitude towards graphic activity in the Visual Arts Educational direction can give a significant impetus to design. At the same time, the motivation for the fertile use of innovative technologies in drawing science is determined by the positive

attitude of the student youth to the entire educational process, stable internal motives, a passion for finding an original solution to the assigned graphic task.

Bibliography.

1. E.H. Gombrich. The Story of Art. Englewood Cliffs. New York, 2012, P. 346.
2. Betty Edwards. The New Drawing on the Right Side of the Brain. Redhouse Publishing house. Auckland, P. 248.
3. Austin Kleon. Steal Like an Artist: 10 Things Nobody Told You About Being Creative.
5. Н.Ж.Ёдгоров. Ахборот-коммуникатсия texnologiyalari chizmachilik ta'limida. <http://uz.infocom.uz/2010/01/15/axborot-kommunikatsiya-texnologiyalari-chizmachilik-talimida/>
6. Маматов Д.К., Собирова Ш.У Особенности организации самостоятельной работы студентов Педагогические науки <http://wwenews.esrae.ru/pdf/2015/1/62.pdf>
7. Маматов Д.К. Организация самостоятельной работы студентов первая международная научно-методическая конференция междисциплинарные исследования в науке и образовании <http://man-ua.edukit.kiev.ua/Files/downloads/%D0%9F%D0%9D-%D0%A1%D0%B1%D0%A2-14-09-2012.pdf#page=183>
8. Маматов Д. К. Роль компьютерной графики в развитии космического воображения студентов //Вестник науки и образования. – 2020. – №. 21-2 (99).
9. Маматов Д. К. Индивидуально-психологические детерминанты эффективной управленческой деятельности// Наука. Мысль: электронный периодический журнал. – 2016. – №. 9.
10. Одилова М.О. The role of independent education in increasing student space imagination. International Conference on Digital Society, Innovations & Integrations of ... 2021/1/7. 6(10), 1-5.
11. MD Odilova M. Ta'lim jarayonida axborot texnologiyalarni qo'llashning mazmun-mohiyati. Педагогик махорат., 61-69.

VOLUME-3, ISSUE-5

Art has a mental health problem.

Hojiyev Mirshod Jalilovich

Bukhara State Pedagogical Institute

„ Department of music and Fine Arts”.

shooter.

Annotation

This article sheds light on the extent to which the owners of the musical arts and Fine Arts Sox are more susceptible to depression than other professional owners-his sabaps and solutions. Since art is associated with the psyche, it is easier for him to face problems. In this article you can see exactly how to proceed in these cases. Of course all sohaningham have cases of depression of their own difficulties but when it comes to music or the field of Fine Arts, this situation develops a lot faster.

Keywords: Music art, depression, health, psyche.

Commissioned by Help Musicians UK and conducted by researchers Sally-Anne Gross and Dr George Musgrave at the University of Westminster, the study confirmed what anyone who has worked in music education already knows, music education can have a bad impact on your mental and physical health.

According to a study by the University of Westminster and MusicTank, musicians write that 2,211% of 68.5% experienced depression and 71.1% had severe anxiety or panic attacks. These results suggest that musicians are 3 times more prone to depression than the average person. The musicians, unfortunately, have moved away from society. While their friends have a good time, they spend countless hours honouring and performing their art. They do not have unstable working hours to communicate, establish strong ties with people, or maintain contacts due to their disorganization. Because musicians are so alienated from society, they often feel absent. Researchers Gross and Musgrave: this study is a decisive step in our understanding of the complex relationships that musicians have between working conditions and mental health conditions.

Since musicians often go on tour, in a healthy lifestyle, they have problems. Not sleeping in time eating disorders being on the road for a long time will also be fraught with depression. In addition, they are always away from their families, friends because they travel of course this state generates depression.

When artists are depressed abroad, they turn to drug and alcohol resistance organizations. Drugs and alcohol have always been in the music business, and their use has been popular with many artists. Drugs and alcohol are considered by many to be musicians or as part of their culture. This is bad because drugs and alcohol make depression worse. After musicians become addicted to drugs and alcohol as a coping mechanism, it becomes much more difficult for them not to be discouraged. This is bad not only for artists, but also for those in adulthood who have an impressive, intelligent mind.

Artists are now romanticizing depression and drugs because they find it useful. While some artists, such as Mac Miller, have indeed struggled with depression and drug addiction, some may describe doing it for money. After Lil Peep's death, his younger brother Karl Ahr mentioned how his death was an accident and that he was only depressed. He mentions his brother's depression and his vision as a quick way to deal with depression through drugs, which cost a long time for this condition. There is no false depression, unfortunately, we have lost many talented musicians and artists over the past few years due to depression and the brutal effects of drugs.

Early findings showed that while artists find solace in music production, working in the music industry can indeed make musicians sick or at least contribute to the extent of their mental illness. Respondents did this for a variety of reasons, including:

- Poor working conditions, including: difficulty ensuring survival, anti-social Working Time, fatigue, and inability to plan their time/future.
- Non-recognition of one's work and the transformation of music and identity into one's own idea of selfishness.
- Physical impact of a musical career, such as a violation of the musculoskeletal system.

List of literature.

1. "Our Study. "Musical Minds Matter.
2. "Looking from the outside: a sense of belonging, depression and the risk of suicide."
3. https://www.researchgate.net/publication/281823481_From_the_Outside_Looking_In_Sense_of_Belonging_Depression_and_Suicide_risk
4. "Working in the art of music can harm your mental health"
"Everything Mac Miller said about drugs, depression, and death."
5. "Reveals how Lil Peep's brother was paid to offend lil Peep."
6. "Substance abuse and depression: dangerous down-Spiral."PsyCom.net -mental
7. Since 1986, the source of Health,
8. Bradley. "'Xanax is not a wave": to Lil Pump

Methodology of developing creative ability of students in painting classes

Ibragimova Aisha

Bukhara State Pedagogical Institute, Master

Abstract: In this article, the use of art therapy, which is a popular method of psychological correction of emotional disorders, the role and importance of art therapy sessions in the development of a person, as well as the problems of developing their emotional and personal sphere, the factors necessary for personality development, and issues of revealing the possibilities of using art and art therapy methods in finding effective methods of neutralizing negative influencing resources and anomalous functions of personality.

Key words: art therapy, emotional disorders, emotions, aggression, psychological correction, creative ability, personality, aesthetic skills, perception, anomalous function.

Personality development is a period of development that requires serious attention not only from parents, but also from educators. During this period, social skills and norms of behavior, moral values, among others, "self-recognition", problems in communication not only in the family, but also with peers, conflicting processes of interaction in society are encountered. Of course, the level of development of his emotional and moral sphere depends on his mental health. Therefore, the development of the emotional sphere of personality through creation, the conditions for the formation of emotional intelligence, emotional sensitivity and empathy is one of the urgent problems of today. Unfortunately, nowadays, more attention is paid to intellectual development in the field of education than to the development of the emotional and personal sphere. This leads to the fact that in the modern programs of educational institutions this issue is not included in the program documents, or it is fragmented and solved in an unsystematic way. The big psychological dictionary gives the following description of emotions: "Emotions (Latin *eshowege* - to arouse, excite) - mental processes associated with instincts, needs, motives and reflected in the form and is a special class of situations (people and animals). Events and situations that affect a person are of great importance in the realization of his life. Mental activity and behavior aimed at satisfying urgent needs that accompany almost any manifestation of the subject's activity. serves as one of the main mechanisms of internal regulation of actions. It is known that art therapy is based on the effective use of art and creativity, and is one of the directions of psychological correction. In a word, art therapy is usually visual art therapy aimed at influencing the psycho-emotional state of a person. The main goal of art therapy is to harmonize the state of mind by developing self-expression and "self-awareness". Usually, the importance of using art for therapeutic purposes is that it can be used to symbolically express and explore different emotions: love, hate, sadness, anger, fear, joy, etc.

For example, the technique of art therapy is based on the conclusion that the content of the inner "I" of a person is reflected in the visual images he draws or sculpts. Basically, the state of the psyche changes. As for the term art therapy, it literally means "treatment with art." The term was first coined by artist Adrian Hill in 1938 to describe his work with tuberculosis patients in sanatoriums. Art therapy methods were first used in the United States during the Second World War with children who were under psychological pressure taken from Nazi camps. Art therapy originally reflects the psychoanalytic views of Z. Freud and K. G. Jung, according to which the final product of the client's artistic activity (whether it is a drawing, sculpture, assembly) represents his unconscious mental processes. The results achieved led to the establishment of the American Art Therapy Association in 1969. It is known that the main goal of art therapy is to master the

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-3, ISSUE-5

process of self-knowledge in a person and to develop his ability to express himself, and its concept currently includes several meanings: - a set of art used in treatment and correction; - a set of art therapy techniques; - direction of psychotherapeutic and psychorexia practice; - art therapy methods. The development of personal feelings is influenced not only by the family, but also by certain life situations. Any changes in the usual lifestyle (daily routine, etc.) or a negative social situation can lead to the manifestation of affective reactions, including increased fear. Needs, a feeling of social insecurity, anxiety, especially during the age crisis, leads to a state of despair (anger, aggression or, on the contrary, a state of passivity) and leads to an increase in characteristics such as aggression. Aggression should be understood as any intentional behavior that harms another person or thing. There are the following types of aggression: physical (attacking, hitting, biting) and verbal (shouting, cursing). In addition, instrumental and targeted aggression are different. The most aggressive actions are instrumental aggression, that is, stopping at nothing for personal gain. To strengthen this position, they use physical aggression. Targeted aggression is always planned and directed. So, aggression is harming another person or object for a specific purpose. Aggression can be situational, that is, it is episodic and personal in a certain situation, and it is manifested in the form of stable behavior under suitable conditions. The qualities of aggression appear in the child's behavior in exactly 6 months, such as lack of self-control, non-compliance with rules, hysterical behavior (often demonstrative), insulting behavior towards peers and adults, blaming others for their mistakes if there is, then in such a case the child is considered an aggressor. Unfortunately, when an aggressive child is tried to have an educational influence, a kind of circle is created, and the aggressive child creates a hostile attitude towards him from others, as a result of which his aggressive actions increase, because they support him in aggression. powered up. The emotional burden and demands of the parents on the child, if they do not correspond to his age, lead to the fact that the child is forced to protect the preservation of "his boundaries". The emotional sphere of a person with a complex regulatory system is very weak, but it takes the first place in the formation of personality and affects the formation of behavior.

The role of art therapy is incomparable in the correction and treatment of anomalous functions in such development with the help of art. Currently, in our country, there are opportunities for the use of art therapy for children of preschool age, but it is not intended to be used as a practical exercise in art classes and clubs in general education schools. , and within the framework of fine arts in higher educational institutions, these issues have not been given serious attention and have not been formed as an academic subject. The use of art therapy technologies in the field of education successfully solves the problems of creating conditions for the emotional development of a person, as well as preventing and correcting negative emotional manifestations. Therefore, art therapy is an independent psychotherapeutic direction that has a corrective effect through visual and creative activities in order to harmonize and develop the human psyche. The definition of art therapy is based on the concepts of expression, communication, and symbolism associated with artistic creativity. The use of art therapy in correction and treatment with the help of art means to prevent today's negative processes affecting the human psyche (wars, natural disasters, overcoming infectious diseases, aggression, fear, anger, hatred, etc.) gives an opportunity to solve problems. Art therapy technologies mainly consist of developing children and adolescents in need of help by pedagogues with the help of art therapy, their emotional and volitional sphere, cognitive processes, general characteristics. In these processes, the tasks of art therapy are mainly to adapt existing art therapy methods, and it is appropriate to use them in the

system of psycho-corrective work with children who need special help and their parents. In conclusion, it should be noted that the use of art therapy is the most effective method of social adaptation. Its inclusion in the field of education allows for full participation in the life of society, creativity of thinking and development of the integrity of the individual. Today, the "therapeutic effect with the help of visual arts" (painting, modeling, artistic crafts, etc.), which includes the most important stages in modern art therapy, is achieving positive results.

REFERENCES

1. Бойметов Б. Қалам тасвир. Педагогика институтлари ва университетлари учун ўқув қўлланма. – Т.: ТДПУ, 1997. -55-56-б.
2. Ибатова Н. И. TALABLARNING TASVIRIY YARATUVCHANLIK, IJODKORLIK POTENTIALLARINI RIVOJLANTIRISHDA INNOVATSION TEXNOLOGIYALARDAN FOYDALANISH: Ibatova Nigora Istamovna Buxoro davlat pedagogika institute “Musiq va tasviriy san’at” kafedrasida o‘qituvchisi //Образование и инновационные исследования международный научно-методический журнал. – 2023. – №. 2. – С. 261-265.
3. Ибатова Н. И. TALABLARNING TASVIRIY YARATUVCHANLIK, IJODKORLIK POTENTIALLARINI RIVOJLANTIRISHDA INNOVATSION TEXNOLOGIYALARDAN FOYDALANISH: Ibatova Nigora Istamovna Buxoro davlat pedagogika institute “Musiq va tasviriy san’at” kafedrasida o‘qituvchisi //Образование и инновационные исследования международный научно-методический журнал. – 2023. – №. 2. – С. 261-265.
4. Khakimova, G. A., Azimova, M. B., Tuxsanova, V. R., & Ibatova, N. I. (2021). DIDACTIC PRINCIPLES IN TEACHING FINE ARTS. Journal of Contemporary Issues in Business and Government Vol, 27(2).
5. Ibatova N. I., Zaripova L. R. In The Works of Uzbek Artists of XIX-XX Centuries Landscape Genre //EUROPEAN JOURNAL OF INNOVATION IN NONFORMAL EDUCATION. – 2022. – Т. 2. – №. 4. – С. 14-17.
6. Ibatova N. DEVELOPMENT OF STUDENTS'ARTISTIC-PICTURE THINKING IN THE PROCESS OF TEACHING THE SCIENCE OF PAINTING //Science and innovation. – 2023. – Т. 2. – №. B2. – С. 163-167.
7. D.E.Omonov., Improving Conversation Classes on Fine Arts in Secondary Schools. European Journal of Innovation in Nonformal Education (EJINE) Volume 2 | Issue 2 | ISSN: 2795-8612.
8. D.E.Omonov., The Role of Graphics in the Training of Teachers of "Fine Arts and Engineering Graphics" European Journal of Innovation in Nonformal Education (EJINE) Volume 2 | Issue 2 | ISSN: 2795-8612.
9. D.E.Omonov, G. Namozova, F. Rashidov, S. Abduvohidova., Engineering graphic sciences are a conceptual framework for conducting educational technologies in lectures and practical training. In Volume 2, Issue 12 of ResearchJetJournal of Analysis and Inventions December, 2021.
10. Boltaevna S. M. Improving the quality of spiritual and educational work //Euro-Asia Conferences. – 2021. – Т. 1. – №. 1. – С. 27-28.

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-3, ISSUE-5

11. АЗИМОВ, Б. Б., АЗИМОВА, М. Б., ТУХСАНОВА, В. Р., & СУЛАЙМОНОВА, М. Б. (2021). ПЕДАГОГИЧЕСКИЕ, ПСИХОЛОГИЧЕСКИЕ И МЕТОДИЧЕСКИЕ ОСНОВЫ ПРОВЕДЕНИЯ БЕСЕД ОБ ИСКУССТВЕ. *European science*, (2 (58)), 38-40.
12. Сулаймонова, М. Б., Азимов, Б. Б., Азимова, М. Б., & Тухсанова, В. Р. (2021). ДОСТИЖЕНИЕ ЭСТЕТИЧЕСКОЙ И НРАВСТВЕННОЙ ЗРЕЛОСТИ ОБУЧАЮЩИХСЯ ИЗОБРАЗИТЕЛЬНОМУ ИСКУССТВУ. *European science*, (3 (59)), 53-56.
13. N.M.Avliyakulova-This is the role of visual art in attracting students to visual and creative activities. *International Engineering Journal For Research & Development-2020 y.* [151-153]
14. Avliyakulova, N.M. Improving future teachers'skills of designing and modeling fine arts lessons. *Journal of Innovation, Creativity and Art.* [21-24]
15. Ibadullaeva, S. I. (2022). The Role of Art in the Development of Junior Schoolchildren. *European Journal Of Innovation In Nonformal Education*, 2(2), 130-133.
16. Ibadullaeva, S. I., & kizi Sharifova, S. S. (2022, June). ORIGIN AND TECHNOLOGY OF DYEING FABRICS. In *INTERNATIONAL CONFERENCES ON LEARNING AND TEACHING* (Vol. 1, No. 9, pp. 49-54).
17. Ибадуллаева Ш. И., Амонова Р. Ж. К. Коммуникативные Основы Художественной Культуры //Miasto Przyszłości. – 2022. – Т. 28. – С. 169-173.
18. Phamovna, I. S. (2023). The Development of Creative Abilities of Younger Schoolchildren at the Art Lesson. *AMERICAN JOURNAL OF SCIENCE AND LEARNING FOR DEVELOPMENT*, 2(4), 65-68.
19. Азимова М. Б., Ибадуллаева Ш. И. XIX аср охири-XX аср бошларида Бухоро аҳоли турар жойлариинтерьер безаги (Файзулла Хўжаев уй-музейи мисолида) //Евразийский научный журнал. – 2017. – №. 2. – С. 379-383.
20. Ibadullaeva Shaxnoza Phamovna. Avlikakulova Nafisa Muzafarovna., Sobirova Sharofat Umidullayevna. HARMONIZATION OF TYPES OF FABRIC ART PROCESSING TO STUDENTS..INTERNATIONAL JOURNAL OF PSYCHOSOCIAL REHABILITATION, 1-7 ISSN:1475-7192
21. Olimov, S. S., & Mamurova, D. I. (2022). Information Technology in Education. *Pioneer: Journal of Advanced Research and Scientific Progress*, 1(1), 17-22.
22. Olimov, S. S., & Mamurova, D. I. (2022). Directions For Improving Teaching Methods. *Journal of Positive School Psychology*, 9671-9678.
23. Sayfullayevich A. S. Development and Dynamics of Bukhara Ornamental Art at the Modern Stage of Uzbekistan's Independence //Pioneer: Journal of Advanced Research and Scientific Progress. – 2023. – Т. 2. – №. 2. – С. 31-35.
24. Laue, S., & Abdullaev, S. S. (2022). Legends and True Stories about the Samanid Mausoleum. *EUROPEAN JOURNAL OF INNOVATION IN NONFORMAL EDUCATION*, 2(2), 308-311.
25. Magdiyeva, M. E., Dildora, S., & Sayyora, S. (2022, October). Hunarmandchilik Asosida Xotin-Qizlarni Kasbiy-Amaliy Kompetentligini Rivojlantirishninng Ijtimoiy Pedagogik Zaruriyatlarini. In " *ONLINE-CONFERENCES*" PLATFORM (pp. 8-10).
26. Мамурова, Д. И., Собирова, Ш. У., Шукуров, А. Р., & Аминов, А. Ш. (2021). УЧЕБНАЯ ДЕЯТЕЛЬНОСТЬ СТУДЕНТОВ ПО РЕШЕНИЮ РАЗЛИЧНЫХ ДИДАКТИЧЕСКИХ ЗАДАЧ В РАЗВИТИИ ПРОСТРАНСТВЕННОГО ВООБРАЖЕНИЯ СТУДЕНТОВ. *European science*, (2 (58)), 29-31

Ideological and artistic features of folk singing

Marifat Yoshiyevna Umurova,

Teacher of the "Pedagogy" department of Bukhara State University (Republic of Uzbekistan)

Abstract: The role and importance of folk music in the development of the art of singing; The role of the teachings of Eastern thinkers in the development of the art of singing; It was discussed about the organization of the features of the tradition of teacher and discipleship in the art of national singing; it is important to study the ideological and artistic features of Uzbek folk singing.

Key words: Folk art, folk songs, musical perception, national values, customs and traditions, morals, virtue, national education.

Using its artistic and educational possibilities by referring to samples of our folk music heritage in school music culture classes is one of the main factors of increasing the effectiveness of the lesson. The state policy in the field of personnel training implemented in our country envisages the formation of a thinking, free-thinking person through a continuous education system aimed at educating the young generation intellectually and morally. One of the important conditions for achieving efficiency in modern education is to clearly define the content of education at each stage, the compatibility of the curriculum with the student's programs, the level of mastery of students and regular checking of the result of education. Each specific subject has its own psychological features and conditions for acquiring knowledge, and students' ability and interest in this subject has a positive effect on the outcome of the work. In this case, there is a great need for special subject pedagogical technologies. One of the psychological features of improving lesson efficiency in music education is the development of intellectual thinking - musical perception by creating an emotional state. Understanding the artistic content of music, fully feeling the experiences expressed in it is realized only through perception with emotional awareness.

Examples of folk music have great potential in developing artistic thinking and musical perception in young students. It is the basis of education of our youth in the spirit of national values, customs and traditions, and it is of great importance to use its attractive, unique tones as a means of spiritual and aesthetic education. The great thinkers of the East, Farobi, Ibn Sina, Rudaki, and Zamakhshari, wrote down valuable ideas about educating a person, cleaning his soul and mind from dust through the art of music. Fakhridin Razi (13th century) writes about this in the encyclopedia "Collection of Sciences". "If it sounds in harmony with high and low sounds, it matches the feelings of the heart. Differences in sounds and tones express different emotional feelings. With its power, it gives peace and pleasure, the unchanging state of sound extension can never be pleasant, if it acts on the basis of certain laws, the listener begins to like it." While different characteristics of sounds create different moods, low and high tones are appropriate. If it evokes sadness, it is because of the combination of high sounds with low sounds.

Wrath, anger, and thought are expressed by low sounds, feelings-emotional actions by high sounds. Especially during the renaissance period, the theoretical foundations of Uzbek and Central Asian folk music in general were perfected in the scientific treatises of scholars such as Ibn Sina, Safiddin Urmawi, Mahmud ash-Sherazi, Abdulkadir Maroghi, Abdurrahman Jami, and Zainolubiddin Husayni. This was made possible by the stable social situation in the time of Sahibqiran Amir Temur and the Timurids, and the efforts of the wise sahibqiran in the direction of the development of science, culture and enlightenment. The musical-theoretical and artistic-

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-3, ISSUE-5

aesthetic views of the musicologists and musicians who worked in this period were reflected in the music treatises of the XIV-XVI centuries. Examples of these are Zaynolobuddin Husayni's "Kanuni ilmiki wa amali muzik" ("Scientific and practical laws of music"), Muhammad Nishopuri's "Book about the science of music", Ahmadi's "Discussion of Music", Najmuddin Kavkabi Bukhari's "Risolai muzik" and "Risala dar bayani duvazda". maqom" ("Treatise on twelve statuses") can be cited. The theoretical and practical issues of folk music, its social importance and important educational tool are expressed in these scientific treatises. The historical development of folk music shows that in different periods it has developed as the main tool of the social life of our people and served as an important factor in educating the young generation.

The song genre forms the basis of folk music, as it is widely expressed as a song of the social life, national life, customs and traditions of the people. In the performance of the song, musical tones and poetic content combine and have a strong emotional impact on the listener.

Music is more popular than other genres due to its wide range of visual possibilities and unique impact. In folk songs, humanity - patriotism, internationalism, honesty, tolerance, generosity, loyalty to the motherland, purity of heart and other human qualities are glorified in their own way. negative situations - ruthlessness, lying, indifference, stinginess, laziness, vanity and other characteristics are condemned. This creates an opportunity for the formation of positive character traits and spiritual and moral education in students and young people through folk songs. One of the requirements for the successful implementation of the new educational model of music culture is the main factor in the realization of the potential forces that serve the development of our society by focusing on the essence rather than the form. Today, students and young people are less interested in listening to folk songs and playing national musical instruments. Because they, as listeners, are more interested in modern pop songs. However, not all of the music created and performed in this genre is of high demand. And we don't always mean that music is a tool of strong emotional influence.

Local styles play an important role in ensuring the richness, attractiveness and variety of folk songs. Fergana-Tashkent, Bukhara-Samarkand, as a result of their veneration by our people, Uzbek folk music preserves its ancient roots. For example, in the Fergana valley, there is great singing and yallachilik, in Kashkadarya and Surkhandarya oasis, epic poetry, in Samarkand and Bukhara regions, there is more folklore and folk songs and the diversity of music, in the singing of Khorezm, there is a unique intensity and enthusiasm, Turkmen and edges similar to the melodies of Azerbaijani music are noticeable. Epics are told in the form of speech-declamation in other regions of Uzbekistan, but in Khorezm they are sung in their own forms. Each way and method of performance in Uzbekistan is closely related to the roots of the national heritage of the people, and at the same time, they have preserved some of their own characteristics and distinctive aspects. This leads to the development of folk music. In order to perform the folk songs in a figurative and emotional way, it depends first of all on the conscious penetration of the students into the musical and poetic world of the song. In this case, it is necessary to direct the students' attention to working with the musical text of the song as much as possible, and try to find the most characteristic means of expression in it according to the content of the song. Beautiful, clear and correctly pronounced words create positive emotions in students and the performer himself. Another characteristic of children's emotions is that they are related to specific circumstances. That is, the emotional experience that occurs in children occurs in one or another concrete situation. Accordingly, creating conditions and situations that interest, attract, and excite students is an important condition

for developing musical perception in them. Of course, folk songs are distinguished by the expressiveness and simplicity of the melody, the brightness of the rhythmic form, the originality of the poetic text, because modern Uzbek musical works were created on the basis of our deep-rooted national music. Understanding the importance and content of modern musical works created on the basis of folk music leads to the development of students' thinking and perception, as well as to drawing individual conclusions about this sample of music.

Creating problematic situations in the lesson is a leading method, and it creates favorable conditions for them to express their views and attitudes through debates and discussions. Through this method of education, the attention span of students expands and becomes voluntary. As the well-known scientist Ye. V. Nazaykentsky said: "any piece of music is accepted on the basis of a concrete life reserve, including musical ideas, skills, and habits. The main reason for emphasizing the song genre in school music education and upbringing is that the novelty of musical melodies and poetic text has a complex impact on the child's emotional and artistic-creative thinking and creates adequate imaginative connections. . Acquired skills of imagination and imagination help the formation and development of musical perception. Studying the creation of folk songs in the lesson, first of all, attention is paid to the art of singing as a form of general artistic culture, and secondly, to imagine and study the social and spiritual characteristics of our nation, national values and our musical culture. is to educate a positive attitude to history. Our people's unique way of life, thinking and worldview are national songs, musical and spiritual wealth, which are an expression of attitude to life and reality. Art masterpieces such as "Shashmaqom", "Alpomish", the life path of our national heroes such as Jalaluddin Manguberdi, Spitamen, Amir Temur are examples for young people. Our national music, which has been improving and developing over the centuries, calling our people to goodness, has all the possibilities for the spiritual education of the youth of our free and prosperous republic, which is building its future. It is the main duty of specialists in the field to develop musical perception and thinking in students and young people by realizing these opportunities.

List of used literature.

1. Akbarov I.A. Musiqa lug'ati. Toshkent G'.G'ulom nomidagi adabiyot va san'at nashriyoti 1987 yil
2. Karamatov F.M. "O'zbek xalq musiqa merosi" XXasrda I-kitob .Toshkent G'.G'ulom nomidagi adabiyot va san'at nashriyoti. 1978 yil
3. Komil Ochil. Qaldirg'ochni ko'ndirgan qo'shiq . "Zarafshon" Samarqand 1993
4. Amonullayev "Darslikka xalq merosini o'rganish". Boshlang'ich ta'lim 1993
5. Sarimsoqov B."O'zbek merosi va folklori. Toshkent "Fan" 1986 yil
6. Mirzayev T. va boshqalar. O'zbek folklor ocherklari . Toshkent "Fan" 1998 yil
7. Абдуллаев К. Ф., Умурова М. Ё. ПЕДАГОГИЧЕСКИЕ ОСОБЕННОСТИ УРОКА ПЕНИЯ В НАЧАЛЬНОЙ ШКОЛЕ //CENTRAL ASIAN JOURNAL OF MATHEMATICAL THEORY AND COMPUTER SCIENCES. – 2023. – Т. 4. – №. 2. – С. 66-69.
8. Umurova M. Y. Educational Significance of Children's Folklore Songs //AMERICAN JOURNAL OF SCIENCE AND LEARNING FOR DEVELOPMENT. – 2023. – Т. 2. – №. 4. – С. 148-152.
9. Umurova M. Y. Formation of Patriotic Feeling in Youth Students through Folk Songs //Pioneer: Journal of Advanced Research and Scientific Progress. – 2022. – Т. 1. – №. 4. – С. 99-103.

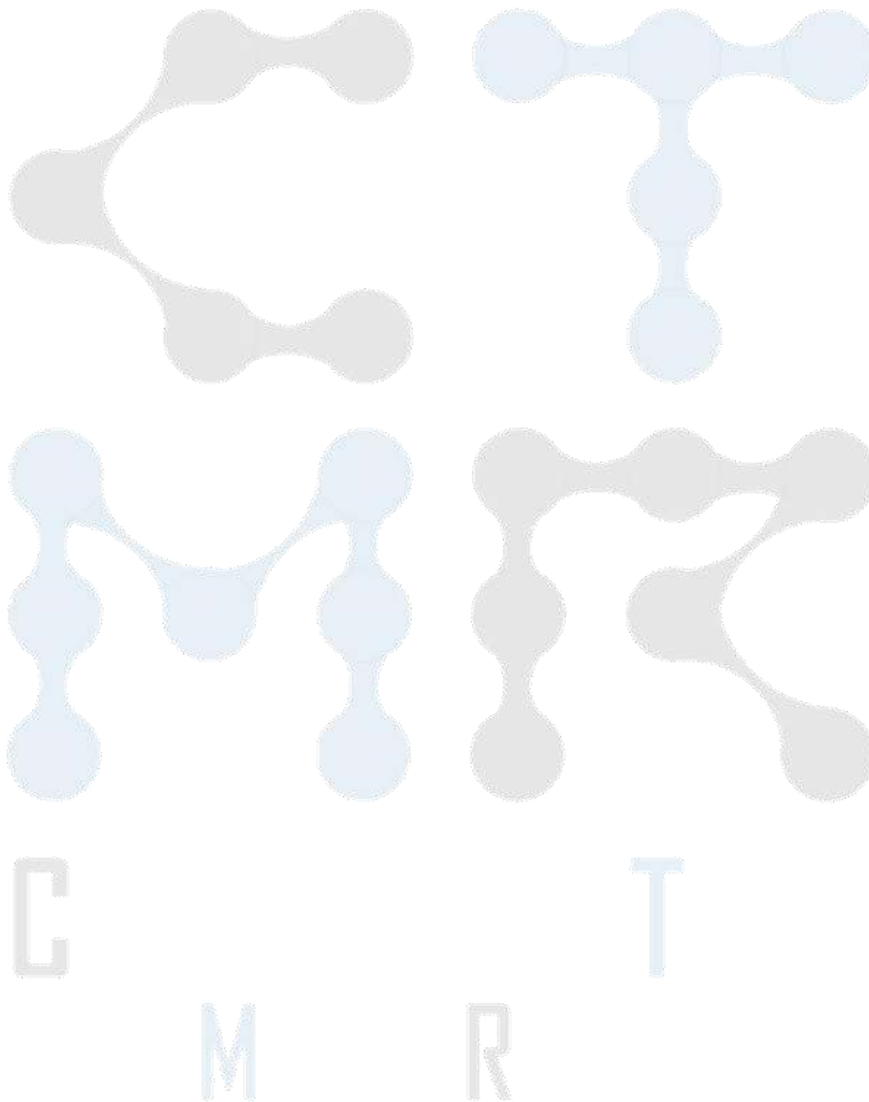
THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-3, ISSUE-5

10. Yorievna, U. M. R., & Karimovna, N. N. (2020). Innovative approach to the development of musical abilities in children with disabilities health opportunities. *Проблемы педагогики*, (2 (47)), 40-41.

11. Yoshiyevna U. M. THE ROLE OF THE CREATIVE HERITAGE OF EASTERN THINKERS IN THE FORMATION OF THE SPIRITUAL AND MORAL OUTLOOK AND MUSICAL PERCEPTION OF YOUNG PEOPLE //E-Conference Globe. – 2021. – С. 102-104.

12. Yoshiyevna U. M. The emergence and stages of development of navruz //Herald pedagogiki. Nauka i Praktyka. – С. 8.



**THE RELEVANCE OF THE METHODS AND TECHNICAL METHODS OF
TEACHING NATIVE LANGUAGE SCIENCE TO STUDENTS IN THE SCHOOLS OF
OUR REPUBLIC TODAY.**

Samarkand regional Bulungur District 57-general secondary education school native
language and literature teacher:

Ubaydullayeva Ramiza Abdullayevna

Annotation: the following cited article deals with the positive aspects and nature of teaching native language science to students. It also highlights the methodology and similar techniques that are important in teaching native language education to today's youth

Keywords: method, education, knowledge, methodology, students, skills, phonetics, potential, conclusion

Main part: the method is actually derived from the Greek word „metodos, which means" knowledge and research is lost", " theory", " doctrine "as M A'nolam i1. M etodica (yurt, "methodike") is the science of M etodes, paths, and means to perform, carry out, perform a work, sum of M etodes, methods, or give a measure of growth methods. The subject of the subject of the methodology of teaching mother tongue in elementary grades is the science of ways and means of teaching students the Uzbek language, mastering the native language, that is, mastering speech, reading and writing, grammar and spelling. The methodology is based on the educational and educational tasks set before the school, determines the tasks of teaching the native language and the M azm flour, checks the educational process, determines the laws of the same process and the scientifically based system of teaching methods. M the science of etodica studies the following issues: 1. Determines the tasks of training and mazm flour. What to train? answers the question, that is, primary classes determine the programs, educational content of the native language course, create textbooks and manual alar for students, improve them, and constantly monitor the relevance and compliance of sam. 2. Teaching methods, principles, methods, lesson and its types, students develop a consistent system of practical work - exercises and written work, that is, "Q anday should be taught?" will prepare an answer to the question. 3. Giving students knowledge of their native language and generating a skill solves issues about the most useful conditions from a scientific point of view, that is, " why should I be taught the same way?" prepares an answer to the question. Studies the most useful materials, m etodes, bases selected m etodes, experimentally checks recommendations.

Although the importance of practical work in the school is properly evaluated by students, they find it difficult to use the theoretical knowledge of students in practice. Little use of grammar rules when performing written work. In fact, transcribing and practical exercises play an important role in order to improve spelling literacy. From psychological studies, it turns out that spelling literacy is formed gradually. Even in the transition from practical to rule, the process of mastering is slow. It is initially discussed orally under the guidance of a teacher. Gradually, students begin to think and meditate and realize. In all writing classes, it is possible to increase their spelling literacy by emphasizing the correct writing rules for students and doing practical work. In all native language classes, students are given time to repeat the previously mentioned lessons in order to improve their knowledge and skills. Repetition helps to identify, take into account and, at the same time, consolidate knowledge. In general secondary schools, new knowledge is given at the same time as the repetition of the previous ones, and little by little in the process of repetition. Through repetition, students organize, strengthen their knowledge.

The modern lesson is that a student, a listener, a teacher should not remain a speaker. Perhaps the teacher should become a director who will monitor the lesson and regulate it. The teacher should organize the lesson in such a way that all the student will have an independent opinion on this topic, be able to say his opinion, if there is a drawback, be able to correct it based on the response of his comrades and the teacher. Depending on the character nature of the lesson, the lesson should be achieved in an interactive way. The use of tests and handouts in classes also gives a good result. It is important to rely on the life experience of students when giving knowledge of the native language. The teacher relies on the life experience of children, their practice of speech, both at the stage of collecting evidential materials, for which generalization of a theoretical nature is necessary, and in order to put the knowledge given into practice. As a result of the study of linguistic knowledge, the quality of speech activity of students changes, awareness increases. Connecting language learning with life provides a basis for understanding the materiality of the world. With this, one of the main tasks of native language lessons at the same time, the issue of proper observation in students and the cultivation of the skills to clearly state their thoughts in oral and written form is solved. In this, the teacher is required to pay special attention to the formation of the dialectical thinking skill in students.

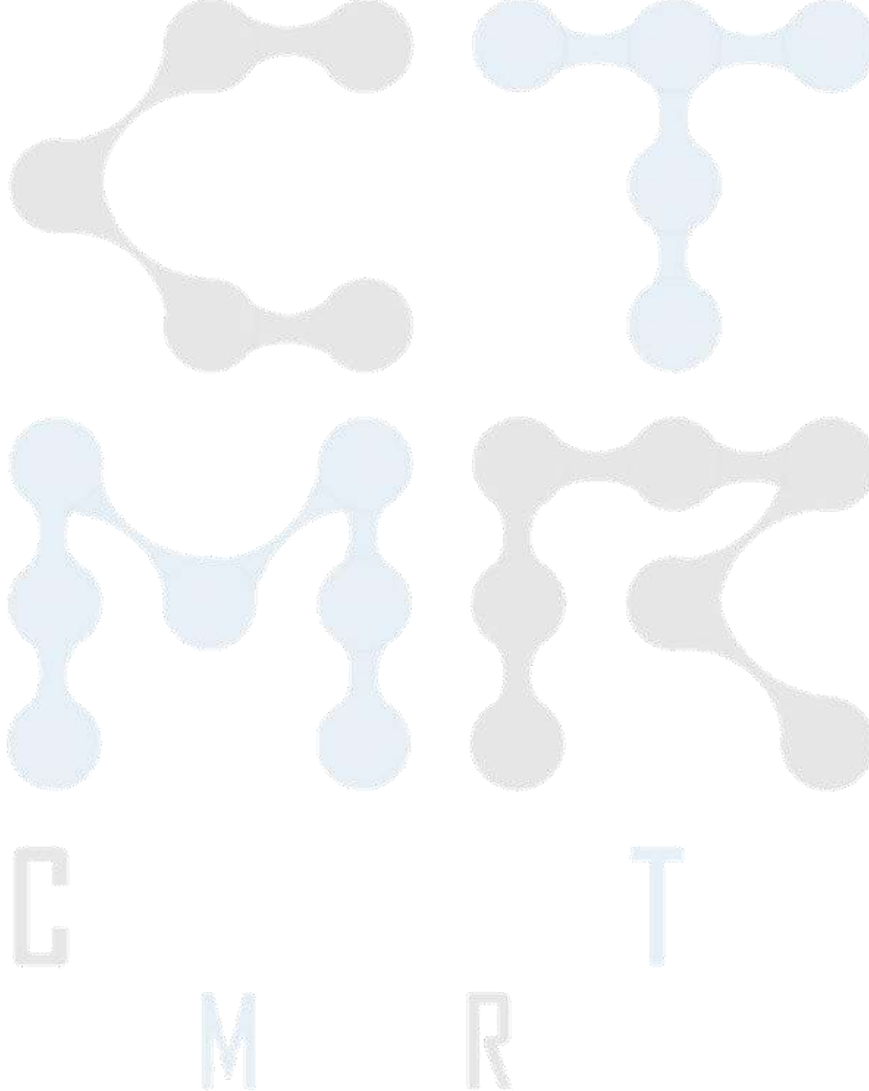
When carrying out the education of the mother tii, the psychological and young personality of the students should be taken into account by the educator. It is advisable to use modern multimedia tools more widely. Wider use of pedagogical technologies, taking into account the capabilities and age characteristics of students. Development of large-scale cooperation with linguistic scientists, writers and poets. This is accompanied by increased enthusiasm, respect and, of course, interest in readers in relation to language, culture. Oynaijahon, issues such as the preparation of materials in the native language and literary language were considered as important as possible, so that the manna in the means of Mass Communication did not make shallow materials available to the public.

Conclusion: the points presented determine the methodology for teaching the native language to schoolchildren, taking into account the internal connection between objects. 1. Taking into account that all (lexical, phonetic, word-making, grammatical) aspects of language are interconnected and each of them has its own characteristics, it is necessary for students to master the features of each side of the language and the connection between them so that they can consciously master the language. The system of learning the native language, taking into account the peculiarity of age, is drawn up taking into account the essence of phonetics, lexicology, word making and the interconnection of grammar. This case is taken into account both in determining the procedure for studying program materials and in determining the content of education (the inextricable connection between program departments). 2. The influence of all aspects of language on each other is manifested in its function as a weapon of communication. For the purpose of communication as the basic unit of language, it is necessary to correctly pronounce or write a word, to be equally understandable to all those who speak the same language, to be grammatically correctly structured in a sentence. Taking this into account, in order for younger readers to understand the essence of the pronunciation of the language, graphic, lexical, word making and the interconnection of grammatical sides, the task of language communication is taken into account when studying the program material, that is, the joint use of all sides of the language in the process of communication with people. To this end, in the study of the phonetic side of the language, great

importance is placed on explaining the meaning and pronunciation of the word forming unity, the position of the sound in distinguishing the meaning of the word.

Reference:

1. Normatov U. "Ona tili o'qitishning dolzrb muammolari", -T.: 2008 y
2. https://uz.wikipedia.org/wiki/Ona_tili
3. <https://kun.uz/uz/35715601>
4. ona tili fanini o'quchilarga o'rgatishning ahamiyati va xususiyati
T.N.Butayorovna
5. **Ona tili o'qitish metodikasi (K.Qopsimova, S.Matchonov va b.).pdf**



**COMPARATIVE ANALYSIS OF MORPHOLOGICAL CHANGES IN THE
LIVER IN COVID -19.**

Bukhara State Medical Institute

Fayzillayeva Gulnara Ibragimovna

Nurilloveva Shakhodat Nurillo kizi.

shakhodatnurilloveva92@gmail.com

Annotation:

Liver injuries have been documented in patients affected by COVID-19, and commonly have mild increasing liver enzymes range from 14% to 53%. Patients with severe disease, especially those hospitalized in ICU, have shown a higher increase in transaminase enzymes than patients with mild to moderate severity. In the experiments, 43 white thoroughbred rats aged 1,3,6 months were used. These are white non-breeding rats of both sexes weighing on average about 250-300 g. The rats were fixed on a self-propelled vehicle with manual control, and in the moving vehicle, the experimental rats approached the wooden barrier and hit them on the forehead, which led to brain injury. The speed of the car was 6.7 km per hour. In the course of experiments on a traffic accident, 30 rats survived and 4 rats died. In general, i.e. macroscopic view of the liver of 1,3,6-month-old white rats, changes are observed depending on the month, varying degrees of morphological changes in the state of fatty metamorphosis in the liver cortex, consisting of lymphoid cells (hepatocytes), blood cells and epithelial cells.

Key words: Covid-19; the immune system; autoimmune reactions; Gassali cells; inflammation; liver disease.

In the last 10-15 years, research in the field of immunology, new information about the structure of the immune system, the functions and mechanisms of innate and acquired immune cells, the development of immunopathological effects on the brain and the protective effect of immunity, connective tissue repair in general. The mechanism of development of the immune response to injury (TMS) neurotrauma is considered: These include: 1) primary activation of innate immune cells immunity, ie microglia in the brain, 2) synthesis of cytokines by microglia and involvement of peripheral immune cells in the parenchyma 3) systemic specific immunity and the development of inflammation are reactions in the body [21,22,23,24,25,26,27,28,29,30,31,32,33,34,35].

The development of immune reactions after a given TMS can have a two-way effect over time: 1) an attempt to clear the brain of dead cells and stimulate the recovery of neurons, 2) an immunopathological effect at the time of injury, which can lead to early or delayed neurodegeneration after TMS. With this in mind, further study of immune processes has led to the development of targeted immunomodulatory methods for TMS, which are the consequences of acute TMS and its long-term treatment outcomes [1,2,3,4,5,6,7,8,9,10,11,12,13,14,15,16,17,18,19,20].

Separate groups of liver lobules are located around or in the thickness of thyroid tissue, in the soft tissues of the neck, in the fatty tissue of the anterior, rarely posterior mediastinum of the tonsils. Aberrant liver detection rate reaches 25%. Such anomalies are most often observed in women, mainly on the left side of the neck and mediastinum. The literature contains specific data on ectopic liver tissue in infants. Such pathologies are accompanied by shortness of breath, dysphagia and respiratory failure. P. According to Novak et al, cervical localization is detected on

the left side in 76 out of 91 cases of liver ectopia, mainly in men. Liver ectopy is also associated with congenital heart defects in 71% of cases.

Research materials and methods:

We used 43 1.3.6-month-old white pedigree rats in the experiments. They are white non-breeding rats of both sexes weighing an average of around 250-300 g. The rats were fixed to a hand-wheeled self-propelled vehicle, and in a moving vehicle, the experimental rats came to a wooden barrier and hit them on the forehead, resulting in a brain injury. The speed of the vehicle was 6.7 km per hour. During the experiments of the road traffic accident, 39 rats survived and four rats died. In the general, ie macroscopic view of the liver of 1.3.6-month-old white rats, changes depending on the month are observed, different levels of morphological changes in the state of fat metamorphosis in the cortex of the liver, consisting of lymphoid cells (hepatocytes) were noted.

Growing neurotraumatic conditions worldwide, increasing disability and increasing mortality rates require constant study of the medical and social aspects of the problem.

It should also be noted that traumatic brain injury accounts for 30-40% of injuries and is the leading cause of permanent and temporary disability in the population, as well as cardiovascular and oncological diseases among the causes of death in middle-aged people [4,6].

Against the background of traumatic brain injury in the immune system of the body, respectively, broncho-pulmonary complications and autosensitization of the body, in particular, the emergence of autoantibodies to antigens of brain structures, leads to disruption of the range of action of all T-lymphocytes and V-lymphocytes [1,5]. The effect of various factors on the body of origin may be manifested by hypofunction or hyperfunction of the liver. The attenuating effect (e.g., stress, ionizing radiation, severe pathological conditions of the body and the influence of other environmental factors on the outside) is manifested by increased proliferation and orientation of cells responsible for the immunological state, increased delimitation, apoptosis and decreased macrophage activity. [6,7,8]

To date, detailed studies on the effects of traumatic brain injury on the liver structure have been virtually non-existent. At the same time, the research will help to understand the effects of exogenous factors and the mechanisms of immune response that occur after traumatic brain injury and to study in more depth the impact of traumatic brain injury on changes in morphofunctional parameters in the liver.

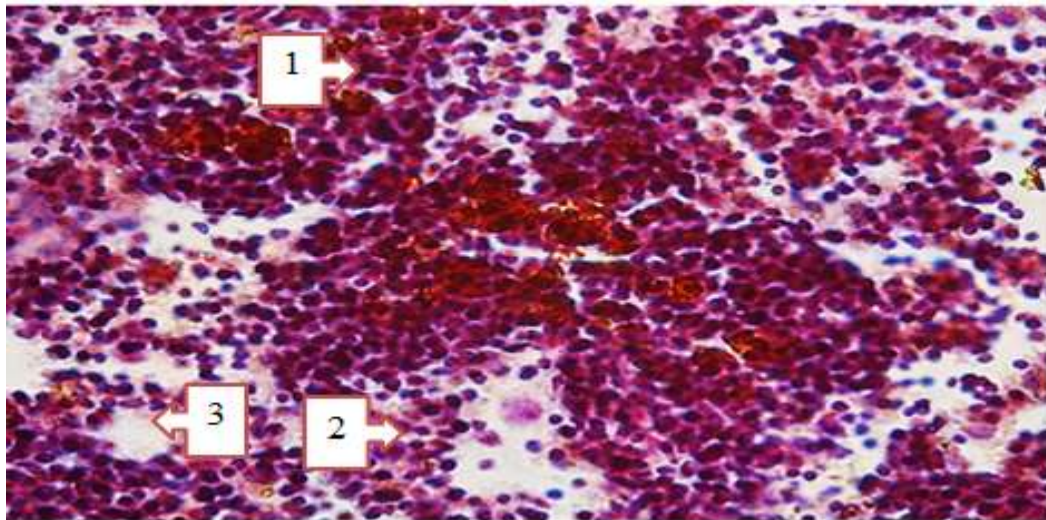
Materials and methods. The experiment was performed on 43 white-bred rats aged 1.3.6 months. Rats were composed of representatives of both sexes and their average weight was 250-300 grams. The animals were immobilized on a hand-held device, i.e. a wheeled vehicle, then the laboratory rats were accelerated in the vehicle (speed - 6.7 km / h) and hit a wooden barrier with the forehead of the head. As a result of this experiment, 4 white rats died on the spot. Prior to injury, all rats were trained for 4 days in the Morris water labyrinth to develop cognitive memory retention and water survival skills, which were evaluated by time and area mobility indicators. After receiving a traumatic brain injury, the rats were again retested to determine movement patterns in time and area, as a result of which all experimental animals were divided into three subgroups according to the results of the last indicators, depending on the degree of injury. (For mild, moderate, and severe injuries). This article presented the results of animals with only mild traumatic brain injury. Different levels of complications were observed in the rats after the injury (tremors, nosebleeds, bleeding from the mouth, short-term fainting, etc.). All 43 laboratory rats were decapitated in place immediately after the experiment by removing their heads from the body.

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

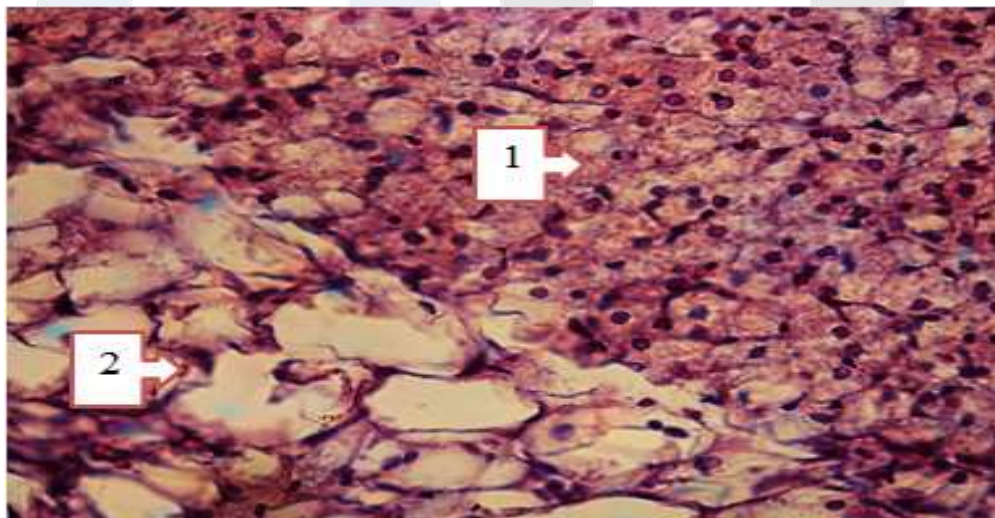
VOLUME-3, ISSUE-5

After the chest was opened, the liver was removed for examination. All experiments on laboratory animals were performed in accordance with the 1964 Helsinki Declaration of the International Medical Association. The removed liver and its parts were immersed in Buena solution and placed in paraffin. It was then prepared and stained in hematoxylin-eosin solutions in sections 6–7 μm in size. Morphometric studies were performed under the NLCD NOVEL-307B (China) microscope.

Research results. Changes in the liver of 1.3.6-month-old white rats after minor brain injuries vary with age. Examination of lymphoid cells (hepatocytes) in 1-month-old rat liver 3 days after brain injury showed a decrease in the number of hepatocytes (20-30%), narrowing of local blood vessels, dilation of the barrier separating the cortex and core layers (15-20%). until the state of fatty metamorphosis is enlarged (25-35%), it can be seen that the shape of Gassali cells is almost unchanged. (Figure 1.2).



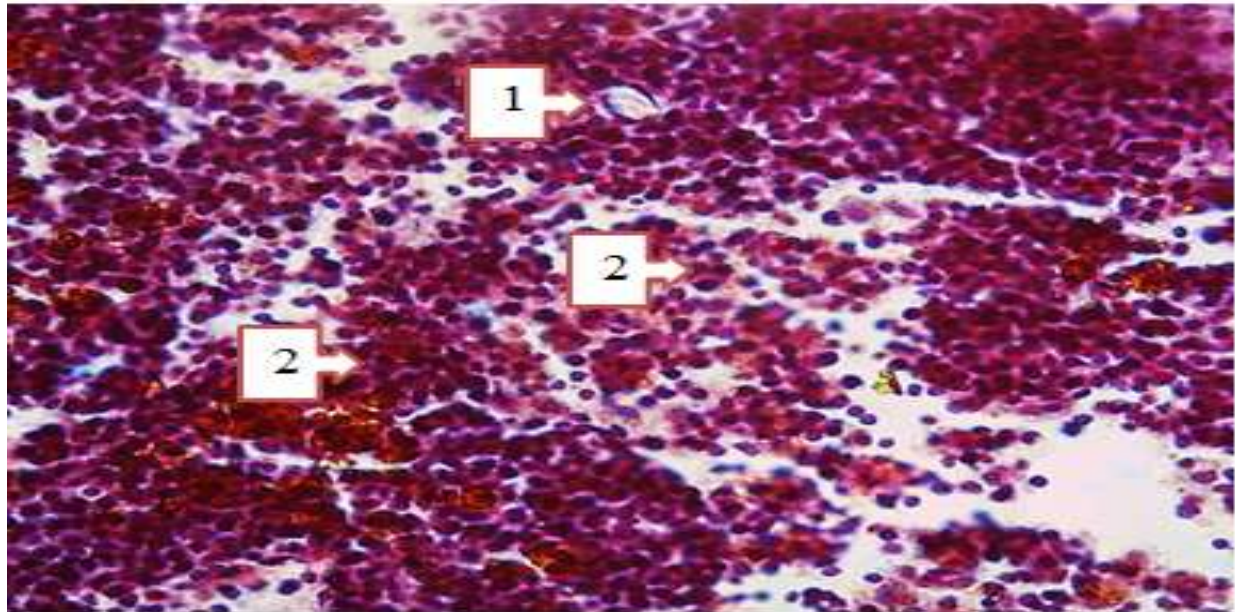
1- Picture. 3-month-old rat. 1. Rare lymphocytes. 2. Local blood vessels are dilated. 3. Dilated blood vessels



2- picture. 3-month-old rat. 1. Decreased number of lymphocytes 2. Areas of fat metamorphosis have increased

Changes in the liver of 3.6-month-old white rats after minor brain injuries vary with age. When the lymphoid cells (hepatocytes) were examined in the 3.6-month-old rat liver 3 days after

brain injury after TMS, the number of hepatocytes decreased to 50-60%, the local blood vessels there narrowed, and the barrier separating the cortex and core layers widened (30-50%)., until the state of fatty metamorphosis is enlarged (60-70%), it is possible to see the unevenness of the boundaries of the deformed cells of Gassali. (Figure 3.4)



3- picture. 1. Dilated blood vessels 2. Decreased lymphocyte count

The size of organ lobules in the liver was determined by their length and diameter, total area of lobules, area of arbitrary units of cortical and medulla zones, as well as large-scale composition, decreased number of medium and small lymphocytes in cortical and medulla lobules, and widened interval. [9,10]

Conclusions. Studies have shown that in cases of traumatic brain injury in animals, i.e. 3 days after a mild injury in rats, some changes in the structure of the liver, i.e. decreased lymphocyte count and dilation, increased fatty metamorphosis areas, dilated blood vessels. Changes are also observed in the Gassali cells of the liver.

Literature:

1. Kalinina N. M. Trauma: inflammation and immunity / N. M. Kalinina, A. E. Sosyukin, D. A. Vologjanin // *Tsitokiny i vospalenie*. -2005. - T.4, № 1.-S.28-35.
2. Konovalov A. N., Lixterman L. B., Potapov A. A. *Klinicheskoe rukovodstvo po cherepno-mozgovoy travme*. -M.: Antidor, 2002. - T.1. - 550 s.
3. Rybakina E.G., Shanin S.N., Fomicheva E.E., Filatenkova T.A., Dmitrienko E.V. *Kletochno-molekulyarnye mekhanizmy izmeneniya zashchitnyx funktsiy organizma pri cherepno-mozgovoy travme i popytka lecheniya* // *Meditinskiy akademicheskiy zhurnal*, 2014. T. 14, №4. S. 55- 62.
4. Salamov V.B., Tshaev Sh.J., Bafoev U.V. Modeling of cerebral palsy trauma. // *Problems of biology and medicine* 2021, № 2 (127). S. 214-219
5. Tshaev Sh.J., Turdiev M.R., Soxibova Z.R. Morphometric parameters of histological structural sele-zenki belyx kryis in postnatal ontogenesis // *Problems of biology and medicine* 2019, №4.2 (115). S. 187-189

6. Petrenko VM. Early stages of liver organogenesis. Intern J Appl and Fund Research. 2012; 12: 19-22. Русский (Petrenko V.M. Nachalnye etapy organogenesis timusa // Mezhdunarodnyy zhurnal prikladnyx i fundamentnyx issledovaniy. 2012. № 12. P. 19-22)
7. Akhmedova Shakhlo Malikovna "Age-Related Features of Changes in the Liverland in Children" Central Asian Studies // s Special Issue on COVID-19: Yesterday, Today, and Tomorrow ISSN: 2660-4159 <http://cajms.centralasianstudies.org> 271-275
8. Matkovskaya T.V. Enlarge the timus in the details. Tomsk, 1991. 152 p. Russkiy (Matkovskaya T.V. Uvelichenie timusa u detey. Tomsk: TGU, 1991. 152 p.)
9. Akhmedova Sh. M.// Morphometric changes in age-related signs of the liver // Special Issue: Applying Foreign Experience In Distance Education To The Education System-2022 Issn: 2181-2594
10. Kuzmenko L.G., Kiseleva N.M., Simonova AV. Training in the liver. Journal nauchnyx statey Zdorove i obrazovanie v XXI veke. 2013; 15 (1-4): 170-175. Russkiy (Kuzmenko L.G., Kiseleva N.M., Simonova A.V. Starenie i timus // Jurnal nauchnyx sostoyaniy zdorovya i obrazovaniya v XXI veke. 2013. T. 15, № 1-4. P. 170-175)
11. Орзиев З. М., Нуриллоева Ш. Н. Компетентность количественных показателей ведущих клинических признаков холестаза в дифференциации его градаций //Биология и интегративная медицина. – 2018. – №. 4. – С. 62-73.
12. qizi Nurilloeva, S. N. (2022). OBSTRUCTIVE PULMONARY DISEASE AND CHANGES IN MENTAL STATUS IN PATIENTS WITH COVID-19. *THE ROLE OF SCIENCE AND INNOVATION IN THE MODERN WORLD*, 1(3), 91-97.
13. qizi Nurilloeva, Shahodat Nurillo. "OBSTRUCTIVE PULMONARY DISEASE AND CHANGES IN MENTAL STATUS IN PATIENTS WITH COVID-19." *THE ROLE OF SCIENCE AND INNOVATION IN THE MODERN WORLD* 1.3 (2022): 91-97.
14. Nurillokizi N. S. Metabolic Syndrome: Methods of Prevention and Treatment //BARQARORLIK VA YETAKCHI TADQIQOTLAR ONLAYN ILMIY JURNALI. – 2021. – Т. 1. – №. 6. – С. 475-482.
15. qizi Nurilloeva S. N. OBSTRUCTIVE PULMONARY DISEASE AND CHANGES IN MENTAL STATUS IN PATIENTS WITH COVID-19 //THE ROLE OF SCIENCE AND INNOVATION IN THE MODERN WORLD. – 2022. – Т. 1. – №. 3. – С. 91-97.
16. Nurilloeva Shakhodat Nurillo kizi. Diagnosis of Tubuloglomerular Relationship in Patients with Metabolic Syndrome // Journal of advanced research and stability (JARS) Volume: 01 Issue: 06 | 2021 ISSN: 2181-2608. –P. 469-474.
17. 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.
18. 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.
19. Хамдамов И.Б., Хамдамов А.Б. Фертил ёшдаги аёлларда эндовидеохирургик герниопластика // Тиббиётда янги кун. Бухоро, 2021.-№6 (38/1) -С. 25-27.
20. 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

21. 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.

22. Хамдамов И.Б. Морфофункциональные особенности брюшного пресса у женщин репродуктивного возраста // Тиббиётда янги кун. Бухоро, 2022.-№3(41)- С. 223-227.

23. 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.

24. 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.

25. 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.

26. 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.

27. 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.

28. 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.

29. 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.

30. 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.

31. 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.

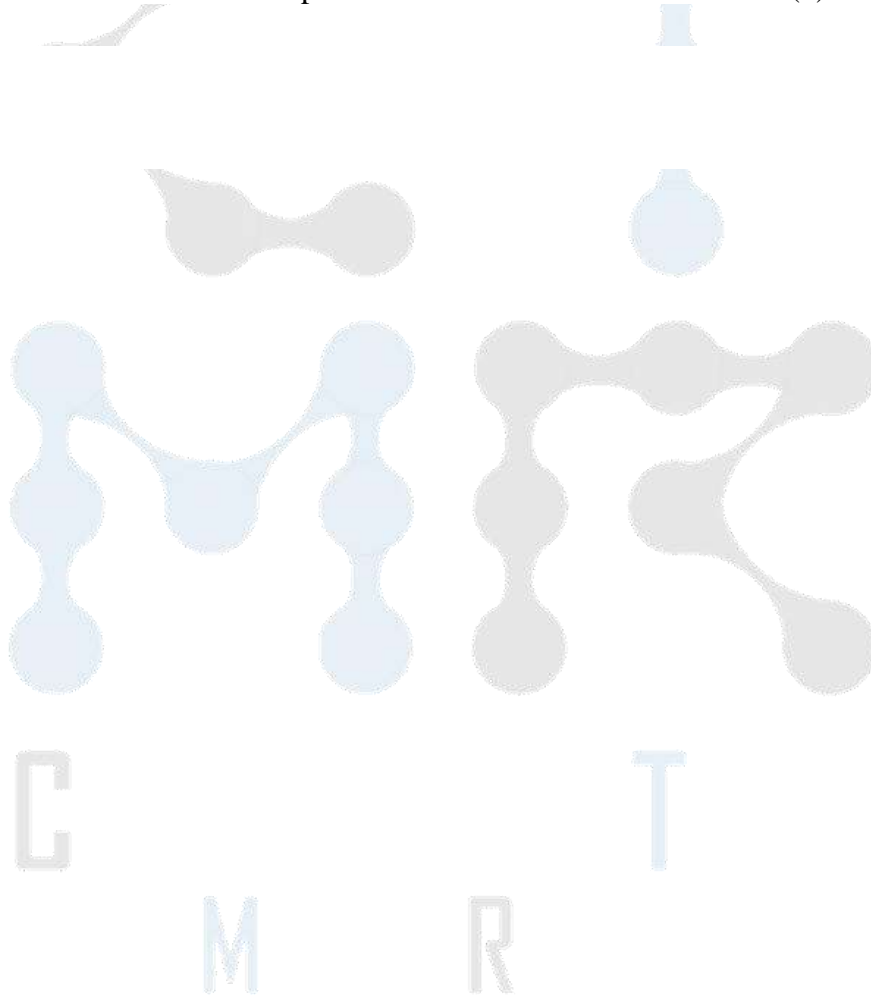
32. Хамдамова М.Т. Особенности ультразвукового изображения матки и яичников у женщин второго периода среднего возраста применяющие комбинированные

оральные контрацептивные средства // Тиббиётда янги кун. - Ташкент, 2020. - № 2 (30). - С. 258-261.

33. 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.

34. 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.

35. 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.



BIOCHEMICAL COMPOSITION OF BROCCOLIES IN IQF PROCESS.

prof. Q.O.Dodayev, Teacher. Kh.N.Niyazov, PhD student. M.Miralimov.

Tashkent Institute of Chemical Technology

e-mail: miralisher@gmg-trade.uz phone: +99899 818-75-55

Annotatsiya. Individual tez muzlatish (IQF) meva, rezavorlar va sabzavotlarning sifati va ozuqaviy qiymatini saqlab qolish uchun muhim jarayondir. IQF (individual tez muzlatish) mahsulotlarni sifatli va qisqa muddatli muzlatishdan iborat bo'lib, bu mahsulot hujayra tarkibidagi muz kristallarini shakllanishi jarayonida hajm jihatidan kattalashuviga to'sqinlik qiladi va ularning tuzilishi, ta'mi va ozuqaviy tarkibini saqlab qoladi.

Annotation: The Individual Quick Freezing (IQF) process is essential for maintaining the quality and nutritional value of vegetables such as broccoli. Rapid freezing of the vegetable prevents the formation of large ice crystals that can damage the cell structure and reduce the nutritional value of the vegetable. By preserving the texture, taste, and nutritional content of broccoli, IQF allows for longer storage times, reducing the risk of spoilage and food waste. The IQF process also helps to retain important bioactive compounds, such as antioxidants and vitamins, making IQF broccoli a valuable addition to a healthy and balanced diet.

Kalit so'zlar. QF texnologiyasi, sovutish, muzlatish, konservalash, atrof-muhit, bioaktiv birikmalar, potentsial, yuqori to'yimli sabzavotlar, oziq-ovqat fanlari jurnali, muz kristallari, biokimyoviy va ozuqaviy qiymat

Key words. IQF technology, cooling, freezing, preservation, environment, bioactive compounds, potential, a nutrient-dense vegetable, the Journal of Food Science, ice crystals, biochemical composition and nutritional value.

The IQF technology has been in existence since the 1920s, but it has undergone significant improvements in recent years. The introduction of advanced refrigeration and freezing systems has made the IQF process more efficient, cost-effective, and environmentally friendly. These new technologies have revolutionized the IQF process and have made it possible to preserve the quality and nutritional value of fruits, berries, and vegetables in a more sustainable and efficient way.

Broccoli is a cruciferous vegetable that is highly nutritious and has gained a reputation as a superfood in recent years. It is rich in vitamins, minerals, antioxidants, and other bioactive compounds that have been linked to a range of health benefits, including reducing the risk of cancer, heart disease, and diabetes. In order to preserve these valuable nutrients, broccoli is often processed using IQF (individually quick frozen) technology.

The IQF process involves rapidly freezing individual pieces of broccoli at a very low temperature (-40°C or lower) using a blast freezer. This process is designed to minimize the formation of ice crystals, which can damage the cell structure of the broccoli and reduce its nutritional value. By freezing the broccoli quickly and at a low temperature, the cell structure is preserved, and the nutritional content of the vegetable is retained.

The biochemical composition of broccoli can be affected by various factors, such as the growing conditions, harvesting methods, and storage conditions. Broccoli is a rich source of various nutrients and bioactive compounds. The biochemical composition of broccoli includes:

1. Carbohydrates: Broccoli contains 6 grams of carbohydrates per 100 grams of serving. The carbohydrates in broccoli are mainly in the form of fiber, which helps in maintaining digestive health.

2. Protein: Broccoli is a good source of protein, containing 2.8 grams of protein per 100 grams of serving.

3. Vitamins: Broccoli is a rich source of vitamins, especially vitamin C, vitamin K, and vitamin A. 100 grams of broccoli contains 89.2 mg of vitamin C, 101.6 mcg of vitamin K, and 623 IU of vitamin A.

4. Minerals: Broccoli is a good source of minerals, including calcium, iron, potassium, and magnesium.

5. Bioactive compounds: Broccoli contains various bioactive compounds, including glycosylates, flavonoids, and carotenoids. These compounds have been shown to have antioxidant, anti-inflammatory, and anti-cancer properties.

Overall, broccoli is a nutrient-dense vegetable that can provide several health benefits when included in a balanced diet. However, the IQF process has been found to be an effective way of preserving the nutritional value of broccoli. Studies have shown that the levels of antioxidants, vitamins, and other bioactive compounds in IQF broccoli are comparable to fresh broccoli.

Broccoli is a nutrient-dense vegetable that is widely recognized for its health benefits. It is packed with vitamins, minerals, antioxidants, and other bioactive compounds that are essential for maintaining good health. The biochemical composition of broccoli can vary depending on factors such as the variety, growing conditions, and maturity, making it crucial to preserve the quality and nutritional value of the vegetable during IQF (Individual Quick Freezing) processing.

Broccoli typically contains around 7-9% carbohydrates, including fiber, and about 3-4% protein. It also contains various vitamins and minerals, including vitamin C, vitamin K, folate, potassium, and calcium. Additionally, broccoli is rich in antioxidants, such as carotenoids, flavonoids, and phenolic compounds, which have been linked to a range of health benefits, including reducing the risk of cancer and heart disease.

During IQF processing, it is essential to freeze broccoli rapidly to prevent the formation of large ice crystals that can damage the cell structure and reduce the nutritional value of the vegetable. The IQF process is designed to maintain the texture, taste, and nutritional content of the broccoli while extending its shelf life and reducing the risk of spoilage.

Research has shown that IQF broccoli retains its nutritional value and bioactive compounds, making it a valuable addition to a healthy diet. One study published in the Journal of Food Science and Technology found that IQF broccoli had comparable levels of antioxidants, total phenolics, and vitamin C to fresh broccoli. Another study published in the Journal of Agricultural and Food Chemistry found that IQF broccoli had higher levels of vitamin C and total phenolics compared to conventionally frozen broccoli.

In addition to preserving the nutritional value of broccoli, the IQF process also has other benefits. It allows for longer storage times and reduces the risk of spoilage, which can result in food waste. IQF broccoli is also more convenient for consumers, as it can be easily stored and used as needed.

In conclusion, the IQF process is a crucial step in preserving the quality and nutritional value of broccoli. It allows for the retention of important bioactive compounds, such as antioxidants and vitamins, and is a convenient way for consumers to enjoy the health benefits of this nutrient-dense vegetable. As such, IQF broccoli is a valuable addition to any healthy and balanced diet.

References:

1. Y. H. Hui, Isabel Guerrero Legarretta, Miang Hoong Lim, K.D. Murrell, Wai-Kit Nip CRC Press, 29 march, 2004 y `` Frozen fruits and foods ``
2. József Barta, M. Pilar Cano, Todd W. Gusek, Jiwan S. Sidhu, Nirmal K. Sinha
3. Nirmal K. Sinha, Jiwan Sidhu, Jozsef Barta, James Wu, M.Pilar Cano Wiley, 18 june, 2012 y. `` Frozen fruits and fruit processing ``
4. John Wiley & Sons, 23 april, 2007 y. `` Food products Manufacturing ``
5. J. Scott Smith, Y. H. Hui Wiley, 28 february, 2008 y `` Food processing, principles and applications ``
6. Martsinkevich // Fruit growing: a collection of scientific papers / RUE "Institute of Fruit Growing". - Minsk: Republican Unitary Enterprise Publishing House "Belarusian Science", 2021. - P. 227-238. – DOI 10.47612/0134-9759-2021-33-227-238. – EDN KASSSN
7. Isabel Guerrero Legarretta, `` Frozen Foods `` Marcel Dekker Inc 270 Madison Avenue, New York.
8. Tursunov, O., Dobrowolski, J. W., Khujaev, O., Abduganiev, N., Nazarova, O. J., & Yuldosheva, D. J. (2021, December). Study on the perspectives of application of eco-friendly laser biotechnology for environmental protection in Uzbekistan. In IOP Conference Series: Earth and Environmental Science (Vol. 939, No. 1, p. 012083). IOP Publishing.
9. Da-Wen Sun `` Frozen Food Processing and Packaging `` CRC Press. 14-november, 2005-2018y.



IMPROVING THE SPEECH OF ELEMENTARY SCHOOL STUDENTS IN
LEARNING FOREIGN LANGUAGES OUTSIDE THE CLASSROOM.

Jumaqulova Surayyo

Student of group 429

Faculty of Foreign Philology, Termiz State University

Annotation: This article provides an explanation of the semantic meaning of the word exercise, its conceptual basis, its use in educational tools and its characteristics, the role and importance of exercises in the development of linguistic, speech, and basic competencies from scientific and methodical sources. , the scientific opinions and views of linguists and Methodist scientists were analyzed.

Key words: exercise, speech skills, development of speech forms, development of oral and written speech, forms of speech, written literacy, norms of literary language, knowledge, skills, skills, speech styles, speech skills, speech competence, dictionaries, lexical layer, work on text types, text analysis.

In the following years, one of the main tasks is to teach pupils and students foreign languages on the basis of innovative approaches and advanced modern technologies, as well as to create knowledge, skills, skills and speech on the subject. Through the use of innovative technologies in teaching foreign languages to students, their thinking, having certain ideas, speaking and speaking skills in a foreign language are developed. According to McCarthy, "the methodology of teaching foreign languages is half a century old

developed a lot during It has been carried out at various times in grammatical translation, audio-linguistic structure, global audiovisual, inductive/deductive, functional, ideational, situational, communicative, immersion, learning/acquiring, recommendation, etc. as it is organized with linguistic tools, it becomes easier for them to master and understand the topic. Therefore, as a result of using these tools in the course of the lesson, the ability to remember the semantic meaning of words in memory, recall and use a number of words in live speech develops.

Raising the interest of young students in learning a foreign language, creating opportunities for them, and supporting them will help them learn this language faster need:

- providing the lesson with various electronic resources;
- creating methodical literature for use in foreign language teaching activities;
- focus on individual work with students;
- increase the effectiveness of the quality of education;
- adequate introduction of new educational technologies into the educational process;
- organizing and motivating students during the lesson.

The role and importance of exercises and assignments along with a number of educational tools in the methodology of teaching a foreign language to students in the course of the lesson is of great importance.

It is known that the exercise has been used since ancient times to conduct classes and teach the subject, this educational tool is considered one of the sources that make students think and

learn the subject. In particular, during the teaching of the German language and in the implementation of the goals of the lesson, the advantages and important aspects of the exercise are distinguished. This educational tool is widely used in the subject of education to clearly understand and strengthen the subject. Ya. Kamensky emphasized the importance of exercise in his work "The School of Pansophia" and wrote: "Exercise makes a person skillful, dexterous, aware of everything, interested in all fields, suitable for any job". In fact, as a result of performing exercises, various psychological characteristics of students improve. The textbook "Native language didactics" compiled by a number of scientists led by O. Ochilov contains the following information about the importance of linguistic exercises: "Linguistic exercises are a component of the process of preparing young people for life, the leading factor in the implementation of language education"¹ Linguistic exercises o develops students' linguistic competences. Expressed his thoughts on the systematization of assignments. If exercises and assignments are effectively used to improve the quality and efficiency of education in foreign language teaching, if foreign language is taught from easy to complex, students' knowledge and skills will develop, they learn the given topic perfectly and develop their speech literacy.

In her research, A. Nisanbayeva focuses on exercises and tasks related to the development of text-based speech in primary grades. Developing speech based on the text, if the teacher consistently works on exercises and tasks starting from the primary grades, the students' speech will develop well. In our opinion, the exercise is a set of independent activities that establish the essence of educational content and develop speech forms. The exercise is considered an educational tool that improves the student's knowledge and develops speaking skills for learning a foreign language.

I.M. Podgaetskaya thinks as follows about the performance of exercises and assignments: "methodological interest is an emotional feeling that makes students want to know the knowledge of the subject and stimulates enthusiasm for this subject. "Attitude is understood. From the outside, this attitude is manifested in diligence and curiosity."

So, if we pay attention to the teaching of exercises and assignments among the main educational tools in the course of the lesson, we will increase their interest in learning this subject. their speaking and writing competences will develop and grow if special exercises and exercises developed by the teacher are used to learn a foreign language even more deeply at the required level.

REFERENCES:

1. Hamraev G'.H. Umumiy o'rta ta'lim tizimida fonetikaga doir o'quv materiallarining metodik ta'minotini takomillashtirish: ped. fan. dok. (PhD) diss. - Samarqand: 2019. - 82 b.
2. Salisheva Z.I. O'zbek tili mashg'ulotlarida talabalar monologik nutqini rivojlantirish metodikasini takomillashtirish (rus guruhlardapyc гурухларда). Ped.fan.nom. ...diss.avtoref. -T., 2019.-11b
3. Nisanboyeva A.Q. O'zbek tili darslarida matn vositasida o'quvchilar nutqini o'stirishning metodik asoslari.(Ta'lim qozoq tilida olib boriladigan maktablar misolida): Ped. Fan.nomz. diss. - T.: TDPU, 2008.-160b
4. Подгаetskaya И.М. Воспитание у учащихся интереса к изучению русского языка . Просвещение,,1985
5. Nisanboyeva A.Q. O'zbek tili darslarida matn vositasida o'quvchilar nutqini o'stirishning metodik asoslari.(Ta'lim qozoq tilida olib boriladigan maktablar misolida): Ped. Fan.nomz. diss. - T.: TDPU, 2008.
6. Roziqov O.R v.b. Ona tili didaktikasi. - T.:Yangi asr avlodi, 2005.
7. Salisheva Z.I. O'zbek tili mashg'ulotlarida talabalar monologik nutqini rivojlantirish metodikasini takomillashtirish (rus guruhlardapyc гурухларда). Ped.fan.nom. ...diss.avtoref. -T., 2019.
8. Подгаetskaya И.М. Воспитание у учащихся интереса к изучению русского языка . Просвещение,,1985
9. Hamrayev G'.H. Umumiy o'rta ta'lim tizimida fonetikaga doir o'quv materiallarining metodik ta'minotini takomillashtirish: ped. fan. dok. (PhD) diss. - Samarqand: 2019.

ПСИХОЛОГИЧЕСКИЙ ФАКТОР МУЗЫКИ ДЛЯ
ДОШКОЛЬНОГО ВОЗРАСТА



Камолов Шавкат Хаджиевич

Старший преподаватель кафедры музыкальное исполнение и культура Бухарского государственного университета

Kamolovsavkat81@gmail.com

Аннотация: В данной статье дается представление о развитии детей, обучающихся по

направлению дошкольного образования средствами музыкотерапии.

Ключевые слова: Тональность, ритм, частотность, эмоциональное активирование, эстетических потребностей, актив, пассив.

Abstract: This article gives an idea of the development of children studying in the direction of preschool education through the means of music therapy.

Key words: Tonality, rhythm, frequency, emotional activation, aesthetic needs, asset, passive.

Музыкальная терапия (или “музыкотерапия”, дословно - “исцеление музыкой”, от лат. musica “музыка” и греч. therapeuein “лечить”) – это психотерапевтический метод, основанный на целительном воздействии музыки на психологическое состояние человека, где музыка используется как лечебное средство. Музыкотерапия относится к комплексным средствам эмоционального и психосенсорного воздействия. Терапевтическое воздействие музыки известно с древних времен. Совершим небольшой

экскурс в историю музыкального врачевания, которая уходит своими корнями далеко в прошлое. Музыкотерапию связывают с именем Аполлона – покровителя искусств и его сына Асклепия – покровителя врачевания. Древняя медицина была тесно связана с религией, философией, мифологией и искусством, особенно с музыкой. Умение петь и играть на музыкальных инструментах было одной из обязанностей врача. О целебной силе музыки мы находим упоминание в трудах древнегреческих ученых и философов. Платон предлагал лечить ревматизм пением и игрой на музыкальных инструментах. Пифагор утверждал, что музыка помогает человеку поддерживать внутреннюю гармонию, ему принадлежит известный афоризм: «Музыка может врачевать безумства людей». Аристотель считал, что музыка влияет на освобождение от эмоционального

напряжения и психологического надлома. Многие мыслители высказывали свое убеждение в том, что музыка формирует характер и помогает взаимопониманию. Древние врачи прописывали больным курсы музыкотерапии (Гиппократ). Авиценна утверждал в «Каноне врачебной науки»: «Страдающих меланхолией необходимо развлекать музыкой», считал, что хорошее пение утишает боль, отвлекает от нее и даже усыпляет. У великого Гомера описывалось, как исполнение мелодичных песен способствовало исцелению ран героев.

В Парфянском царстве в III веке до нашей эры с помощью специально подобранных мелодий лечили от тоски, нервных расстройств и сердечных болей. В XIX столетии французский психиатр Эскироль начал использовать музыкальную терапию в психиатрических заведениях. Дальнейшее распространение музыкотерапия получила после первой мировой войны. В 1930-х годах опыт военных врачей использовали

немецкие терапевты при лечении язвы желуд-ка, швейцарские - при лечении легких форм туберкулеза. Австрийские акушеры с помощью му-зыки обезболивали роды. Использование музыки и звука как анестезирующего средства стало применяться и в стоматологической и хирургической практике. Вся эта практика стала основой развития музыкотерапии после второй мировой войны. Древние врачи прописывали больным курсы музыкотерапии (Гиппократ). Авиценна утвер-ждал в «Каноне врачебной науки»: «Страдающих меланхолией необходимо развлекать музы-кой», считал, что хорошее пение утишает боль, отвлекает от нее и даже усыпляет. У великого Гомера описывалось, как исполнение мелодичных песен способствовало исцелению ран героев.

В Парфянском царстве в III веке до нашей эры с помощью специально подобранных мелодий лечили от тоски, нервных расстройств и сердечных болей. В XIX столетии французский психиатр Эскироль начал использовать музыкальную терапию в психиатрических заведениях. Дальнейшее распространение музыкотерапия получила после первой мировой войны. В 1930-х годах опыт военных врачей использовали немецкие терапевты при лечении язвы желуд-ка, швейцарские - при лечении легких форм туберкулеза. Австрийские акушеры с помощью му-зыки обезболивали роды. Использование музыки и звука как анестезирующего средства стало применяться и в стоматологической и хирургической практике. Вся эта практика стала основой развития музыкотерапии после второй мировой войны. Человеческий мозг - это очень хороший прогностический механизм. Он должен непрерыв-но предсказывать развитие событий, потому что это дает нам возможность подготовиться к их последствиям. Однако, с научной точки зрения объяснить феномен получение удовольствия от музыки весьма трудно. Ведь для человеческого инстинкта музыка бесполезна, то есть без музы-ки человек не умрет, но существует теория, согласно которой музыка представляет тренажерный зал для мозга. Именно музыка позволяет нашим прогностическим механизмам делать предпо-ложения о том, как она будет развиваться, куда повернет мелодия, насколько она нас удивит.

Мы можем формировать ожидания на разных уровнях. Конечно, в случае с музыкой мы делаем это не для выживания, но, согласно этой теории, нам от природы интересно предсказывать раз-витие событий, мы ничего не можем с этим поделать. С другой стороны, человек не может вооб-разить себе жизнь без музыки, она ему нужна как все остальные жизненные человеческие по-требности, чтобы жить в гармонии. Получается, что музыка - прекрасная возможность потрени-роваться в таких предсказаниях. Таким образом, Слушая музыку, мы строим догадки, какая нота прозвучит дальше и как будет меняться ритм. Если мы угадали, в мозге активируется система

вознаграждения и мы испытываем положительные эмоции. Как однажды сказал Эрнест Ансерме: «Музыка вызвала к жизни величайшую историю, но человек - движущая сила музыки - так и не составил, более того, даже не осознал необходи-мость составить себе ясное представление о явлении, которое он так назвал». Отдельные элементы музыки имеют прямое влияние на различные системы человеческого организма:

Ритм. Правильно подобранный музыкальный ритм путем нормализации биологических ритмов способствует правильному перераспределению энергии, гармонии, хорошему самочув-ствию. Если звучание ритма музыки реже ритма пульса - то мелодия будет оказывать релакса-ционный эффект на организм, мягкие ритмы

успокаивают, а если они чаще пульса, возникает возбуждающий эффект, при этом быстрые пульсирующие ритмы могут вызывать отрицательные эмоции.

Тональность. Минорные тональности обнаруживают депрессивный, подавляющий эффект. Мажорные - поднимают настроение, приводят в хорошее расположение духа, повышают артериальное давление и мускульный тонус.

Частотность. Высокочастотные звуки (3000-8000 Гц и выше) вызывают в мозге резонанс, пагубно воздействуя на познавательные процессы. Длительный и громкий звук вообще способен привести к полному истощению организма. Звуки среднего диапазона (750-3000 Гц) стимулируют

сердечную деятельность, дыхание и эмоциональный фон. Низкие (125-750 Гц) воздействуют на физическое движение, вызывают напряжение и даже спазмы в мускулатуре. Музыка с низкими вибрациями не дает возможности сконцентрироваться или успокоиться.

Также очень важны такие характеристики, как диссонансы - дисгармоничное сочетание звуков - они возбуждают, раздражают, и консонансы - гармоничное сочетание звуков - они, напротив, успокаивают, создают приятное ощущение. Так, например, рок-музыка отличается частым диссонансом, нерегулярностью ритмов, отсутствием формы. Она воздействует ультра- и инфразвуками, мы их не слышим, но их воспринимают наши органы, а это может действовать разрушающе на мозг по принципу «25-го кадра».

Выделяют три основных направления лечебного действия музыкотерапии:

- эмоциональное активирование;
- регулирующее влияние на психовегетативные процессы;
- повышение эстетических потребностей.

Музыка... Когда мы слышим это слово - для каждого из нас в воображении звучит что-то своё. Но, безусловно, это всегда та мелодия, которая даёт нам силы, заряжает энергией и позитивом.

Различают следующие формы музыкотерапии:

- активную (двигательные импровизации под соответствующий характеру музыки словесный комментарий);
- пассивную (прослушивание стимулирующей, успокаивающей или стабилизирующей музыки специально или как фон).

Музыкотерапия - одно из перспективных направлений в жизни ДОУ. Она способствует коррекции психофизического здоровья детей в процессе их жизнедеятельности.

Литература.

1. Каюмов И. Ф. Психологические истоки музыки //Academy. – 2020. – №. 11 (62). – С. 56-58.
2. Васильченко Е.В. Культура звука в традиционных восточных цивилизациях. Автореф. дис. доктора культурологических наук. - М., 1997. - С. 10-26.
3. Минаев Е. Музыкально-информационное поле в эволюционных процессах искусства. Авт. дис. на соиск. уч. ст. д. искусствоведения. - М., 2000.
4. Музыкальный энциклопедический словарь. - М., 2000.

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-3, ISSUE-5

5. Каюмов И. Ф., Жураева М. Место музыки в воспитании духовно-нравственных качеств учащихся 5-7 классов общеобразовательных школ //Проблемы педагогики. – 2020. – №. 3 (48). – С. 17-19.
6. Kayumov I. F. Values and aesthetic factors in the formation of culture and art //International Engineering Journal For Research & Development. – 2020. – Т. 12. – №. 1. – С. 10.
7. Fayzullaevich Q. I. Culture and art values and aesthetics in formation factors. – 2021.
8. Kayumov I. F. XALQ QO'SHIQLARI ASOSIDA BOSHLANGICH SINF O'QUVCHILARINING NUTQIY MALAKASINI O'STIRISH USULLARI //Scientific progress. – 2021. – Т. 1. – №. 5. – С. 635-640.
9. Каюмов И. Ф. Санъатнинг турлари ва уларнинг тарбиявий аҳамияти //Science and Education. – 2022. – Т. 3. – №. 1. – С. 849-854.
10. Kayumov, I. F. (2021). Formation of composing art in uzbek music. *Researchjet journal of Analysis and Inventions*, 2(12), 61-65.
11. Каюмов И. Ф. ВАЖНОСТЬ ВНЕКЛАССНЫХ ЗАНЯТИЙ В РАЗВИТИИ МУЗЫКАЛЬНЫХ СПОСОБНОСТЕЙ //Academy. – 2021. – №. 3 (66). – С. 51-53.
12. Каримов О. И. Значение специфических особенностей и воспитательных возможностей узбекских народных инструментов //Academy. – 2020. – №. 3 (54). – С. 78-80.
13. Karimov O. J. I. Tanbur sozining paydo bo 'lishi va milliy cholg 'u ijrochiligidagi o 'rni //Scientific progress. – 2021. – Т. 1. – №. 5. – С. 767-771.
14. Каримов О. И. Профессиональные музыкальные взгляды будущего учителя музыки //Вестник науки и образования. – 2020. – №. 22-2 (100). – С. 17-20.
15. Каримов О. И. Садриддин Айни-знаток и любитель народной музыки //Вопросы науки и образования. – 2021. – №. 13 (138). – С. 21-24.
16. Ходжаев Р. Р., Каримов О. И. Подготовка будущих учителя музыки. Тренировка на скрипке для рефлексии мышц //Science and Education. – 2022. – Т. 3. – №. 2. – С. 1419-1423.
17. Каримов О. И. Бўлажак мусика ўқитувчиларида маънавий-ахлоқий сифатларни шакллантириш //Scientific Impulse. – 2022. – Т. 1. – №. 2. – С. 377-381.
18. Каримов О. И., Шарипова С. Ш. К. Место искусства музыки в формировании идеальной личности человека в дошкольном заведении //Science and Education. – 2022. – Т. 3. – №. 1. – С. 692-698.
19. Islamovich K. O., Shukhrat S. S. The Role of Music in Forming a Perfect Human Personality //Miasto Przyszłości. – 2023. – Т. 33. – С. 72-75.
20. Камолов Ш. Х., Бомуродов Ш. Ш. Педагогический характер студенческой молодежи и психологический подход //Academy. – 2021. – №. 3 (66). – С. 60-62.
21. Камолов Ш. Х. Приёмы и методы преподавания музыки в общеобразовательной школе //Science and Education. – 2022. – Т. 3. – №. 1. – С. 602-607.
22. O'quvchi-yoshlarni mumtoz musiqa asarlari va xalq og'zaki ijodi namunalari bilan tanishtirishning ahamiyati SX Kamolov, Scientific progress, 2021
23. TALABALARDA MUSTAQIL TA'LIMNI TASHKIL ETISH Sh/ KAMOLOV, PEDAGOGIK MAHORAT. Ilmiy-nazariy va metodik jurnal. 2022, Maxsus son, 2022

USE OF CEREAL PRODUCTION TECHNOLOGY IN THE FOOD INDUSTRY

N.F.Xujakulova, K.A.Shokirov, H.B.Ergasheva, Sh.J.Yuldasheva

Bukhara Institute of Engineering and Technology

nilu_0430@mail.ru

Abstract: One of them is sorghum. All parts of this plant are of economic value. From sorghum grain, you can get cereals and flour, molasses, starch, syrup, beer and wine. Sorghum is a raw material for the production of ethyl alcohol, cellulose, paper, cardboard, brushes and brooms. Grain is a good concentrated feed for all kinds of animals and birds, green leaves and stems are used for livestock feed in fresh form and are well siloed.

Keywords: cereals, rice groats, nutritional value, germ, grains, buckwheat, oatmeal, kernels, semolina.

Grits are whole, crushed or flattened particles of the central part of the grain core, obtained as a result of removing the flower films of the fruit and seed shells of the aleurone layer and embryo, grinding, polishing and sorting [1,3,4].

The nutritional and consumer value of cereals is characterized by physical, chemical, colloidal and biochemical properties that depend on the natural characteristics of the grain, soil and climatic conditions of crop growth, the state of the art and technology of obtaining cereals [2,5,6].

Various types of cereals in the recipe of cereal concentrates, especially the first and second lunch dishes, make up 50-80%. Their initial taste qualities and nutritional value determine the quality of the finished product to the greatest extent [6,7,8].

Rice groats are produced polished and polished in three grades: the highest, the first and the second. Depending on the shape and consistency of the grain, rice is divided into three categories: glassy, semi-glassy and powdery. Polished rice is produced only from vitreous grains [9,10,11,12].

The ground rice of the highest, first and second grade is grains processed on grinding machines, in which the flower films, fruit and seed shells, most of the aleurone layer and the embryo are completely removed. The surface of the ground rice is rough.

Polished rice of the highest, first and second grades are grains of polished rice processed on polishing machines, produced from vitreous varieties. The surface of the polished rice is smooth, shiny [13,14,15].

Crushed rice is crushed kernels formed during the production of ground or polished rice, additionally processed on grinding machines and not passed through a sieve with holes with a diameter of 1.5 mm.

Rice groats of the highest and I grades are used in the production of food concentrates.

Buckwheat. From the grain of buckwheat, which has a triangular shape and a dark-colored fruit shell, the following types of kruna are produced: a kernel, a fast-growing kernel [16,17,18,19].

The kernel - the kernel of buckwheat, freed from the fruit shells - is released in grades I and II. The done - crushed buckwheat kernel - is not divided into varieties. Kernels, fast-growing kernels of grades I and II contain whole and chipped buckwheat kernels that do not pass through a sieve with holes of 1,6x20 mm [20,21,22,23].

The fast-growing process contains buckwheat kernels split into parts, passing through a sieve with holes of 1.6x20 mm and not passing through a wire mesh sieve N8. [24,25,26]

Fast-growing buckwheat is produced from buckwheat that has undergone hydrothermal treatment, which improves consumer properties and increases the yield of whole grains [27,28]. Due to steaming of grain, the duration of cooking cereals is significantly reduced. The rapidly developing kernel has a darker color, the amount of water-soluble substances and the coefficient of digestibility (boiling) increase, the porridge becomes more crumbly, the smell is more pleasant. Their initial taste qualities and nutritional value determine the quality of the finished product to the greatest extent.

In the production of food concentrates of lunch dishes, a fast-growing grade I kernel is usually used [29,30].

Millet millet is millet kernels completely freed from flower films and mainly from fruit and seed shells and embryo. Grits are obtained by processing the kernel (millet shingle) on grinding machines [31,32].

Millet of the highest, I and II grades differs in the content of broken and spoiled kernels and unpeeled grains. In addition, crushed rice is produced, which is not divided into varieties. In the production of food concentrates, it is advisable to use millet only of the highest grade.

VNIIZOM has developed an improved technology of millet of improved quality (such as crushed) by strengthening the grain cleaning by using new screw-pressing machines U1-BSHG for grain grinding operations. In such millet, the content of fiber, protein and fat is somewhat reduced, but consumer properties are significantly improved: the cooking time is reduced by almost 2 times, the volume welding is 8-9% higher, the color is lighter. The product is an excellent raw material for the production of concentrates [33,34,35,36].

From oats, unbroken oat groats of the highest and I grades are produced, flattened oat groats of the highest and I grades, oat flakes "Hercules", petal flakes and prepared oat flour – oatmeal. In the production of food concentrates, oatmeal is mainly used.

Oatmeal is produced from oats, purified from weed impurities, puny and underdeveloped grains. Before grinding oats into flour, it is soaked in vats, steamed, dried, cooled and peeled, followed by sifting to isolate flour (crushed) and sifting to separate the husk[37].

Barley is used to produce pearl barley and barley groats. Pearl barley is available in five numbers, depending on the size, shape of the kernel, color and shade. In the production of cereal concentrates, cereals N 1, 2 and 3 are used.

Pearl barley is a barley kernel, freed from flower films, well polished. Pearl barley N1 and 2 is characterized by an oval shape of the kernel and a white color with a yellowish tinge. Pearl barley N3 has a rounded shape with a small dark line or dot in the place of the groove.

Pearl barley is sorted by size on sieves with round holes. Pearl barley N 1, 2 and 3 is characterized by passage through sieves with holes with a diameter of 3, 2.5, 2 mm.

Barley groats are particles of crushed kernels of various sizes and shapes, completely freed from flower films and partially from fruit shells. According to the content of the endosperm, barley groats are inferior to pearl barley because they contain an aleurone layer, a significant part of the fruit and seed shells [38,39].

Barley groats are produced in three numbers, depending on the size of the kernel. In the production of food concentrates, barley groats N 1 and 2 are used. Groats N1 is characterized by a passage through a sieve with holes with a diameter of 2.5 mm and a descent of a sieve with holes with a diameter of 2 mm, groats N 2 - 2 and 1.5 mm, respectively.

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-3, ISSUE-5

Corn is used to produce grits ground in five numbers, large - for flakes and small - for the production of crispy sticks.. In the production of cereal concentrates, ground corn groats of the first three numbers are used. The ground grain consists of a coarsely crushed corn kernel, freed from fruit shells and germ, well sanded. Depending on the color of the processed corn grain, the ground grain can be white, light yellow and amber in color [40,41,42].

Groats N1 is characterized by passage through sieves with holes of 4 mm in diameter, and the descent of the sieve with holes of 3 mm, groats N2, respectively, are 3 - 2.5 and 2mm.

Produce whole peas peeled polished and crushed peeled polished. Whole peas consist of undivided cotyledons that do not pass through a sieve with holes 4-4.5x20 mm. The cereal contains crushed peas, peeled and polished, no more than 5%. According to the content of the endosperm, barley groats are inferior to pearl barley because they contain an aleurone layer, a significant part of the fruit and seed shells Whole polished peas have a spherical shape, a smooth surface with a whitish coating.

Split polished peas consist of divided cotyledons passing through a sieve with holes with a diameter of 4-4.5x20 mm and not passing through a sieve with holes with a diameter of 3 mm. Split peas have the shape of hemispheres, the surface is polished with a light whitish coating and rounded edges around the circumference. The color of peas, both whole and chopped, can be yellow and green [43,44,45].

Corn is used to produce grits ground in five numbers, large - for flakes and small - for the production of crispy sticks.. In the production of cereal concentrates, ground corn groats of the first three numbers are used. Both types of cereals are used in the production of food concentrates.

Wheat groats. Durum wheat (Durum) is used to produce "Poltava" groats of four numbers, "Artek" and semolina. Grain "Poltava" N1 wheat grain (passage through a sieve with holes with a diameter of 3.5 mm, exit from a sieve with holes with a diameter of 3 mm), freed from the embryo and partially from fruit and seed shells, sanded, oval in shape with rounded ends. Cereals-N3 and 4 - particles of crushed wheat grain of various sizes, completely freed from the embryo and partially from fruit and seed shells. The grain particles are rounded and sanded [46,47].

Artek grits are particles of finely crushed wheat grain (passage through a sieve with holes with a diameter of 1.5 mm, exit from the sieve N063), completely freed from the embryo and partially from the fruit and seed shells. Grain particles are sanded. Ground wheat groats are translucent, light yellow in color.

According to the content of the endosperm, barley groats are inferior to pearl barley because they contain an aleurone layer, a significant part of the fruit and seed shells Whole polished peas have a spherical shape, a smooth surface with a whitish coating.

Semolina is selected during the varietal grinding of wheat into flour from intermediate products (grains). This grain is the best part of the kernel peeled from the shell, crushed, sorted and sifted through appropriate sieves. Semolina from soft wheat varieties is indicated by the symbol M, from hard varieties - T, and from soft wheat varieties with an admixture of up to 20% of hard ones – MT [48,49,50].

Semolina of the M brand is an opaque powdery white grain, soft to the touch. This grain is the best part of the kernel peeled from the shell, crushed, sorted and sifted through appropriate sieves. The content of fine flour in it (passing through the nylon sieve N 38) should be no more than 2%, the large fraction (passing through the sieve N 23) no more than 8%.

Semolina of the MT brand is an opaque powdery white grain with the presence of a translucent ribbed grain of cream or yellowish color. The content of fine flour in it (passage through the sieve N 38) should be no more than 1%, the large fraction (passage through the sieve N 23) - no more than 5%. This grain is the best part of the kernel peeled from the shell, crushed, sorted and sifted through appropriate sieves. The content of fine flour in it (passing through the nylon sieve N 38) should be no more than 2%, the large fraction (passing through the sieve N 23) no more than 8%. Semolina of the T brand is a translucent ribbed grain of cream or yellowish color [51].

Literature

1. Аманов, Б. Н. (2013). Функциональное питание как основной фактор гармоничного развития личности. XXI асп-интеллектуал-инновацион гоълар асри республика илмий-амалий семинар материаллари. *Материалы республиканского научно-практического семинара «XXI век интеллектуально-инновационных идей»*. Ташкент, 64-69.
2. Аманов, Б. Н., Исабаев, И. Б., Аманова, З. М., & 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.
3. Аманов, Б. Н. (2017). Новое хлебобулочное изделие с повышенными показателями качества. *Хлебопечение России*, (3), 20-22.
4. Аманов, Б. Н., & Бакоева, С. С. (2023). Оценка биологической ценности тыквенного порошка при использовании в производстве. *Жизненно важное приложение: Международный журнал новых исследований в области передовых наук*, 2(1), 18-22.
5. 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.
6. 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.
7. 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.
8. Аманов, Б. Н., & Нурматов, Д. Д. (2023). Пищевая ценность хлебобулочных изделий увеличивает ее. *Жизненно важное приложение: Международный журнал новейших исследований в области передовых наук*, 2(1), 165-169.
9. Аманов, Б. Н., & Амонова, З. М. (2023). ДИСКРЕТНАЯ ТЕХНОЛОГИЯ ПРОИЗВОДСТВА РЖАНОГО ХЛЕБА НА ОСНОВЕ СЫРЬЯ. *Procedia of Теоретические и прикладные науки*, 3.
10. Мухамедова, М. Е., & Аманов, Б. Н. (2023). ПРИМЕНЕНИЕ НОВЫХ ВИДОВ СЫРЬЯ В ПРОДУКТАХ ИЗ МУКИ ГРУБОГО ПОМОЛА. *Procedia of Теоретические и прикладные науки*, 3.
11. Аманов, Б. Н. М., Рахмонов, К. С., Исабаев, И. Б., Атамуратова, Т. И., Олтиев, А. Т., & 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.

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., & АЛЬБУМИНОВ, И. 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., Амонова, З. М., Хайдар-Заде, Л. Н., & Файзуллаев, А. Р. (2021). Перспективы использования продуктов переработки томатов в производстве ржаного хлеба. *Анналы Румынского общества клеточной биологии*, 1009-1022.

18. Бакоева, С. С., & Аманов, Б. Н. (2023). Использование тыквенной муки при производстве полуфабриката для печенья. *ЕВРОПЕЙСКИЙ ЖУРНАЛ ИННОВАЦИЙ В НЕФОРМАЛЬНОМ ОБРАЗОВАНИИ*, 3(2), 101-105.

19. Мухамедова, М. Е., & Аманов, Б. Н. (2023). Использование пищевых добавок при производстве сухариков. *ЕВРОПЕЙСКИЙ ЖУРНАЛ ИННОВАЦИЙ В НЕФОРМАЛЬНОМ ОБРАЗОВАНИИ*, 3(2), 96-100.

20. Аманов, Б. Н., & Адизова, Н. Б. (2023). Пищевая ценность хлеба из муки сорта Веда. *ЕВРОПЕЙСКИЙ ЖУРНАЛ ИННОВАЦИЙ В НЕФОРМАЛЬНОМ ОБРАЗОВАНИИ*, 3(3), 45-50.

21. Amanov, B. N., Amonova, Z. M., Khaidar-Zade, L. N., & Fayzullaev, A. R. (2021). Prospects for Using Tomato Processing Products in the Production of Rye Bread. *Annals of the Romanian Society for Cell Biology*, 1009-1022.

22. 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.

23. Аманов, Б. Н., & Амонова, З. М. Хайдар-Заде ЛН и Файзуллаев АР (2021). Перспективы использования продуктов переработки томатов в производстве ржаного хлеба. *Анналы Румынского общества клеточной биологии*, 1009-1022.

24. Amanov, B. N., Isabaev, I. B., Amonova, Z. M., & Khaidar-Zade, L. N. (2021). Methods Of Application Of Probiotic Bacterial Preparations In The Production Of Rye Bread. *Nveo-natural volatiles & essential oils Journal| NVEO*, 8152-8165.

25. A.A. Nodirov, B.N. Amanov, & Z.M.Amonova. (2023). RYE BREAD USING DISCRETE TECHNOLOGY. *Multidisciplinary Journal of Science and Technology*, 3(3), 350–355. Retrieved from <http://mjstjournal.com/index.php/mjst/article/view/247>

26. Muxamedova, M. E. ., & Amanov, B. N. . (2023). Treatment of Pullorosis in Chickens of Biological Control of an Incubation Egg. *EUROPEAN JOURNAL OF INNOVATION IN NONFORMAL EDUCATION*, 3(6), 169–176. Retrieved from <http://inovatus.es/index.php/ejine/article/view/1823>
27. Baqoyeva, S. S., Amanov, B. N., & Amonova, Z. M. (2023). Biological Value of Pumpkin Powder when Used in Production. *EUROPEAN JOURNAL OF INNOVATION IN NONFORMAL EDUCATION*, 3(4), 133–137. Retrieved from <http://inovatus.es/index.php/ejine/article/view/1629>
28. Amanov, B. N. ., & Adizova, N. B. . (2023). Nutritional Value of Bread from Veda Flour. *EUROPEAN JOURNAL OF INNOVATION IN NONFORMAL EDUCATION*, 3(3), 45–50. Retrieved from <http://inovatus.es/index.php/ejine/article/view/1528>
29. Baqoyeva, S. S. ., & Amanov, B. N. . (2023). Use of Pumpkin Flour in the Production of Semi-Finished Biscuit. *EUROPEAN JOURNAL OF INNOVATION IN NONFORMAL EDUCATION*, 3(2), 101–105. Retrieved from <http://inovatus.es/index.php/ejine/article/view/1485>
30. Muxamedova, M. E. ., & Amanov, B. N. . (2023). Use of Food Additives in the Production of Rusk Products. *EUROPEAN JOURNAL OF INNOVATION IN NONFORMAL EDUCATION*, 3(2), 96–100. Retrieved from <http://www.inovatus.es/index.php/ejine/article/view/1484>
31. Amanov, B. N., & Nurmatov, J. J. (2023). Nutritional Value of Bakery Products Increasing It. *Vital Annex: International Journal of Novel Research in Advanced Sciences*, 2(1), 165-169.
32. Amanov, B. N., & Baqoyeva, S. S. (2023). Evaluation of the Biological Value of Pumpkin Powder When Used in Production. *Vital Annex: International Journal of Novel Research in Advanced Sciences*, 2(1), 18-22.
33. Amanov, B. N., & Nodirov, A. A. (2022). Rye Bread on Dry Steader by Discrete Technology. *Pioneer: Journal of Advanced Research and Scientific Progress*, 1(6), 45-49.
34. Аманов, Б. Н., Исабаев, И. Б., Атамуратова, Т. И., Очилов, Ш. Б., Жаббарова, С. К., & Кусова, И. У. (2022). СОВЕРШЕНСТВОВАНИЕ ТЕХНОЛОГИИ ПРИГОТОВЛЕНИЯ РЖАНЫХ СОРТОВ ХЛЕБА. In *Совершенствование рациона питания населения, обеспечение качества и безопасности кулинарной продукции* (pp. 8-16).
35. Amanov, B. N. M., Rakhmonov, K. S., Isabaev, I. B., Atamuratova, T. I., Oltiyev, A. T., & Nikolaevna, M. E. (2021). Applications Of Natural Additives-Acidiments And Probiotic Bacterial Preparations For Prevention Of Rye Bread Cretal Disease. *NVEO-NATURAL VOLATILES & ESSENTIAL OILS Journal| NVEO*, 5976-5988.
36. Amanov, B. N., & Majidov, K. H. FUNCTIONAL PROPERTIES OF ALBUMINS FROM WHEATEN BRAN. *КОМПЛЕКСНЫЕ СОЕДИНЕНИЯ НИКОТИНАТА КАЛЬЦИЯ С АМИДАМИ*, 83.
37. Амонова, З. М., & Бухарский технологический институт пищевой и легкой промышленности. (2001). Технологические особенности выпечки мучных изделий с применением ИК-излучения. *Хранение и переработка сельхозсырья*, (2), 16-17.
38. Ergasheva, H., Khujakulova, N.// Enrichment of Wheat Flour with Shorts at Flour-Milling Enterprises// *Journal of Pharmaceutical Negative Results*, 2022, 13, pp. 2359–2363

39. Sh.Sh.Baqoyeva, B.N.Amanov, & Z.M.Amonova. (2023). USING PUMPKIN FLOUR IN COOKIE PRODUCTION. *Multidisciplinary Journal of Science and Technology*, 3(4), 119–125. Retrieved from <https://mjstjournal.com/index.php/mjst/article/view/314>
40. B.N Amanov, Z.M.Amonova, B.S.Abdullayev, & Q.G.Majidov. (2023). STUDY OF THE FUNCTIONAL PROPERTIES OF PROTEINS FROM WHEAT BRAN IN BAKERY PRODUCTS. *Multidisciplinary Journal of Science and Technology*, 3(4), 102–108. Retrieved from <https://mjstjournal.com/index.php/mjst/article/view/311>
41. Amanov, B. N. ., & Adizova, N. B. . (2023). Nutritional Value of Bread from Veda Flour. *EUROPEAN JOURNAL OF INNOVATION IN NONFORMAL EDUCATION*, 3(3), 45–50. Retrieved from <http://inovatus.es/index.php/ejine/article/view/1528>
42. Baqoyeva, S. S. ., & Amanov, B. N. . (2023). Use of Pumpkin Flour in the Production of Semi-Finished Biscuit. *EUROPEAN JOURNAL OF INNOVATION IN NONFORMAL EDUCATION*, 3(2), 101–105. Retrieved from <http://inovatus.es/index.php/ejine/article/view/1485>
43. Muxamedova, M. E. ., & Amanov, B. N. . (2023). Use of Food Additives in the Production of Rusk Products. *EUROPEAN JOURNAL OF INNOVATION IN NONFORMAL EDUCATION*, 3(2), 96–100. Retrieved from <http://www.inovatus.es/index.php/ejine/article/view/1484>
44. Baqoyeva, S. S., Amanov, B. N., & Amonova, Z. M. (2023). Biological Value of Pumpkin Powder when Used in Production. *EUROPEAN JOURNAL OF INNOVATION IN NONFORMAL EDUCATION*, 3(4), 133–137. Retrieved from <http://inovatus.es/index.php/ejine/article/view/1629>
45. Muxamedova, M. E. ., & Amanov, B. N. . (2023). Treatment of Pullorosis in Chickens of Biological Control of an Incubation Egg. *EUROPEAN JOURNAL OF INNOVATION IN NONFORMAL EDUCATION*, 3(6), 169–176. Retrieved from <http://inovatus.es/index.php/ejine/article/view/1823>
46. B.N Amanov, Z.M.Amonova, B.S.Abdullayev, & Q.G.Majidov. (2023). STUDY OF THE FUNCTIONAL PROPERTIES OF PROTEINS FROM WHEAT BRAN IN BAKERY PRODUCTS. *Multidisciplinary Journal of Science and Technology*, 3(4), 102–108. Retrieved from <http://mjstjournal.com/index.php/mjst/article/view/311>
47. Sh.Sh.Baqoyeva, B.N.Amanov, & Z.M.Amonova. (2023). USING PUMPKIN FLOUR IN COOKIE PRODUCTION. *Multidisciplinary Journal of Science and Technology*, 3(4), 119–125. Retrieved from <http://mjstjournal.com/index.php/mjst/article/view/314>
48. Эргашева, Х. Б. (2002). Исследование технологических свойств пшеницы местных сортов (Doctoral dissertation, -Ташкент: ТХТИ).
49. Эргашева, Х. Б. (2000). Исследование влияния исходной характеристики зерна пшеницы на его мукомольные свойства./2-я международная научная конференция «Управление свойствами зерна в технологии муки, крупы и комбикормов». Тезисы докладов. М, 86.
50. Ergasheva, H., & Khujakulova, N. (2022). Enrichment of Wheat Flour with Shorts at Flour-Milling Enterprises. *Journal of Pharmaceutical Negative Results*, 2359-2363.
51. Хужакулова, Н. Ф. СРАВНИТЕЛЬНАЯ ХАРАКТЕРИСТИКА ЗЛАКОВЫХ ЗЕРЕН, ВЫРАЩЕННЫХ В РАЗЛИЧНЫХ ПОЧВЕННЫХ УСЛОВИЯХ. ББК 36 Т38 Редакционная коллегия: д. т. н., профессор Акулич АВ (отв. редактор) к. э. н., доцент Козлова ЕА (отв. секретарь), 165.

**Impact of customer support and customer technology adoption on Customers
Loyalty in the Nigerian Banking Industry**

Lawan Garba

¹Dept. of Accounting and Finance, Faculty of Management Sciences,
Abubakar Tafawa Balewa University Bauchi – Nigeria. (Orcid ID: <https://orcid.org/0009-0009-0380-0816>).

Author's Mail Id: garbalawan91@gmail.com, *Tel* +2347036832025, +2348143691854.

Abstract - The study examined impact of customer support and customer technology adoption on customer's loyalty in the Nigerian banking industry. Its aim was to assess the level of relationship between customer support and customer technology adoption and customer loyalty in the Nigerian banking industry. In line with the objective of the study, two null hypotheses were formulated to guide the research. The theoretical foundation of the study was based on Rogers innovation diffusion theory and technology acceptance model (TAM) theories. The study adopted cross-sectional survey research design. The population size was drawn from the customers of eight (8) banks with international authorization in Bauchi State, Nigeria. A sample size of 384 customers was obtained using Krejcie and Morgan (1970) formula. A convenience sampling technique was further utilized in picking the respondents. A questionnaire of five point likert scale was used in data collection. Data were analyzed using descriptive and inferential statistics via Statistical Package for Social Science (SPSS) version 23.0, while multiple regression coefficients were employed in testing the hypotheses formulated for the study. All the null hypotheses were rejected. The research therefore revealed that; a significant relationship exist between customer support and customer loyalty in the Nigerian banking industry, as well that there is a significant relationship exist between customer technology adoption and customer loyalty in the Nigerian banking industry. It was concluded that customer support and customer technology adoption have help to improved customer loyalty in the Nigerian banking industry. It was therefore recommended amongst others that, banking industry should develop their technology by making it more interactive, online banking should be made easier for customers to make use of, and that more awareness should be given to customers on the need for e-banking.

Keyword: Customer Support; Customer Technology Adoption; Customers Loyalty; Banking Industry; Nigeria.

Introduction

It is understood that the goal of any organization is to meet the needs and demands of its stakeholders. Customers are considered one of the most important stakeholders in any business because they are unlikely to succeed without them. Understanding consumer behavior can greatly help ensure effective customer profit marketing policies and ultimately promote a positive customer attitude towards the business. Especially because the customers behavioral intention is a powerful indicator of actual behavior [1].

As Ignou explains, with the advent of recent technologies, the ever-evolving behavior of customers in 2020 has dramatically changed the needs, preferences, requirements and expectations of all industries exponentially. Banks are no exception. Today's customers want first-class services from financial institutions and service providers, including uninterrupted and seamless access to their bank accounts. In the wave of online shopping, payment is the focus of all activities that customers seek a seamless experience, from e-commerce beginners to online shopping. New trends

in the Internet of Things, cloud computing, biometrics, ubiquitous artificial intelligence, and machine learning. Affects how customers interact with service providers [2].

Effective e-service excellent in banking is one of the maximum crucial approaches to maintain clients coming lower back regardless of the hurdles within side the Nigeria banking quarter. The techniques to hold clients self-belief consists of responding to clients` proceedings in a radical and well-timed way and interacting with clients through head to head meeting, telephone, mail, fax and email. This big contribution of the offerings enterprise and mainly the banking quarter in Nigeria warrant research a good way to beautify the quarter`s non-stop boom in an effort to sooner or later bring about the higher overall performance of the economy. However, it is far crucial to notice that one of the approaches through which banks can meet the expectancies in their clients who are the anchor of the banks` enterprise is through the information of the clients` behavior [3].

Statement of the Problem

Customers want efficient, fast and convenient service. Customers want a bank that meets their specific needs (personalized banking) and provides services that support their business goals, which has grown several electronic service channels and creating of digital banking platforms to serve customers better. Though digital banking platforms (for example mobile apps and software) are adopted by all banks but customers want a better interactive platforms that will make them have access to banking services 24/7 [4]. Despite the use of various electronic banking channels, the use of better interactive platform like interactive teller machines (ITM) which provides a proven efficiency alongside an improved customer service are limited. Moreover, banks customers are sometimes frustrated while expecting an immediate response to their request from the bank, this a times is as a result of network or the ineffective use of the electronic banking platform. This sometimes demeans the customers and makes them lose their loyalty to the bank [5].

Customers expect banking services that would integrate them with their real needs, so banks must ensure that they keep supporting their customers to attain their needs and goal for them to maintain their loyalty. In most cases, banks are only concerned with their own benefit in the expense of customers goal and this discourage customers from banking with such banks when they realized that their banks are not giving them the required support [6].

Research Questions

In this section of the study, the following research questions were derived;

1. To what extent does customer support influence customer loyalty in the banking industry Bauchi, Nigeria?
2. To what extent does customer technology adoption influence customer loyalty in the banking industry Bauchi, Nigeria?

Objective of the Study

This study focuses on determining the relationship between interactivity, customer support and customer technology adoption on customers loyalty in the Nigerian banking industry.

Hence, the objectives of the study are as follows:

1. To evaluate the relationship between customer support and customer loyalty in the banking industry Bauchi, Nigeria.
2. To determine the impact of customer technology adoption on customer loyalty in the banking industry Bauchi, Nigeria.

Statement of Hypotheses

Derived for the study are the following null hypotheses;

H0₁: There is no significant relationship between customer support and customer loyalty in the banking industry Bauchi, Nigeria.

H0₂: There is no significant relationship between customer technology adoption and customer loyalty in the banking industry Bauchi, Nigeria.

Related Work

The premise of e-service quality as the competitive edge in gaining market leadership has gained significant attention from both practitioners and scholars. The banking industry, in particular, recognized the need not only to attract customer but also to maintain a long-term relationship with customers in order to create a competitive edge in an ever-growing business environment [27]. This aspect of the study covers the review and discussion of published researched materials relating to e-service quality and customer loyalty. The review of literature in this study will include an emphasis on the conceptual, empirical, theoretical foundation and conceptual framework carried out on e-service quality and customer loyalty in the field of customer relationship marketing [26].

3. Theory/Calculation

This study is anchored on two theories namely; Rogers Innovation Diffusion Theory and Technology Acceptance Model (TAM)

Rogers innovation diffusion theory is one of the most popular theories for studying adoption of information technologies (IT) and understanding how IT innovations spread within and between communities. According to this theory, innovation is an idea, process, or a technology that is perceived as new or unfamiliar to individuals within a particular area or social system [7].

Technology acceptance model (TAM) is a theory majorly used in the field of information system. It focuses on modeling computer users and showing them on how they can accept and adopt a new technology. It was designed to predict the technology adoption decisions of users. Technology acceptance model is usually used to predict. It indicates that there are only two components that determine the users' acceptance of a computer system [8].

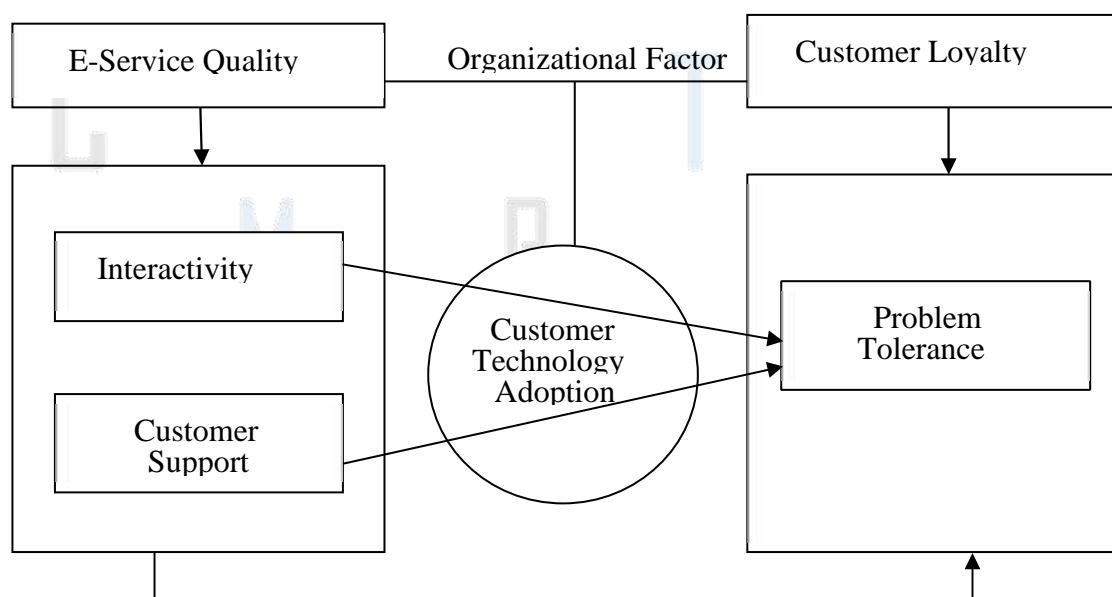


Figure 1: Conceptual Framework of e-service quality and customer loyalty of deposit money bank in Nigeria.

Source: Osagie and Geraldine, (2020).

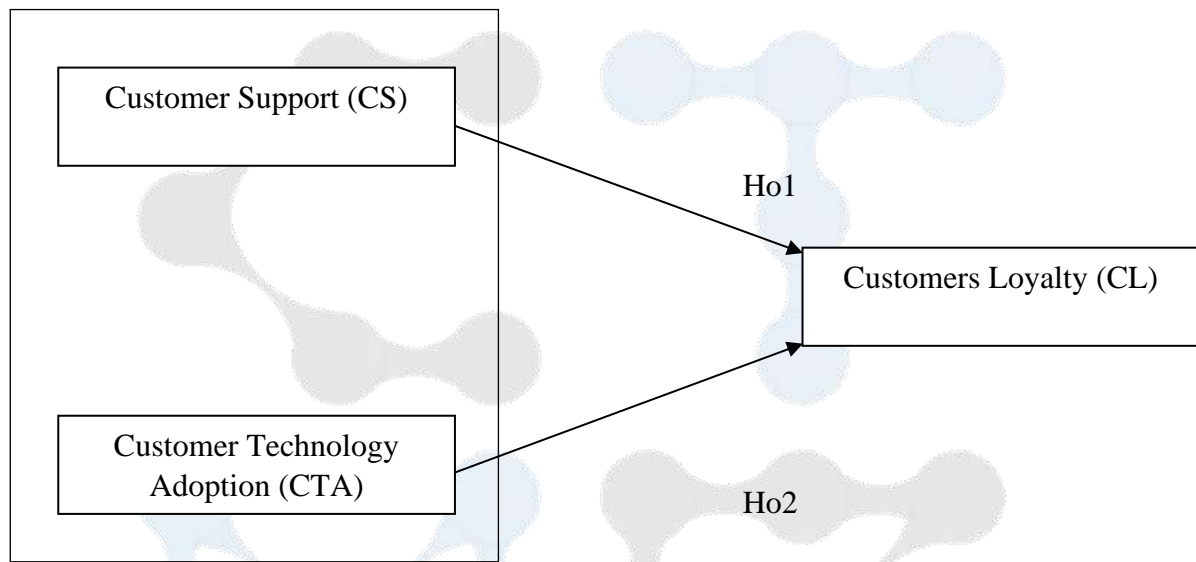


Figure 2: Conceptual Framework impact of customer support and customer technology adoption on customers loyalty in the Nigerian banking industry.

Measurement of Customer Support and Customer Technology Adoption

Customer Support

Customers are the heart of every successful business and therefore businesses need to be more concentrated on customers than more ever. Except those who donate blood voluntarily, one is either selling a service or a product for a living. Politicians, bankers, clerks, messengers, bus conductors, ticket agents, market women and everyone who provides a trade or service has a customer. According to [6], Customer support service is a series of activities designed to enhance the level of customer satisfaction, that is, the feeling that a product or service has met the customer expectation. The level of satisfaction can also vary depending on other options the customer may have and other products against which the customer can compare the organizations products. In today's business world customer support has become one of significant function for every company either it is manufacturing or service based [29].

How Some of the main challenges in customer service in banking includes a poor data base, management of customers, illiteracy level of the majority of customers, lack of adequate infrastructure and technology on which customer satisfaction depends on like electricity (for ATM operations) and low level of internet penetration. The importance of technology in banking became

obvious when developed countries that had involved IT in its banking operations managed to reduce their costs of operations [4].

a. Customer Technology Adoption

Technological developments have removed repetitive, time consuming tasks, reduced human error and extended access to banking related facilities. Technology also provides customer information that it would be much more expensive to provide on a person to person basis. Telephone banking facilities allow non-cash transactions to be carried out which would have required a visit to a branch earlier [13].

Measurement of Customer Loyalty

Customer Loyalty

Customer loyalty is defined as customers repeated patronage over a certain period of time. Also defined service loyalty as the degree to which a customer exhibits repeat purchasing behavior from a service provider, possesses a positive attitudinal disposition toward the provider and considers using only this provider when a need for this service arises [14]. Customer loyalty can be defined as the closest step to the repurchasing behavior of customers. Customer loyalty has usually been referred to as a consequence of all the experiences that a customer has with a service/product provider. Customer loyalty as a deeply held commitment to rebuy or repatronize a preferred product/service consistently in the future, thereby causing repetitive same brand or same brand set purchasing despite situation influences and marketing efforts having the potential to cause switching behaviors [5].

4. Experimental Method/Procedure/Design

The study adopted a cross-sectional survey research design because it relies on a sample of elements from the population of interest measured at a single point. The population was drawn from e-banking customers of quoted deposit money banks with international authorization in Nigeria because of their involvement in e-service banking. Although the study is for the whole banking industry, only customers of eight (8) banks with international authorization in Bauchi State, Nigeria, were adopted [15]. The period of this study was between 2021 to 2023. The target population of the bank customers under review in Bauchi state, Nigeria is over 4,000,000 [15]. Bauchi State serves as an ideal location for studying the impact of e-service quality on customer's loyalty in the Nigerian banking industry due to its geographic representation, diverse customer's base, varied banking landscape, socioeconomic factors, and potential for research generalization. Therefore, Krejcie and Morgan (1970) formula was used to determine the sample size of 384, confidence level typically allows researchers to specify a desired level of confidence, if you choose a high confidence level, such as 95% or 99%, your sample size may need to be larger to ensure that the results are significant while margin of error also plays a crucial role, if you require a smaller margin of error, your sample size will need to increase to achieve the desired precision in your estimates [3]. The source of data is primary while the instrument of the study was the questionnaire. The instrument was checked for reliability and validity. The Cronbach alpha regression coefficient is averagely 0.880 which established the internal consistency of the instrument. Four experts validated the research instrument which enabled the researchers to proceed for the main survey. Multiple regression coefficients were used in testing the hypotheses formulated for the study at 0.05 level of significance. Multiple regression coefficients

were used to test the hypotheses. The decision rule is to reject null hypothesis if the p-value is less than 0.05 whereas, if the p-value is greater than 5%, null hypothesis is supported and accepted [30].

5. Results and Discussion

The demographic information of the respondents was collected. The frequency and percentage analysis were carried out and the results presented to explore the respondents' profile. A total of Three hundred and eighty four (384) set of questionnaires were administered and three hundred and fifty-six (356) responses were received. **Gender** shows that 63.5% representing 226 respondents are male and 36.5% representing 130 respondents are female. **Marital Status** shows that 55.3% representing 197 respondents are married, while 44.7% representing 159 of the respondents are single. **Age** shows that 37.1% representing 132 respondents are 18-30 years, 37.9% representing 135 respondents are 31-40 years, 14.3% representing 51 respondents are 41-50 years, and 10.7% representing 38 respondents are above 50 yrs. **Level of Education** shows that 53.1% representing 189 respondents are First degree level of education, 5.6% representing 20 respondents Masters Level of education, 1.4% representing 5 respondents are PhD holders level of education, 39.9% representing 142 respondents are others level of education. **List of Banks with International Authorization in Nigeria** shows that 12.9% representing 46 respondents are access bank, 11.8% representing 42 respondents are fidelity bank, 12.6% representing 45 respondents are first bank, 12.1% representing 43 respondents are guaranty trust bank, 13.5% representing 48 respondents are union bank, 11.8% representing 42 respondents are united bank of Africa, while 11.8% representing 42 respondents are zenith bank.

Regression Analysis

The section captured the model summary and ANOVA of the impact of e-service quality on customer's loyalty in the Nigerian banking industry with the e-service quality provided in the Nigerian banking industry.

The table below shows the summary of the findings.

Table 6: Model Summary and ANOVA

Model	R	R Square	Adjusted Square	R	Std. Error of the Estimate	F	Sig.
1	.473 ^a	.224	.215		.42764	25.339	.000 ^b

a. Dependent variable: Customer Trust

Table 6 shows the multiple linear regression analysis which was calculated to predict the impact of e-service quality on customer's loyalty in the Nigerian banking industry with the e-service quality provided in the Nigerian banking industry. The model produces R value of .473 and R square value of .224 with F statistics of 25.339 which shows a highly significant value of .000 which means that P is less than 0.05 which really means ($P < 0.0005$). This study reveal that the model as a whole predict about 47.3 percent of variance in customer trust. The table also present the goodness fit of the model which shows that the model produces a moderate R value with a P value of .000.

From the model summary, the R value 0.473 which indicate that, 47.3% of variation in the dependent variable (customer trust) is caused by the explanatory variable (customer Support and

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-3, ISSUE-5

customer technology adoption) included in the mode summary. Whereas the remaining 52.7% are explain by other variable that are not included in the model but also impact the dependent variable. By implication, the model is fit for the research, since the R value is close to 1 which indicate the fitness to the model, because the result is showing that 47.3% variation in model is explain by explanatory variables

Table 7: Coefficients

	Model	Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.419	.269		5.269	.000
	Customer Support	.098	.051	.104	1.933	.004
	Customer Technology Adoption	.173	.053	.172	3.231	.001

a. Dependent Variable: Customer Trust

The table 7 above shows the coefficient table for the regression model analysis. The table shows the degree of impact of e-service quality on customer's loyalty in the Nigerian banking industry. It reveals that customer support and customer technology adoption. Customer technology adoption has impact on customer trust with beta value of .172, while customer support has less impact on customer trust with beta value of .104.

Test of Hypotheses

H0₁: There is no significant relationship between customer support and customer trust in the Nigerian banking industry.

The results concerning the Beta value of customer support is 0.104 which indicate its contribution to the dependent variable customer trust with probability value showing the significant value of 0.004 is less than 0.05 therefore, the alternate hypothesis which state that, there is significant impact of customer support on customer's trust is accepted. As such the null state that there is not significant impact between customer support and customer's trust should be rejected. It can be concluded that the customer support contributed lesser contribution to the customer trust.

H0₂: There is no significant relationship between customer technology adoptions on customer trust in the Nigerian banking industry.

Similarly, the results concerning the Beta value representing customer technology adoption is 0.172, which indicate high contribution to the dependent variable customer trust which is 0.001, is less than the P value 0.05. Therefore, the alternative hypothesis was accepted and null hypothesis that state that there is not significant impact between customer technology adoption and customer trust should be rejected. It is concluded that, customer technology adoption has significant impact on customer's trust in Nigeria. In view of the findings, it can be said that hypothesis number three, which initially stated that the customer technology adoption has no impact on customer's trust is hereby rejected.

Discussion of Results

The findings were discussed based on the order of the research questions as follows.

As observed from Table 6 and 7, the findings reveal positive and significant R value statistics at 5% levels of significance in all the models, this indicates that the models are statistically fit to predict customer's loyalty in the Nigerian banking industry by technology. Meaning that, the variables used in the study are appropriate to predict the dependent variable. Furthermore, technology indicators explained 47.3% of the variation in the models. Looking at the contribution of each of the e-service quality indicator in the model.

The finding shows that customer support has a positive impact but statistically significant influence on customer trust with coefficients value of 0.104 and probability value of 0.004, which is below the 5% level of significance. The results are not in accordance with what was earlier expected going by the hypotheses statement in chapter one. This finding is in line with the results of [18], [19], [20] and [3], who discovered that customer support, has a positive significant influence on customer trust. This observation disagrees with the study of [22], [33] and [21].

The findings also showed that customer technology adoption has a positive and significant influence on the customer trust in the Nigerian banking industry where the customer loyalty measured by customer trust for the study period. This is because the probability values for depicted in table under the robust standard error are all less than 5% level of significance, as can be seen 0.001. The result is agreement with the prior studies such as [23], [24], Osagie & [3], that found a positive significant influence of customer trust. The results are not in accordance with what was earlier expected going by the hypotheses statement in chapter one. The result is in disagreement with the prior studies such as [25] in their study.

6. Conclusion and Future Scope

This research was conducted to investigate the impact of e-service quality on customer's loyalty in the Nigerian banking industry. The study is divided into five (5) chapters. The first chapter discussed the background issues which led to developing three (3) objectives and formulating three (3) hypotheses for the research with a scope covering 2021 to 2023. The review of literature on the impact of e-service quality on customer's loyalty in the Nigerian banking industry was carried out. The result of the descriptive statistics and inferential statistics were presented, analyzed and discussed in chapter four.

Conclusion

It can be concluded that the customer support contributed lesser contribution to the customer trust. The results are not in accordance with what was earlier expected going by the hypothesis statement in chapter one.

Finally, it is concluded that, customer technology adoption has significant impact on customer's trust in Nigeria. In view of the findings, it can be said that hypothesis number three, which initially stated that the customer technology adoption has no impact on customer's trust is hereby rejected. This implies that, the finding contradicts the null hypothesis earlier stated in chapter one, in this case, the null hypothesis is rejected.

Recommendations

In line with the findings of the study, the following recommendations are made:

1. Online banking should be made easier for customers to make use of, and that more awareness should be given to customers on the need for e-banking.
2. Banks should work towards getting customers maximum trust through electronic service delivery as this will help to get customer trust and loyalty.

Suggested Areas for further research

The following research areas are hereby recommended:

i. The study covered only banks with international authorization in Nigeria for the period of 2021 to 2023. Therefore, there is need for further research using other banks and more period coverage in Nigeria.

ii. Researchers in the area can carry out similar studies using other customers loyalty measures such as commitment as their dependent variables to assist in providing a clear guidance to the Nigerian banking industry in providing appropriate e-service quality that could optimize the value of a bank as most of the previous studies have been based on evidence from foreign countries.

iii. There is need to expand the scope of this study in future research to cover other geographical zones in Nigeria in order to broaden the frontier of knowledge since the survey was done in Bauchi state of Nigeria.

Contribution to knowledge

The findings of the study have theoretical framework, practical, policy and managerial implications. The strong significant contributions of the study constructs have provided an opportunity for proper decisions making by the bank executives and managers. It would enable the managers to make strategies policies for better customers' loyalty. Practitioners and other stakeholders will use the findings from this study to communicate the benefits associated e-service quality for improved customer loyalty and patronage.

Conflict of Interest

This distinct replica has not been distributed and is not being considered for publication elsewhere. As a result, there are no conflicts of interest to disclose.

Funding Source

This study received no external funding.

Authors' Contributions Statement: The author contributed to this inquire approximately work. They all examined and confirmed the extreme adjustment of the first duplicate.

Acknowledgments

I thank and give all the glory to God. I also acknowledged and expressed a propound gratitude to the entire staffs of Accounting and Finance, Management Sciences, ATBU, Bauchi and my family for their encouragement toward the success of this study.

References

- [1] Kumari, K., & Yadav, S., "Linear regression analysis study", *International Journal of the practice of Cardiovascular Sciences*, Vol.4, Issue.1, pp. 33-42, 2018.
- [2] Central Bank of Nigeria, "Annual report and financial statements for the year ended 31st December 2018", *Journal of Management and Sustainability*, Vol.2, Issue.3, pp. 25-33, 2018.
- [3] Bouchrika I., "Types of Research Design: Perspective and Methodological Approaches", *International Journal of Management and Sustainability research*, Vol.4, Issue.2, pp. 52-63, 2014.
- [4] Laforet, S., & Li, X., "Consumers' attitudes towards online and mobile banking in China" *International Journal of Bank Marketing*, Vol.23, Issue.5, pp. 362-380, 2015.
- [5] Uwabor O. L., & Ugwuonah G., "E-service quality and customer loyalty in deposit money banks in Nigeria", *European Journal of Business and Management*, Vol.12, Issue.21, pp. 2222-2839, 2020.

VOLUME-3, ISSUE-5

- [6] Ignou, S., "E-service quality in banking industry-A review", *Global Journal of Enterprise Information System*, Vol.12, Issue.12, pp. 0975-1432, 2020.
- [7] Osagie L. U., & Geraldine U., "E-service quality and customer loyalty in deposit money banks in Nigeria", *European Journal of Business Management*, Vol.12, Issue.21, pp. 2222-2839, 2020.
- [8] David, A., "Problems affecting digital banking in Nigeria", *Journal of Asia Pacific Management Review*, Vol.6, Issue.1, pp. 34-40, 2018.
- [9] Farrell, S., "Key benefits of interactive teller machines", *European Journal of Business and Management*, Vol.4, Issue.18, pp. 127-137, 2019.
- [10] Anton, J., "Customer relationship management: Making hard decisions with soft numbers, Upper Saddle River, Prentice-Hall" *Journal of management sciences*, Vol.13, Issue.9, pp. 30-43, 2017.
- [11] Fornell, C., "A national customer satisfaction barometer: The Swedish experience". *International Journal of Marketing*, Vol.10, Issue.9, pp. 56-62, 2019.
- [12] Central Bank of Nigeria, "List of deposit money banks and financial holding companies operating in Nigeria" *International Journal of Management Information Development Studies*, Vol.3, Issue.3, pp. 403-423, 2017.
- [13] Okafor, E. E., "Reforms in the Nigerian Banking Sector and Strategies for Managing Human Resources Challenges", *European Journal of Business and Management*, Vol.5, Issue.18, pp. 127-137, 2013.
- [14] Masika, E. J., "Effect of service quality management and customer loyalty on customer loyalty", A case of NSSF, Tanga City. MBA Dissertation, Mzumbe University. pp. 1-98, 2018.
- [15] Uwabor, O., L. Anetoh, J., C. Ugwuonah, G., E. & Ezenta, O., N., "E-Service Quality and Customer Satisfaction in Deposit Money Banks", *International Journal of Marketing and Communication Studies*, Vol.5, Issue.1, pp. 2695-2173, 2021.
- [16] Bowen, J. T., & Chen, S. L., "The relationship between customer loyalty and customer satisfaction", *International Journal of Contemporary Hospitality Management*, Vol.13, Issue.5, pp. 213-219, 2021.
- [17] Shih, Y., & Fang, K., "The use of the decomposed theory of planned behaviour to study internet banking in Taiwan", *Internet Research Electronic Network Application Policy*, Vol.14, Issue.3, pp. 213-223, 2017.
- [18] Bevans, R., "An introduction of multiple linear regressions", *International Journal of Information Development*, Vol.33, Issue.3, pp. 30-44, 2016.
- [19] Zairi, A., "Global benchmarking for internet and E-commerce applications" *Journal of Information Development*, Vol.33, Issue.3, pp. 303-323, 2018.
- [20] Uwabor, O., L. Anetoh, J., C. Ugwuonah, G., E. & Ezenta, O., N., "E-Service Quality and Customer Satisfaction in Deposit Money Banks", *International Journal of Marketing and Communication Studies*, Vol.5, Issue.1, pp. 2695-2173, 2021.
- [21] Shih, Y., & Fang, K., "The use of the decomposed theory of planned behaviour to study internet banking in Taiwan", *Internet Research Electronic Network Application Policy*, Vol.14, Issue.3, pp. 213-223, 2017.

DEVELOPMENT OF SYSTEMS TO PROVIDE SOCIAL SERVICES TO THE POOR.

Khalida T. Sultanova

Senior Lecturer, Department Of Social Sciences,

Tashkent Medical Academy, Uzbekistan

Abstract: This article talks about the development of systems for providing social services to the poor and its modern methods.

Keywords: education and healthcare, implementation of projects, government services.

This section addresses points regarding the provision of services that are common to all sectors and specific services such as education and healthcare will be explained in respective sections. In developing countries, central governments, having control of budgets, and tend to make all decisions regarding administrative services. However, physical distance between the decision-making process and the field has several disadvantages such as unprofitable investments, the implementation of projects that do not meet actual needs and delays in schedules. Local governments play a significant role in formulating and carrying out projects appropriate for the needs of the field and in reducing such disadvantages as mentioned above, since they are in close proximity to the field. Local governments: 1) can clearly understand the actual conditions of the poor, 2) can be a main body (with their own financial resources) in making decisions regarding the provision of services to the poor, and 3) can be a main body in planning and implementing the provision of services to the poor. There is, however, a tendency for the local governments to carry out projects somewhat as a sub-contractor of the central government, as a result of constraints on human resources, know-how and funding. Also, sometimes, services are not adequately provided due to corruption or inefficiencies inside the government. Thus, in developing countries, despite the fact that various poverty reduction policies are advocated, government services often do not actually reach the poor. The poor may even feel a sense of resignation or mistrust towards the government because their voices are not adequately reflected in the local government and thereby, there is no improvement in the situation. In order for decentralization to be functional, related systems must be developed and budgets must be allocated accordingly. At the same time, the administrative capacity of both the central and local governments must be strengthened. In particular, local governments are limited in terms of finances and human resources, and so it is of paramount importance to develop the knowhow and mechanisms for planning and operating services for the poor assuming these limitations. To operate services effectively with the limited resources of the local governments, it is essential that public service plans be formulated based on the specific needs of the poor and the specific causes of poverty. To do this, it is important to promote the planning of public services that are based on accurate social assessment and participation of the poor. Furthermore, to increase the impact and sustainability of public services, it is essential that the poor participate, since the ownership of the poor, the recipients of the services, is needed in implementing and managing projects. Strengthening of partnerships between local government agencies and with the central government is also indispensable in providing effective and efficient services. For effective and efficient administrative services, accountability of the government and prevention of corruption play significant roles. Finally, as services that can be

provided by governments are limited, it is important to improve the capacity of cooperation, coordination and negotiation with non-governmental organizations (NGOs, private organizations, aid agencies) as well as to create mechanisms to involve participation of the poor. The basic human rights of the poor are not always protected in developing countries, and many policies and institutions are often not in the interest of the poor. If these situations are not improved, it would be difficult to find opportunities for the poor to realize their full potential. It is, therefore, necessary to protect the basic human rights, formulate democratic policies and develop systems that reflect the voices of the poor, based on an understanding of their actual situations. In terms of policies and institutions, there are voting rights, multi-party systems, separation of powers, protection of basic human rights, and measures to directly help those who are socially vulnerable. We must bear in mind, however, that careful planning is necessary since systems that provide preferential treatment for the socially vulnerable may bring about a backlash from other groups and may distort the self-image of the target group. Furthermore, the establishment of policies and institutions alone is not sufficient. For policies and institutions to be functional, capacity development and institution building of both government agencies and the poor themselves are indispensable. On the governments' side, it is necessary to strengthen the function of internal and external assessment, simplify administrative procedures, increase transparency and improve legal procedures as well as policing functions. The tasks on the side of the poor are to promote community education activities (self-education) and to foster organizations that can provide support for such activities. The poor are often left out of the development process, have little incentive to improve their own capacities and gain few opportunities to achieve their full potential. On the other hand, while the governments of developing countries and donors are providing various services and investing efforts for the poor, this type of assistance without ownership on the part of the poor may lead to their dependence and consequently, does not encourage the improvement of their capacities. It is, therefore, essential to build mechanisms that promote the participation of the poor in the decision-making process and motivate them to have their own goals, to think about the ways for improving their capacities and to act towards the goals. In terms of social development in assisting independence and community participation of the poor, while every country has local NGOs that are thoroughly knowledgeable about the local situation, local NGOs and local governments rarely work together, and in many cases they are carrying out efforts independent of each other. It is important to maintain and improve agricultural and fishery income since many of the poor live in rural villages and are engaged in agriculture or fisheries. Agricultural and fishery policies and institutions, however, are not always congruous with the actual conditions and needs of the poor. In many cases, the poor do not own land and receive an unfairly small distribution in proportion to the amount of their work, or they are unable to take advantage of public services such as subsidies. It is, therefore, important to first accurately understand the actual conditions and needs of the poor and then develop policies and institutions that can directly or indirectly alleviate or improve the adverse conditions faced by the poor. Land reform is especially important, but strong opposition can be expected from the existing landowners (often the influential people in the country). So, it is vital to carefully consider how to deal with predictable resistance when carrying out system reforms such as land reforms that challenge the vested interests.

References:

1. World Bank. (2021). Poverty and Shared Prosperity Report.
2. United Nations Development Programme. (2020). Human Development Report.
3. International Labour Organization. (2019). World Employment and Social Outlook.
4. Organisation for Economic Co-operation and Development. (2020). Social Protection and Inequalities.
5. World Health Organization. (2019). Universal Health Coverage.
6. United Nations Women. (2020). Gender Equality and Women's Empowerment.
7. Food and Agriculture Organization of the United Nations. (2021). Sustainable Agriculture and Rural Development.
8. United Nations Human Settlements Programme. (2020). Affordable Housing.
9. International Monetary Fund. (2020). Fiscal Policy for Growth and Development.
10. The World Justice Project. (2021). Rule of Law Index.



**THE MECHANISM OF IMPROVEMENT OF PROFESSIONAL READERS,
HELPING THEM TO PROVIDE SCHOOL AND ADULT EDUCATION
INTEGRATION.**

Inamov Nurmira Dedamirzayevich

Turg'unov Sobitxon Toshpo'latovich

Namangan state university

Abstract: in school and in adult education this article reader-directed to the coverage of the pedagogical basis of motivation given to the young professional. Also in the article the reader-young people in the profession right at problems, ways to eliminate them think concerning the gaps in practice.

Keywords: continuing education, professional referral, specialized training, technological education, continuous system.

The article middle school students with specialized education in the school within the framework of the implementation of the professional work of the organization based on a study of methods of directing. Literary analysis the activities of qualified specialists in this field, their specialized education of the content, functions, features and pedagogical complex business entities according to a systematic phenomenon can be called. The study pedagogical theory and practice the problems clearly, to understand its purpose and content to achieve in need of theoretical and empirical studies directed at actively summarize the basic recipe and is currently in phase will determine that (1). the pedagogical process, which established a system of continuing education institutions in the implementation of the ongoing news of the effectiveness of education on the basis of the recipient of the received knowledge, modern technology and information and communication technologies able to spend learning, intellectual formation and the teacher the level of knowledge, skills and qualifications, as well as the level of development determines the growth of pedagogical skills and professional abilities. (2)

The body of knowledge of certain interest to the reader is the basis for the formation of stable professional. Also, the methods and analysis this analysis in the form of professional directing the work in the first place, future of the upper and aims to prepare students in grades independent profession to make an informed choice. The school students' self-preparation and process to ensure the professional character of different forms in the method, professional occupations and the world of work while directing readers are starting to get acquainted with the basics of modern production. The direct result of professional work in the interest of the professional development of governors of the latest educational secondary school,. In addition to the lessons from the school should become a specific tool, two systems and the integration of additional content in the overall process should be closely related with its educational sciences general education within the areas of science and to be studied them; they constitute a permanent part of the basic curriculum. On the other hand, the variability of the process of education and its main task to provide (3). "Extracurricular lessons" to be a mandatory component of the school's basic educational program, educational activities organized in various forms, they are special readers. The process of integration of all three components: general education, adult education classes for children between special and meaningful to establish additional associated need to pay attention. The science that means students will show their abilities depth study of particular interest. Make a difference and that that creates radical in addition to school sports, art, additional courses on professional readers the opportunity to create his own destiny set (4). If so,

the integration of two functions available to each component in the system is a set of variability in this process, personalize, constructive activity and the person is there to rely on the formation of the professional preparation of students before the implementation of the preparation, referral program of additional education for children with specific style [5]. On the other hand, focus on learning to continuously improve quality associated with new technologies, methods, forms, research and development, teaching, methods of assessment of learners' achievements, the general characteristic will make the process of additional education for children [1, p. 6]. In addition to these human activities, linking the school with the school becomes between components.

As a conclusion we can say that-based education relies on the following main principles: continuity, conformity natural, cultural compatibility, openness. Additional education for children these principles, continuing education is characterized by the constant search to focus. Technologies, methods of work, the form, as well as improvement of the methods and criteria of assessment of student achievement, in the field of education continues to seek new forms of organization, but this is not enough to update the system to get additional education of children with great freedom and here's the source, openness, the initial focus of the personal development of students and the improvement of mechanisms to ensure the integration of the two systems should be [2, p. 7]



References:

1. Turg'unov S.T. Teachers are competent professional educational institution that functions in the development of functional heads: (study guide) - T.: "Praise For The Standard", 2011. - 162 b
2. Turg'unov S.T., and others. Teachers are competent that professionalism and develop. T.: "SanoStandart", 2012. - 174 b
3. L. N. Buylova lessons and extracurricular programs, general education courses for additional expertise and technology to the development of work programs: a methodological guide. M.: and gao, WHERE MI, 2015. -155–31-page.
4. Inamov D.D. The activation of the level of activities STUDENTS. International journal of environmental Economic ep could, commerce and management journal of educational PROVINCES: 10.36713/epra0414 |ISI value f: 0.815|SJIF impact factor (2020): 7.572 ISSN: 2348 – 814X volume: 7| Chair: 4| November 2020.

A. U. Inamova. M. Kamola O.I., "INCREASING THE EFFICIENCY OF SAW GINNING TECHNOLOGY," *The American Journal of Engineering and Technology*.

I. S. S. M. M. B. O. Inamova. M. D. q. Sarimsakov Olimjon Sharifjanovich, "Пахта хомашёсини ифлосликлардан тозалашда олинган натижаларни тахлили," *To'qimachilik va yengil sanoatda ilmhajmdor innovatsion texnologiyalar va dolzarb muammolar yechimi (To'qimachilik va yengil sanoat -2023)*, p. 10, 26-27 aprel 2023 .

Inamova. M. Q. Yoldashev Kh., "Effect Of Moisture Contenenent In The Process Of Storing, Drying And Cleaning The Seed Cotton," *Science, Education,Innovation in THE MODERN WORLD International Scientific and Current Research Conferences*, p. 6, 2021-10-15.

Comparative linguistic Analysis of Food Related Idioms in English and Uzbek Languages.

Tagayeva Umida Ernazarovna

Teacher of Samarkand State Institute of Foreign Languages

Narpay faculty of Foreign Languages

ernazarovna.1987@gmail.com

Abstract

This article delves into fascinating exploration of phrasological units, expressions focusing on food related idioms in both English and Uzbek. Through a comparative analysis, it seeks to unravel the cultural nuances embedded in these idiomatic expressions, examining how each language uses culinary metaphors to convey meaning. The linguistic journey unfolds with insights into well-known English idioms like “Piece of cake”, “Bring home a bacon”, “Like two peas in a pod”, “as sweet as honey”, “Have a sweet tooth”, juxtaposed with their Uzbek equivalents, such as “Xamirdan qil sug’urgandek oson”, “non topmoq”, “Ikki tomchi suvdek”, “asaldek shirin”, and “shirintomoq bo’lmoq”.

Key words: phrasological units, idioms, food-related phrases, metaphor

Introduction

Language, as a vibrant tapestry of culture, often weaves its expressions around the daily experiences of its speakers. This article embarks on a delectable exploration, conducting a comparative linguistic analysis of food related idioms in English and their equivalents in Uzbek. Through this journey, we aim to uncover the cultural flavors encapsulated in the idiomatic expressions of these two distance linguistic landscapes.

There is no doubt, language, a dynamic and intricate system of communication Language, a dynamic and intricate system of communication, is deeply entwined with the cultural fabric of societies. The interplay between culture and language development is complex and multifaceted, shaping the way individuals perceive, express, and interact within their cultural contexts.

Cultures influence the richness and diversity of a language's vocabulary. Specific cultural experiences, practices, and priorities contribute to the creation of unique words and expressions. For example, cultures with rich culinary traditions may have an extensive lexicon related to food, reflecting the importance of gastronomy in daily life. Although, cultural nuances introduce variations in the meanings and connotations of words. The same word in different cultures may carry distinct emotional or social implications. For instance, a term expressing politeness in one culture might convey formality or distance in another, shaping interpersonal communication.

If we consider the statements above, the various idioms in these two languages, based on different linguistic structures rooted in extensive linguistic history, not only reflect their own cultures but also the depth of similarity and meaningfulness related to food. It is certainly essential to delve deeper into learning these idioms to not only mirror one's culture but also to appreciate the richness and similarity encapsulated in them.

Studying phrases related to food in Uzbek and English is beneficial for several reasons. Firstly, it facilitates effective communication in diverse cultural settings, as food is an integral part of any culture. Knowing food-related phrases helps when ordering in restaurants, discussing preferences, or sharing culinary experiences. Additionally, understanding these phrases enhances language proficiency by exposing learners to different linguistic structures and idiomatic

expressions. It also contributes to cultural awareness, allowing individuals to appreciate the significance of various foods within the context of each language's culture. Moreover, as languages often reflect unique cultural perspectives, studying food-related phrases can provide insights into the lifestyle, traditions, and values of Uzbek and English-speaking communities. Overall, it enriches language learning by connecting linguistic skills with cultural understanding.

Related works

It is possible to observe a widespread appeal to the comparative typology of phraseological units among researchers in general in different languages. For example, Kaskova M.E., Ustinova O.V., Bolshakova E.K assert that phraseologisms featuring gastronomic elements serve as a conceptual constant present in all languages. The significance of national cuisine, its symbolism, and terminology plays a crucial role in understanding and interpreting culture as a dynamic system encompassing the past, present, and future in continuous dialogue. In an intercultural context, this dialogue involves the exchange of various food products and national dishes between different communities. In her book "Food Idioms and Proverbs in English and Romanian," Daniela Corina Ionesco explores the cross-cultural aspects of English and Romanian food idioms, exploring whether these idioms are connected to the conceptualization of the surrounding world. She investigates how these idioms metaphorically represent social, cultural, historical, and linguistic realities in which they originated.

Similarly, Sadoqat Dilshodbekovna Khakimova has analyzed the cultural aspects of idioms in two languages in her article "Reflecting Culture through Food Names in Phrasology," focusing specifically on the typology of idioms related to self-cooked food.

One can also mention the article "The Linguo-Cultural Analysis of English and Uzbek Idioms with Food Component" written by Dilfuza Iskandarova as another exploration in this direction. In this article, the author delves into the linguistic and cultural characteristics of idioms, shedding light on their unique features.

The main findings and results

Initially, analyzing the idiomatic expressions related to food preferences in two languages logically, linguistically and semantically, in a conditional manner, it is possible to categorize the into the following types, considering their similarities and differences based on meaning, functionality, metonymy and metaphor.

1. First of all, the distinctive aspect of phrases belonging to the first category lies in the fact that when translated from one language to another, there is change in meaning, indicating a shift from negative to positive or conveying an entirely different meaning. It is possible to express such phrases even with limited linguistic proficiency in both languages. For instance, let's examine the expressions "*Like a fish out of water*" and "*Suvdagi baliqdek*" in Uzbek. While the first phrase conveys a sense of discomfort or unease, there might be cultural nuances that differentiate them. "*Like a fish out of water*" in English specifically emphasizes the feeling of being out of place or awkward. On the other hand, "*suvdagi baliqdek*" in Uzbek, with its literal translation of "like a fish in water," might focus more on the contrast between the usual comfort of a fish in water and the discomfort of being out of that familiar environment. The cultural context and idiomatic expressions can influence the nuances in how these feelings are expressed.

2. The second type directly based on Semantic Similarity and Functional Basis. Through this analysis, we discern the logical, linguistic and semantic distinctions and similarities between idiomatic expressions related to food preferences in English and Uzbek.

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-3, ISSUE-5

The English expression "*Eat someone's lunch*" and the Uzbek phrase "*yemagan somsaga pul to'lamoq*" share a conceptual similarity, both implying a negative outcome for someone. However, they differ in cultural context and literal meaning.

First of all we should examine common similarities of these idioms: Negative Outcome

- English: "*Eat someone's lunch*" metaphorically suggests defeating or outperforming someone in a competitive situation, causing them a loss or setback.

In the fiercely competitive business negotiations, our strategic team not only managed to secure the lucrative contract but also metaphorically ate our competitors' lunch, leaving them astonished by our unparalleled expertise and finesse.

- Uzbek: "*Yemagan somsaga pul to'lamoq*" conveys a similar idea of causing financial loss or defeating someone, particularly in a monetary context.

Kelin qaynotasining oldida yana yemagan somsasiga pul to'lab aybdor bo'lib qoldi. (kitobdan)

Although, it is impossible to ignore some differences between two expressions: Cultural and Literal

- Cultural Context: The English expression is idiomatic and commonly used in various contexts, not necessarily tied to financial matters. On the other hand, the Uzbek phrase is more specific, relating directly to paying money for food.

- Literal Translation: While both expressions share the negative outcome concept, the literal translation of the Uzbek phrase involves paying money for a meal at a "somsa" place, highlighting the cultural context of financial loss in a specific scenario.

Similarly, there are some other versions of these kinds of expressions.

"*Nonini tuya qildi*" in Uzbek and "*made a flatbread stale*" in English share the concept of rendering something valuable or beneficial into a less desirable state. Both expressions share the idea of making something valuable less desirable, but the Uzbek phrase is more culturally specific and might have a more direct and literal connotation. The English phrase, on the other hand, is idiomatic and may not carry the same cultural weight associated with bread in Uzbekistan.

In the oral speaking process, we often come across the Uzbek phrase "*Xamirdan qil sug'urgandek oson*" translates to "*As easy as stealing honey from a beehive*" or "*A piece of cake*" in English. These idioms exemplify the idea that a task or action is very easy to accomplish. In both phrases imply that the difficulty level is comparable to a seemingly effortless act, such as taking honey from a hive, pulling hair from the dough or cutting the pie into pieces. It is possible to say that the main similarity in these expressions is functionality of these action which are expressed in these idioms.

The phrase "*Bring home a bacon*" in English is idiomatic and it means to earn a living, especially to provide financial support for one's family. In Uzbek, the equivalent could be "non topib kelmoq"

So, the similar nuance between the two phrases is the idea of earning a living or providing sustenance for oneself or one's family.

She works hard at her job and her dedication is to what helps bring home the bacon for her family.

U oilasiga non topib borish uchun kechani kecha, kunduzni kunduz demay ter to'kar edi.

Furthermore, for expressing emphasizing a strong resemblance or likeness in English speakers use "*two peas in a pod*", while Uzbek audience utilize the idiomatic expression "*Ikki*

tomchi suvdek o'xshash". Similarity between both phrases conveys the idea of two things being very similar or closely related.

In this case, while the first phrase emphasizes the difficulty of separating peas in a pod due to their close similarity, the second idiom in Uzbek "*ikki tomchi suvdek o'xshash*" is constructed by highlighting the lack of difference or distinction between two drops of water.

Furthermore, the people in both countries, despite of the different culture, widely use for expressing disappointment with following idioms. "*Finger in the pie*" is an English idiom involvement or participation in something, often implying interference. On the other hand, "*oshga qoshiq bo'lmoq*", is a equivalents in Uzbek and while the literal translation is "*to be a spoon in the pilaf*", it signifies being a role situation, similar to the idiom. The key difference lies in cultural and linguistic nuances.

In these expressions, the intrusion of a finger without permission into the dishes is compared to the disruptive act of a spoon inserted without consent, helping to illustrate their similarity. This serves as a way to demonstrate the resemblance between incidents in two languages when showcasing similarities.

The translation of the compound phrases in the next category, both in terms of word-to word translation and meaning may align with each other, and it is possible the translation of the phrases in the two languages will not differ significantly.

For example, "*finger linking*"- "*Barmoq yalaydigan darajada mazzali*", "*half-baked*"- "*yarim –chala*", "*as sweet as honey*"- "*asaldek shirin*" such expressions like these can be relevant examples for this category. With a few examples we will try to prove our point of view.

The phrase "finger linking" is not a commonly recognized idiom in English. However, it seems to be a playful variation or fusion of two well-known phrases: "finger-licking good" and "linked fingers."

1. "*Finger-Licking Good*":

- This phrase is often associated with delicious food. It originated from the famous slogan of KFC, "It's Finger-Licking' Good," suggesting that the food is so tasty that one would want to lick their fingers.

2. "*Linked Fingers*":

- This phrase typically refers to the physical act of intertwining one's fingers with another person's, often holding hands. It symbolizes a close and intimate connection, commonly seen in romantic or supportive contexts.

- The phrase "*finger linking*" might be a creative combination that conveys a strong, positive connection or bond, possibly in the context of collaboration or teamwork. It could be used metaphorically to describe a close partnership where individuals work seamlessly together, akin to fingers interlocking.

- "*Their project was a success because of their finger linking – each team member contributing their strengths in perfect harmony.*"

While not a conventional idiom, the expression "finger linking" demonstrates the flexibility of language, allowing for inventive combinations to convey nuanced meanings.

The Uzbek idiom "Barmoq Bilan Yalaydigan Darajada Mazzali" translates to "Tastes as Good as Licking with a Finger" in English. Let's analyze this idiom:

1. Meaning:

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-3, ISSUE-5

- The idiom conveys a sense of exceptional delight or satisfaction, emphasizing the intense and pleasurable experience associated with the taste of something.

- The use of the action "*licking with a finger*" suggests an intimate and direct connection with the sensory experience of enjoying food. This reflects a cultural appreciation for rich and flavorful culinary experiences in Uzbekistan.

- The idiom uses vivid imagery and sensory language to express the intensity of the taste. The act of licking with a finger adds a tactile and personal element to the description.

- "*The dish she prepared was barmoq bilan yalaydigan darajada mazzali – each bite was a burst of flavors that left everyone savoring the moment.*"

- The inclusion of the action of licking fingers adds a sensory appeal to the idiom, making it more vivid and memorable. This characteristic is common in idioms that aim to evoke a specific experience.

So, the idioms "*Finger Linking*" in English and "*Barmoq Bilan Yalaydigan Darajada Mazzali*" in Uzbek offer intriguing insights into the cultural values and linguistic richness of their respective languages. While "*Finger Linking*" emphasizes unity and collaboration, "*Barmoq Bilan Yalaydigan Darajada Mazzali*" provides a flavorful metaphor for exceptional enjoyment. Exploring such idiomatic expressions enhances our understanding of language as a dynamic reflection of culture and shared experiences.

As another example, in English the expression "*Hard nut to crack*" is an idiom that illuminates the idea of a challenging or difficult problem or person. Just like in English, we can use some expressions in Uzbek. The idiom "*Ko'r yong'oqdek chaqilishi qiyin*" is also used for situations where understanding is challenging for a person, as well as, it might be translated as "*Hard nut to crack*"

The next English idiom "*as sweet as honey*" and its Uzbek counterpart "*asaldek shirin*" reveal both similarities and cultural nuances:

Both idioms use a simile structure, comparing sweetness to honey. This shared metaphorical expression signifies a high level of sweetness or pleasantness. - "*As sweet as honey*" is a common English idiom that reflects the universal association of honey with sweetness. In Western cultures, honey symbolizes a natural and delightful sweetness. "*Asaldek shirin*" in Uzbek similarly uses honey as a metaphor for sweetness. However, the choice of words and the cultural significance of honey might differ, reflecting the culinary traditions and local preferences of Uzbekistan. The English idiom is concise and straightforward, using common words to convey the idea of sweetness. "*Asaldek shirin*" in Uzbek is more culturally specific, incorporating the word "asal" for honey. This specificity adds a layer of cultural richness and provides a direct connection to the sweetness derived from honey in Uzbek culinary traditions. However, honey is not only a universal symbol of sweetness but also carries cultural and historical significance in various societies. In both idioms, the cultural associations with honey contribute to the depth of meaning. Both idioms use sensory language to convey the experience of sweetness. The mention of honey appeals to the sense of taste and adds a vivid and relatable quality to the expressions.

The idioms "*as sweet as honey*" in English and "*asaldek shirin*" in Uzbek share a common metaphorical structure, the use of honey as a symbol of sweetness bridges the linguistic gap in both languages.

Let's conduct a linguistic semantic analysis of the English idiom "*half-baked*" and its Uzbek counterpart "*yarim chala*":

1. "**Half-Baked**" (English):

- Literal Meaning: Originally a term used to describe food, it refers to something that is only partially cooked and is not fully prepared to be eaten.

- Figurative Extension: In a figurative sense, "half-baked" is used to describe ideas, plans, or solutions that are poorly thought out, incomplete, or lacking in substance.

2. "Yarim Chala" (Uzbek):

- Literal Meaning: Translated as "**half-cooked**," this idiom likely has a culinary origin, describing food that is not fully cooked or prepared.

- Figurative Extension: Similar to the English idiom, "**yarim chala**" might be used metaphorically to describe ideas, projects, or plans that are not well-thought-out or incomplete.

- English (Half-Baked): The figurative use of "half-baked" reflects a Western cultural context, emphasizing the importance of thorough planning and completion.

- Uzbek (Yarim Chala): The culinary origin of the Uzbek idiom indicates a connection to the importance of well-prepared food in Uzbek culture, and its figurative use likely carries a similar emphasis on completeness. Both idioms share a semantic overlap in conveying a sense of incompleteness or inadequacy. Whether applied to food or ideas, they suggest that something is lacking or not fully realized.

Both idioms are likely used in contexts where a critical or dismissive tone is warranted. They might be employed to criticize plans, proposals, or solutions that are deemed insufficient or poorly executed.

The use of the terms "**half-baked**" and "**yarim chala**" evokes a visual metaphor, creating a mental image of something only partially cooked or developed.

So, the English idiom "**half-baked**" and the Uzbek idiom "**yarim chala**" share a common theme of incompleteness or inadequacy. The linguistic semantic analysis highlights the idioms' culinary origins, figurative extensions, and cultural nuances, showcasing the diverse ways in which languages express similar concepts.

The last idiom we should analyze the linguistic semantics of the English expression "**as tasteless as a cucumber**" and its Uzbek denotations "**bodringdek bemaza**":

First if we refer "**As Tasteless as a Cucumber**" (English):

Cucumbers are often recognized for their mild and refreshing nature but are also acknowledged for their subtle taste. This phrase literally signifies something devoid of flavor or taste. In a figurative sense, the idiom is employed to characterize food or experiences that lack excitement or are bland.

Now look at the meaning of the "**Bodringdek Bemaza**" in Uzbek:

When translated as "as tasteless as a cucumber," this Uzbek idiom compares something to the mild flavor of a cucumber, emphasizing a lack of taste. Similar to the English idiom, "**bodringdek bemaza**" is likely utilized metaphorically to depict things that are uninteresting, dull, or lacking in excitement.

- English (Cucumber): The selection of a cucumber in the English idiom reflects the cultural understanding of cucumbers as mild and commonly used in salads.

- Uzbek (Cucumber): Cucumbers are a staple in Uzbek cuisine, and the choice of "**bodringdek bemaza**" may resonate more deeply within Uzbek culture.

Both idioms share a common semantic ground, conveying a sense of blandness or the absence of flavor. They are likely utilized to express dissatisfaction or disappointment when

something does not meet expectations. Both idioms draw upon the culinary context, linking taste and flavor to the sensory experience of eating. They utilize familiar food items to create a relatable metaphor. These idioms are likely employed in situations where a critical or disapproving tone is appropriate. They may convey discontent with food, experiences, or anything perceived as lacking in interest or excitement.

Both idioms incorporate a visual metaphor by likening the tasteless quality to a specific vegetable, creating a mental image that enhances comprehension.

In the nutshell, the English idiom "*as tasteless as a cucumber*" and the Uzbek idiom "*bodringdek bemaza*" share a common theme of describing something as lacking in flavor. The linguistic semantic analysis underscores the idioms' culinary origins, cultural nuances, and their ability to convey the universal human experience of taste and disappointment.

Conclusion

In this exploration of food-related idioms, we embarked on a delightful linguistic journey comparing expressions in English and Uzbek. These idioms, intricately woven into the fabric of language, offer glimpses into the cultural flavors and shared experiences of speakers in these distinct linguistic landscapes.

Language, as a dynamic reflection of culture, intertwines with daily experiences. Through a comparative linguistic analysis, we uncovered how culinary metaphors are employed in both English and Uzbek to convey meaning. The idioms examined, such as "Piece of cake" and its Uzbek counterpart "Xamirdan qil sug'urgandek oson," illustrate the rich tapestry of expressions shaped by cultural contexts.

Cultural nuances play a pivotal role, influencing the meanings and connotations of words. The idioms discussed reflect not only the uniqueness of each language but also the depth of similarity and meaningfulness related to food. This linguistic exploration emphasized the importance of delving into idioms, not just as linguistic constructs but as mirrors reflecting cultural richness.

Studying food-related phrases benefits effective communication in diverse cultural settings, enhances language proficiency, and fosters cultural awareness. The comparative analysis showcased the interconnectedness of language and culture, revealing insights into lifestyle, traditions, and values.

Building upon the works of researchers like Kaskova, Ustinova, Bolshakova, Ionesco, Khakimova, and Iskandarova, we delved into the linguistic and cultural characteristics of idioms, shedding light on their unique features. The idioms examined, whether undergoing shifts in meaning or aligning in semantic similarity, contribute to the cross-cultural dialogue inherent in language.

In the realm of food-related idioms, we uncovered the similarities and distinctions between English and Uzbek expressions. Whether expressing ease with "Piece of cake" or emphasizing likeness with "Two peas in a pod," these idioms bridge cultural gaps through shared metaphors. Even less common expressions like "*Finger Linking*" and its Uzbek counterpart "*Barmoq Bilan Yalaydigan Darajada Mazzali*" offer glimpses into collaborative unity and exceptional enjoyment.

As we conclude this culinary journey through languages, we recognize the idioms not just as linguistic curiosities but as windows into the diverse ways cultures express shared human experiences. These idioms, rooted in culinary traditions, reflect the universal themes of ease,

challenge, sweetness, and disappointment, creating a delightful tapestry that transcends linguistic boundaries.

References

1. Yusupov. A.L. English-Uzbek dictionary of idioms. Tashkent, “Yangi asr avlodi”, 2014.
2. Nabiev A.M. Ways of formation of phraseological compounds and methods of studying their alternatives in the Uzbek language. Graduation thesis for a bachelor's degree Andijan, 2014, P.36.
3. Flavell L., Flavell R. Dictionary of idioms and their origins. – London.: Kylie Cathie LTD, 1994.
4. Ionescu D.C. A Contrastive Analysis of Food Idioms: Linguistic and Cultural Perspective. – Bucharest: Oscar Print Publishing Company, 2017.
5. Rahmatullayev Sh. O’zbek tilining izohli frazeologik lug’ati. – Toshkent, “O’qituvchi”, 1978.
6. Pinnavoia L. Food and Drink Idioms in English. – Newcastle upon Tyne.: Cambridge Scholars Publishing, 2018.3

Teacher of Termez branch of Tashkent medical academy

Murtazayeva Xadicha Nuriddinovna

The 1st year student of Termez branch of Tashkent medical academy

Nabiyev Shahboz Shohruh o'g'li

Yoqubov Nuriddinxon Mexmonxon o'g'li

Raxmatov Shohrux Shokir o'g'li

Annotation: The dental industry is transforming into a fully-digital one quicker than most dentists imagined, and 3D technologies are completely altering the way in which dental solutions can be approached. The latest 3D printing innovation could change the way you think about your visit to the dentist. As the researchers from all over the world are working on the creation of a 3D-printed tooth made of an antimicrobial plastic that kills the bacteria responsible for tooth decay on contact. To test the bacteria-fighting tooth in a lab environment, the researchers coated the material with human saliva and exposed it to the bacterium that causes tooth decay. The anti-bacterial tooth killed more than 99% of all bacteria and showed no signs of being harmful to human cells. It should be pointed out that 3D-printing has not still become a reality. The 3D-printing innovation, for example, is still not ready for clinical trials and has not yet been tested inside a human mouth. Moreover, there is a significant problem of how the tooth might react to brushing and the application of toothpaste. However, it is hard to deny the growing role of 3D printers in medicine and dentistry. Using 3D printers, there are ongoing attempts to “bio-print” human bone, skin, tissue and even organs.

Key Words: Digital dentistry, Laser Dentistry, technology, digital imaging, dental care, 3D printing, frenectomies, specialized equipment.

Introduction

The field of dentistry has been rapidly evolving with the advancement of technology. New technologies are constantly being introduced to improve the quality of dental care and enhance patient experience. In this paper, we will discuss some of the latest technologies in dentistry and their impact on the practice of dentistry.

Digital Dentistry

Digital dentistry is a broad term that encompasses various technologies such as digital imaging, computer-aided design and manufacturing (CAD/CAM), and 3D printing. These technologies have revolutionized the way dental procedures are performed, making them more accurate, efficient, and patient-friendly.

Digital imaging, such as cone-beam computed tomography (CBCT) and intraoral scanners, allows for high-resolution 3D images of the oral cavity, aiding in diagnosis and treatment planning. CBCT has become an essential tool in implant dentistry, providing detailed information about bone density and anatomy. Intraoral scanners eliminate the need for traditional impressions, reducing patient discomfort and improving accuracy.

CAD/CAM technology has also made significant advancements in dentistry. With this technology, restorations such as crowns, bridges, and veneers can be designed and milled in-office, eliminating the need for multiple appointments and temporary restorations. This results in faster treatment times and improved patient satisfaction.

3D printing has also found its way into dentistry, allowing for the fabrication of surgical guides, models, and even custom-made prostheses. This technology has greatly improved the accuracy and precision of dental procedures, resulting in better outcomes for patients.

Laser Dentistry

Laser technology has been used in dentistry for many years, but recent advancements have made it an essential tool in various procedures. Lasers are now used for soft tissue surgeries, such as gum contouring and frenectomies, as well as for hard tissue procedures like cavity preparation and root canal disinfection.

The use of lasers in dentistry has many advantages, including minimal bleeding, reduced post-operative pain, and faster healing times. It also allows for more precise and conservative treatment, preserving healthy tissue and reducing the risk of complications.

Virtual Reality

Virtual reality (VR) is a technology that creates a simulated environment that can be interacted with using specialized equipment, such as headsets and gloves. In dentistry, VR has been used to reduce patient anxiety and fear during dental procedures. By immersing patients in a virtual world, they can be distracted from the dental treatment, making it more tolerable and less stressful.

Tele-dentistry

Tele-dentistry is a relatively new technology that allows for remote communication between dentists and patients. This technology has become increasingly important during the COVID-19 pandemic, as it allows for virtual consultations and follow-ups, reducing the need for in-person visits. Tele-dentistry also enables dentists to provide care to patients in remote areas or those with limited mobility.

Conclusion: The advancements in technology have greatly influenced the practice of dentistry, making it more efficient, accurate, and patient-friendly. Digital dentistry, laser technology, virtual reality, and tele-dentistry are just a few examples of how technology has improved the field of dentistry. As technology continues to advance, we can expect even more innovations that will further enhance the quality of dental care.

References:

1. Di Fiore A., Graiff L., Savio G., Granata S., Basilicata M., Bollero P., Meneghello R. Investigation of the Accuracy of Four Intraoral Scanners in Mandibular Full-Arch Digital Implant Impression: A Comparative In Vitro Study. *Int. J. Environ. Res. Public Health*. 2022;19:4719. doi: 10.3390/ijerph19084719. [PMC free article] [PubMed] [CrossRef] [Google Scholar]
2. Unkovskiy A., Huettig F., Kraemer-Fernandez P., Spintzyk S. Multi-Material 3D Printing of a Customized Sports Mouth Guard: Proof-of-Concept Clinical Case. *Int. J. Environ. Res. Public Health*. 2021;18:12762. doi: 10.3390/ijerph182312762. [PMC free article] [PubMed] [CrossRef] [Google Scholar]
3. Panpisut P., Doungkom P., Padunglappisit C., Romalee W., Suksudaj N. Assessment of 3D-Printed Tooth Containing Simulated Deep Caries Lesions for Practicing Selective Caries Removal: A Pilot Study. *Int. J. Environ. Res. Public Health*. 2023;20:90. doi: 10.3390/ijerph20010090. [PMC free article] [PubMed] [CrossRef] [Google Scholar]
4. De Stefani A., Barone M., Hatami Alamdari S., Barjami A., Baciliero U., Apolloni F., Gracco A., Bruno G. Validation of Vectra 3D Imaging Systems: A Review. *Int. J. Environ. Res. Public Health*. 2022;19:8820. doi: 10.3390/ijerph19148820. [PMC free article] [PubMed] [CrossRef] [Google Scholar]

Linguistic-psychological factors of teaching Russian-speaking students to Uzbek monologue speech

Salisheva Zilola Ismailovna,

Associate Professor of the Department of Uzbek Language and Literature, Doctor of Philosophy (PhD) in Pedagogical Sciences, Uzbekistan State University of World Languages

Abstract

The article delves into speech activity, exploring its emergence, formation, and specifically focuses on the role of monologic speech within this framework. It also emphasizes the extent of research dedicated to monologic speech within the methodology of teaching the Uzbek language, shedding light on both linguistic and psychological factors influencing monologic speech.

Keywords: speech activity, monologue, dialogue, monologic speech, linguo-psychological, language, teaching, methodology, text.

The process of acquiring a second language encompasses mastering four intertwined speech components: *reading, writing, listening, and speaking*. Among these, speaking presents a notably intricate challenge for learners. Cultivating oral monologic speech skills in second language education becomes intricate due to students' constrained linguistic resources, which impede their capacity to freely articulate thoughts or employ existing vocabulary with methodological precision. Respected experts, including psychologist L.S. Vygotsky, emphasize the importance of monologic speech training using two primary approaches:

1. The "Upward" approach entails education culminating in a polished, finalized text.
2. The "Downward" approach centers on education founded upon sentences expressing simple ideas [1].

Linguo-didactic studies highlight a distinction in psychological methods between learning one's native language and acquiring a second language. It's noted that "native language learning progresses from the bottom up, while foreign language acquisition proceeds from the top down" [2]. This distinction elucidates the process: from the bottom up, where analysis of specific language elements leads to generalization, versus the top-down direction, which moves from general principles or simply rules to practical application.

In the "upward" direction, the emphasis lies on comprehensive mastery of the text's content, its composition, language elements—essentially everything that contributes to the construction of monologic texts students will later generate. Students engage with the text by reading, answering questions, devising structural plans for the text, organizing sentence sequences, retelling the text, expressing its content from a different perspective, and altering the context. On the other hand, the "downward" approach involves commencing with an idea encapsulated within a sentence and expanding it into a complete monologue. Within this framework, students learn to craft a monologue text centered on a specific topic: under the guidance of the teacher, they elaborate and modify their text, constructing a monologue based on the given subject matter while infusing personal thoughts and viewpoints. This process facilitates their ability to articulate ideas in a logically coherent manner. Typically, the process of teaching monologic speech encompasses the following stages:

- work on the base text intended to be used in the course of the lesson, i.e. teaching the text, translating new words and phrases;
- organizing a conversation on the basis of questions and assignments based on the content of the text;
- enriching and strengthening the language reserve with the help of repetition of the grammatical topic in connection with the text, some word combinations, oral presentation of linguistic tools and performing exercises.

The approach to language learning seems to be influenced by the specific characteristics of the language under study. In acquiring one's native language, a systematic presentation of the language's grammar is preferred. However, in learning a second language, the focus should shift towards practical application, particularly in developing oral communication skills [3]. All teaching methods for monologic speech should adhere to a coherent system. Throughout these tasks, students should understand their abilities, feel their knowledge advancing, and develop a heightened interest and motivation for language learning.

It is important to highlight that employing question-and-answer formats to develop monologic speech skills is viewed as an inappropriate educational approach. The nature of a monologue necessitates uninterrupted content delivery over a specified duration without interruption or division. Consequently, a monologue cannot be equated to a series of question-and-answer sequences. These characteristics underscore the preference for teaching monologic speech at relatively advanced stages in second language education.

A structured and continuous approach to preparing for monologue delivery should commence at foundational levels and progress systematically. Consequently, within higher education, a pressing contemporary concern lies in enhancing the monologic speech capabilities of Russian-speaking students in their native language, particularly within their specialized fields and socio-economic contexts. This emphasis aims to cultivate automatic oral monologic speech skills among these learners.

The Uzbek monologue exhibits typical monologue traits, including coherence, comprehensiveness, and relevance. However, Uzbek monologic speech possesses distinctive attributes, such as sentence structure, intonation, and the pace of enunciating lexical elements. Specifically, Uzbek is classified among agglutinative languages and is considered an affixal language due to the prevalent use of suffixes in word formation. This relatively widespread grammatical structure presents challenges for speakers accustomed to inflected languages. Russian-speaking students often encounter difficulty in this type of monologic speech, which demands consistent word usage without frequent repetitions or substitutions.

It can be noted that the following difficulties are encountered in acquiring oral speaking skills in second language education:

- insufficient vocabulary to express thoughts independently;
- to be able to choose the necessary tools for speaking according to their lexical-grammatical meaning;
- able to use ready-made speech patterns, expressions appropriately;

- difficulties with choosing the correct tone of speech and being able to correctly divide the sentence into syntagms;
- difficulties with accent and pronunciation of certain sounds;
- difficulties with understanding the speech of native speakers (mistakes in live conversation: dialect words, slang, many uses of euphemisms, etc.);
- use of interfering errors and unnecessary acquisitions that occur under the influence of the mother tongue;
- difficulties with dividing connected speech into logical parts, using introductory words and sentences used to connect these parts appropriately and moderately.

Also, the biggest difficulty in mastering any language and acquiring the skills of oral monologic speech in this language is usually the choice and use of appropriate language tools based on the functional styles of the language, the style of the information being presented [4]. Therefore, in our opinion, it is absolutely impossible to solve the problems in this regard without teaching the methodological features of the studied language in the development of monologic speech. Among the extralinguistic tools in second language education, one of the most common negative phenomena is related to pauses (stops), which are observed in the process of speaking. As a result of pauses, various psychological conditions, disorders of speech fluency, and excesses occur.

In psychological research, discussions on the psychological challenges within monologic speech have been somewhat explored. Notably, I. I. Zimnyaya divides speech activity into initiation, formation, and implementation stages, highlighting the speech need as a pivotal aspect linked to the initial stage. Zimnyaya underscores that the motivating force driving speech stems primarily from necessity. The birth of this necessity necessitates both external and internal influences. External influence involves demand, while internal influence revolves around understanding the mechanisms of speech, namely language materials. Consequently, the process of oral speech encounters two psychological challenges: 1) the lack of time to contemplate the subject of thought, leading to rapid speech generation; and 2) the balance between automated and non-automated speech skills [4]. The first factor hinges on speech conditions, while the second factor relies on linguistic aspects within speech.

In summary, within second language education, oral monologic speech holds paramount importance among the skills of reading, writing, and listening. It stands as the demonstrative culmination of a student's language learning journey, showcasing achievements attained through reading, listening, and writing. Consequently, in foreign language education, including the instruction of Uzbek as a second language, the primary objective lies in nurturing students' proficiency in spoken language—from basic connected speech to proficient delivery of both prepared and spontaneous monologues. Achieving this goal necessitates a thorough understanding of the linguistic and psychological facets inherent in monologic speech.

1. Выготский Л. С. Мышление и речь // Избранные психологические исследования. – М.: Педагогика, 1956. – С.60.
2. Лapidус Б.А. Проблемы содержания обучения языку в языковом вузе. –М.: Высшая школа, 1986. – С. 143.
3. Волкова Л.В. Обучение грамматически правильной речи литературно-разговорного стиля на II этапе языкового вуза (франц. язык). Дисс. ... канд. пед. наук. – М.: 1975. – С. 116.
4. Зимняя И.А. Психология слушания и говорения. Дис. ... докт. наук. –М., 1973. – С. 26.
5. Mukhitdinova, K., Asilova, G., Salisheva, Z., & Rakhmatullaeva, M. (2019). Current Issues of Creating Educational Material for Intensive Teaching to the Uzbek Language of Foreigners. *International Journal of Engineering and Advanced Technology*, 9(1), 5224-5226.
6. Салишева, З. И. (2011). Значение упражнений по переводу в процессе обучения узбекскому языку как второму. *Вестник Московского государственного лингвистического университета*, (630), 154-159.

ТКАНИ ПАРОДОНТА И ЕЕ ЗАБОЛЕВАНИЯ

ХОЛБЕКОВ БАХТИЁР

АХМЕДОВА САОДАТ

ЭШОНКУЛОВА ДИЛФУЗА

ТУРАЕВА НИЛУФАР

АННОТАЦИЯ: К функциям ткани пародонта относятся следующие: выполняет механистатические или анатомические, распределительные, тропические и пластические задачи. Что касается самой ткани пародонта, то пародонт – это два слова (пери) – окружающий, (одонт) – означает зуб, состоит из соединения. Активная ткань вокруг зуба заполняет пародонтальное пространство между внутренними стенками челюстных костей и альвеальными растениями цементом в корневой части зуба. Воспаление пародонтита называется пародонтит.

КЛЮЧЕВЫЕ СЛОВА: пародонт, пародонтальный слой, стоматология, функция ткани пародонта, пародонтит, острый асептический пародонтит, острый напорный пародонтит.

Зуб – один из важных органов в организме человека, и важно иметь информацию о его строении и заболеваниях. Познакомимся со строением, свойствами и заболеваниями ткани пародонта, которая является одной из тканей зуба.

Периодонт (от латинского слова) — соединительная ткань, расположенная в щелевидном пространстве между цементом корня зуба и внутренней поверхностью альвеол. Средняя его ширина 0,20-0,25 мм. Самая узкая часть пародонта расположена в средней части корня зуба, а его ширина несколько больше в апикальном и маргинальном отделах. Развитие тканей пародонта тесно связано с эмбриогенезом и развитием зубов. Этот процесс начинается параллельно с формированием корня зуба. Рост пародонтальных волокон происходит как за счет корневого цемента, так и за счет альвеолярной кости. С начала развития волокна имеют косое направление и располагаются под углом к альвеолам и цементной ткани. Окончательное развитие пародонтального комплекса происходит после прорезывания зубов. При этом в этом процессе участвует и сама ткань пародонта. Следует отметить, что, несмотря на мезодермальное происхождение компонентов пародонта, в его нормальном формировании участвует эпителий эктодермы. Основу пародонта составляет соединительная ткань. Его основная структура – коллагеновые волокна. Они составляют основу ткани пародонта и соединяют цемент зуба с костной тканью альвеолы. Несмотря на недостаточную эластичность, волокна коллагена обеспечивают некоторую подвижность зуба в десне, которая в основном возникает за счет небольших перекручиваний в их сторону. Участки волокон альвеол, проникающие в цемент и костные ткани, называются прокалывающими волокнами Шарпея. Глубина их проникновения в цемент не превышает 3-5 см, а в альвеолярную кость он проникает до 20 см. В пародонтальной щели агрегаты коллагена из альвеолярного цемента образуют четкое промежуточное сплетение, обеспечивающее их адаптацию. Коллаген, входящий в состав пародонтальной связки, отличается своими физическими и биохимическими свойствами, но его фибриллы имеют относительно небольшой диаметр, не превышающий 55 нм. Помимо типичных коллагеновых волокон, пародонт содержит незрелые эластические окситалановые волокна.

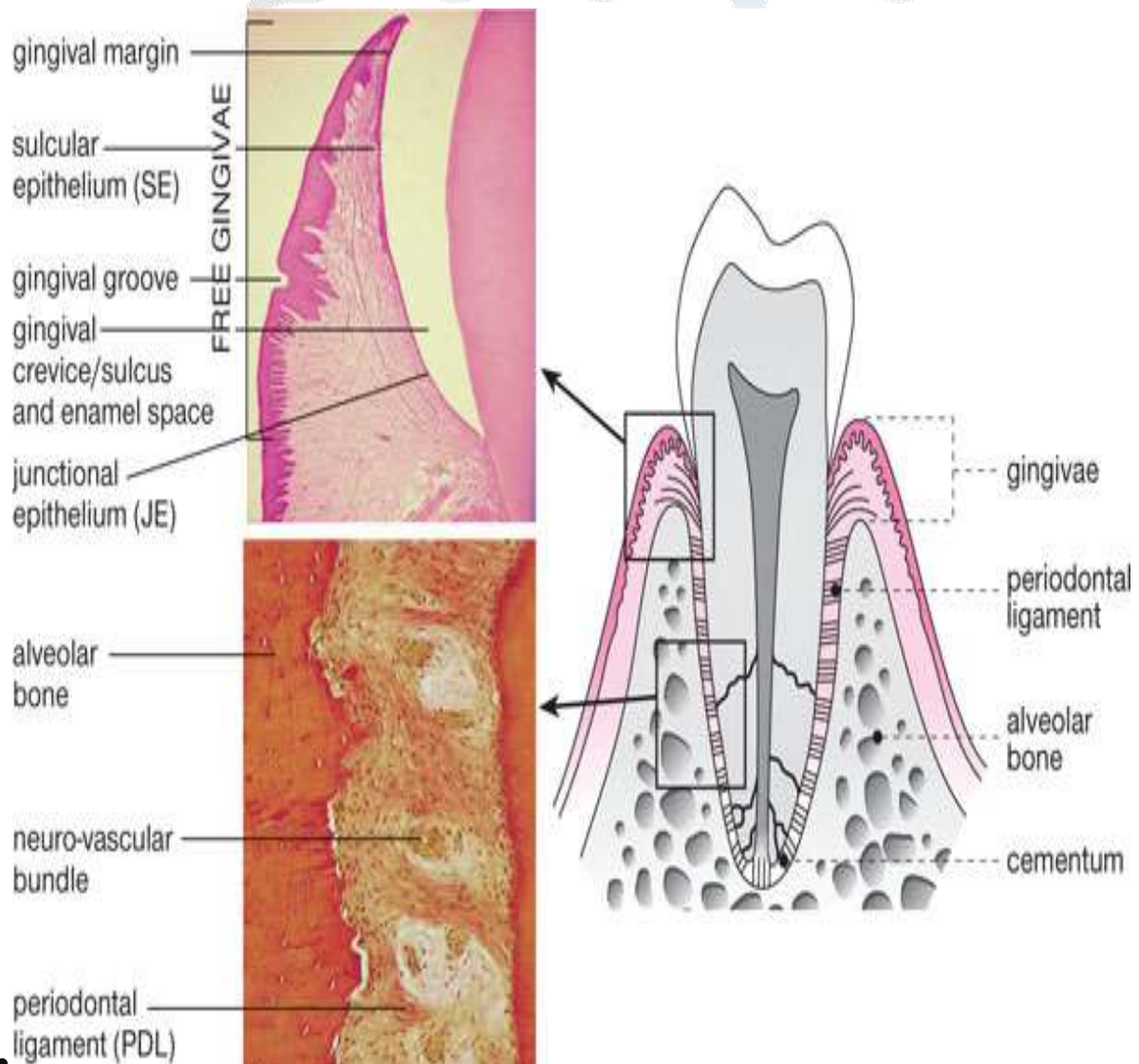
Они достигают длины нескольких мм и проходят параллельно сегменту корня побега, пересекая коллагеновые пучки под прямым углом. Эти волокна играют важную роль в регуляции и распределении кровотока. Основное вещество пародонта занимает 60% всех остальных компонентов соединительной ткани. Кроме того, около 70% гелеобразного аморфного вещества составляет вода. Основным материалом, содержащим большое количество воды, играет важную роль в процессе поглощения большого количества воды. Клеточные элементы, входящие в состав пародонта, весьма разнообразны, они представлены как стационарными, так и подвижными клетками. Они расположены вдоль коллагеновых волокон. В течение жизни некоторые из них могут дифференцироваться в стационарные клеточные элементы — фиброциты, а другие — в сократительные миофибробласты. Другую популяцию клеток составляют: цементциты и цементобласты, последние из которых непосредственно прилегают к поверхности цемента корня зуба и участвуют в построении вторичного цемента. Остеобласты располагаются на поверхности альвеол и выполняют функцию костеобразования. Кроме того, в тканях пародонта в небольших количествах обнаруживаются остеокласты, одонтокласты, макрофаги и клеточные элементы определенного отдела иммунной системы (лимфоциты и плазматические клетки). Кроме того, в маргинальной части IgA синтезируют преимущественно плазматические клетки. Помимо этих клеточных элементов, в пародонте присутствуют в небольшом количестве тучные клетки, эозинофилы и нейтрофильные лейкоциты.

- Кровоснабжение пародонта осуществляется через верхние и нижние альвеолярные артерии. Наибольшая часть артериальной крови поступает в ткань пародонта из медуллярных головок альвеолярного отростка по артериолам, через Гаверсовы и Фалькисмановы каналы, а также через ветви зубной артериолы, придающие связку к пародонту. Сосудистая сеть связочного аппарата соседних зубов интегрирована в систему, обеспечивающую возможность коллатерального кровотока.

- Характерной особенностью ткани пародонта является высокая скорость ее обновления. Это касается не только клеточного состава, но и коллагеновых волокон и основного вещества. С возрастом процессы регенерации существенно замедляются, уменьшается количество макрофагов, тучных клеток и плазматических клеток, постепенно нарастает процесс сокращения системы. Аfferentные и эfferentные волокна редуцируются. Помимо вышеперечисленного, структурная целостность пародонта обеспечивается за счет прикрепления эмали. Он представлен 10-20 многослойными клетками плоского эпителия, полное их обновление происходит за 4-8 дней. Он значительно превосходит физиологические процессы регенерации эпителиальных клеток десны и не только обеспечивает механическую защиту доступа к периферическому отделу пародонта, но и обеспечивает процессы устранения потенциальных повреждающих факторов.

- Функции тканей пародонта:
 - Механостатическая или анатомическая функция – удерживать зуб в альвеоле.

- • Распределение – регуляторная функция заключается в равномерном перераспределении нагрузки на зубы и альвеолярные ткани во время жевания.
- • Защитную функцию выражают компоненты пародонта, представляющие собой особый гистогематический барьер и обеспечивающие структурный и антигенный гомеостаз собственных и окружающих тканей. Эта реализация гарантируется специфическими и неспецифическими факторами.
- • Трофическая функция обеспечивается хорошо развитой сосудистой и нервной сетью.
- • Пластическая функция тесно связана с защитной функцией и обеспечивает структуру и восстановление самого пародонта и соприкасающихся с ним тканей.



В настоящее время стоматологические заболевания занимают ведущее место среди населения. Среди них есть заболевания с воспалением тканей пародонта. Воспаление тканей пародонта называется пародонтитом. Одной из распространенных его форм является острый пародонтит.

Острый пародонтит. В случае своевременного и неправильного лечения пульпита или создания в нелеченном зубе условий, способствующих проникновению инфекции в пародонтальное пространство, инфекция может распространиться на мягкие структуры кости и челюстно-лицевой области (периостит), остеомиелит, абсцессы, флегмоны) и других органов и тканей (менингит, сепсис, медиастинит и другие осложнения) с развитием опасных для жизни осложнений. Пародонтальное пространство расположено между корневым цементом и пластинкой альвеолы зуба и заполнено пучками соединительной ткани — пародонтом. По сути, эти пучки являются связочным аппаратом зуба, а весь конгломерат тканей можно считать его надкостницей. Пространство между тканями пародонта заполнено интерстициальной жидкостью, которая действует как пародонтальный амортизатор. Пародонт богат нервными окончаниями и, прежде всего, барорецепторами.

Клиническая картина. При остром серозном периодонтите люди обычно жалуются на сильную боль, в чем его отличие от острого пульпита. Из-за отека пародонта и внутрипародонтального напряжения повышается тактильная и болевая чувствительность пародонта. В связи с этим больные часто жалуются на боль в пораженном зубе противоположной челюсти, вызывающую резкую боль при закрывании рта. Такое состояние зуба опасно острым периодонтитом. При остром гнойном периодонтите более выражены местные и общие проявления заболевания. Боль усиливается, с редкими световыми промежутками. Иногда возникает лучевая боль по ходу ветвей тройничного нерва. Не только удар инструментом по зубу, но и легкое прикосновение вызывает резкую боль. В результате гнойного растворения соединительного аппарата зуб становится подвижным. Острый гнойный пародонтит иногда сопровождается побочным отеком мягких тканей лица и гиперемией десны в области больного зуба. Регионарные лимфатические узлы увеличены и болезненны при пальпации. Ухудшается общее самочувствие больных, появляется общая слабость, нарушается сон. Больные отказываются от еды из-за острой боли при жевании. Температура тела часто повышается до 37,5-38 С. В анализе крови выявляют повышение СОЭ до 15-30 мм/с, увеличение количества лейкоцитов, что свидетельствует об общей реакции организма. Без специального лечения воспалительный процесс может закончиться лишь выделением экссудата из области пародонта. Есть несколько выходов.

Наиболее благоприятным исходом острого пародонтита является формирование связи очага воспаления с полостью зуба через корневой канал. Из источника воспаления гной может распространиться в другом направлении. Так, через перфорантный (Фолькман) и костный (Гаверсов) каналы из пародонта гной может попасть в костный мозг челюстной кости и при определенных условиях привести к развитию остеомиелита челюсти. — это воспалительный процесс при пародонтите, в результате которого наступает поверхностный.

Гной может распространиться на компактную костную пластинку челюсти и выйти из-под надкостницы, развивая периостит челюсти. Растворение надкостницы и проникновение бактерий в мягкие ткани, окружающие челюсть, остаются основной и наиболее частой причиной развития флегмоны на поверхности нижней челюсти. Наконец, при развитии острого пародонтита на верхней челюсти, особенно в области коренных и премоляров, при распространении и образовании гноя в пазухе верхней челюсти абсцесс

может привести к острому гаймориту. Таким образом, острый пародонтит может вызвать тяжелые осложнения, исход которых порой трудно предсказать.

Уход. Основную задачу по обеспечению выхода экссудата стоматолог решает путем открытия дренажа через канал кариозной полости зуба. Для этого специальным инструментом эвакуируют гангренозную ткань пульпы. Освобождение корневого канала от остатков пульпы создает благоприятные условия для выхода гноя из периодонтальной щели, что предотвращает распространение гноя в наиболее опасном направлении. Вероятность развития осложнений после лечения при пародонтите сводится к минимуму. При отсутствии стоматолога мероприятия по профилактике осложнений острого пародонтита должен проводить другой врач. Создание условий для выхода экссудата через корневой канал зуба требует не только специальных инструментов, но и особых навыков, поэтому любой врач любого профиля должен удалить больной зуб как единственно целесообразную меру. После удаления зуба широкий контакт источника воспаления с полостью рта создает оптимальные условия для ликвидации воспалительного процесса. Поскольку иногда это происходит очень быстро и остро, зуб удаляют в экстренном порядке, чтобы предотвратить воспалительные процессы. Если в пораженном зубе имеется явный отек мягких тканей, десны и переходных складок, то для предотвращения развития периостита необходимо хирургическое лечение надкостницы, несмотря на удаление зуба.

Вывод

Чтобы ткань пародонта была здоровой и могла выполнять свои задачи, необходимо следить за чистотой зубов, не употреблять алкоголь и табачные изделия, а также употреблять больше продуктов, содержащих витамины и минералы, обеспечивающие прочность тканей.

Пародонтит возникает в результате пренебрежительного отношения человека к своим зубам. Если вы не хотите преждевременно потерять свои естественные зубы и стать клиентом стоматолога-ортопеда, позаботьтесь о своем здоровье. Кровоточивость десен, отек, подвижность зубов – симптомы пародонтита. Своевременное лечение пародонтита способствует раннему появлению осложнений и красивой улыбке пациента.

Литература:

1. https://meduniver.com/Medical/stomatologia/anatomia_periodonta.html
2. Stomatologiya akademik tomonidan tahrirlangan . RAMS N.N . Bajanova . 2008-yil.
- 3 . Zufarov .K . A.Gistalogiya : darslik – Toshkent ,2005 –y.
- 4 . To'xtayev . Q . R . Gistalogiya .

CAUSES OF SOIL DEGRADATION AND MEASURES TO PREVENT IT

J. Jumayev,

Bukhara State University, teacher of the Department of Agronomy and Soil Science

Annotation: *the degradation of the Earth is considered one of the most pressing environmental problems in the world, and the world's population suffers from one aspect or another of degradation. A number of measures are being taken by the government of Uzbekistan on the reasons for the emergence of degradation processes in the lands and measures to prevent them. In this article, analyzes were carried out in the regions of the "Babur massif" and "Ibrahim Muminov" massif of the Shofirkon District of the Bukhara region, and a number of cases of degradation were identified in these regions, and data on the Prevention of the causes of degradation and factors of occurrence are presented in this article.*

Keywords: *soil fertility, degradation, groundwater, drought, climate, temperature, erosion.*

Introduction.

Combating land degradation in the country and mitigating its negative consequences, preventing desertification and drought in the regions, preserving biodiversity, maintaining and increasing soil fertility, restoring degraded lands, advanced scientific developments in this direction and Decision PQ-277 dated 10.06.2022 of the President of the Republic of Uzbekistan on measures to create an effective system of combating land degradation was signed in order to achieve sustainable development of regions based on wide use of innovations.[1]

According to the Food and Agriculture Organization of the United Nations, if the degradation processes on the earth continue in this direction, by 2050, soil degradation may make up 90% of agricultural land. Currently, the annual damage due to degradation in the world is about 490 billion dollars. In many areas, 2.6 billion people are suffering from soil degradation. As a result of degradation, approximately 73% of pastures and 47% of drylands have been degraded. [2,3].

According to the degree of salinity, the area we studied is weakly saline. According to him, according to the level of alkalinity, which changes the parameters of the soil environment, it was 0.038% in the upper driving layer of the soil 0-30 cm, this indicator is 0.069% in Cl⁻ anion, 0.069% in SO₄ anion. in this layer, according to the amount of cations, the amount of Ca²⁺ is 0.018%, and the amount of Mg²⁺ is 0.010%. The combined share of Na⁺ cation and K⁺ cation was 0.020% when calculated based on the generally accepted method. The total amount of water-soluble salts, that is, the amount of dry residue in this layer, is 0.178%. (in Table 1).

Table 1

Analysis of water absorption of soils of "Ibrahim Mominov" massif, Shofirkon district, Bukhara region

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-3, ISSUE-5

Don't cut	Depth cm	A	l	O ₄	a	C	g	ni	ati	ry	um
		lkalinit y	atio nal Gr. equi v	ation al Gr. equiv	ation al Gr. equiv	ation al Gr. Equi valen ce	on	on	resi due	of sal ts	
	0-32	.62	.49	.44	.90	.79	.55	.69	.178	.153	
	32-68	.56	.39	.19	.75	.64	.14	.39	.142	.128	
	68-95	.52	.49	.19	.80	.79	.20	.59	.148	.130	
	95-137	.50	.39	.19	.75	.79	.08	.54	.142	.123	

The amount of salinity changes slightly towards the lower layers of the soil, which is not significant. For example, if the total alkali content in the 32-68 cm subsoil layer was 0.5 mg/eq, Cl⁻; of SO₄⁻² anions was 0.39; 1.19 mg/eq. These indicators are cations, i.e. Ca²⁺; Mg²⁺ and K⁺; It is relatively high in Na⁺ cations, 0.75; 0.64; is 0.75 mg/eq, the ratio of anions and cations is 2.14 mg/eq. The sum of anions and cations in the 65-95 cm layer of the soil was 2.20 mg/eq, in the 95-137 cm layer these values were 0.142% of the dry residue, while anions and cations were an equality is formed according to That is, it is observed that it is from 2.08 mg/eq. It is observed that the salinity level is X-S in all soil layers [5,6].

Degradation of soils has a negative effect on the agrochemical parameters that can be assimilated by plants. We can see this in the decrease in the amount of mobile phosphorus and exchangeable potassium in the soil. One of the main factors determining the fertility of the soil is the amount of humus. For example, if the amount of humus is 0.6% in the surface layer of the soil, that is, in the 0-32 cm layer, it decreases due to the decrease in the amount of organic matter in the lower layers of the soil, which is 32-68% of the soil; 68-95; 0.4 in accordance with the sequence of layers in layers of 95-137 cm; 0.4; It is 0.3 percent. In the process of land

degradation, carbon and nitrogen oxides are released from the soil into the atmosphere. This makes it one of the most important factors of climate change. As a result of scientific research, scientists found out that we are losing almost 24 billion tons of fertile soil per year. 3.2 billion people worldwide suffer from land degradation. Therefore, this chosen topic is relevant.[4]

Material and methods.

Researches were carried out in the conditions of meadow alluvial soils in the "Babur" and "Ibrahim Mominov" massifs of Shafirkon district, Bukhara region.

It should be noted that soil sections and soil samples were taken from genetic horizons. The amount of water-soluble salts from the obtained soil samples was determined based on water absorption analysis, and the agrochemical parameters of the soil were determined based on generally accepted methods. Mathematical analysis of the results was also carried out.

Results.

Soil salinization is one of the important degradation processes. If we look at the results of the experiment, the soils of Shafirkon district of Bukhara region are considered to be more or less saline. According to salinity levels, the area we studied is weakly saline. According to him, according to the level of alkalinity, which changes the indicators of the soil environment, it was 0.038% in the upper driving layer of 0-30 centimeters of the soil, this indicator was 0.069% in Cl⁻ anion, 0.069% in SO₄ anion. in this layer, the amount of Ca²⁺ was 0.018%, and the amount of Mg²⁺ was 0.010%. The combined share of Na⁺ cation and K⁺ cation was 0.020% when calculated based on the generally accepted method. The total amount of water-soluble salts, that is, the amount of dry residue in this layer was 0.178% (Table 1).

Degradation of soils has a negative effect on the agrochemical parameters that can be assimilated by plants. We can see this in the decrease in the amount of mobile phosphorus and exchangeable potassium in the soil. Humus content, one of the main factors determining soil fertility, is observed to decrease sharply in degraded soils. For example, if the amount of humus is 0.6% in the surface layer of the soil, that is, in the 0-32 cm layer, it decreases due to the decrease in the amount of organic matter in the lower layers of the soil, which is 32-68% of the soil; 68-95; 0.4 in accordance with the sequence of layers in 95-137cm layers; 0.4; It was 0.3 percent.

One of the main agrochemical indicators of the soil is 10.3 mg/kg in the surface 0-32 cm layer of the soil, which is in the very low supply group in terms of the amount of mobile phosphorus (Table 2).

Table 2

Information on the agrochemical properties of the soils of the "Ibrahim Mominov" massif.

Don't cut	Depth, cm	Humus %	P ₂ O ₅ mg/kg	K ₂ Omg/kg
1	0-32	0,6	10,3	127,6
2	32-68	0,4	8,6	102,0
3	68-95	0,4	6,4	95,3
4	95-137	0,3	5,0	88,0

As the layer goes to the bottom, the amount of mobile phosphorus also decreases, and fluctuated between 8.6 mg/kg and 5.0 mg/kg.

The analysis of indicators on the amount of exchangeable potassium shows that it belonged to the low supply group with 127 mg/kg in the surface 0-32 cm layer of the soil, this indicator was 102 in the 32-68 cm layer. was .8 mg/kg, and as the layer went down, the amount of exchangeable potassium decreased and belonged to the very poor group, and the indicators were 95.3 and 88.0 mg/kg.

Conclusions and recommendations. Scientific analyzes show that in the last 30-40 years, with the reduction of the duration of irrigation at some points of the massifs, salinity increased and the amount of humus decreased in these areas. It can be seen that the formation of agro-irrigation horizon and its thickening as a result of irrigation has a very effective effect on the humus stock. Also, humus reserves in irrigated meadow alluvial soils are higher than those in newly developed and newly irrigated meadow alluvial soils. In addition to the agricultural area, there are also salt marshes, barrens and barren sands, and their phytoremediation status should be improved. Seasonal use of pastures is necessary for efficient use of farm pastures. In order to improve the productivity of pastures, it is recommended to artificially plant black saxophone to strengthen the sands. As a result of wind erosion, many shrubs and semi-shrubs are dying due to exposure of their roots. Pastures are the main source of food and means for raising and breeding livestock. Therefore, it is necessary to protect the existing pastures, prevent their decline, increase the productivity of pasture plants, and in general, establish a rational and efficient use of pastures.

To do this, to organize the use of livestock in some pastures in order to prevent overgrazing; Careful use of existing wells, repair of damaged ones, opening of new water sources in remote areas (drilling of wells and wells) in order to improve water supply of pastures. It is necessary to carry out work on the restoration and development of the world of plants in the soils of the degraded area of 11.8 thousand hectares identified as a result of the study.

In addition, in order to fundamentally improve land reclamation and to wash off the salinity of the soil, it is necessary to increase the depth of on-farm and inter-farm collectors, ditches and drains to a depth of 2.5-3.0 m, and ensure their drainage. These works can be carried out using complex agrotechnical and reclamation measures. As a result, the areas of saline soils on farm land are reduced, their productivity increases, the yield of agricultural crops increases, and soil fertility improves.

References:

1. O'zbekiston Respublikasi Prezidentining qarori. "Yerlar degradatsiyasiga qarshi kurashishning samarali tizimini yaratish chora-tadbirlari to'g'risida" 10.06.2022 yildagi 277-son
2. Abdurahmonov T. Jabborov Z. Nikadambayev X. "Tuproqlarni kimyoviy iflaslanish muammolari va muhofaza qilish tadbirlari maxsus kursini o'qitish pedagogik texnologiyalar" T.. Universitet 2017 y.
3. Javohir Jahon oglu Jumaev. CAUSES OF SOIL DEGRADATION IN BUKHARA REGION AND FACTORS TO PREVENT IT (ON THE EXAMPLE OF SHAFIRKAN DISTRICT). //ResearchJet Journal of Analysis and Inventions. Indonesian Volume 3, Issue 1 Jan., 2022
4. Artikova Hafiza Tuymurodovna, Sattorova Mahfuza Muhiddinnovna , Jumaev Javohir Jahon Oglu. Development and Increase of Fertility of Irrigated Sandy and Loamy Soils of Bukhara Region. 2021. October 25
4. H.SALIMOVA. COMPOSITION AND LEVEL AND TYPE OF SALINITY OF IRRIGATED MEADOWALLUVIAL SOILS OF BUKHARA.//Modern Problems of Geography: integration of Science and Education international Scientific-Practical Conference Proceedings Book REGION. 29-30 Noyabr 2022 Baki. Azerbaijan
6. H.T Artikova, M.M Sattorova, J.J Jumaev. Prevent Salinization And Increase The Fertility Of Irrigated Sandy And Loamy Soils. // The USA Journals. Volume 03 Issue 03-2021

Svitlana Maksymova¹, Vladyslav Yevsieiev¹, Amer Abu-Jassar²,
Mohammad Al-Abdallat³

¹Department of Computer-Integrated Technologies, Automation and Robotics, Kharkiv National University of Radio Electronics, Ukraine

²Faculty of Information Technology, Department of Computer Science Ajloun National University, Ajloun, Jordan

³Jordanian Ministry of Education, Amman, Jordan

Abstract:

The development of prosthetics is an extremely pressing task in our time. Such devices are designed to improve a person's quality of life and give him opportunities that he lost either as a result of injury or illness, or at birth. However, direct physical development is preceded by three-dimensional modeling of such devices, as a result of which it becomes possible to identify and correct errors, as well as optimize the device itself. In this article, the authors provide modeling of a human hand, its assembly, as well as calculation of grip force and analysis of the choice of material in the UniGraphics NX 7.5 environment

Key words: Medicine robot, Gripper device, Assembly, UniGraphics, Simulation, Modeling.

Introduction

With the development of technology, especially IoT and AIoT, robotics is increasingly penetrating various spheres of human life [1]-[9]. Many scientists note the expansion of the areas of application of robots. Accordingly, the number of research related to robotics using a variety of sensing systems, sensors is constantly growing [10]-[14]. One such area is medicine, in which robotic devices are used to solve a wide variety of problems [15], [16].

Despite the highest level of development of science, including medicine, the number of people in need of prostheses is not decreasing, but, unfortunately, is growing. At the current stage of development of technological progress and scientific achievements, people with physical disabilities have a large selection of different opportunities and a range of products from the prosthetic industry, as well as a full range of various adaptive equipment. Moreover, despite all the variety of existing devices, each of them is not ideal, much less universal, suitable for any person who needs this type of prosthetics.

Many scientists are working on this problem, creating more and more new devices, among which robotic prostheses are becoming quite popular. It should be noted that the use of robotics in various fields of medicine is a very promising area for Research [17]-[22].

Robotic prosthetics are advanced medical devices designed to restore or improve limb function in people who have lost them due to injury, disease, or birth defect. These prosthetics are typically equipped with advanced technology, including motors, sensors and microcontrollers, that allow them to mimic natural limb movements.

Robotic prostheses can vary in functionality and level of complexity. They can perform a wide range of movements, from simple everyday activities to more complex tasks such as skillful finger control to perform precise actions.

The technologies used in robotic prosthetics are constantly improving. Some of these include brain interfaces that allow users to control the prosthetic with thoughts, as well as sensors that can provide haptic feedback, giving users the sensation of touch and pressure.

These innovative prosthetics play an important role in improving the quality of life of people with limb loss, helping them return to daily activities and activities that may have previously been limited.

To develop robotic prostheses, it is advisable to first simulate its design in modeling environments, which also help to select the material for the device being developed. Further in the article we will consider modeling a prosthetic hand in the UniGraphics NX 7.5 environment.

Related works

The development of robotic prostheses is extremely promising due to the provision of new opportunities for people with disabilities, and is also very relevant due to the large number of people in need of prosthetics. The consequence of this is a huge number of scientific works devoted to this topic. Let's briefly look at just a few of them.

Paper [23] analyzes the state of the art of robotic prosthetic hands with particular attention to the potential and current limits of their main building blocks: the hand itself approaches to decoding voluntary commands and controlling the hand, and systems and methods for providing sensory feedback to the user.

In [24] authors consider above-knee amputees. They note the lack of sensory information, even while using most advanced prostheses. And it is necessary to restore intraneural sensory feedback results in functional and cognitive benefits.

Fleming, A. and co-authors in [25] describe robotic lower limb prosthesis control via electromyographi signals recorded from residual muscles in individuals with lower limb amputations.

Scientists [26] propose soft prosthetic hand that is able to perform all the real-world grasping tasks of the benchmark tests, showing great potential in improving life quality of individuals with upper limb loss.

Prostheses focused on people with an amputation below the elbow are considered in work [27]. It integrates different studies related to hand prosthesis, this will allow him to evaluate alternatives where he will be able to choose, analyze the study or characteristics that better contribute to his research topic.

Sun, Y., & et al. in [28] write about the robotic knee prosthesis. They distinguish such development trends bionic and lightweight structures with better mechanical performance, bionic elastic actuation with energy-saving effect, artificial intelligence-based bionic prosthetic control.

A robotic knee is also under research in [29]. Authors of this study demonstrate reinforcement learning tracking control for automatically configuring the impedance parameters of a robotic knee prosthesis.

Researchers [30] note that existing powered robotic prostheses are much heavier and bigger and have shorter battery life than conventional passive prostheses, severely limiting their clinical

viability and utility in the daily life of amputees/ They propose their own lightweight robotic leg prosthesis.

This is a very small part of the research, but it gives us an idea of how comprehensive and relevant the development of robotic prosthetics is. Later in the article we will present the development of our device at the 3D modeling stage.

Manipulator detailed assembly development using UniGraphics NX 7.5

When developing any device, it is necessary to perform its three-dimensional modeling, as well as modeling the necessary parameters, including the strength of forces that will be used during its further operation. Many works present such modeling [31]-[33].

Most designed products are assembly units (assemblies). In fact, an assembly is a kind of hierarchical structure, at different levels of which there are components - subassemblies or parts.

Connections are used to place parts in an assembly. Assembly connections allow you to specify the relative position of the assembly components, that is, they fix the degrees of freedom. By correctly specifying all the assembly connections in the assembly, it is possible to analyze the operation of the entire mechanism. Assembly constraint is applied to component geometry (such as planar faces, edges, etc.).

Each component located in space has 6 degrees of freedom (3 linear and 3 rotational). By imposing assembly connections, certain degrees of freedom are fixed. One constraint usually limits several degrees of freedom.

The designed gripping device consists of elements such as a body and 5 fingers. This model has 4 fingers with an identical design, the assembly of which is shown in Figure 1.

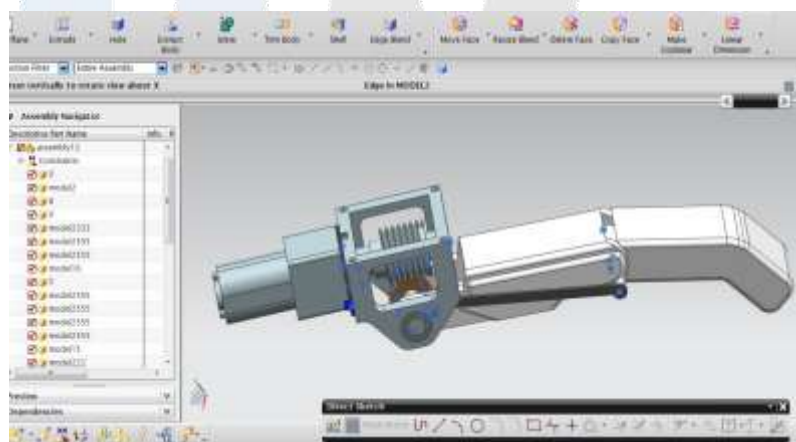


Figure 1: Gripper device finger assembly

The second design element of the manipulator is the thumb, which has a different type of assembly. Figure 2 shows the assembly of the robot's thumb.

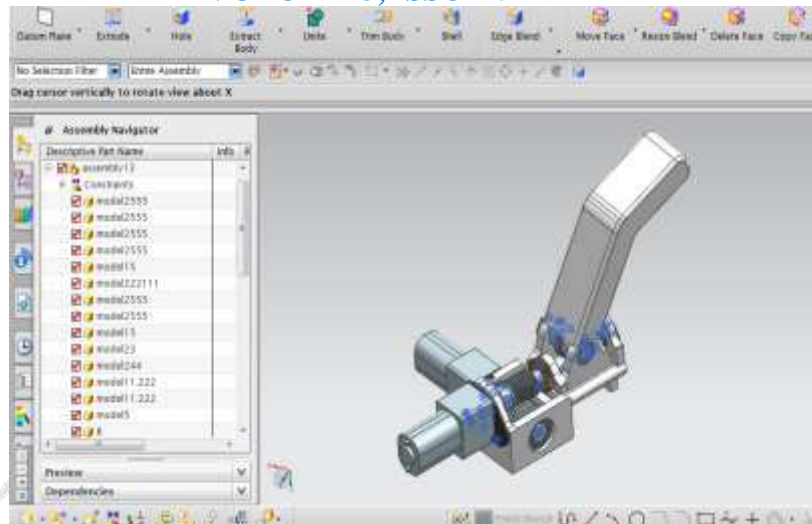


Figure 2: Gripper device thumb assembly

The final work is to assemble the manipulator hand, which consists of a body, 4 identical fingers and 1 thumb. This design is shown in Figure 3.

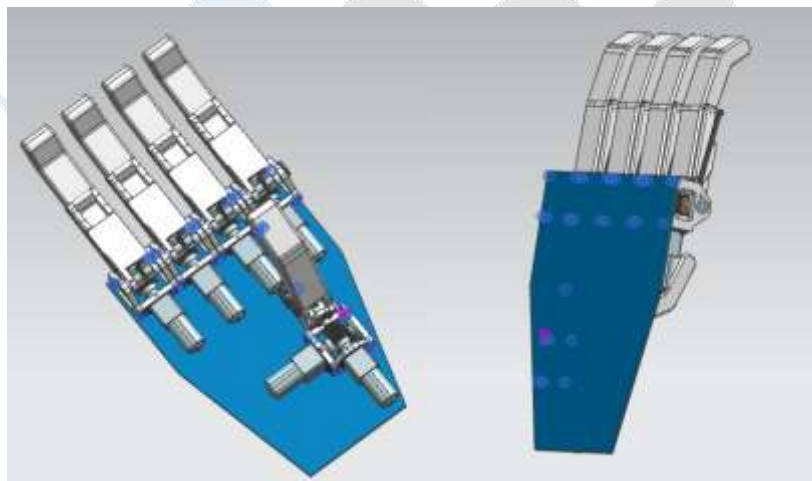


Figure 3: Robot hand assembly

The force applied to the manipulator body modeling

For a preliminary assessment of a structure strength and performance, an engineering approach is used, which mainly consists of representing the structure in the form of simple units and elements, for which there are analytical estimates for searching for the stress-strain state. Such estimates include the use of simple formulas for searching for stresses in beams during tension, bending or torsion, searching for relative elongation, moments of inertia, reaction forces, etc.

The basic principle underlying analysis based on the finite element method is to split the mathematical model of the area under consideration into non-overlapping subdomains (finite elements) and solve the problem at each element. The set of elements, their properties, and boundary conditions is called a finite element model. The behavior of each element is described

by a certain finite number of degrees of freedom, which together determine the number of degrees of freedom of the finite element model. The main steps of the finite element method: idealization, sampling, solution of a system of differential equations. By idealization we mean the transition from a real physical model to a simplified (modified) mathematical one. However, mathematical models have an infinite number of degrees of freedom, which entails the practical impossibility of solving the problem using a complex mathematical model. Limiting the number of degrees of freedom of a model is called sampling, and the model is called a discrete model. Each stage of numerical modeling introduces one or another error into the calculation result. Particular attention should be paid to two stages:

- idealization – at this stage the transition to a mathematical model is carried out, which can introduce a significant error or even a cardinal error in the result;
- sampling – at this stage it is necessary to check the convergence of the numerical solution to the correct one, and as the number of degrees of freedom increases to infinity, the discretization error tends to zero.

Engineering analysis "NX Advanced Simulation" allows you to evaluate the accuracy of calculations to increase grip force. By simulating grip compression, an gripper device finite element model was created. When creating a finite element model, the program automatically creates an idealized gripping device model by simplifying the model geometry and checking nodes and structural elements.

For the engineering calculation of the force applied to the rack in "NX advanced simulation" the following operations were performed:

- creation of a geometric model (or assembly) representing an accurate digital model of the object being analyzed;
- performing numerical engineering analysis;
- stage of idealization of the model. At this stage, geometry is simplified, midsurfaces are highlighted, and bodies are divided for additional local control of the mesh quality;
- construction of a finite element mesh taking into account condensations in the zones of the greatest gradients, properties and materials, fastenings and loads are specified;
- launching the model for calculation;
- obtaining and analyzing post-processing results will allow for a detailed visual and quantitative analysis of the results.

NX's mathematical and engineering calculations provide us with maximum risk reduction when performing modifications to increase the gripping force of the gripper and release the finished product. Figure 4 shows the modeling of the gripping force

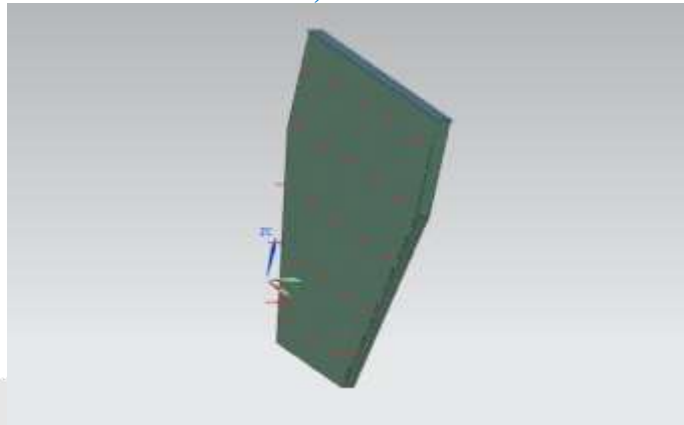


Figure 4: Grip force simulation

When modeling the manipulator body, it was proposed to assign 3 selected materials: Titanium-Annealed, Polypropylene and Iron_40.

The first material chosen is Titanium-Annealed. Based on the analysis, we can see the results presented in Figure 5.

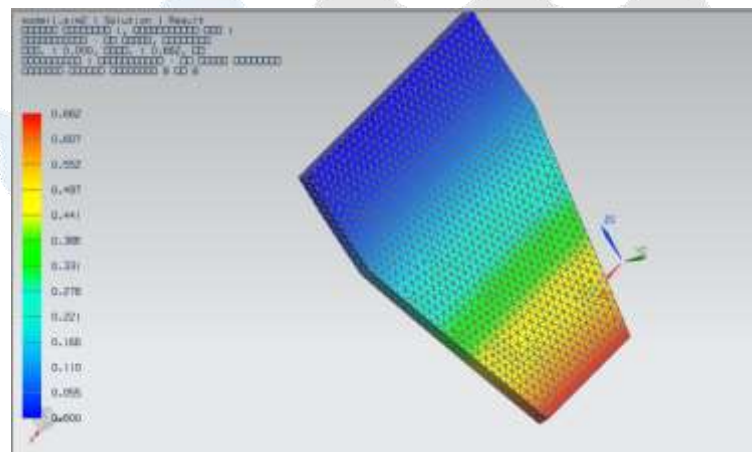


Figure 5: Titanium-Annealed material

The second material chosen is Polypropylene. The results are presented in Figure 6.

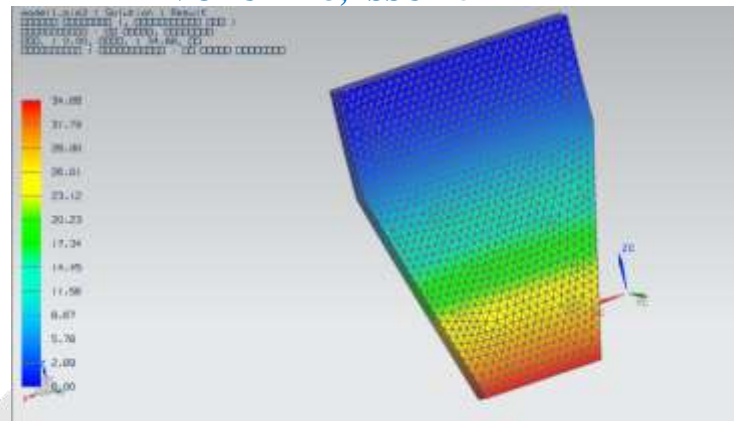


Figure 6: Polypropylene material

The third material selected is Iron_40. The results are presented in Figure 7

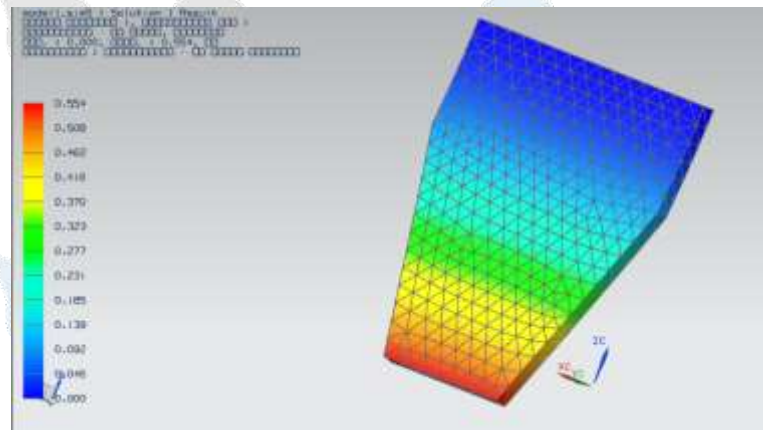


Figure 7: Iron_40 material

Conclusion

Thanks to this study, using a clear example, it is possible to select the optimal structural elements for a humanoid-type manipulator. Since it is important to understand the fact that when making a manipulator for a person with disabilities, it is necessary to take into account his individual characteristics and needs.

The work contains experimental data in the form of a strength study when choosing a material for the manipulator body. Three types of material are presented: iron, titanium and polypropylene. After completing the experiment, we can conclude that the most durable material is iron, but it has its drawback - large mass, so this material is not suitable for every person. Titanium is in second place; it should be said that this material is more practical and convenient to use for this manipulator. Since titanium does not have a large mass, it is at the same time a durable metal alloy that is not harmful to human health. Polypropylene, based on experiment, is less durable than the two previous materials, but at the same time has the smallest mass. When choosing a material, the main selection criteria are the purposes for which the manipulator will be used; you should pay attention to the height, weight, gender and age of the person for whom it is intended.

During the research process, the Pololu 30:1 Micro Metal Gearmotor HP metal gearmotor was selected, which consists of a reliable high-power motor with a 30:1 metal gearbox. This geared motor has one, no less important, criterion - small size and weight, since for this manipulator these factors are among the main ones.

Currently, there are many devices that make modern medicine more effective, and in this work, an example of such a device was considered - a humanoid-type manipulator. Medicine is in constant development, so the introduction of robots in this area is a promising activity.

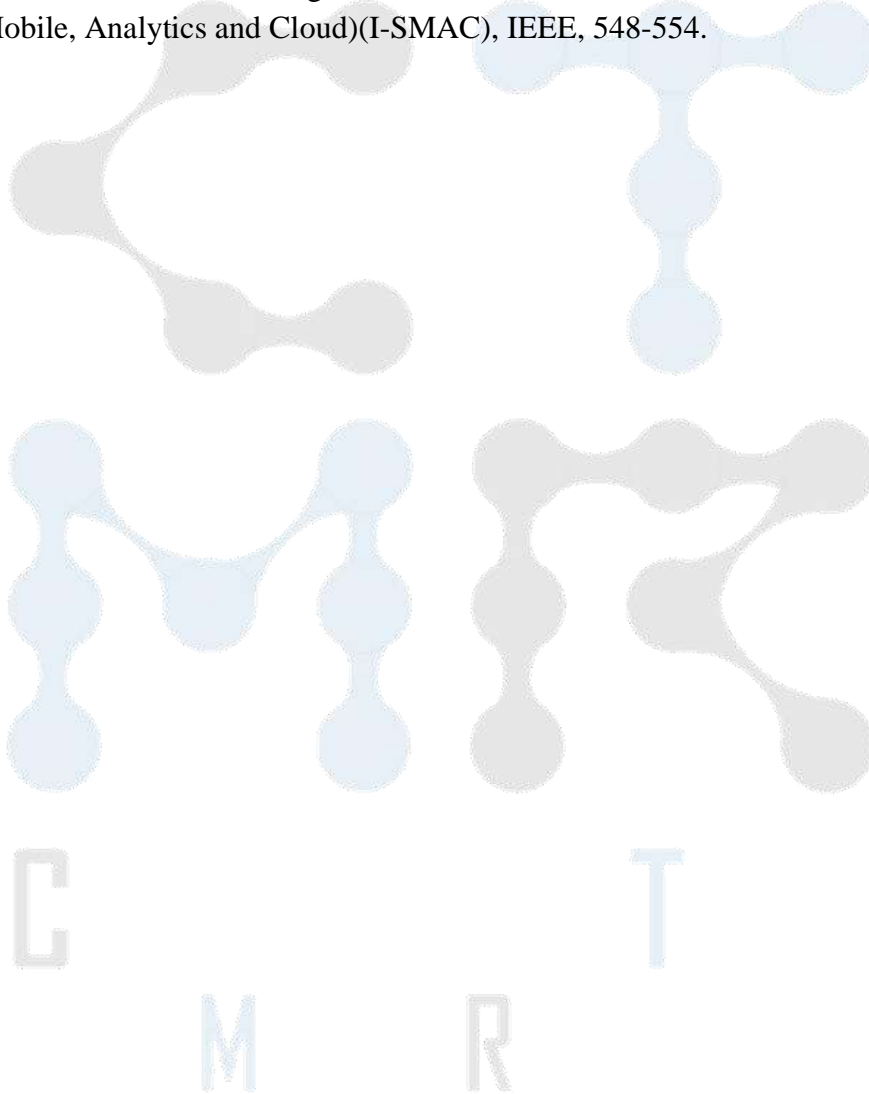
References:

1. Abu-Jassar, A. T., Attar, H., Yevsieiev, V., Amer, A., Demska, N., Luhach, A. K., & Lyashenko, V. (2022). Electronic User Authentication Key for Access to HMI/SCADA via Unsecured Internet Networks. *Computational Intelligence and Neuroscience*, 2022, 5866922.
2. 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.
3. 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.
4. 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.
5. Al-Sharo, Y. M., Abu-Jassar, A. T., Sotnik, S., & Lyashenko, V. Neural Networks As A Tool For Pattern Recognition of Fasteners. *studies*, 69(19), 151-160.
6. Sotnik, S., Mustafa, S. K., Ahmad, M. A., Lyashenko, V., & Zeleniy, O. (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.
7. Attar, H., Abu-Jassar, A. T., Lyashenko, V., Al-qerem, A., Sotnik, S., Alharbi, N., & Solyman, A. A. (2023). Proposed synchronous electric motor simulation with built-in permanent magnets for robotic systems. *SN Applied Sciences*, 5(6), 160.
8. Lyashenko, V., & et al. (2023). Automated Monitoring and Visualization System in Production. *Int. Res. J. Multidiscip. Technovation*, 5(6), 09-18.
9. Abu-Jassar, A. T., Attar, H., Lyashenko, V., Amer, A., Sotnik, S., & Solyman, A. (2023). Access control to robotic systems based on biometric: the generalized model and its practical implementation. *International Journal of Intelligent Engineering and Systems*, 16(5), 313-328.
10. Javaid, M., & et al. (2021). Substantial capabilities of robotics in enhancing industry 4.0 implementation. *Cognitive Robotics*, 1, 58-75.
11. Yevsieiev, V., & et al. (2023). A Small-Scale Manipulation Robot a Laboratory Layout Development. *International independent scientific journal*, 47, 18-28.
12. Rubio, F., & et al. (2019). A review of mobile robots: Concepts, methods, theoretical framework, and applications. *International Journal of Advanced Robotic Systems*, 16(2), 1729881419839596.

13. Choi, H., & et al. (2021). On the use of simulation in robotics: Opportunities, challenges, and suggestions for moving forward. In Proceedings of the National Academy of Sciences, 118(1), e1907856118.
14. Nevliudov, I., & et al. (2023). Mobile Robot Navigation System Based on Ultrasonic Sensors. In 2023 IEEE XXVIII International Seminar/Workshop on Direct and Inverse Problems of Electromagnetic and Acoustic Wave Theory (DIPED), IEEE, 1, 247-251.
15. Ahmad, M. A., Mustafa, S. K., Zeleniy, O., & Lyashenko, V. (2020). Wavelet coherence as a tool for markers selection in the diagnosis of kidney disease. International Journal of Emerging Trends in Engineering Research, 8(2), 378-383.
16. Babker, A., Sotnik, S., & Lyashenko, V. (2018). Polymeric Materials in Medicine. Sch. J. Appl. Med Sci, 6, 148-153.
17. Dupont, P. E., & et al. (2021). A decade retrospective of medical robotics research from 2010 to 2020. Science robotics, 6(60), eabi8017.
18. Wang, X. V., & Wang, L. (2021). A literature survey of the robotic technologies during the COVID-19 pandemic. Journal of Manufacturing Systems, 60, 823-836.
19. Matarneh, R., & et al. (2018). Voice Control for Flexible Medicine Robot. International Journal of Computer Trends and Technology, 55(1), 1-5.
20. Yevsieiev, V., & et al. (2022). A robotic prosthetic a control system and a structural diagram development. In Collection of scientific papers «ΛΟΓΟΣ», Zurich, Switzerland, 113-114.
21. Attar, H., Abu-Jassar, A. T., Yevsieiev, V., Nevliudov, I., Lyashenko, V., & Luhach, A. K. (2022). Zoomorphic Mobile Robot Development for Vertical Movement Based on the Geometrical Family Caterpillar. Computational Intelligence and Neuroscience, 2022, 3046116.
22. Babker, A. M., Altoum, A. E. A., Tvoroshenko, I., & Lyashenko, V. (2019). Information technologies of the processing of the spaces of the states of a complex biophysical object in the intellectual medical system health. International Journal of Advanced Trends in Computer Science and Engineering, 8(6), 3221-3227.
23. Mendez, V., & et al. (2021). Current solutions and future trends for robotic prosthetic hands. Annual Review of Control, Robotics, and Autonomous Systems, 4, 595-627.
24. Valle, G., & et al. (2021). Mechanisms of neuro-robotic prosthesis operation in leg amputees. Science Advances, 7(17), eabd8354.
25. Fleming, A., & et al. (2021). Myoelectric control of robotic lower limb prostheses: a review of electromyography interfaces, control paradigms, challenges and future directions. Journal of neural engineering, 18(4), 041004.
26. Mohammadi, A., & et al. (2020). A practical 3D-printed soft robotic prosthetic hand with multi-articulating capabilities. PloS one, 15(5), e0232766.
27. Huamanchahua, D., & et al. (2021). A robotic prosthesis as a functional upper-limb aid: An innovative review. In 2021 IEEE International IOT, Electronics and Mechatronics Conference (IEMTRONICS), IEEE, 1-8.
28. Sun, Y., & et al. (2021). Review of recent progress in robotic knee prosthesis related techniques: Structure, actuation and control. Journal of Bionic Engineering, 18(4), 764-785.
29. Wu, R., & et al. (2022). Reinforcement learning impedance control of a robotic prosthesis to coordinate with human intact knee motion. IEEE Robotics and Automation Letters, 7(3), 7014-7020.

VOLUME-3, ISSUE-5

30. Tran, M., & et al. (2022). A lightweight robotic leg prosthesis replicating the biomechanics of the knee, ankle, and toe joint. *Science robotics*, 7(72), eabo3996.
31. Maksymova, S., & et al. (2023). 3D Robot Model Development. *Technical Science Research In Uzbekistan*,1(4), 255-267.
32. Shim, W., & et al. (2022). Implementation of the XR rehabilitation simulation system for the utilization of rehabilitation with robotic prosthetic leg. *Applied Sciences*, 12(24), 12659.
33. Sree, K. S., & et al. (2021). EMG controlled bionic robotic arm using artificial intelligence and machine learning. In 2021 Fifth International Conference on I-SMAC (IoT in Social, Mobile, Analytics and Cloud)(I-SMAC), IEEE, 548-554.



ФАРМАКОПЕЯ КАК ОСНОВА ДЛЯ ДАЛЬНЕЙШЕГО ПОВЫШЕНИЯ КАЧЕСТВА
ЛЕКАРСТВЕННЫХ СРЕДСТВ В УЗБЕКИСТАНЕ

Амракулов Султон Туйчимуратович

Студент 2 курса Самаркандского государственного медицинского университета

Самарканд, Узбекистан

sultan.amrakulov@icloud.com

ABSTRACT

In the article, the author analyzes the organization of the development, approval and implementation of the State Pharmacopoeia in European countries, as well as the Republic of Uzbekistan in the pharmaceutical industry.

Key words: Pharmacopoeia, pharmaceuticals, healthcare, regulatory documents, medicines, medical devices.

Уровень развития фармацевтической отрасли напрямую влияет на показатели качества жизни населения. В нашей стране в этом направлении реализуются комплексные преобразования.

Руководство нашей страны уделяет особое внимание здоровью населения, и, конечно же, лекарствам в нем отводится важное место. Стремительное развитие отечественной фармацевтической промышленности отражается в увеличении числа фармацевтических компаний, создании и внедрении новых оригинальных лекарственных средств, совершенствовании системы управления лекарственными средствами и усилении контроля качества, а также во многих других вопросах.

Качество лекарственных препаратов проверяется в установленном порядке и оценивается на соответствие требованиям утвержденных стандартов, которые выполняются в рамках сложного комплекса процессов по созданию, производству, хранению, транспортировке и использованию лекарственных средств в установленном порядке.

В связи с этим в Узбекистане согласно приказу №227 Министерства здравоохранения от 28 августа 2020 года, утверждён первый том первого издания Государственной фармакопеи Республики Узбекистан.

И так что же это такое - Государственная фармакопея?

Фармакопéя (с др.-греч. *фармаков* «лекарство» + *ποιη* «делаю, изготавливаю») — собрание нормативных документов (фармакопейных статей), регламентирующих требования к качеству лекарственных средств. Фармакопейные статьи подразделяются на общие и частные.

Общие фармакопейные статьи содержат описания методов анализа лекарственных средств, данные о применяемых при этом реактивах и индикаторах. Частные фармакопейные статьи – стандарты лекарственных средств, содержат перечни показателей и методов контроля качества лекарственных средств и описания лекарственных средств, а также вспомогательных веществ и сырья для их производства.

Многие страны разрабатывают свои Фармакопеи. Наиболее часто сотрудники фармацевтической отрасли обращаются к Фармакопеям ЕС, США, Японии и

Великобритании. Кроме того, существует Международная Фармакопея, которая издается ВОЗ.

Государственная фармакопея - это совокупность современных требований к качеству лекарственных средств и изделий медицинского назначения, которая, с одной стороны, определяет уровень развития фармацевтической отрасли в конкретной стране, а с другой - формирует основу для дальнейшего повышения качества лекарственных средств.

По данным Всемирной организации здравоохранения, на сегодня зарегистрировано 56 национальных фармакопей, а также четыре региональных и международных фармакопей. Существующие фармакопеи различаются по структуре, степени выраженности охватываемых в них статей, требованиям к стандартам, уровню установленных норм.

Из приведённой выше информации ясно, что сегодня в большинстве стран нет собственных национальных фармакопей, то есть требования и методы контроля качества лекарственных средств и медицинских изделий в обращении ограничиваются принятием и применением требований других стран.

Это, в свою очередь, может привести к установлению разных критериев качества к одной продукции, производимой в разных странах, введению в обращение продукции с низкими показателями качества и другим подобным негативным ситуациям.

Организация разработки, утверждения и внедрения Государственной фармакопеи Республики Узбекистан в эти дни является ещё одним свидетельством особого внимания, уделяемого Президентом фармацевтической отрасли. Это играет важную роль во внедрении лекарств и медицинских изделий, производимых местными фармацевтическими компаниями, включая новые оригинальные фармацевтические продукты, созданные в стране, для использования в международной медицинской практике.

Основание для публикации Государственной фармакопеи Республики Узбекистан отражено в Законе Республики Узбекистан от 5 января 2016 года № ЗРУ-399 «О лекарственных средствах и фармацевтической деятельности», в 8-статье которого говорится, «Государственная фармакопея — официальное издание, являющееся сборником документов, содержащих требования к лекарственным средствам и изделиям медицинского назначения, общие фармакопейные статьи, фармакопейные статьи и методы контроля качества лекарственных средств и изделий медицинского назначения».

Согласно изложенному, в соответствии с Указом Президента Республики Узбекистан от 10 апреля 2019 года № УП-5707 «О дальнейших мерах по ускоренному развитию фармацевтической отрасли республики в 2019-2021 годах» была поставлена задача разработать и утвердить Государственную фармакопею Узбекистана до сентября 2020 года. Для обеспечения выполнения данной задачи Агентством по развитию фармацевтической отрасли подписан приказ от 17 июля 2019 года № 24 «Об организации работы и подготовки к публикации (переизданию) Государственной фармакопеи Республики Узбекистан», и в данное время предпринимается ряд необходимых мер для выполнения приказа.

Европейская фармакопея является региональной фармакопеей, максимально сочетающая в себе методы контроля качества современных лекарств и медицинских изделий. Европейская фармакопея в настоящее время принята в 38 странах, включая страны Европейского союза, а её основные монографии используются более чем в 100 странах.

Другой примечательный аспект Европейской фармакопеи заключается в том, что Всемирная организация здравоохранения учредила Фармакопейную дискуссионную группу

(Pharmacopieial Discussion Group - PDG), которая стремится гармонизировать фармакопеи Европы, США и Японии. Это, в свою очередь, означает, что при разработке Государственной фармакопеи Республики Узбекистан Европейская фармакопея используется в качестве основного источника и согласована с ней, что во многом означает, что фармакопея нашей страны будет согласовываться с фармакопеями США и Японии.

Принимая во внимание действующие международные требования к качеству фармацевтической продукции, Агентство по развитию фармацевтической отрасли совместно с Государственным центром экспертизы и стандартизации лекарственных средств, изделий медицинского назначения и медицинской техники подписало соглашение с Европейским директором по качеству лекарственных средств и здравоохранения (EDQM). Согласно двустороннему соглашению, подписанному в 20 марта 2019 года, при разработке и подготовке к публикации Государственной фармакопеи Республики Узбекистан её тексты были согласованы с 8-10 изданиями Европейской фармакопеи как основного источника.

Также, согласно сравнительному анализу, 155 из 157 общих фармакопейных статей (монографий), включенных в первый том первой части Фармакопеи Евразийского экономического союза соответствуют текстам Государственной фармакопеи Республики Узбекистан.

Кроме того, учитывая продолжающиеся процессы глобализации в фармацевтической отрасли необходимо совершенствование методов контроля качества лекарственных средств и медицинских изделий для облегчения экспорта отечественной фармацевтической продукции на зарубежные рынки. В этих целях, тексты основных монографий, включаемые в Государственную фармакопею, были дополнительно приведены в соответствии с ведущими фармакопеями - Международной фармакопеей, Фармакопеей США (USP), Британской фармакопеей (BP), Японской фармакопеей (JP), Российской фармакопеей (GF RF), Белорусской фармакопеей (GF RB), Казахской фармакопеей (GF RK), Фармакопеей Украины (SFU) и другими.

На основании соответствующего законодательства Республики Узбекистан было решено, не включать, в Государственную фармакопею Республики Узбекистан тексты фармакопейных статей, касающихся лекарственных средств и медицинских изделий, используемых в ветеринарной практике.

При создании Государственной фармакопеи Республики Узбекистан максимально учитывались рекомендации Всемирной организации здравоохранения «Необходимая фармакопейная практика» (GPhP). Это, в свою очередь, требует разработки стандартов Республики Узбекистан в соответствии со стандартами Всемирной организации здравоохранения «Необходимая фармакопейная практика» (GPhP) на всех этапах разработки, подготовки и оценки нормативных документов по контролю качества лекарственных средств, производимых местными фармацевтическими компаниями и импортируемых в страну, и служит основанием для применения.

Во исполнение Закона Республики Узбекистан «О государственном языке» (№ 167-I от 21 декабря 1995 г.) и Указа Президента Республики Узбекистан от 21 октября 2019 года № УП-5850 «О мерах по радикальному повышению роли и авторитета узбекского языка в качестве государственного языка», первая редакция Государственной фармакопеи Республики Узбекистан разработана на государственном языке.

В соответствии с указанным приказом с 1 марта 2021 года была поставлена задача, обеспечить выполнение требований Государственной фармакопеи Республики Узбекистан в процессе подготовки, экспертизы и утверждения нормативных документов отечественных и зарубежных лекарственных средств и изделий медицинского назначения, представляемых на государственную регистрацию в Республике Узбекистан. Задача по гармонизации нормативных актов отечественных и зарубежных лекарственных средств и изделий медицинского назначения, прошедших государственную регистрацию до 1 марта 2021 года с Государственной фармакопеей Республики Узбекистан должна будет реализована до 1 марта 2026 года.

Поэтому для удобства фармацевтов, в том числе иностранных специалистов, работающих на фармацевтическом рынке Узбекистана, а также с учётом того, что тексты Государственной фармакопеи используются не только при лабораторных анализах, но и на всех этапах обращения лекарственных средств, мы также сочли целесообразным опубликовать его на русском языке.

Кроме того, были организованы специальные семинары для должностных лиц организаций и учреждений, занимающихся исследованиями в области разработки местных лекарств, организаций и учреждений, которые производят лекарственные средства и изделия медицинского назначения и контролируют их качество.

ЛИТЕРАТУРА

1. Закон Республики Узбекистан от 5 января 2016 года № ЗРУ-399 «О лекарственных средствах и фармацевтической деятельности»
2. Указа Президента Республики Узбекистан от 21 октября 2019 года № УП-5850 «О мерах по радикальному повышению роли и авторитета узбекского языка в качестве государственного языка»
3. Указом Президента Республики Узбекистан от 10 апреля 2019 года № УП-5707 «О дальнейших мерах по ускоренному развитию фармацевтической отрасли республики в 2019-2021 годах»
4. <https://bigenc.ru/medicine/text/4706356>

«SELECTION OF WINTER WHEAT AND RICE VARIETIES ADAPTED TO THE SOIL
AND CLIMATIC CONDITIONS OF THE REPUBLIC OF KARAKALPAKSTAN»

Xojambergenov Ganibay Ametovich

Candidate of Agricultural Sciences, Head of the Laboratory

Scientific and production associations grain and rice. Nukus district. Uzbekistan.

(e-mail): www.h.ganibay@mail.ru

Abstract: The effectiveness of grain production greatly depends on selecting the appropriate variety for the region and intended use of the grain. The cultivars differ from one another in yield, adaptability to local conditions, and reaction to stress factors since they each have unique features.

The selection of grain types for the harsh conditions of Karakalpakstan was based on the aforementioned factors, and 10 varieties of winter wheat and 5 kinds of rice were chosen. Winter wheat types ASR and Antonina, ultra-ripe rice variations Gulistan, and late-ripening variety Iskander all differed in terms of winter hardiness, salt resistance, drought resistance, and eventually grain output.

Keywords: Winter wheat, rice, variety, selection, circumstances, stressors, grain, harvest, growth stages, density, and growing season.

Introduction

While agricultural technology helps to increase yields, the actual yield is mostly influenced by the genetically inherited economic and biological characteristics of varieties. Old types can frequently be replaced with new ones to boost yield by 10% to 40%. The new kinds' advantageous traits enable greater use of other production elements, such as agricultural equipment, fertilizer, etc. This result is only possible when the variety's beneficial economic and biological traits are present without any additional expense.

A well-executed seed production program, whose goals are to maintain the genetic traits and qualities of the variety, is essential to getting a consistently high yield of rice. Rice producers sustain enormous financial losses as a result of the low quality of the seed stock, which inevitably reduces rice output and field germination.

In view of the rapidly deteriorating ecological and economic conditions in the Republic of Karakalpakstan, varieties that must adapt to the soil and climatic conditions of this region will be distinguished by high productivity, winter hardiness, resistance to drought and high temperatures, to lodging, diseases, and salinization, as well as high plastid content.

The selection of varieties that are flexible, provide consistently high yields with high grain quality despite a lack of resources, and are the most sensitive to ongoing agrotechnical interventions is the fundamental strategy for tackling these issues.

The developed methods for growing grains in other parts of the Republic of Uzbekistan and overseas are incompatible with the soil and climate of the Republic of Karakalpakstan, and non-zoned varieties are not suitable for the region's soil and climate.

The major goal of this research is to support scientifically and practically the choice of varieties that, under the conditions of the Republic of Karakalpakstan, assure good yields of winter wheat and rice.

The choice of cultivars for actual cultivation circumstances is a difficult but crucial undertaking. Practice has demonstrated that it is impossible to cultivate one type in production, even if it is extremely good, under the starkly varying weather conditions that mirror the region of Karakalpakstan. For specialized growth circumstances and a greater potential for adaptation, the selection of cultivars should take into account the specialization of farms. The producers continue to have sole discretion over the types to be sown.

Research methodology

In order to solve the tasks set, field experiments were conducted on the following varieties of winter wheat and rice

1. Varieties of winter wheat:

1. ASR
2. AZIZ
3. KARADARYA
4. UMID
5. TABOR
6. ДAVR
7. KUREN
8. ANTONINA
9. BEZOSTAYA-100
10. ALEKSEICH

2. Rice varieties:

1. GULISTAN
2. SHARM
3. NOVATOR
4. ISKANDER
5. LAZURNIY

Both grain crop varieties were produced under the identical conditions, and the recommended agrotechnical practices were used in each case. Every observation and record was made using the commonly acknowledged methods.

RESEARCH RESULTS

Breeding and selecting hardy winter wheat varieties for the conditions of the Republic of Karakalpakstan is currently one of the key objectives. Additionally, since this indicator is dependent on the region of origin, the length of the growing season is a crucial factor. The two most significant variables influencing the variability of this feature are genotypes and ecological and geographic settings. Based on this, the table depicts the beginning of the winter wheat's developmental phase. It was noted that different types go through the following developmental stages: seedlings, tillering, spring regrowth, tubulation, earing, and ripeness.

Table 1

The growing season of various varieties of winter wheat, days

No	Name of Varieties	Sowing	seedlings	Tillering	Spring regrowth	Pipe-forging	heading	Ripeness	Vegetation period, days
1	ASR (st)	08.10.	19.10	22.11	26.02.	23.04	06.05	11.06.	246
2	Aziz	08.10.	19.10	24.11	26.02.	24.04	07.05	13.06.	248
3	Koradaryo	08.10.	21.10	22.11	26.02.	23.04	06.05	13.06.	248
4	Ymid	08.10.	21.10	24.11	26.02.	24.04	08.05	15.06.	250
5	Davr	08.10.	20.10	22.11	27.02.	23.04	06.05	14.06.	249
6	Tabor	08.10.	21.10	23.11	27.02.	26.04	10.05	15.06.	250
7	Kuren	08.10.	21.10	24.11	27.02.	26.04	10.05	13.06.	248
8	Antonina	08.10.	21.10	26.11	27.02.	24.04	08.05	16.06.	251
9	Bezostaya-100	08.10.	20.10	22.11	26.02.	23.04	06.05	13.06.	248
10	Alekseich	08.10.	20.10	22.11	26.02.	25.04	10.05	15.06.	250

The information in the table shows that there are variations in the length of the growing season among the winter wheat cultivars. The study's findings showed that Asr, Aziz, Koradare, Kuren, and Bezostaya-100 were the most mid-ripening varieties, with grains fully ripening in 246 and 248 days, respectively. Davr, Umid, Tabor, Alekseevich, and Antonina were the most late-ripening varieties, with grains fully ripening in 249 and 251 days, respectively. The table shows that there are no appreciable differences in the length of the growth season among the various winter wheat cultivars. This enables the farm to grow three to four types with various stalk lengths.

On the territory of the Republic of Karakalpakstan, the summer is hot and long, but there are also frequent cold spells and frosts in the second decade of April, as well as fall frosts in the second or third decade of October. Winter wheat's growth and development are notably impacted by the exceptionally low relative humidity of the air, the extreme lack of precipitation, and the highly salinized soil.

All of the above elements point to particularly unusual growing conditions for winter wheat, which in large part dictates the specifications for the selection of seeded types. Table 2 provides some information on the tested local and international winter wheat types for germination and winter hardiness in this regard.

The whole germination and spring regrowth periods were used to calculate the standing density of winter wheat plants. According to the findings, the density of winter wheat plants varied between 359 and 456 pieces per square meter during the complete germination phase, and between 290 and 373 pieces per square meter after the spring regrowth.

Table 2.

Density of standing of various varieties of winter wheat and their degree of wintering

No	Names of varieties	The number of plants in the period of full germination pcs per 1 m ²	Number of plants during spring regrowth, pcs per 1 m ²	% of winter hardiness
1	ASR (st)	402,8	351,6	87,3
2	Aziz	409,6	336,8	82,5
3	Koradaryo	422,0	344,0	81,5
4	Ymid	455,6	373,2	81,9
5	Davr	407,2	338,4	83,1
6	Tabor	427,2	353,2	82,6
7	Kuren	359,2	290,0	80,7
8	Antonina	392,4	332,4	84,7
9	Bezostaya-100	424,0	330,0	77,8
10	Alekseich	456,4	373,2	81,7

The studied types' levels of winter hardiness vary among them.

Varieties Asr, Antonina, and Davr had the maximum winter hardiness among the examined varieties, ranging from 83.1 to 87.3%. It was also between 77.8 and 82.6% in other variations.

The production of plants serves as the ultimate test of any agricultural approach. Table 3 displays the impact of several cultivars on winter wheat yield.

As can be seen from the data in Table 3 for the study period, high yields of winter wheat grain were obtained in the standard variety ACP and Antonina (60.0-63.5 c/ha). The increase in yield in the standard variety ASR compared with the studied varieties ranged from 1.5 to 12.2 q/ha.

Table 3

Biometric indicators of the tested varieties of winter wheat

№	Varieties	Productivity, c/ha	Height of plant cm.	Spike length, cm.	Number of grains per ear, pcs.	Weight of 1000 grains, g
1	ASR (st)	63,5	88,1	9,8	42,1	45,2
2	Aziz	57,0	83,9	9,4	37,4	36,7
3	Koradaryo	62,0	91,4	9,6	45,9	40,3
4	Ymid	51,3	91,5	9,7	36,9	36,3
5	Davr	53,5	80,2	7,7	38,5	38,6
6	Tabor	57,5	81,2	8,8	35,8	33,4
7	Kuren	55,3	91,3	8,6	36,9	40,2
8	Antonina	60,0	89,1	11,0	42,7	41,0
9	Bezostaya-100	57,0	87,3	9,2	39,2	34,1
10	Alekseich	57,0	84,7	9,3	39,3	36,7

HCP₀₅ c/ha 3,23HCP₀₅ % 5,61

These kinds outperform other evaluated types in terms of number of grains per ear (42.1-45.9 pieces), mass of grain per ear (1.6-1.8 g), and weight of 1000 grains (41.0-45.2 g).

According to the findings of the second year of research, ASR (63.5 c/ha), Koradaro (62.0 c/ha), and Antonina (60.0 c/ha) were the types of winter wheat with the highest yields.

Like other agricultural crops, rice productivity depends on the emergence of numerous quantitative and qualitative features. Quantitative features, the severity of which in rice is characterized by a significant amplitude of fluctuation under diverse environmental conditions, are particularly crucial in the establishment of productivity. Due to the ability of one group of features to grow more favorably under some conditions than another, rice has the ability to produce high yields under specific environmental conditions.

In our research, the direction concerns the choice of high-yielding, low-water-consuming, early-ripening rice varieties.

Sowing was carried out in the third decade of May with a seeding rate of 180 kg/ha. During the growing season, we carried out phenological observations on 5 varieties on the onset of the development phase of various rice varieties, the results of which are shown in Table 4

Table 4

Phenological observations of different varieties of rice

Names of varieties	sowing	seedlings	tillering	into the pipe	bulging	Ripeness			Veg. period, days
						milky	waxy	whole	
Gulistan	26.05	08.06.	04.07	28.07	01.08.	07.08	15.08	01.09	98
Noavtor	26.05	08.06.	04.07	22.07	30.07.	06.08	18.08	30.08	96
Sharm	26.05	08.06.	04.07	20.07	30.07.	06.08	17.08	24.08	92
Iskander	26.05	10.06.	06.07	07.08	15.08.	26.08	14.09	28.09	125
Lazurniy	26.05	10.06.	08.07	14.09	22.09.	29.08	20.09	23.10	140

The information in Table 4 demonstrates a considerable difference in the length of the growing season for varieties belonging to the early-ripening, late-ripening, and ultra-early groups. Because the grains did not ripen at the same time, the growing season varied from 92 to 140 days.

The ultra-early varieties "Sharm" and "Innovator" of Russian origin ripened 2 and 6 days earlier than the early-ripening variety of local origin "Gulistan" if the length of the growth season of the tested kinds is examined. Additionally, it ripens 15–30 days later in the Iskander and Azure cultivars' late-ripening group. The usage of irrigation water is impacted by this indication in turn. In the heading and ripening phases, rice is said to use 181.0 and 164.6 m³.ha daily. According to our research, the amount of water saved for this time period is roughly 3620-3292 m³.ha and 6335-5761 m³.ha (evaporation, transpiration, and filtration) if we multiplied the water use by the length of these rice types.

Having friendly and dense shoots and keeping them throughout the growth season are two aspects that affect rice's output. Table 5 displays the standing density of rice based on this.

Table 5

Standing density of different varieties of rice (S=1m².)

No	Names of varieties	Number of seedlings, pcs	Field germination, %	Coef. tillering	Number of plants before	Number of stems, pcs	Safety for cleaning, %
1	Gulistan	235,6	39,3	1,5	207,8	311,7	88,2
2	Sharm	233,0	38,8	1,4	204,4	286,1	87,7
3	Novator	234,1	39,0	1,4	203,0	284,2	86,7
4	Iskander	232,4	38,7	1,3	200,5	260,6	86,3
5	Lazurniy	231,8	38,6	1,3	198,6	258,2	85,7

In order to quantify the field germination, the standing density of the rice plant throughout the complete germination and full ripening phases was determined. The statistics obtained demonstrate that the differences in the seed germination duration, measured in terms of pieces per square meter (m²) and 0.3-0.7%, respectively, are negligible. The range of rice types' tillering coefficients was 1.3 to 1.5 percent. The ultra-early group showed a substantially greater survival rate of the plant by the end of the growing season than the early-ripening and late-ripening rice types, ranging from 0.5 to 2.5%.

Biometric sheaves were collected prior to harvesting in accordance with the technique, and the findings are displayed in Table 6.

Table 6

Elements of the crop structure of various varieties of rice

Names of varieties	Panicle length cm.	Number of grains in 1 panicle, pcs		Weight, gr		Biological yield c/ha.
		full	empty	Biological yield c/ha.	1000 grains.	
Gulistan	14,2	80,9	16,8	5,1	27,1	71,0
Sharm	18,9	74,5	11,1	3,9	29,8	43,0
Novator	15,1	83,3	17,6	4,4	27,9	46,0
Iskander	25,3	140,9	32,6	7,9	33,7	70,0
Lazurniy	21,7	94,8	22,4	4,1	23,4	31,0

HCP₀₅ c/ha 2,08
HCP₀₅ % 3,98

The results of various rice varieties' biometric indicators show that the ultra-early rice variety Gulistan (71.0 centner/ha) and the late-ripening rice variety Iskander (70.0 centner/ha), which has a better yield structure than other subject rice varieties, obtained the highest grain yields.

The examined rice varieties in the late-ripening group "Lazurniy" had a low indicator (31.0 c/ha) when compared to the indicators from the variety's features, according to the results of the biometric study.

Bibliography

1 **1 Koptik I.K., Kulinkovich S.N., Karpovich T.A.** прогрессивная технология выращивания продовольственного зерна озимой пшеницы.

Magazin. Современные ресурсосберегающие технологии производства растениеводческой продукции в Беларуси. 2013

2 Recommendations for obtaining a high yield of grain crops (in Uzbek).

3 Recommendations for obtaining a high yield of rice, Uzbekistan, Nukus, 1999.

4 Sadykov E.P. and others. Морозостойкости образцов озимой пшеницы в посевом на разную глубину. Magazin «Вестник науки и образования». изд. «Проблемы науки» Москва, 2021 №14 part 2.

Shahzodbek Baxtiyarovich Matnazarov

Urganch State University

e-mail matnazarov97@inbox.ru

Annotatsiya. *Soʻzlar oʻz maʼnosi bilan obʼyektiv borliqdagi narsa, harakat, belgi kabilarning konkret oʻzini emas, balki ular haqidagi tushunchani ifodalaydi. Tushuncha obʼyektiv borliqdagi narsa-hodisalarning kishi ongida umumlashgan holdagi inʼikosidir. Narsa-hodisa haqidagi tushuncha shu turdagi narsa-hodisalarga xos umumiy belgilarni birlashtiradi. Koʻrinadiki, leksik maʼno bilan tushuncha oʻrtasida umumiylik bor. Soʻzlar oʻziga xos fonetik, soʻz yasaliş, morfologik strukturaga ega boʻlgani kabi oʻziga xos semantik strukturaga ham ega boʻladi. Soʻzning semantik strukturasi kiruvchi leksik maʼno ham maʼlum komponentlardan tashkil topadi. Ushbu maqolada aynan shu narsalar oʻz ifodasini topgan.*

Аннотация. *Слова представляют концепцию, а не самоподобное, действие, характер в существовании, такие как акт, персонаж. Концепция является обобщенным отражением того, что объективно в умах человека человека. Концепция чего -то, что сочетает в себе общие признаки такого типа вещей. По -видимому, между лексическим смыслом и концепцией существует общее. Слова также имеют уникальную семантическую структуру, такую как наличие уникальной фонетики, слово с морфологической структурой. Лексическое значение, которое включает в себя семантическую структуру слова, также состоит из определенных компонентов. Это то же самое, что отражено в этой статье.*

Annotation. *The words represent the concept of them not self-like, action, character in existence, such as the act, the character. The concept is a generalized reflection of what is objective in the minds in the minds of the person. The concept of something that combines the general signs of this type of things. Apparently, there is general between lexical sense and the concept. Words also have a unique semantic structure, such as having a unique phonetic, a word with a morphological structure. The lexical meaning that includes the semantic structure of the word is also made up of certain components. This is what the same thing is reflected in this article.*

Kalit soʻzlar: maʼno, soʻz, omonim, sinonim, tilshunoslik, metafora.

Ключевые слова: значение, слово, сурит, синоним, лингвистика, метафоры.

Keywords: meaning, word, surim, synonym, linguistics, metaphors

Til bevosita ajdodlardan avlodlarga oʻtib kelayotgan maʼnaviy meros, bebaho boylik hisoblanadi. Shuning uchun prezidentimiz I.A.Karimov “uni boyitish, asrab-avaylash, nufuzini yanada oshirish uchun doimo izlanishlar, tadqiqotlar olib borish zarur” ligini taʼkidlab oʻtgan. Maʼlumki, leksema – tilning asosiy birligi sifatida bizni qurshab turgan olam unsurlarini nomlash uchun xizmat qiladi. Leksema nomlash vazifasi bilan chegaralanib qolmasdan, olam haqidagi bilimlarimizni kelajak avlodlarga yetkazish, anglash, tinglovchiga taʼsir etish kabi vazifalarni ham bajaradi. Bu esa soʻzning naqadar serqirra hodisa ekanligidan dalolat beradi. Soʻzlar dastlab paydo boʻlganda biror bir predmet, harakat, holat yoki miqdor haqidagi tushunchalarni ifodalash uchun paydo boʻladi. Keyinchalik til taraqqiyoti natijasida soʻzning maʼnolari taraqqiy etib boradi va natijada soʻzlar asl-real maʼnosidan tashqari koʻchma maʼnolarni ham anglatadi. Koʻchma

ma'nolar tildagi so'zlarning to'g'ri ma'nosi negizida vujudga keladi. O'zbek va jahon tilshunosligida so'z va uning ma'nolari xususida ko'plab ilmiy-nazariy qarashlar mavjud bo'lib, unda so'z ma'nolarning o'ziga xosligi, mohiyati, turlari, xususan, so'z ma'nolarining ko'chishiga bag'ishlangan ilmiy tadqiqotlar maydonga kelgan. Ularni o'rganish va tadqiq etish mavzuning dolzarbligini belgilaydi.

So'z paydo bo'lishidayoq o'z tovush qobig'iga va ma'lum bir ma'noga ega bo'ladi. So'zlar o'z ma'nosi bilan ob'yektiv borliqdagi narsa, harakat, belgi kabilarning konkret o'zini emas, balki ular haqidagi tushunchalarni ifodalaydi. Tushuncha ob'yektiv borliqdagi narsa-hodisalarning ongda umumlashgan holdagi in'ikosidir. So'zlar o'ziga xos fonetik, so'z yasali, morfologik strukturaga ega bo'lgani kabi o'ziga xos semantik strukturaga ham ega. So'zning semantik strukturasi kiruvchi leksik ma'no turli tiplarga ajraladi: etimologik ma'no, bosh ma'no, yasama ma'no, asos ma'no, nominativ ma'no, figural ma'no, erkin ma'no, bog'liq ma'no va hokazo. Ko'pma'nolilik va ko'chma ma'nolar asosan so'zning bosh ma'nosi yoki asos ma'nolari zaminida yuzaga keladi. Bosh ma'noning taraqqiyoti natijasida so'z ma'nosida turli xil o'zgarishlar sodir bo'ladi. So'zlarning ko'chma ma'noda qo'llanishi ham ana shu taraqqiyot natijasidir. O'zbek tilshunosligida so'z ma'nolarining ko'chish usullari sifatida metafora, metonimiya, sinekdoha, vazifadoshlik e'tirof etiladi. Metafora – nom ko'chishining alohida bir turi hisoblanib, unda ob'yektiv borliqdagi narsa, hodisa, belgi, harakatlar o'rtasida keng ma'nodagi o'xshashlik asos bo'ladi. Ya'ni metafora qandaydir bir o'xshashlik asosida bir narsa nomining ikkinchi bir narsa nomi o'rnida qo'llanishidir. Masalan, tulki (ayyorlik), bo'ri (yulg'ichlik), gul (chiroylilik). Metaforik ma'no nutqni bezash, ta'sirchanlikni oshirish uchun xizmat qiladi. Nomlashni ham nazarda tutadi. Uning qo'llanilish darajasi nihoyatda keng bo'lib, ilmiy uslubdan boshqa barcha uslublarda qo'llaniladi. Metafora ekspressivlik ifodalash jihatidan ikki turga bo'linadi. a) ekspressiv (ilm urug'i, xurriyatning chashmasi); b) noekspressiv (o'choq boshi, choynakning og'zi). Har qanday metaforik ma'no dastlab paydo bo'lganda ekspressiv bo'ladi, tilda ko'p marta qo'llanilishi natijasida ekspressivlikni yo'qotib oddiy nomga aylanib qoladi. Metaforik ma'no tilda ikki asosga ko'ra yuzaga keladi: 1) nomsiz shartli narsani nomlash zaruriyati 2) nomli narsani qayta nomlash. (ikkilamchi nominatsiya) Masalan, samo xaltasi, g'amning ignasi (nomsiz narsani nomlash). Boqibuldozer, Ali-laylak (nomli narsani nomlash). Saida-sinchalak. Metafora ko'p qirrali jarayon. Shuning uchun uning tavsifi bir necha jihatni qamrab oladi. Metonimiya ham nom ko'chish usuli bo'lib, narsalar orasidagi ob'yektiv bog'liqlikka asoslanadi. Bog'liqlik asosidagi ko'chish bir necha xil bo'lishi mumkin. Metafora va metonimiya orasidagi farq nom ko'chirish asoslaridadir. Metaforaga o'xshashlik, metonimiyaga bog'liqlik asos bo'ladi. Bu eng asosiy farq bo'lib, o'xshashlik va bog'liqlik munosabatlari orasidagi tafovut bu farqni yanada kuchaytiradi. Bu tafovut shundaki, o'xshashlik qaysidir darajada erkin, ya'ni sub'ekt o'xshashlikni ochadigina emas, balki yaratadi. Metonimiyaga bog'liqlik asos bo'lar ekan, bog'liqlik ob'yektiv mavjud bo'lmasa, uni tiklab bo'lmaydi. Masalan, Navoiyni oldim qo'limga (kitobi). Samarqand bosh ko'tardi (odamlar). Darhaqiqat, bog'liqlik (munosabati) xususiyati doimiy bo'lib, uni hamma qayd etadi. Bu munosabat bo'lmasa, ma'noning bog'liqlik asosida ko'chish holati yuzaga chiqmaydi. Sinekdoxa ham ma'no ko'chish usuli sifatida butun va qism orasidagi bog'liqlikni nazarda tutadi. Ya'ni butun orqali qismni, aksincha qism orqali butunni nomlash sinekdoha usulida nom ko'chishidir. Masalan, besh qo'l barobar emas (butun orqali qism, barmoq). Ne kunlarni ko'rmadi boshim (qism orqali butun, odam) Tilda sinekdoha usulida nom ko'chish metafora va metonimiyaga nisbatan kamroq uchraydi. Vazifadoshlik ham ma'no ko'chishining alohida bir

usuli sifatida bir narsaning nomi boshqasiga ular bajargan vazifasidagi o'xshashlik asosidagi ko'chishni nazarda tutadi. Demak, vazifadoshlik asosidagi ko'chirish ham o'xshashlikka asoslanar ekan, bu jihatdan u metafora yo'li bilan ma'no ko'chishiga juda yaqin turadi. Farq shundaki, metafora yo'li bilan ma'no ko'chishda predmetlar orasidagi tashqi ko'rinish jihatdan, material jihatidan o'xshashlik asosga olinsa, funksional ko'chishda vazifa jihatdan o'xshashlik nazarda tutiladi: qanot, siyoh, ko'mir. Funksional ko'chirishda ko'pincha shakliy o'xshashlik ham qatnashadi. Yuqorida keltirilgan qanot so'zida shakliy, ko'mir so'zida rang jihatdan, siyoh leksemasida holat (suyuk) jihatdan o'xshashlik mavjud. Shu sababli ko'chirishlarni funksional-metaforik ko'chirish deb baholash holatlari uchraydi. Xulosa qilib aytganda so'z ma'nosining ko'chish usullari ma'no nozikliklari bilaan bir-biriga o'xshaydi, lekin ular bitta narsa emas. Ya'ni metafora keng ma'noda narsalar orasidagi o'xshashlikka asoslansa, metonimiya ob'ektiv bog'liqlikka asoslansa, sinekdoha butun qism munosabati asosidagi ko'chishni, vazifadoshlik esa ana shu nom ifodalagan predmetning vazifalari jihatdan bir xil, material jihatidan turlicha bo'lgan narsalar o'rtasidagi ko'chishni anglatadi. Bu usullarning barchasi tilda keng qo'llaniladi hamda so'zlovchining lisoniy mahoratini, nutqiy ta'sirchanlikni, emotsionallikni oshirishga, fikrni ixcham lo'nda va aniq tushunilishini ta'minlashga xizmat qiladi. Tilda so'z va leksema atamaları ko'p hollarda aralash holda qo'llanadi. Lekin ular bir-biridan farq qiladi. Leksema – jamiyat a'zolari uchun tayyor, umumiy, majburiy bo'lgan, shakl va mazmunning barqaror birikuvidan tashkil topgan, voqelikdagi narsa, belgi, xususiyat va munosabatlarni shakllantiruvchi, nutq va lug'atda grammatik morfemalarni o'ziga biriktira oladigan morfema turidir. Leksema semema va nomemalarning o'zaro munosabatidan tashkil topgan butunlik sanalib, uning mazmuniy mundariyasi atash, ifoda va vazifaviy semalar munosabatidan iborat. Har qanday leksema bu semalardan "atash" semasi, albatta, ishtirok etadi. Shuning uchun bu sema leksemaning markaziy semasi, qolgan semalar esa chegara semalar hisoblanadi. Masalan, so'zlamoq, do'ngillamoq leksemalari bir xil atash semasiga ega bo'lib, ifoda semasi bilan bir-biridan farq qiladi. So'z atamasi leksemalardan boshqa birliklarni ham, ya'ni atash semasiga ega bo'lmagan birliklarni ham o'z ichiga oladi. Masalan, ammo, uchun so'z, lekin leksema emas, chunki ularning atash semasi mavjud emas, faqat grammatik ma'noga ega. Demak, so'z grammatik ma'noga ega bo'lgan leksemalarni va yordamchi, undov, modal nomlari bilan yuritiluvchi birliklarni ham o'z ichiga oladi. Leksema leksik sath birligi sanaladi. U grammatik ma'no va bu ma'noni ifodalovchi shaklga ega bo'lib, so'zga ya'ni, morfologik birlikka aylanadi. Masalan, daraxt shoxlanuvchi ko'p yillik o'simlik, atash semasiga ega bo'lishi bilan leksema. Bu leksema, "ot", "bosh kelishik", "birlik", semalariga va bu semalarni ifodalovchi shakllarga ega bo'lishi bilan so'zga, morfologik birlikka aylanadi.

FOYDALANILGAN ADABIYOTLAR

1. Каримов И.А. Юксак манавият – енгилмас куч. -Т.: Маънавият, 2008.
2. Нурмонов А., Искандарова Ш. Умумий тилшунослик. -Андижон, 2007.
3. Ўзбек тили грамматикаси. II том. Морфология. –Т., 1975.
4. Ўзбек тили лексикологияси. -Т., 1983.
5. Миртожиев М. Лингвистик метафоралар таснифи. // Ўзбек тили ва адабиёти. 1973, 4-сон
6. Неъматов Х., Расулов Р. Ўзбек тили систем лексикологияси асослари. -Т.: Ўқитувчи, 1985.

FUNDRAISING METHOD IN FINANCING NON-GOVERNMENTAL EDUCATIONAL ORGANIZATIONS: PROS AND CONS

**Turakulov O.A., Berdinazarov Z.U.*

**Termez University of Economics and Service, non-state educational institution, Republic of Uzbekistan, Termez, Faravan massif, building 4B.*

Vice-Rector of Tashkent International Educational University

email: odilturakulov76@gmail.com

Annotation

The article analyzes the problems of financing non-state educational institutions in Uzbekistan, measures taken to solve them, as well as the achievements and shortcomings of the fundraising method in financing non-state educational institutions. Information is provided on financial activities carried out in this direction at the Termez University of Economics and Service.

Key words: non-state educational institutions, financing, financial risks, fundraising, potential, sponsor, benefit, loan, grants.

МЕТОД ФАНДРАЙЗИНГ ПРИ ФИНАНСИРОВАНИИ НЕГОСУДАРСТВЕННЫХ ОБРАЗОВАТЕЛЬНЫХ ОРГАНИЗАЦИЙ: ПЛЮСИ И МИНУСЫ

**Туракулов О.А., Бердиназаров З.У.*

**Термезский университет экономики и сервиса, негосударственное образовательное учреждение,*

Республика Узбекистан, г. Термез, массив Фараван, дом 4Б.

Проректор Ташкентского международного образовательного университета

электронная почта: odilturakulov76@gmail.com

Аннотация

В статье анализируются проблемы финансирования негосударственных образовательных учреждений в Узбекистане, меры, принимаемые для их решения, а также достижения и недостатки метода фандрайзинга при финансировании негосударственных образовательных учреждений. Приведены информации по финансовой деятельности, проводимой в этом направлении в Термезском университете экономики и сервиса.

Ключевые слова: негосударственные образовательные учреждения, финансирование, финансовые риски, фандрайзинг, потенциал, спонсор, льгота, ссуда, гранты.

Введение. Финансирование негосударственного образовательного учреждения напрямую зависит от его эффективной работы. Научно-методический потенциал заведения, связанный с привлечением средств, не имеет значения. Активностью по внебюджетному привлечению средств занимается попечительский совет учреждения. Функциями данного совета являются: установление контактов и связей в образовательной сфере, поиск

спонсоров, развитие творческих способностей учащихся, защита прав и интересов студентов и учителей, создание благоприятной атмосферы для преподавателей и студентов, проведение различных вебинаров, конференций и лекций. Многие негосударственные образовательные учреждения высшей ступени ориентируются на приток абитуриентов с базовыми правилами по их дисциплинам. Поэтому многие вузы носят свои средства в негосударственном образовательном учреждении с учетом новых программ обучения студентов [1].

Любые вступления в образовательные структуры, не затрагивающие бюджет государства, регламентируются нормативно-правовыми актами. Нельзя обходить эти поступления и рыночный механизм страны. Также должно быть открытым информации по использованию всех доходов и налоговые сборы. Но независимо от объема внебюджетных поступлений государственное финансирование остается постоянным [2].

Экспериментальная часть. Рассмотрим современные методы финансирования образовательных учреждений.

1. Средства государственного бюджета.

Механизм государственного заказа также предполагает наличие конкурентной среды между претендентами на бюджетные деньги и основывается на принципах основного механического планирования – актуальности, связности, эффективности, визуализации результатов, оптимизации затрат и т.д [3].

2. Финансирование с помощью грантов или целевых пожертвований благотворительных организаций.

В Узбекистане существует реестр международных благотворительных организаций, деятельность которых на территории Узбекистана разрешена законом. В то же время появилось довольно много зарубежных благотворительных организаций, целью которых является не адресная помощь третьим гражданам, а целенаправленная поддержка общественных объединений, действующая в обычном сообществе, или реализация чистых программ и др. В настоящее время в Узбекистане действует несколько десятки фондов и некоммерческих организаций. Их миссия – обеспечение развития и повышения эффективности грант дающей деятельности, направленной на меры защиты демократического, графического общества в Республике [4].

Обсуждение результатов. Одним из новейших методов привлечения инвестиций в негосударственное образовательное учреждение со стороны является фандрайзинг. Это представляет собой привлечение средств на данный проект. Главной специфической формой данного метода является умение убедить людей в эффективной работе данного проекта или программы вуза. За счет такого привлечения финансовых средств можно значительно улучшить положение дел, но при этом потерять финансирование на постоянной основе [5].

Фандрайзинг – это система мер, направленная на привлечение средств для развития исследовательских, образовательных и социальных проектов.

В рамках системы фандрайзинга существует понятие спонсорства, означающее более узкий круг мероприятий, проводимых для привлечения средств из коммерческого сектора. В системе фандрайзинга предусмотрено наличие и использование нескольких источников, в их числе – программы, благотворительность, спонсорство, гранты

общественных организаций и благотворительных фондов. Работа со спонсорами состоит из трех слоев:

Потенциальные – это я, о ком вы уже знаете, а их о вас еще нет, но возможно они могут вас заинтересовать и понятно, почему. Так же предполагается понятно, почему они могут дать вам грант;

Заинтересованные – это те, кто о вас уже знает, как вы уже заинтересованы, может быть, даже уже разок, что-то дал в прошлом и помнит о вас;

Постоянные – те, кто работает с организацией давно и на первый взгляд надежно. Однако и это относится к категории, они тоже не даны вам в пожизненном пользовании, рано или поздно они уйдут [6].

Для получения фандрайзинга также полезно:

- собирать данные о благотворительных спонсорах;
- обратите внимание на свой прошлый опыт сбора средств;
- собирать архив отзывов о вашей организации;
- вести постоянный поиск источников финансирования.

Существуют, созданные специально для поддержки каких-либо проектов – фонды прямых действий, использующие свои ресурсы для поддержки открытых исследований или непосредственного предоставления услуг. Региональные и местные фонды объединяются с жителями соответствующего региона, города для поддержания и регионального статуса. Соответственно, они ориентируются на местного игрока, поэтому получают поддержку организации, обеспечивающей реальное влияние на региональную нестабильную политику и политику [7].

Для начала мы разрабатываем коммерческое предложение и план работ с потенциальным спонсором. В коммерческих предложениях мы подробно описываем, что мы можем предложить потенциальным спонсорам и что мы от них хотим. План работ включает в себя следующие этапы: – Разработка спонсорского пакета, предложения о спонсорстве (информационных писем)

- Составление списка спонсоров,
- Обход спонсоров с предложениями.

4. Частные фонды образованных людей каким-либо частным лицом (семьей) и финансируют проекты, в основном, «из собственного кармана». Они стремятся к созданию капитала, только часть или проценты которого с ним идут на финансирование программ. Такие фонды в планируют средства, как правило, в проектах, направленных на развитие общества, образования, культуры, правового просвещения.

5. Некоммерческая организация. Эндаумент-фонд – это центр финансового управления, своеобразное «казначейство» системы финансирования проектов вуза.

Организационно эндаумент-фонд представляет собой некоммерческую организацию в форме благотворительного фонда, предназначенную для накопления благотворительных средств и их эффективного использования в целях развития вуза.

Эндаумент-фонд обеспечивает возможность использования существующих инструментов для обеспечения баланса между:

- реализация краткосрочных и текущих социальных проектов;
- Финансированием постоянно действующих проектов;

– Накоплением ресурсов в фондах целевого капитала в качестве обеспечения финансовой устойчивости ВУЗа.

Благодаря такому подходу ограничить капитал с годами только при необходимости, обеспечивает долгосрочную финансовую устойчивость вуза, что способствует постоянному финансированию социальных проектов.

На рисунке представлена организационная структура управления такого фонда.



Рис.1. Организационная структура управления эндаумент-фонда

Для спонсоров это реклама в студенческом обществе, размещение логотипа и привлечения фирм, для профсоюзной организации и для вуза в целом это привлечение дополнительных средств. Это может быть организовано следующим образом.

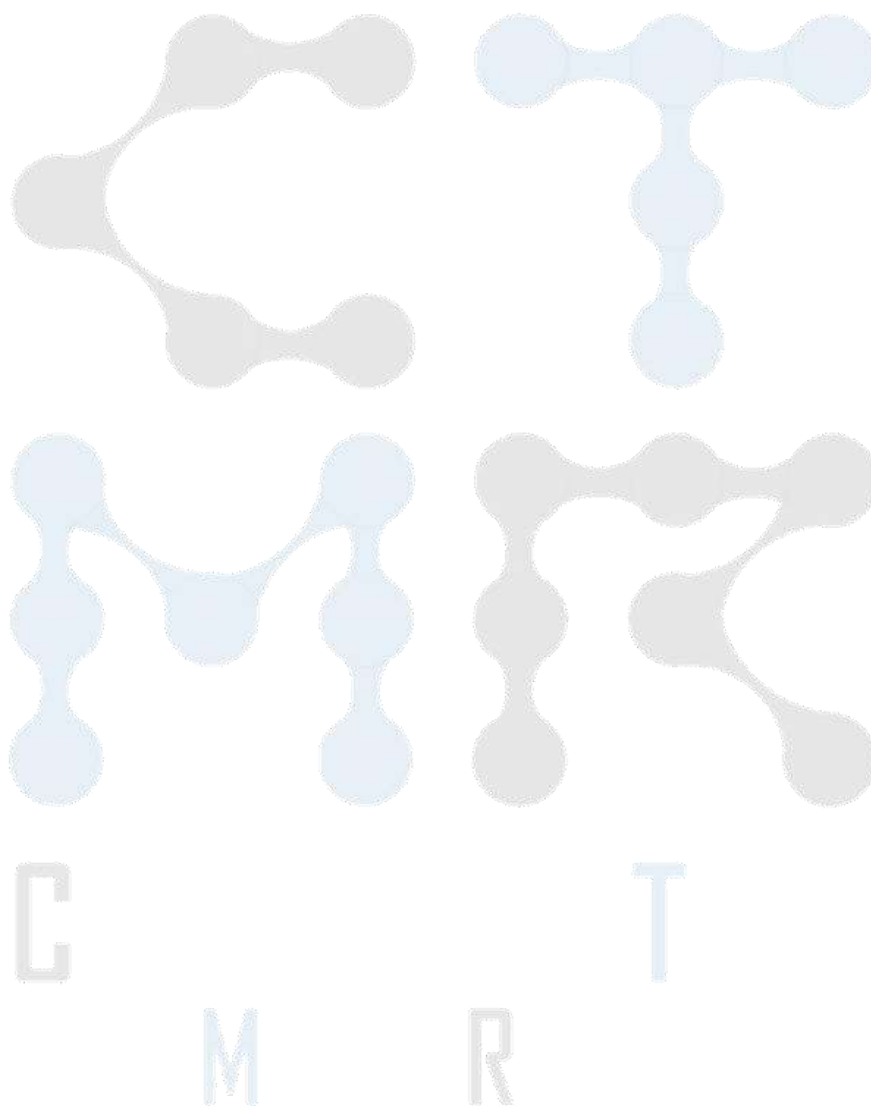
- Уточнение спонсорского пакета, заполнение бланка спонсорского участия (по желанию разработки рекламных модулей)
- Сбор рекламной (аудиовизуальной), сувенирно-печатной продукции, объектов спонсорской помощи;
- Оформление стенда о спонсорах;
- организация фотосъемки реализуемых информационных возможностей (распространение печатных материалов, прокрутка видеоролика, выступление представителя организации-спонсора, награждение победителей конкурсной программы, оформление документов и т.д.) для отчета спонсорам [3].

Выводы. Внебюджетное финансирование на комплексном этапе занимает 40-50 % всей финансовой базы негосударственного образовательного учреждения. Поиски улучшения развитой образовательной структуры привели к интеллектуализации населения и, тем самым, к изменению всей сферы государства.

ИСПОЛЬЗОВАННАЯ ЛИТЕРАТУРА

1. Ахтариев И. З. Особенности формирования рынка услуг общественной аккредитации образовательных программ и учреждений: Автореф. диссертации на соискание ученой степени кандидата экономических наук. Москва, 2010. 26 с.
2. Кирилловых А. А. Комментарии к Федеральному закону «Об образовании в Российской Федерации» № 273-ФЗ (постатейный). Москва: Книжный мир, 2013. 352 с.
3. Боровская Н. Е., Гудошников Л. М. Образовательное законодательство и управление образованием в Китае. Образовательные системы и образовательное законодательство государства Востока. Эд. А. Н. Козырин. Москва: Готика, 2005. С. 48–94.
4. Сайт Вольного экономического общества. Доступно по адресу: <http://www.veorus.ru/veo-accreditation.html> (дата обращения: 18.09.2013).

5. Пуляева Е. В. Обеспечение качества юридического образования: правовые аспекты. Журнал российского права. 2009, № 11, стр. 69–77.
6. Похолков Ю. П. Общественно-профессиональная аккредитация образовательных программ. Кому и зачем она нужна? Инженерное образование. 2010, № 3, стр. 50–57.
7. Образовательное законодательство и образовательные системы зарубежных стран. Эд. А. Н. Козырин. Москва: Академия, 2007. 432 с.



Umarov Shohzod Zafar o'g'li

TUIT named after Muhammad al-Khorazmi, graduate student

Abstract – Elliptic Curve Cryptography (EECH) is a public-key cryptographic technique that uses the mathematical properties of elliptic curves to secure data transmission over the Internet. EECH is known for providing robust security, providing sufficient tolerance for smaller key lengths compared to traditional cryptographic methods such as RSA or Diffie-Hellman. In general, EECH is relevant in scenarios where security is important and computing resources are limited. This article presents an analysis of various cryptographic algorithms based on EECH.

Keywords - Elliptic curves, encryption algorithms, digital signature algorithms, key distribution algorithms

ELLIPTIK EGRI CHIZIQLARGA ASOSLANGAN KRIPTOTIZIMLAR TAHLILI

Umarov Shohzod Zafar o'g'li (*Muhammad al-Xorazmiy nomidagi TATU, magistrant*)

Annotatsiya – Elliptik egri chiziq'larga asoslangan kriptografiya (EECH) - bu Internet orqali ma'lumotlarni uzatishni himoya qilish uchun elliptik egri chiziq'larning matematik xususiyatlaridan foydalanadigan ochiq kalitli kriptografik usul hisoblanadi. EECH ishonchli himoyani ta'minlash bilan mashhur bo'lib, RSA yoki Diffie-Hellman kabi an'anaviy kriptografik usullariga nisbatan kichikroq kalit uzuligida ham yetarli bardoshlikni ta'minlab beradi. Umuman olganda, EECH xavfsizlik muhim bo'lgan va hisoblash resurslari cheklangan stsenariylarda dolzarbdir. Ushbu maqolada EECH asoslangan turli kriptografik algoritmlar tahlili keltirilgan.

Kalit so'zlar – Elliptik egri chiziq'lar, shifrlash algoritmlari, elektron raqamli imzo algoritmlari, kalitlarni taqsimlash algoritmlari

Ochiq kalitli kriptografiyaning barcha zamonaviy dizaynlari tizimlar xavfsizligini ta'minlash uchun guruh nazariyasiga tayanadi. EECH ning kriptografik bardoshlilik diskret logarifm muammosining murakkabligiga tayanadi. Xavfsizlik protokollari bilan bog'langan ushbu tushuncha kalitlarni o'rnatish, shifrlash, autentifikatsiyalash va imzolash xizmatlarini taqdim etish uchun ishlatilishi mumkin. Egri chiziq'lar operatsiyalarida kirishlar elliptik egri chiziq'dagi nuqtalar bo'lib, ular elliptik egri chiziqning boshqa nuqtalarini topish uchun ishlatiladi. Yagona hisob-kitob bu to'plamga, skalyar ko'paytirishga tegishli. Bu guruh qonunining timsoli: $P \in E(F_q)$ nuqtasiga muvaffaqiyatli guruh operatsiyalarini qo'llash (qo'shish) egri chiziq'dagi boshqa nuqtalar natijasida hosil bo'ladi. Agar nuqtaga qo'llaniladigan qo'shimchalar soni elliptik egri guruhning tartibiga teng bo'lsa, natija asl nuqta bo'ladi.

$E(F_q)$ egri chizig'ida skalyar ko'paytirish P nuqtaning k qo'shimchasini hisoblashni bildiradi va kP bilan belgilanadi. Bu jarayonda ma'lum qoidalar to'plami orqali $Q = kP$ bo'ladigan boshqa $Q \in E(F_q)$ nuqtani topish uchun skalyar ko'paytirish $k \in N$ va egri chiziq $P \in E(F_q)$ nuqtadan foydalaniladi. Skalyar ko'paytirishni amalga oshirish uchun ko'plab usullar taklif qilingan, jumladan: ikkilantirish va qo'shish, NAF, Montgomery zinapoyasi va boshqalar [1].

Bu usullarning barchasi ma'lum bir elliptik egri chiziq uchun aniqlangan guruh operatsiyalariga asoslangan bo'ladi.

EECH asosiy guruh amallari bo'lib nuqtalarni qo'shish

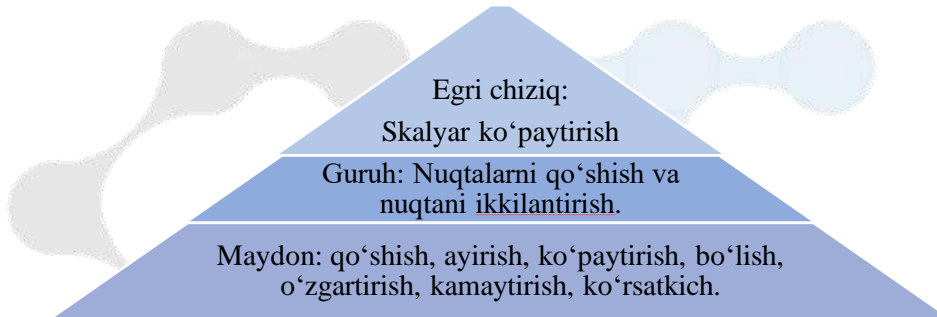
$$P + Q \forall P, Q \in E(\mathbb{F}_q) \quad (1)$$

hamda nuqtalarni ikkilantirish

$$P + P \forall P \in E(\mathbb{F}_q) \quad (2)$$

hisoblanadi.

Quyida EECH amallarining turli darajalari ko'rsatilgan (1.1-rasm).



1.1-rasm. EECH dagi operatsiyalarning darajalarga bo'lingan shakli

Elliptik egri chiqizlarga asoslangan shifrlash algoritmlari

Ochiq kalitli shifrlash tizimlarida har bir A ob'ektida ochiq kalit P_A va tegishli shaxsiy kalit a mavjud bo'ladi. Xavfsiz tizimlarda berilgan P_A dan a ni hisoblash vazifasi qiyin. Ochiq kalit E_{P_A} shifrovchi o'zgartirishni belgilaydi, maxfiy kalit D_a rasshifrovkalovchi o'zgartirishni belgilaydi. A tomonga m xabar yuborishni istagan har qanday ob'yekt B , A tomonning P_A ochiq kalitining haqiqiy nusxasini oladi, $c = E_{P_A}(m)$ shifrlangan matnni hosil qiladi va uni A tomonga yuboradi [2]. c ni rasshifrovkalash uchun A tomon, asl xabarni olish uchun $m = D_a(c)$ rasshifrovkalash o'zgartirishni qo'llaydi.

Hozirgi kunda EECH asoslangan El-Gamal, ECIES kabi algoritmlar mavjud bo'lib ular faktorzatsiyalash va diskret logarifmlash masalalariga qaraganda kalit o'lchami kichik bo'lganligi bilan faqrlanadi.

1.1-jadval

ECIES va RSA algoritmlari kalit uzunliklarini solishtirma tahlili

Xavfsizlik darajasi (bit)	RSA kalit uzunligi (bit)	ECIES kalit uzunligi (bit)
80	1024	160-223
112	2048	224-255
128	3072	256-283
192	7680	384-511
256	15360	512-571

Kalit o'lchamidagi afzallik apparatga kichikroq talablarni qo'yish imkonini beradi (masalan, bufer, operativ xotira va jismoniy xotira hajmiga; kalitlarni tarmoq orqali uzatishda kanalning o'tkazish qobiliyatiga). ECIES ning boshqa kriptografik algoritmlarga nisbatan muhim kamchiligi turli standartlar (ANSI X9.63, IEEE 1363a, ISO/IEC 18033-2 va SECG SEC 1) bilan tavsiflangan ECIES ning bir nechta versiyalarining mavjudligidir. Ushbu standartlar o'rtasidagi farqlar ECIES

komponentlarini (KA, KDF, ENC, MAC, HASH) amalga oshirish uchun maxsus funksiyalar va parametrlarni tanlashdir. Kamchilik shundaki, barcha standartlarga javob beradigan ECIES versiyasini amalga oshirish mumkin emas.

Elliptik egri chiziqlarga asoslangan elektron raqamli imzo algoritmlari

Xabarning raqamli imzosi - imzolovchining shaxsiy kalitiga va imzolanayotgan xabarga bog'liq bo'lgan koddir. Imzolar doim tekshirilishi kerak; agar biror tomon hujjatni imzolaganligi to'g'risida nizo yuzaga kelsa, xolis uchinchi shaxs ushbu masalani imzolovchining ochiq kalitidan foydalangan holda hal qilishi kerak bo'ladi [3].

ECDSA (Elliptic Curve Digital Signature Algorithm) - raqamli imzoni yaratish uchun ochiq kalit algoritmi bo'lib, tuzilishi bo'yicha DSA ga o'xshash, lekin undan farqli o'laroq, cheklangan sonli maydonda emas, balki elliptik egri chiziqdagi nuqtalar guruhida aniqlangan amallar bilan farqlanadi.

Quyidagi EECH asoslangan elektron raqamli imzo algoritmlari tahlili keltirilgan (1.2-jadval)

1.2-jadval

EC-DSA va EC-KCDSA algoritmlarning qiyosiy tahlili

Sxema	Chekli maydon	q
EC-DSA	$GF(p)$ yoki $GF(2^m)$	$q > 2^{160}$
EC-KCDSA	$GF(p)$, $GF(2^m)$ yoki $GF(p^m)$	$ q > 128 + 32i, (i = 0, 1, \dots, 4)$

Sxema	Imzoni hisoblash	Imzoni tekshirish
EC-DSA	Shaxsiy imzo: $x \in_r Z_q^*$	Ochiq kalit: $y = xG$
	$k \in_r Z_q^*$ $r = \pi(kG) \bmod q$ $s = k^{-1}(rx + h(m)) \bmod q$	$u_1 = s^{-1}r \bmod q$ $u_2 = s^{-1}h(m) \bmod q$ $\pi(u_1y + u_2G) \bmod q = r?$
EC-DSA	Shaxsiy imzo: $x \in_r Z_q^*$	Ochiq kalit: $y = \bar{x}G$ ($\bar{x} = x^{-1} \bmod q$)
	$k \in_r Z_q^*$ $r = h(kG)$ $s = x(k - r \oplus h(z m)) \bmod q$	$e = r \oplus h(z m) \bmod q$ $h(sy + eG) = r?$

Elliptik egri chiziqlarga asoslangan kalitlarni tarqatish algoritmlari

Kalit o'rnatish protokolining maqsadi ochiq tarmoq orqali muloqot qiladigan ikki yoki undan ortiq ob'ektlarni umumiy maxfiy kalit bilan ta'minlashdir. Keyinchalik, maxfiylik yoki ma'lumotlar yaxlitligi kabi kriptografik maqsadlarga erishish uchun kalit simmetrik kalit protokolida ishlatilishi mumkin [4].

Elliptik egri chiziqlarga asoslangan Diffie-Hellman hamda Menezes-Qu-Vanston kalitlarni taqsimlash algoritmlari mavjud.

MQV algoritmi Diffie-Hellman algoritmiga nisbatan elliptik egri chiziqlar kontekstida yaxshiroq xavfsizlikni ta'minlaydi. Biroq MQV ning aloqa qiluvchi tomonlarning ochiq kalitlarini autentifikatsiya qilish uchun sertifikatlashtirish organi (CA) kabi ishonchli uchinchi tomondan foydalanishni talab etadi. Agar sertifikatlashtirish markazi buzilgan yoki uning infratuzilmasi

xavfsiz bo'lmasa, bu qo'shimcha murakkablik va potensial zaifliklarni keltirib chiqarilishi mumkin.

ECMQV ning umumiy sirdan olingan seans kalitni taqdim etsada, u takroriy hujumlar yoki xabarlarni buzishdan qo'shimcha himoya qilmaydi. Shu sababli, almashilgan xabarlarning yaxlitligi va haqiqiyiligini ta'minlash uchun xabarlar autentifikatsiya kodlari (MAC) kabi qo'shimcha kriptografik mexanizmlardan foydalanish muhim ahamiyatga ega.

Adabiyotlar ro'yxati

1. Z. Liu, E. Wenger, and J. Großschädl, MoTE-ECC: Energy-Scalable Elliptic Curve Cryptography for Wireless Sensor Networks, pp. 361–379. Cham: Springer International Publishing, 2014.
2. C. Lederer, R. Mader, M. Koschuch, J. Großschädl, A. Szekely, and S. Tillich, “Energy-Efficient Implementation of ECDH Key Exchange for Wireless Sensor Networks,” in Proceedings of the 3rd IFIP WG 11.2 International Workshop on Information Security Theory and Practice. Smart Devices, Pervasive Systems, and Ubiquitous Networks, WISTP '09, (Berlin, Heidelberg), pp. 112–127, Springer-Verlag, 2009.
3. Akbarov Davlatali Yegitaliyevich, Xasanov Po'lat Fattoxovich, Xasanov Xislat Po'latovich, Axmedova Oydin Po'latovna, Xolimtayeva Iqbol Ubaydullayevna “Kriptografiyaning matematik asoslari”. O'quv qo'llanma. – Toshkent. TATU. 2018 – 208 bet.
4. Z. Liu, J. Weng, Z. Hu, and H. Seo, “Efficient Elliptic Curve Cryptography for Embedded Devices,” ACM Trans. Embed. Comput. Syst., vol. 16, pp. 53:1–53:18, Dec. 2016.
5. W. Diffie and M. Hellman “New directions in cryptography” Information Theory, IEEE Transactions on, vol. 22, pp. 644 – 654. 1976.

GROWTH AND DEVELOPMENT OF SUMMER WHEAT UNDER ORGANIC FARMING CONDITIONS

*Ismailov Makhsetbay Embergenovich, Candidate of Agricultural Sciences Karakalpakstan institute of agriculture and agrotechnologies
Nukus, Uzbekistan*

Annotation. The field experiment was conducted in order to determine the influence of organic agriculture on the growth and development of summer wheat in the condition of Karakalpakstan. According to the information of the experiment good results were achieved when only organic fertilizer was used in the amount of 60 t/ha without any mineral fertilizers and in addition to this the biostimulant phytovak was applied three times in order to feed the summer wheat and after gathering the yield of wheat sowing mung bean for siderate and plowing in autumn.

Keywords. Summer wheat, mineral, organic and siderate fertilizers, biostimulants, saline soil, productivity, yield, organic agriculture, ecological free product.

Introduction. In the decree of the President of the Republic of Uzbekistan on October 23, 2019, About affirming the strategy of developing agriculture of the Republic of Uzbekistan planned for years 2020-2030 number PP-5853 indicated to carry out some actions in developing agriculture of our country as the following: widely conducting market economics, strengthening legal basis of relations between producer, reproducer and seller of agricultural products, applying investments and implementing the system of brainstorming, implementing resource saving technologies, providing with modern technology and applying achievements of agricultural science in industry.

Changing agricultural products into organic method step by step was mentioned in the decree of the President of the Republic of Uzbekistan on May 18, 2020, About additional actions of providing the satisfaction of quality and safety indicators of agricultural products with international standards number PP-5995 and in addition to this decree the conception of developing organic agriculture and organic food products in the Republic of Uzbekistan.

Moreover, conducting scientific research works on increasing the productivity of agricultural crops by improving meliorative condition of irrigated land in agriculture and using water and resource saving modern technologies was stated in the decree of the President of the Republic of Uzbekistan on February 7, 2017, About the strategy of actions on the further development of the Republic of Uzbekistan number PP-4947 in the part. The important branches of developing and liberalization of economics.

Determining the optimal amount of organic fertilizer in the growth and development of summer wheat is an actual problem. Defining the effectiveness of using organic fertilizer in the growth and development of summer wheat in saline soil condition of Karakalpakstan.

Methodology of the research. The field method was chosen as the methodology. Local type of summer wheat was selected for investigating in the experiment. There are 9 variants in the experiment, 1st variant is control, only mineral fertilizer N100 P70 K50 kg/ha was used, in 2nd, 3rd, 4th and 5th variants organic fertilizer was used in the amount of 30, 40, 50 and 60 t/ha without mineral fertilizers. In 6th, 7th, 8th and 9th variants phytovak biostimulant was used three times for the above mentioned fertilizers and in these variants after collecting wheat mung bean was sown as siderate fertilizer and plowed in autumn.

Results of the research and analyzing them. When we determined the influence of using mineral and organic fertilizers in different norms together with biostimulants on the height of wheat stem and biometric indicators of wheat germ before gathering the product the following were obvious.

The height of wheat stem was average from 61,5 cm to 84,2 cm. In this the lowest indicator was observed when summer wheat was fed with only mineral fertilizer in the amount of N100 P70

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-3, ISSUE-5

K50 kg/ha (var. 1). In other variants when mineral fertilizers was used in the amount of 30, 40, 50 and 60 t/ha as a result of improving the feeding regime the indicators of growth and development was high. As can be seen from the table biometric indicators of wheat germ are higher when the amount of organic fertilizer was increased. When organic fertilizer was used in the amount of 30 t/ha the length of wheat germ was 7,0 cm, the number of grains in wheat germ - 34,0 pieces, weight of grains in wheat germ - 1,25 g and weight of 1000 grains - 35,0 g, and when 60 t/ha fertilizer was applied it was 8,0 cm, 38,0 pieces, 1,36 g and 37,5 g. As can be seen from this the requirement of the plant for nutrition is satisfactory when a huge amount of organic fertilizer is applied.

When additional to these organic fertilizers plants were fed with biostimulants 13 times, the height of the plant increased by 4-6 cm, the length of wheat germ - 0,1-0,3 cm, the number of grains in wheat germ - 1,0-1,5 pieces and weight of 1000 grains - 0,5-1,0 g. Therefore, it is expedient to feed summer wheat with 60 t/ha of organic fertilizer and biopreparations three times from the leaves in order to produce in organic agriculture in soil condition of the Republic of Karakalpakstan.

In 2023 the growth and biometric indicators of wheat germ of summer. The reason is that in 2022 after gathering summer wheat mung bean was sown for siderate and plowed in winter in all variants apart from the variant 1. This is an additional source of nutrition for used organic fertilizer and biostimulant.

The height of plant stem was 64,0-84,6 cm, the length of wheat germ - 7,2-8,4 cm, number of grains in wheat germ - 35,5-41,5 pieces, weight of grains in wheat germ 35,6-41,0 g and this was higher than the indicators in 2022

Variants	in 2022					in 2023				
	The height of stem, cm	The length of wheat germ, cm	Number of grains in wheat germ, piece	Weight of grains in wheat germ, g	Weight of 1000 grains, g	The height of stem, cm	The length of wheat germ, cm	Number of grains in wheat germ, piece	Weight of grains in wheat germ, g	Weight of 1000 grains, g
1	61,5	6,5	31,5	1,21	33,5	64,0	6,6	32,0	1,21	33,6
2	66,3	7,0	34,0	1,25	35,0	38,0	7,2	35,5	1,29	35,6
3	71,0	7,5	36,0	1,39	37,0	73,5	7,8	37,5	1,33	38,0
4	75,0	7,8	37,0	1,35	37,5	78,5	8,1	38,0	1,39	39,0
5	78,0	8,0	38,0	1,36	38,5	81,5	8,3	39,5	1,42	40,0
6	70,1	7,3	35,0	1,30	36,0	71,5	7,5	36,5	1,32	37,5
7	76,5	7,6	37,0	1,35	37,5	76,0	7,9	38,5	1,39	39,5
8	79,6	7,9	38,0	1,40	38,0	81,5	8,3	39,5	1,45	39,5
9	84,2	8,1	39,5	1,45	39,5	84,6	8,4	41,5	1,50	41,0

Conclusion. In order to produce ecological free product of summer wheat in the condition of the Republic of Karakalpakstan it is necessary to feed it with 60 t/ha of organic fertilizer, in addition to this 3 times with the phytovak stimulant 3 times in the amount of 0,8 l, sowing mung bean for siderate after gathering the yield in the first year, this creates comfortable condition for the growth and development of summer wheat in the second year.

References

1. Ismailov U.E. Scientific basis of increasing soil productivity. // Nukus. –Bilim. -2004. - p. 186.
2. Sultanova Z. Soft wheat. Nukus. Miraziz Nukus. -2017. -p. 146.
3. Shevtsev L.K. Influence of continuously using manure and mineral fertilizers on the content of humus and nitrogen in different soil. // Moscow. –Kolos. -1996. –p. 169-188
4. Stankov V.V. Widely using biological nitrogen. J. Agriculture -№7 -1990. -p. 44-45.
5. Bekpanov B. Results of the research on winter wheat. // Scientific reports of KKSRIA for 2001-2003.
6. Kozin V.A. Determining the lower limit of optimal content of humus. // Agriculture. -1191. №5. –p. 31-32



DIPLOMATIC AND TRADE-ECONOMIC RELATIONS BETWEEN THE KOKON
KHAN AND RUSSIA

Yusupov Akhrorjon Kurbanovich

Kokan State Pedagogical Institute Teacher of the "History" department, PhD
Hasanov Mukhtarjon Kakharamonjon o'g'li, QDPI History department, 1st stage student
axrorjon201911@gmail.com

Abstract: In this article, the Kokan khanate developed due to its favorable geographical conditions, located on the caravan routes and in an area with long-developed agriculture, and the city of Kokan was one of the largest cities of Central Asia in the first half of the 18th-19th centuries. The information about the fact that the development of a wide range of crafts in the Kokan Khanate made it possible to establish trade relations with neighboring countries is highlighted.

Keywords: trade, caravan routes, Umar Khan, handicrafts, paper, Moi Mubarak, Russia

The Kokan Khanate developed due to its location in favorable geographical conditions, on caravan routes, and in an area where agriculture had been developed for a long time. In the first half of the 18th and 19th centuries, the city of Kokan was not only the khanate, but also one of the largest cities in Central Asia. The city of Kokan was turned into the political, economic and cultural center of the khanate. There are large cities such as Kokan, Tashkent, Andijan, Namangan in the khanate, in which the field of handicrafts developed on a large scale. For example: Kokan had the following types of crafts. Coppersmith, goldsmith, engraver, gunsmith, potter, paper cutter, weaver, hat maker, embroiderer, bridge maker, blacksmith, baker, carriage maker, velvet maker, carpenter, painter, gilker, druggist, jibachi, devorzan, degrez, yormadoz, kutai, gunsmith, najjor, spearman, fencer, pillager, furrier, shoemaker, tubrez, paranjidoz, tent maker, chevar, Chitgar, carpet maker and hokozos. There was a market in the city of Kokan on Wednesdays and Sundays. The development of a wide range of crafts in the Kokan Khanate made it possible to establish trade relations with neighboring countries [1,94].

Relations between the Kokan Khanate and Russia began later than other khanates. The fact that the Kokan Khanate is located far from Russia did not allow for the establishment of relations. However, the Kokand Khanate established intensive diplomatic and trade-economic relations with Central Asian khanates, neighboring China, India, and Kyrgyz steppes. From the beginning of the 19th century, Russia began to look at the Kokan Khanate with great interest. In the 18th and 19th centuries, when paper production in Samarkand was declining, paper production began in Kok. The production of this product is connected with the migration of paper-making masters from Samarkand to Kokan. As a result, it would be safe to say that Kokan has become a monopoly engaged in the supply of paper from the Aral Sea to China. Kokan paper was taken to Kashgar and even to northern Afghanistan. The paper workshop is located next to the mausoleum behind the Moyi mubarak gate of Kokhan city. The paper mill consists of a simple palace, the area of which is 25-30 square meters, on one side of the porch there is a mill, and on the other side there is a large machine for paper pulp. With the help of his assistants, the master prepared 300 sheets of paper in one day. In addition to Kokan, paper was also developed in other places. But Kokan paper was far superior to them in terms of its quality and quantity. Central Asian scientists, historians, poets wrote their works on Kokan paper. These papers were widely used in the cabinet. Local

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-3, ISSUE-5

manuscripts and various diplomatic documents were written on Kokan paper. Siberian Cossack Maksimov, who was in Tashkent at the beginning of the 19th century, wrote that paper is made in Kokan and Tashkent [2,28].

The size of Kokan paper was 58 cm in length and 50 cm in width. There are 240 sheets of it in a pack, on the eve and at the beginning of the First World War, the first type costs 6 rubles, the second type costs 4 rubles. and the third variety 3 rubles. standing There was also very good quality paper made of silk. Since tissue paper was very expensive, there was little demand for it. Tissue paper was prepared on a special order [3,147].

Kokan was connected with Central Asian khanates, China, India, Iran, Russia and other countries through caravan routes, and the khanate entered into intense trade relations with them. Russia's trade and political relations with the Kokand Khanate were at first slightly less developed than those of the Central Asian khanates. This situation can be explained by the fact that the khanate is far from Russia and is separated by the Tashkent principality. Trade and diplomatic relations between Russia and the Kokan Khanate began to develop rapidly from the second decades of the 19th century. Kokan relations with Russia were friendly in the early days, and both sides were interested in these relations. The issue of trade, economic and political-diplomatic relations between the Kokan Khanate and Russia is reflected in the reports of Russian ambassadors and tourists, as well as in special works. Russia's relations with Kokan were carried out through Siberia. On January 13, 1806, the Siberian Inspectorate informed the Russian Minister of Commerce N.P. Rumyantsev that he had sent a trade caravan to Kokan. However, the merchant returned from Turkestan before reaching Kokan. The next caravan of Kaluga merchants Ivan and Akim Sveshnikov, sent from Russia to Kokan, successfully arrived in Kokan Khanate in 1811. Ivan and Akim Sveshnikov, who had the opportunity to establish trade with the Kokan Khanate for the first time, were duly rewarded by the Russian government [4,223]. Due to the arrival of a trade caravan from Russia, Kokan Khan Umar Khan suggested to the Russian government to establish free trade relations through Siberia. Alexander I, who took advantage of the fact that this proposal was in the interests of the ruling circles of Petersburg, supported it. The Russian Empire attached great importance to strengthening economic ties with the Kokan Khanate, and sought ways to protect ambassadors and merchants from the Kokan Khanate [5,97]. According to H. Ziyaev, a major expert on Central Asian and Siberian relations, Shokirbek, the ambassador of the Kokan Khan who came to Russia, said that Kokan merchants would have free trade in the Russian Empire and trade relations between Kokan and Russia. stated that it is necessary to create conditions for development [6,50-51].

The Russian government has given special assignments to expeditions and embassies sent from Russia to Central Asia. In particular, in 1813, Philipp Nazarov, the translator of the Siberian Corps, came to Kokan, i.e. in Petropavlovsk, with the purpose of resolving the conflict caused by the murder of the ambassador of the Kokan Khan who was coming from Petersburg. As a result of F. Nazarov's trip to the Kokan Khanate in 1813-1814, the book "Zapiski o nekotorykh narodax i zemlyakh sredney chasti Azii" was published in 1821. The work has a historical-ethnographic character and reports on the trade relations of the Kokan people with Kashgar, China, Khiva, Bukhara and Eastern Iran. He participated in the ceremony of reception of ambassadors of Kokhan Khan and saw ambassadors from China, Khiva, Bukhara and other countries during the reception ceremony[7]. F. Nazarov writes about the city of Oratepa and admits that the people there live in mud (pakhsa) houses and weave fluffy shawls in their homes. It is stated in the work that the

inhabitants of Oratepa trade with Turkmens, Iranians, and nomadic Arabs in the areas belonging to Bukhara.

In 1826, an article published in the Aziatsky Vestnik magazine reported that Kokan residents were engaged in cotton and silk cultivation, and that Kokan people traded with China, Khiva, and Iran [8,229-230]. In 1828, ambassadors from Kokand, Sadr Gamal'dar Tursunkhoja Nayzakhoja and Khoja Mir Kurban Mamat Kasimov, came to the city of Omsk and offered to Russian Tsar Nicholas I to establish friendly relations between the two countries. came to hand over the label. The ambassadors were very well received in the Asian department and were told that the empire would protect the ambassadors and merchants from the Kokand Khanate, and they were also offered to strengthen and develop Russian-Kokand relations.

According to the agreement between the two countries, on August 12, 1829, N.I. Potanin was sent from Omsk as an ambassador to Kokan, accompanied by ambassadors from Kokan. He stayed in the city of Kokan for five months, and in 1830 he set off to return to his country. N. I. Potanin wrote down the events he witnessed during his travels [9]. His work contains various information about the political and socio-economic situation in the regions of the Kokhan Khanate, local roads, the structure of the military, religious traditions, and the world of plants.

CONCLUSION

Based on the above information, Kokan and Russia are interested in the establishment of friendly trade and economic relations between the two countries. It can be said that the feeling of interest served the development of embassy and trade between them. However, the friendly relations between Russia and the Kokand Khanate at the beginning of the 19th century changed to an atmosphere of hostility by the middle of the century. Russia's dream of conquering the Central Asian territories and then going to the legendary India caused it to start its invasion campaigns to the south. The initial march of Russia to the territories of Central Asia was aimed at the Kokand khanate, and this movement ended with the termination of the khanate.

References:

1. Р.Р.Алимова. Ўрта Осиё хонликларининг кўшни давлатлар билан дипломатик ва савдо-иқтисодий муносабатлари. Т. 2017. Б.94
2. Потанин В. Показание сибирского козока Максимова о Кокандском владении// ИРГО.1860. С.28
3. Разводовский В.К. Кустарное производство бумаги в Узбекистане//Советская этнография. М. 1940. С. 147
4. Н.А.Халфин. Россия и ханства Средней Азии (первая половина XIX века). М. 1974. С.223
5. Р.Р.Алимова. Ўрта Осиё хонликларининг кўшни давлатлар билан дипломатик ва савдо-иқтисодий муносабатлари. Т. 2017. Б.97
6. Х.Зияев. Средняя Азия и Сибирь (вторая половина XVI-XIX вв.). Т.1964. С.50-51
7. Филипп Назаров. Записки о некоторых народах и землях средней части Азии. М.1968
8. О нынешнем состоянии некоторых областей и городов в Средней Азии// Азиатский Вестник. Т.1. СПб. 1826. С.229-230 "Экономика и социум" №4(95)-1 2022 www.iupr.ru 97
9. Записки и Кокандском ханстве, хорунжего Потанина (1830 года) // Вестник Русского географического общества за 1856 год. КН. VI. СПб. 1857

10. Юсупов, Аксроржон и Услуддин Эргашев. «Кадимги Миср маданияти, дини ва урф одатлари». Интерпретация и исследования 1.18 (2023).
11. Курбанович, Юсупов Ахроржон. «Теоретико-методологические подходы к повышению политической культуры граждан». Журнал перспективной зоологии 44.S2 (2023): 3916-3925.
12. Юсупов, Ахрор. "Сущность концепции политической активности граждан." Общественные науки в современном мире: политология, социология, философия, история. 2020.
13. Юсупов, Аксроржон и Услуддин Эргашев. «Кадимги Миср маданияти, дини ва урф одатлари». Интерпретация и исследования 1.18 (2023).
14. Юсупов, Ахроржон. "Cultural, spiritual and ideological factors in increasing the social activity of citizens in society." O'zbekiston milliy universiteti xabarlarlari 1.5 (2022).
15. Юсупов, Ахрор. "Сущность концепции политической активности граждан." Общественные науки в современном мире: политология, социология, философия, история. 2020.
16. Юсупов, А. К. "Роль гражданской активности в демократизации общества." Вопросы политологии 10.9 (2020): 2709-2716.
17. Курбанович, Юсупов Ахроржон. «Теоретико-методологические подходы к повышению политической культуры граждан». Журнал перспективной зоологии 44.S2 (2023): 3916-3925.
18. Юсупов, Ахроржон, and Баходирхан Кодирхан угли Нуманов. "Кипчаки ферганской долины и их участие в этническом процесса." Ученый XXI века 6-2 (2016).
19. Kurbanovich, Yusupov Akhrorjon. "The Role of National Identity in Increasing the Socio-political Activity of the Youth of Uzbekistan." JournalNX: 177-179.
20. Юсупов, А. К. "Роль гражданской активности в демократизации общества." Вопросы политологии 10.9 (2020): 2709-2716.
21. Юсупов, Ахрор Курбанович. «РОЛЬ НАЦИОНАЛЬНОЙ ИДЕНТИЧНОСТИ В ПОВЫШЕНИИ ОБЩЕСТВЕННО-ПОЛИТИЧЕСКОЙ АКТИВНОСТИ МОЛОДЕЖИ УЗБЕКИСТАНА». Электронная конференция «Глобус». 2021.
22. Юсупов, Ахроржон, and Баходирхан Кодирхан угли Нуманов. "КИПЧАКИ ФЕРГАНСКОЙ ДОЛИНЫ И ИХ УЧАСТИЕ В ЭТНИЧЕСКОМ ПРОЦЕССА." Ученый XXI века 6-2 (2016).
23. Kurbanovich, Yusupov Akhrorjon. "The Role of National Identity in Increasing the Socio-political Activity of the Youth of Uzbekistan." Journal NX: 177-179.
24. Курбанович, Юсупов Ахроржон. «Теоретико-методологические подходы к повышению политической культуры граждан». Журнал перспективной зоологии 44.S2 (2023): 3916-3925.
25. Юсупов, А. К. "Роль гражданской активности в демократизации общества." Вопросы политологии 10.9 (2020): 2709-2716.
26. Юсупов, Ахроржон, and Баходирхан Кодирхан угли Нуманов. "КИПЧАКИ ФЕРГАНСКОЙ ДОЛИНЫ И ИХ УЧАСТИЕ В ЭТНИЧЕСКОМ ПРОЦЕССА." Ученый XXI века 6-2 (2016).
27. Kurbanovich, Yusupov Akhrorjon. "Theoretical and methodological approaches to increase the political culture of citizens." Journal of Advanced Zoology 44.S2 (2023): 3916-3925.

28. Юсупов, Ахрор Курбанович. «РОЛЬ НАЦИОНАЛЬНОЙ ИДЕНТИЧНОСТИ В ПОВЫШЕНИИ ОБЩЕСТВЕННО-ПОЛИТИЧЕСКОЙ АКТИВНОСТИ МОЛОДЕЖИ УЗБЕКИСТАНА». Электронная конференция «Глобус». 2021.

29. Qurbonovich, Yusupov Axrorjon. "YOSHLAR IJTIMOYIY-SIYOSIY FAOLLIGINI OSHIRISH ISTIQBOLLARI." IJTIMOYIY FANLARDA INNOVASIYA ONLAYN ILMIY JURNALI 3.11 (2023): 42-46.

30. Юсупов, А. К. "Роль гражданской активности в демократизации общества." Вопросы политологии 10.9 (2020): 2709-2716.

31. Qurbonovich, Yusupov Axrorjon. "YOSHLAR IJTIMOYIY-SIYOSIY FAOLLIGINI OSHIRISH ISTIQBOLLARI." IJTIMOYIY FANLARDA INNOVASIYA ONLAYN ILMIY JURNALI 3.11 (2023): 42-46.

32. Kurbanovich, Yusupov Akhrorjon. "Theoretical and methodological approaches to increase the political culture of citizens." Journal of Advanced Zoology 44.S2 (2023): 3916-3925.

33. A Yusupov, U Ergashev. Qadimgi Misr madaniyati, dini va urf odatlari. Interpretation and researches 162-166

34. Qurbonovich, Yusupov Axrorjon. "YOSHLAR IJTIMOYIY-SIYOSIY FAOLLIGINI OSHIRISH ISTIQBOLLARI." IJTIMOYIY FANLARDA INNOVASIYA ONLAYN ILMIY JURNALI 3.11 (2023): 42-46.

35. Юсупов, Ахрор Курбанович. «РОЛЬ НАЦИОНАЛЬНОЙ ИДЕНТИЧНОСТИ В ПОВЫШЕНИИ ОБЩЕСТВЕННО-ПОЛИТИЧЕСКОЙ АКТИВНОСТИ МОЛОДЕЖИ УЗБЕКИСТАНА». Электронная конференция «Глобус». 2021.

36. Мусаев, Одил и др. «Социально-философские трактовки таких понятий, как «этнос» и «нация» как социальная единица». Международный журнал передовой науки и техники 29.5 (2020): 1936-1944.

37. Абдурахимовна, Жораева Рамзия. «МЕТОДОЛОГИЧЕСКИЙ ИНСТРУМЕНТАРИЙ В КРИТИЧЕСКОМ ТВОРЧЕСТВЕ». Международный междисциплинарный исследовательский журнал «Галактика» 10.12 (2022): 1882-1885.

38. Джораева, Рамзия и Нурсан Илдыры. "GIYSILERIN ADI BELIRLENEN SÖZCÜKLER." Развитие педагогических технологий в современных науках 2.5 (2023): 29-37.

39. Джураева, Рамзия и Сарваржон Рахимов. «ЛЕКСИКО-СЕМАНТИЧЕСКИЕ ОСОБЕННОСТИ ИМЕН ЛЮДЕЙ, УПОТРЕБЛЯЕМЫХ В ПРОИЗВЕДЕНИЯХ МУКИМИ». Академические исследования в современной науке 1.19 (2022): 23-26.

MODERN METHODS OF FORMING THE COMPETENCE OF WRITTEN
EXPRESSION OF OWN OPINIONS IN LITERATURE LESSONS

Fozilova Mohigul Farkhodovna

Doctor of Philosophy in

Pedagogical Sciences (PhD) of

Uzbek language and literature department of

Uzbek State University of World Languages

E-mail: fozilova1204@gmail.com

<https://orcid.org/0009-0001-9464-6480>

Contact number: 99-270-12-04

ABSTRACT

The article outlines strategies aimed at fostering students' competency in articulating their thoughts in writing during literature classes. It delineates methodologies for shaping creative written pieces, considering factors such as the artistic quality of the studied work, the richness of language imagery, and proficiency in using emotional and expressive tools. Literary-speech competencies surpass mere narration or description; they encompass the realm of literary-critical observation. Essays composed in literature classes center on work analysis. To stimulate student creativity, particularly with home essays, specific guidelines for their organization have been formulated.

Key words: written speech, essay, narrative, text creation, creative approach, literary-critical, literary-speech competences, integration, creative approach.

S. Dolimov, B. Tokhliyev, O. Madayev, A. Zunnunov, S. Ismatov, A. Sayfullayev, as well as Q. Husanboyeva, R. Niyozmetova, R. Yoldoshev, M. Rikhsiyeva, K. Mavlonova, among other philologists and educational methodologists, have shared their recommendations on fostering students' written expression in mother tongue and literature classes. Their suggestions encompass various aspects, including gathering material for creative writing on both literary and non-literary topics, structuring the writing process, addressing mistakes, and refining them. Presently, the ability to articulate thoughts in writing is deemed a critical competence, necessitating focused efforts to elevate it to the level of essay writing.

Essays, particularly those tailored to students' individualities, serve as tools to nurture creativity and critical thinking. A prevailing spirit of creativity permeates every lesson. Written expression, emphasizing comprehensive, coherent, and logically consistent sentences, adheres to the principle of completeness and liberty of expression, distinguishing it from oral communication. While the inclusion of erudite language in written works is natural for avid readers, paramount attention should be directed to ensuring that students do not merely echo textbook authors or teachers but develop their own thoughts and expressions.

S. Muhamedova and M. Saparniyozova's assertion holds merit: "It is crucial to note the distinct structural and stylistic differences between impromptu oral discourse and planned written expression."¹ However, Uzbek linguistics currently lacks sufficient comparative analyses in this specific domain.

¹ Muhamedova S., Saparniyozova M. *Matn lingvistikasi*. – Toshkent: Nizomiy nomidagi Toshkent davlat pedagogika universiteti talabalari uchun o'quv qo'llanma., 2011. – B/21.

In the fourth section of the book "Methodology of teaching the Uzbek language" prepared under the co-authorship, entitled "Content of developing students' oral and written and connected speech", it is noted that "Working on written speech is a more complex process than oral speech. Because it requires the student to construct a correct sentence in terms of grammar and content, to use each word correctly in its place, to express thoughts concisely, coherently, expressively, simply and smoothly in terms of style, requires drawing conclusions based on the opinions made."²

Following the study of the material, students engage in crafting creative pieces that encapsulate their personal experiences and relationships. These endeavors occur within both classroom settings and extracurricular activities, involving revisiting and analyzing the produced work.

Among the creative works in literature classes, mainly essays (essays on literary topics) are common. O. Madayev, A. Sobirov, Z. Kholmanova, Sh. Tashmirzayeva's methodical manual entitled "Types of written work: essay, statement, dictation" explains that "Essay on a literary theme is recorded in the educational program, topics covered during the lesson is a written work based on a creative approach, in which the student's attitude to the information in lessons and textbooks, personal opinions are expressed."³ The comment emphasizes the students' attitude, personal thoughts, and creative approach. Of course, independent thoughts of young people are one of the necessary conditions of the essay.

In the manual, the description "essays on literary topics develop the student's literary speech, use artistic imagery such as simile, qualification, animation, exaggeration, distinguish between simple words and colorful words with enhanced meaning, that teaches practical knowledge"⁴ is also given. But it is known from the observations that in the literary-critical article (description) type essay, the reader rarely uses the tools of artistic representation, he uses the tools used in the work only when he describes the characters of the work.

The personal opinion of the students emerges as a result of observing the life events described in the work and expressing their opinions. The authors of the manual call the essay written in this spirit "genre of literary criticism". The authors also touch on what kind of works the essay should be based on and express the following opinion: "... most of the essays of a literary nature are based on the content of works rich in events, with a gallery of colorful symbols, and perfect in terms of ideas and art."⁵

"Getting independent written works based on the student's free and independent judgment at the beginning of the school year, after a little study of the analysis of the artistic work, in the middle and at the end of the school year, will develop children's independent thinking. At the same time, it allows us to control the growth of their independence of thought."⁶

² G'ulomov A., Sayfullayeva R., Ernazarova M., Bobomurodova A., Alavutdinova N. O'zbek tilini o'qitish metodikasi."Fan va texnologiya", – Toshkent: 2020. – B.336.

³ Madayev O., Sobirov A., Xolmanova Z., Toshmirzayeva Sh. Yozma ish turlari: insho, bayon, diktant. – Toshkent: Turon zamin ziyo, 2020. – B.14.

⁴ Madayev O., Sobirov A., Xolmanova Z., Toshmirzayeva Sh. Yozma ish turlari: insho, bayon, diktant. – Toshkent: Turon zamin ziyo, 2020. – B.15.

⁵ Madayev O., Sobirov A., Xolmanova Z., Toshmirzayeva Sh. Yozma ish turlari: insho, bayon, diktant. – Toshkent: Turon zamin ziyo, 2020. – B. 27.

⁶ Husanboyeva Q., Niyozmetova R. O'zbek adabiyotini o'qitish metodikasi. O'quv qo'llanma. – Toshkent: Innovatsiya-Ziyo, 2020. – B.304.

It is known from the above that in the organization of creative written works, the level of artistic excellence of the read work, the richness of the artistic image tools of the language, and the level of using emotional and expressive tools should be taken into account. At the same time, it is useful to emphasize the writer's skills in the introduction or conclusion of the essay, and to emphasize the contribution of the creator to the development of the Uzbek language. In this, the student begins to pay attention to the social significance of the works being read.

It is necessary to read what the students wrote in the lesson. Perhaps it will be possible to make a collection based on what was written. Undoubtedly, the reader tries to reveal the descriptive characteristics of the heroes of the work in his essay. In doing so, he falls into the position of expressing descriptive concepts. It is clear that he does not know enough lexicon that expresses such concepts. This problem prompted the researcher A.T. Boltayeva to do special research. In his scientific work, he was able to comprehensively cover the problems of literary and critical speech, including the enrichment of students' speech with descriptive words and phrases.⁷

Literary-speech competences are not just narrating and describing events and impressions, but literary-critical observation. In this respect, it is fundamentally different from the usual descriptive-essay, narrative-essay, discussion-essay, essays describing the characters of the work. The reader, as a literary critic or critic, evaluates the artistic and aesthetic value of the work, dwells on the skill of the writer, etc.

The main problem is the difficulties in expressing one's attitude to the events described in the work and to the heroes of the work. It can be said that in order to write an essay of the type of a literary-critical article, the student must read and master the work with a high level of understanding, record the necessary materials from it in his notebook, that is, acquire the culture of receiving information, form the ability to observe theoretically, get used to reacting, should be armed with linguodidactic basics at the stage of preparation for essay writing. There is not a single Methodist scientist who did not recommend preparation before writing an essay (choosing words and phrases, collecting evidence, etc.).

Methodist scientist F.H. Aminova, who is deeply familiar with the existing heritage, describes the process of creating a communication text as "...finding and collecting the material necessary for expressing an opinion, organizing and placing them in a coherent system, expressing one's opinion in words based on evidence"⁸ he explains. But in practice, this is not the case: in the essay writing lesson, the topic is announced, and the students start writing.

Essays written in literature classes are based on the analysis of the work. Methodist scientist K. Husanboyeva developed specific recommendations regarding essays, especially home essays to encourage students to be creative, and their organization. At the moment, there is a need to enrich the linguo-didactic and literary-theoretical foundations of these essays on the basis of the results obtained from the analysis of the work, to ensure the connection with the teaching subject of the native language, and to pay attention to the observance of methodological peculiarities.

⁷ Балтаева А.Т. Адабиёт дарсларида ўқувчиларни бадиий асар қаҳрамонларини танқидий баҳолашга ўргатиш технологияси: Пед. фан. бўй. фалс. док. (PhD) ... дисс. – Тошкент, 2020. – Б.112.

⁸ Аминова Ф.Ҳ. Ўқувчиларни мулоқот матн яратишга ўргатишнинг дидактик асослари: Пед. фан. номз. ...дисс. – Тошкент, 2007. – Б.11.

The text and its structure in linguistics and methodical literature, the current state of creative writing related to writing an essay (creating a text), choosing an essay title, epigraph, placing a topic and plan in a written work, making a plan in connection with sub-topics, taking into account the textual errors made in the essays, recommendations are given on providing information on the theory of the essay, and forming relevant skills and qualifications.

"During the reading of the work in class, it is also appropriate to teach students to identify important words and phrases that are useful in writing an essay. This will mentally prepare students to write an essay while reading the work. When writing such an essay, the freedom and opportunity given to the student accustoms him to independent thinking and expressing his experiences in words. The presence of bookish words and phrases in such written works is natural for readers who have read a lot of books."⁹

The size of the essay to be written is specified in the state educational standard and is clearly indicated in some methodical manuals. For example, "It would be appropriate to write a 30-40 word impression essay as homework after analyzing the work."¹⁰

Students' connected written speech begins to grow very slowly. In the early stages, they have a noticeable lack of vocabulary: although they know what to write about, they have to remember the relevant words, write them literately, form them grammatically, and each step of the sentence construction. pressed with difficulties. These challenges are:

- inability to find words;
- looking for the next word to connect with it, not being able to complete the sentence;
- is manifested in the form of not knowing the continuation of the content.

In literature classes, only one essay cannot play a decisive role in the development of students' written speech: in each lesson, in the process of studying each work, students should first prepare a written answer to a problematic question, and this work will promote the growth of their speech. provides

The saying of our people that "one who says halwa does not open his mouth" is not said for nothing. It is clear that recommendations such as students answer such a problematic question do not work in practice. We are forced to think about the reasons for this. Based on the experience, we came to the conclusion that the above type of work should be given priority. After such small steps, we made sure that the result would be more effective when we did the essay (see Appendix 5).

In the process of oral analysis of a work of art, you can plan to prepare for an essay. In other words, if students consider the needs of writing an essay from the analysis of the work, if they think about gathering material, they will write the essay more easily.

According to Q. Husanboyeva, in order to write an essay on "Aspects I value in Qadiri's work", first of all, it is necessary to analyze Abdulla Qadiri's work to the extent that the reader can fall in love with it. It is necessary to discover places in the work that make the reader's heart

⁹ Хусанбоева Қ. Адабиёт – маънавият ва мустақил фикр шакллантириш омили. – Тошкент: Ўзбекистон Миллий кутубхонаси нашриёти, 2009. – Б.93.

¹⁰ Хусанбоева Қ. Адабиёт – маънавият ва мустақил фикр шакллантириш омили. – Тошкент: Ўзбекистон Миллий кутубхонаси нашриёти, 2009. – Б.68.

tremble."¹¹ In fact, it is clear that the teacher's organization of the work based on these will ensure a good outcome of the written essay.

Students' written expression of their thoughts requires an analytical process to be carried out in writing, to be put on paper in the form of creative works. In this case, work is carried out within the rules of spelling and style. Spelling rules are characteristic of book style - scientific style. This encourages students to learn the spelling rules of the "Mother Language" textbooks, to study methodological rules in practice, and requires the mutual integration of literature lessons with the subject of the mother tongue.

According to the requirement of integration of two educational subjects, it is permissible to know the style of conversation, artistic style and bookish (scientific) style from the 5th grade, and learn to distinguish them. Methodist Sh.U. Sariyev, referring to the fact that most of the students find it difficult to express their opinion, said that "actions to develop speech in reading classes should be organically connected with exercises related to working on the text in native language classes" ¹²he emphasizes. This is a very reasonable offer. So, through the work on creating a text, it is possible to form the skills of students to choose words, use them appropriately in the text, and effectively prepare them for writing an essay.

It is necessary to observe the following approaches and principles in all stages and processes aimed at forming the competence of students to express their thoughts in writing in literature classes: the principle of bringing each type of qualification to the level of competence; the principle of goal-oriented reading and analytical observation of the work; the principle of learning to distinguish styles from each other; such as the principle of using lexical and grammatical analysis instead.

Grammatical analysis is an important factor in finding stylistic rules in textbooks. Methodist scientist M.Mirmaksudova clearly explains that the level we think of from grammatical analysis is a tool for students to correct, enrich and improve their speech, that is, it opens the way to remember the necessary rules and makes it easier to find where to look is important.¹³ Students have no choice but to turn to grammatical analysis in search of the methodological use of morphological forms and syntactic devices.

Methodical standards are learned practically throughout life. "Life practice" - the famous psychologist S.A. Rubinstein rightly pointed out - "forces a person to move from unintended reception to goal-oriented observation; at this stage, reception is analysis and synthesis, i.e. it becomes a theoretical activity that embodies the understanding and implementation of what has been accepted."¹⁴ Also, the scientist notes that the level of development of perception, which represents the child's mental development, is the stage of interpretation (interpretation).

¹¹ Husanboyeva Q., Niyozmetova R. O'zbek adabiyotini o'qitish metodikasi. O'quv qo'llanma. – Toshkent: Innovatsiya-Ziyo, 2020. – B.304-305.

¹² Сариев Ш.У. Бошланғич синф ўқиш дарсларида матн устида ишлаш орқали нутқ ўстириш методикасини такомиллаштириш (1–2-синф материаллари мисолида): Пед. фан. бўй. фалс. док. (PhD) ... дисс. – Тошкент, 2020. – Б.73.

¹³ Мирмахсудова М.Б. Ўқувчилар нутқини такомиллаштиришда грамматик терминлардан фойдаланишнинг лингвометодик асослари (5–7-синфлар она тили дарсларида): Пед. фан. номз. ... дисс. – Тошкент, 2004. – Б.13.

¹⁴ Рубинштейн С.Л. Основы общей психологии. – СПб.: Питер, 2002. – С. 226.

The stage of preparing students to write an essay in literature classes is a very responsible stage. As we mentioned in the first chapter of our work, choosing material for an essay from a work of fiction is often assigned as homework. Our experience has shown that it is advisable to allocate a separate lesson for this work or to spend more time on this work than the lesson before writing the essay. But dividing the essay into stages is even more effective. This is as follows:

1) to give a written answer to a problematic question with a few sentences, to express one's opinion in writing, adding one's own relations to the problematic assignment in the same way;

2) write down the words and phrases that can be used in an essay from a work of art, the means of artistic imagery;

3) write a small essay (mini essay);

4) write a medium-sized essay based on a plan consisting of three to four paragraphs on one or two problems;

5) write an essay or essay on a literary topic based on a complex plan.

Writing a written answer to a problematic question with a few sentences, expressing one's opinion in a written way while adding one's own attitude to a problematic task requires students to express their independent opinion. It is advisable to prepare 3-4 or more problem questions and assignments for each fiction story. For example, in the 10th grade, the following questions and tasks can be given in connection with the story "Karakoz Majnun" by Said Ahmed:

1. What are the connections between the verse quoted from the Qur'an at the beginning of the work and the content of the story?

2. How do you explain Saodat Aya being upset with Bori Khan?

3. What was the reason for Borikhan's weak faith?

4. What does the image of a dog represent in the play?

5. Describe the character of Borikhan.

In the beginning, each row in the class receives one question or task, that is, each student writes one creative work. 10-15 minutes of class will be allocated for this work.

Since this type of written work is an initial creative work, the student uses his vocabulary and memorized words. He expresses his thoughts in his own words, uses the text of the work as much as possible.

The writing of words and phrases that can be used in an essay from a work of art, as well as the means of artistic imagery, is a stage of preparation for writing an essay, and Methodist scholars emphasize this type of work. It is better to start this type of work in the classroom. In this case, the performance of the students will be under control. Students can ask the teacher about this or that. Task performance can be monitored through training or by taking notebooks for inspection. These activities will eventually give the students the right direction, and they will start to excel in the assignment. Sometimes the work is done as a team.

The reader thinks about what needs to be thought about and gathers the materials accordingly. Sometimes it is necessary to take extracts from the work. Excerpts serve as evidence for the reader to support his ideas.

Gathering material for an essay is important. When collecting material based on a work of art, the goal of the creator, the people involved in it, the skills of the writer or poet to create an image, and the conclusion to be drawn occupy a central place.

When writing a mini-essay (a small essay), each student receives two problem questions and assignments. Writes the answers as a mini-essay. This work can be done orally first. When writing an essay of average size based on a plan consisting of three to four paragraphs on three to four problems, the problems are presented to students as a simple plan. After certain preparation, an essay of average size is written;

Crafting an essay or literary-themed paper follows a detailed plan, a practice underscored by recommendations from numerous educational methodologists. Notably, in experimental classes, tasks outlined in articles 1-4 are organized subsequent to completion, while in control classes, these tasks, specified in article 2, are assigned as homework, or in some instances, omitted entirely, with students proceeding directly to the essay. Materials specified in articles 1-5 are additionally employed as experimental resources.

The text (essay) written by students in an artistic style should be expressive and impressive. For this purpose, it is recommended to use emotional and expressive means, to reflect their feelings and experiences.

In essay writing, the utilization of pre-collected materials holds significance, yet arranging them coherently within the text poses a challenge. Consequently, practical application involving the collection of materials from a work and their subsequent arrangement or sorting is seldom practiced. Consequently, crafting a text extends beyond rectifying spelling or punctuation errors; it inherently involves enhancing and refining its content for further improvement.

Certain essays necessitate students to employ artistic expression. These assignments serve as a means for students to familiarize themselves with artistic speech, encompassing techniques like similes, qualifications, personification, employing artistic imagery such as exaggeration, utilizing enriched vocabulary to amplify meaning, and conveying diverse meanings through the manipulation of sound length. Moreover, these exercises enable students to grasp specific narrative methodologies.

Hence, students express their opinions orally and in written form by analyzing works of art through engaging with problematic questions and tasks that prompt literary-critical speech activities.

BIBLIOGRAPHY

1. Muhamedova S., Saparniyozova M. *Matn lingvistikasi*. – Toshkent: Nizomiy nomidagi Toshkent davlat pedagogika universiteti talabalari uchun o‘quv qo‘llanma., 2011. – B/21.
2. G‘ulomov A., Sayfullayeva R., Ernazarova M., Bobomurodova A., Alavutdinova N. *O‘zbek tilini o‘qitish metodikasi. "Fan va texnologiya"*, – Toshkent: 2020. – B.336.
3. Madayev O., Sobirov A., Xolmanova Z., Toshmirzayeva Sh. *Yozma ish turlari: insho, bayon, diktant*. – Toshkent: Turon zamin ziyo, 2020. – B. 27.
4. Husanboyeva Q., Niyozmetova R. *O‘zbek adabiyotini o‘qitish metodikasi. O‘quv qo‘llanma*. – Toshkent: Innovatsiya-Ziyo, 2020. – B.304.
5. Аминова Ф.Х. *Ўқувчиларни мулоқот матн яратишга ўргатишнинг дидактик асослари: Пед. фан. номз. ...дисс.* – Тошкент, 2007. – Б.11.

6. Хусанбоева Қ. Адабиёт – маънавият ва мустақил фикр шакллантириш омили. – Тошкент: Ўзбекистон Миллий кутубхонаси нашриёти, 2009. – Б.93.
7. Аминова Ф.Ҳ. Ўқувчиларни мулоқот матн яратишга ўргатишнинг дидактик асослари: Пед. фан. номз. ...дисс. – Тошкент, 2007. – Б.11.
8. Мирмахсудова М.Б. Ўқувчилар нутқини такомиллаштиришда грамматик терминлардан фойдаланишнинг лингвометодик асослари (5–7-синфлар она тили дарсларида): Пед. фан. номз. ... дисс. – Тошкент, 2004. –Б.13.
9. Рубинштейн С.Л. Основы общей психологии. – СПб.: Питер, 2002. – С. 226.
10. Сариев Ш.У. Бошланғич синф ўқиш дарсларида матн устида ишлаш орқали нутқ ўстириш методикасини такомиллаштириш (1–2-синф материаллари мисолида): Пед. фан. бўй. фалс. док. (PhD) ... дисс. – Тошкент, 2020. – Б.73.

VOLUME-3, ISSUE-5
TYPES OF PSYCHOLOGICAL TESTING

National University of Uzbekistan named after Mirzo Ulugbek
Indira Igorevna Rakhimova,
PhD, associate professor of the Department of General Psychology
1st year Master's student of the University of Physical and Social Sciences
Sayfullayeva Sojida Saidzhanovna

Toshkent shahar Maktabgacha va maktab ta'limi boshqarmasi O'quvchilarni kasb-
hunarga yo'naltirish va psixologik xizmat bo'limi boshlig'i
AIFU psixologiya faoliyat turlari 1-kurs magistranti

Abstract

When you hear the words “psychological testing,” all kinds of questions and thoughts may run through your mind. What will they ask? Will my answers be considered right or wrong? If my answers are wrong, what will that say about me? Psychologists use psychological testing in the same way medical doctors use lab work, X-rays, and physical exams: to determine the cause of your symptoms and recommend treatment, when necessary.

Key words: test, aspects, testology

Introduction

Psychological testing is the basis for mental health treatment. These tools are often used to measure and observe a person’s behaviors, emotions, and thoughts. Tests are performed by a psychologist who will evaluate the results to determine the cause, severity, and duration of your symptoms. This will guide them in creating a treatment plan that meets your needs. Tests can either be objective or projective:

- Objective testing involves answering questions with set responses like yes/no or true/false.
- Projective testing evaluates responses to ambiguous stimuli in the hopes of uncovering hidden emotions and internal conflicts.

Both provide valuable insight into your symptoms and help psychologists see your overall level of functioning and distress. Psychological tests can include formal, or “norm-referenced,” tests to measure your ability to comprehend different concepts. They can come in the form of checklists and questionnaires. Each test measure ensures the reliability, validity, and objectivity necessary to avoid bias in scoring or interpreting your results. During a psychological evaluation, assessments may also be used to help diagnose and treat mental health conditions. Assessments include standardized tests as well as informal tests, such as:

- surveys
- clinical interviews
- observational data
- medical exams
- previous educational and medical history

Psychological testing can be recommended for a number of reasons including diagnosing mental health conditions and identifying troubling behavior. According to the American Psychiatric Association, the following symptoms may indicate that a psychological test may be needed:

- increased social withdrawal
- nervousness

- changes in mood
- difficulty completing normal tasks
- a dramatic change in sleep and eating habits
- problems with concentration

Other uses for psychological testing include:

- screening job applicants
- organizational development
- academic placement

Psychologists use testing to examine a variety of factors, including emotional intelligence, personality, mental aptitude, and neurological functioning. Here's a more in-depth look at the types of testing available and the most commonly used tests for each category.

Conclusion

Psychological assessment — also known as psychological testing — is done to help a psychologist better understand an individual and provide valuable insights into the individual's behavior, skills, thoughts and personality. Psychological testing commonly includes intelligence testing, personality testing, and skills testing, among other areas. Psychological assessment is never focused on a single test score or number. Every person has a range of competencies that can be evaluated through a number of methods. A psychologist is there to evaluate the competencies as well as the limitations of the person, and report on them in an objective but helpful manner. A psychological assessment report will not only note weaknesses found in testing, but also the individual's strengths.

References

1. Dennis R. Fox (1999). Psychological Scholarship's Contribution to False Consciousness About Injustice. *Law and Human Behavior*, 23, 9-30.
2. *"American Psychology and the Law Society"*. Retrieved 2007-09-12.
3. Michael J. Saks (1986). The Law Does Not Live on Eyewitness Testimony Alone. *Law and Human Behavior*, 10, 279-280.
4. Irving Weiner; Randy Otto (2013). *The Handbook of Forensic Psychology, 4th Edition*.
5. Irving Weiner; Randy Otto (2013). *The Handbook of Forensic Psychology, 4th Edition*.
6. Examples of legal psychologists in these positions can be found at the [American Bar Foundation \(Website\)](#) and [Federal Judicial Center \(Website\)](#), among others.
7. See, e.g., [Court Appointed Scientific Expert Program Archived 2008-02-29 at the Wayback Machine](#), [American Association for the Advancement of Science](#)

UMUMIY O'RTA TA'LIM MAKTABLARIDA "INFORMATIKA VA AXBOROT
TEXNOLOGIYALARI" FANINI TAKOMILLASHTIRILGAN METODIKA ASOSIDA
O'QITISHNI TAKOMILLASHTIRISH

Fayziyev Nozim Asfandiyorovich

Samarqand davlat chet tillar instituti o'qituvchisi

Telefon: +998(97) 9270612

e-mail: fayziyev@samdchti.uz

Annotasiya

Ushbu maqolada bugungi kunda "Informatika va axborot texnologiyalari" fanini umumiy o'rta ta'lim maktablarida o'qitishda zamonaviy dasturiy vositalar asosida multimediali taqdimotlar yaratish va ulardan foydalanib dars mashg'ulotlarini tashkil qilish masalalari muhokoma qilingan.

Абстрактный

В данной статье рассматриваются вопросы создания мультимедийных презентаций на основе современных программных средств и организации уроков с их использованием при преподавании «Информатики и информационных технологий» в современных общеобразовательных школах.

Abstract

This article discusses the issues of creating multimedia presentations based on modern software tools and organizing lessons using them in the teaching of "Informatics and Information Technologies" in general secondary schools today.

***Kalit so'zlar:** Algoritm, elektron qo'llanma, gipermatn, ovoz, grafika, video, test, multimedia, animasiya, imitasion model, umumiy o'rta ta'lim, dasturiy vosita.*

Umumiy o'rta ta'lim maktablarida dars beradigan o'qituvchilar multimedia texnologiyasi asosida tashkil etilgan dars jarayonida elektron doskadan yoki video proyektordan foydalanishi lozim, chunki bunday holda u bir vaqtning o'zida auditoriyadagi barcha tinglovchilar bilan ishlash imkoniyatiga ega bo'ladi. Amaliyot va olib borilgan tajriba-sinov ishlari multimedaning ta'lim jarayonidagi samaradorligini tasdiqlagan. Multimedia texnologiyasidan foydalanib ta'lim jarayonining samaradorligini oshirish bilan birga, u o'quv jarayoniga ijobiy ta'sir etishi mumkin.

Ma'lumki, umumiy o'rta ta'lim maktablarida "Informatika va axborot texnologiyalari" fanini o'qitishda multimediali elektron qo'llanmalar yaratish va ulardan foydalanish o'quvchilar uchun fanni o'zlashtirishga katta yordam beradi. Yaratilgan yangi elektron qo'llanma imkoniyatlarini o'rgagan o'quvchilarda boshqalar uchun ham foydali bo'lgan bilimlari aks etgan yangi loyihalarni yaratish xoxishi paydo bo'ladi. Bunday holda o'qituvchi o'quvchilarga "elektron qo'llanma"ni yaratishni taklif qilishi mumkin. Bu albatta elektron qo'llanma yaratishdagi ilk qadam. Bu loyihani yaratishni amalga oshirish uchun turli dasturlar to'plami bilan ishlashga to'g'ri keladi. O'quvchilar tasvirni qayta ishlash, nutq va musiqani yozib olish, animasiyali effektlardan foydalana olish kabilarni bajara olishlari kerak. Ular uchun axborotni topish va tanlash usullari, ularni tartiblash muhimdir. Ularga mutaxassis va fan o'qituvchisi ko'mak beradi. Natijada multimediali dasturdan foydalanish imkoniyati yaratiladi. Fan o'qituvchisiga esa o'quvchi bilan ishlashning bu shakli uning mehnati o'sib kelayotgan yosh avlodga juda zarur ekanligi haqida ishonch beradi. Elektron darslik yaratish murakkab jarayon

ekanligini e'tiborga olgan holda uni bosqichlarga bo'lib amalga oshirish maqsadga muvofiqdir. Elektron darslik yaratishning asosiy bosqichlari quyidagilar:

- manbalarni tanlash;
- muallif bilan shartnoma tuzish;
- mundarija tuzish;
- qismlar bo'yicha matnlarni qayta ishlash;
- gipermatni elektron shaklga aylantirish;
- ovozli sohani ishga tushirish;
- multimediali soha uchun materil tanlash;
- kompyuter yordamini yaratish.

Multimediali elektron darslik (MED)ni yaratishda o'quvchilarga tushunarli, matni ravon va qiziqarli, test, krossvordlar tanlashda ularning yoshi, fiziologik xususiyatlari hisobga olish lozim. Elektron darslik strukturasi, boblar va ularga tegishli mavzular bo'yicha bilimlar qisqa hamda xulosa qismi bilan bog'langan holda keltirilgan.

O'quvchilar erishilgan bilim, ko'nikma va malakalarni mustahkamlash maqsadida MEDda savol va topshiriqlar, test sinovlari va krossvord keltirilgan. Masalan, elektron darslik yordamida o'quvchi o'z bilimlarini nazorat qilish, ya'ni o'quvchilar bilimlarini sinab ko'rish maqsadida test sinovlariga javob berishi mumkin.

Umumiy o'rta ta'lim maktablarida pedagogik jarayon kechishining muhim shartlaridan biri darslarda zamonaviy o'qitish texnologiyalaridan foydalanish hisoblanadi. O'quvchilarning bilish faoliyatini faollashtirish uchun mo'ljallangan ana shunday o'qitish texnologiyalaridan biri bu multimediali elektron qo'llanmalardir.

Umumiy o'rta ta'lim maktablarida ta'limni axborotlashtirish sharoitida "informatika va axborot texnologiyalarini" o'qitishniig asosiy maqsadi axborot va kommunikasiya texnologiyalaridan amaliy foydalanish ko'nikma va malakalarini, axborotni kompyuterda qayta ishlash usullarini, ijodiy anglash va mantiqiy fikrlash ko'nikmasini shakllantirish uchun o'quvchilarga shart-sharoit yaratish, ularning bilish faoliyatini rivojlantirishdan iborat.

Bugungi kunda umumiy o'rta ta'lim maktablarida "Informatika va axborot texnologiyalari" kursini o'qitish bo'yicha asosiy muammolardan biri - bu o'quvchilarning informatikani o'rganishga bo'lgan qiziqishini faollashtirishdan iboratdir. Informatika va axborot texnologiyalari darslarida o'quvchilarning bilish faoliyatini faollashtirish bu eng avvalo o'quv materialini multimediali va interaktiv ko'rinishda taqdim etishdir. Bunday o'quv materiali quyidagi ko'rinishlardan biri orqali taqdim etilishi mumkin:

- taqdimot (o'quv materialini namoyish etish, o'quvchilarga o'quv materialining eng muhimlarini mustaqil o'rganishni taqdim etish);
- kompyuterli o'yin;
- o'quv materialining grafik namoyishi
- video va multiilikasion filmlar.

"Informatika va axborot texnologiyalari" darslarida o'quvchilar faoliyatining amaliy yo'nalishi ustivor hisoblanadi. "O'qitish-o'qish" jarayonida o'qituvchi va o'quvchining o'zaro ta'sirlashuvi ro'y beradi. Bu jarayonda o'qituvchi o'quvchining ko'z o'ngida hamma narsani biladigan shaxs sifatida gavdalanadi. Ammo, bilish jarayoni va kashfiyot ta'lim berish doirasida qoladi. Chunki, o'qituvchining xoxishiga bog'liq bo'lmagan holda bilimlarni uzatish jarayonida o'quvchining ishonchi, motivasiyasi, hayotiy konsepsiyasi ishtirok etadi.

Mamlakatimizda ta'lim sifatini oshirish, ish beruvchilar hamda ta'lim bozori subyektlarini bir maqsadda birlashtirish, pirovard natijada raqobatbardosh kadrlar tayyorlash – bugungi kunning dolzarb vazifalaridandir. Qachonki, ishlab chiqarish hamda ta'lim-tarbiya jarayoniga jalb etilayotgan mutaxassislariga berilayotgan bilim har ikki tomon manfaatlarini hisobga olmas ekan, sifat haqida so'z yuritmasa ham bo'ladi. Masalan, umumiy o'rta ta'lim tizimida "Informatika va axborot texnologiyalari" fanini o'qitilishiga to'xtalsak. Hozirgi kunda 1-sinfdan to 11-sinflargacha bu fan o'qitiladi. Texnika va texnologiyalar soat sayin o'zgarib, yangilanib, takomillashib bormoqda. Barchasini birdan qamrab olish mushkuldir. Lekin informatika fanini o'qitishda ham multimediali elektron qo'llanmalarni qo'llash orqali ijobiy natija olish mumkin.

"Informatika va axborot texnologiyalari" fanidan umumiy o'rta ta'lim maktablarida dars mashg'ulotlarini qanday tashkil qilinsa o'quvchilarda bu fanga nisbatan o'qishga motivasiya paydo qilish mumkin degan tabiiy savol tug'uladi?

Bizning nazarimizda bugungi kunda "Informatika va axborot texnologiyalari" fanini umumiy o'rta ta'lim maktablarida o'qitishda zamonaviy dasturiy vositalar asosida taqdimotlar yaratish va ulardan foydalanib dars jarayonini tashkil qilish uning samaradorligiga erishish mumkin. Bu degan so'z "Informatika va axborot texnologiyalari" faninig har bir mavzulari bo'yicha dasturiy vositalar asosida multimediali (ovoz, grafika, video, test va imitasion modellar) ko'rinishdagi taqdimotlar yaratish zarur. Masalan 9-sinf "Informatika va axborot texnologiyalari" fanidagi mavzular bo'yicha multimediali taqdimotlar yaratish va ular yordamida dars jarayonini tashkil qilish lozim.

Xulosa qilib aytganda bugungi kunda "Informatika va axborot texnologiyalari" fanini umumiy o'rta ta'lim maktablarida o'qitishda zamonaviy dasturiy vositalar asosida multimediali taqdimotlar yaratish va ulardan foydalanib dars mashg'ulotlarini tashkil qilish dolzarb masalalardan biridir.

Foydalanilgan adabiyotlar

1. Asfandiyorovich F. N. et al. BASICS OF PROGRAMMING FROM THE TEXTBOOK OF INFORMATICS AND INFORMATION TECHNOLOGIES CHAPTER PYTHON PROGRAMMING LANGUAGE METHODOLOGY OF MULTIMEDIA //Galaxy International Interdisciplinary Research Journal. – 2022. – T. 10. – №. 1. – C. 778-781.
2. Xasanovich, Prof L. M., et al. "Development of Computer Simulation Model Develops Creative Thinking of the Student." *JournalNX*, vol. 7, no. 03, 2021, pp. 167-171.
3. Asfandiyorovich F. N. Teaching the Subject of Repetitive Algorithms Based on Multimedia Electronic Manuals //Eurasian Journal of Learning and Academic Teaching. – 2023. – T. 16. – C. 42-45.
4. Fayziyev Nozim Asfandiyorovich. (2022). TARMOQLANUVCHI ALGORITMLAR MAVZUSINI DOIR KOMPYUTER IMITASION MODELI ASOSIDA TAKOMILLASHTIRISH. *RESEARCH AND EDUCATION*, 1(2), 273–278.
5. Fayziyev, N. (2023). UMUMTA'LIM MAKTABLARIDA "INFORMATIKA VA AXBOROT TEXNOLOGIYALARI" FANINI MULTIMEDIALI ELEKTRON QO'LLANMA ASOSIDA O'QITISH SAMARADORLIGINI ANIQLASH. *International Scientific and Practical Conference on Algorithms and Current Problems of Programming*, 1(01). Retrieved from <http://ojs.qarshidu.uz/index.php/con/article/view/175>
6. Fayziyev Nozim Asfandiyorovich, & Toxirqulov Zufar Jurabek o'g'li. (2023). Registering and Creating Presentations on prezi.com. *World of Semantics: Journal of Philosophy and Linguistics*, 1(1), 66–71. Retrieved from <http://wos.semanticjournals.org/index.php/JPL/article/view/11>

MEDICINAL PROPERTIES OF PLANTAGO MAJOR L

Aslanova Xolida Gafurovna

Termiz State Pedagogical Institute

Biology teacher

Email; xolida.aslanova@mail.ru Termez, Uzbekistan

Annotation: This article provides information on the appearance and geographical distribution of the plant (*Plantago major* L.), its uses, chemical composition and uses, and its specific medicinal properties.

Key words: Essential oil, mucous substances, saponins, auxin glycoside, vitamin C, carotene, flavonoid, organic acids, bitter, astringent and other substances, saponins, tincture, decoction.

Plantaginaceae herb with a short and thick rhizome belonging to the Plantaginaceae family. In the upper part of the earth, the leaves on the rhizome and the flower axis 10-15 cm high make up. The leaves are long, winged, broadly ovate or broadly elliptic, with 3-9 arcuate main veins with raised edges. The flower axis has one or more small, inconspicuous, four-lobed flowers located in a spike-like inflorescence inside the flower axis. The fruit is an egg-shaped capsule with many seeds. It blooms and fruits in June and September. [1] (Picture1).



1- Picture1. (*Plantago major* L.)

The above-ground part is collected when the plant is in bloom and sent to pharmaceutical factories to extract sap from it without drying. The leaves and tops contain 0.1% essential oil, mucilage saponins, aucubin glycoside, vitamin C (up to 300 mg %) and K 4.5-32.91 mg % carotene, flavonoids (luteolin, scutellarsin, aligenin, baikalalis and their glycoside. T-factor, organic acids, bitter, astringent and other substances in the seeds contain up to 22% fatty saponins, up to 44% mucilage and other substances. [2]

Plantaginaceae is a plant that has been used for the treatment of various diseases in folk medicine since ancient times. Abu Ali Ibn Sina used its leaves to treat hard-to-heal wounds, tumors (including dangerous tumors), eye inflammation, liver, kidney and other diseases and to

stop bleeding. In case of liver and kidney diseases and spitting blood, the patient was given a decoction of the seeds of zubtutum, and the juice of the undried leaves or seeds was injected into the intestinal ulcer. Leaf tincture or undried leaf juice is used in folk medicine to treat respiratory tract, eye, skin, malaria, gonorrhoea, colon inflammation, and various infectious diseases, as well as wounds, anthrax, and various bleeding disorders. used in stopping. Plantaginaceae is leaf is also used to treat lung and stomach cancer and as an expectorant in respiratory diseases. Freshly plucked leaves are crushed and bandaged to treat wounds, scabs, and cuts. [3]

A freshly collected leaf of Plantaginaceae is crushed, mixed with an equal amount of sugar and stored in a warm place for 3 weeks. After that, 3-4 teaspoons of juice separated from this mixture is given to the patient to treat lung and stomach cancer.

In conclusion, it can be said that the distribution of the large zubtutum plant, its appearance and medicinal properties were covered in this article. The big zubtutum plant is a cure for many diseases. It is especially used in the treatment of eye inflammation, liver, kidney and other diseases.

Drug preparation and use

1. To make a tincture, add 1 tablespoon of crushed zubtutum leaves to 1 cup of boiling water in a lidded container and infuse for 2 hours. Then float on gauze and drink 1 tablespoon 4 times a day 20 minutes before meals to treat the above diseases.

2. Tab lespoons of freshly cut and ground leaves are put in a bowl and mixed with sugar or honey, covered and kept in a warm place until the juice is released. In order to treat various diseases, juice is drunk 1 teaspoon half an hour before meals 4 times a day.

List of used literature

1. MakhsuMOV M.N, Malikov M.M. Pharmacology. T. Ibn Sina published. 2006
2. Kharkevich D.A. Pharmacology. M. Medicine 2005.
3. Abdullaeva G. K., Tojiboyev S. J. ANALYSIS OF BIOMORPHS OF CYANOPKARYOTES AND ALGAE. – 2023
4. Kholmatov Kh.Kh., A.I., Kasimov Russian-Latin-Uzbek dictionary of medicinal plants. Tashkent. 1992.
5. Musa buva o'gli S. A. et al. STUDY OF THE INTRODUCTION AND BIOECOLOGY OF BANANA (MUSA) IN KHAZORASP DISTRICT OF KHORAZM REGION //Confrencea. – 2023. – T. 5. – №. 05. – C. 114-115
6. Internet Information
<http://www.ziyonet.uz>

CASES OF HYPOFUNCTION OF THE PANCREAS IN HEPATITIS DISEASES

Togayev Azizbek Aliyor o'g'li
azizbek200794@gmail.com

Kushakova Gulhayo Bahadir qizi
gushoqovagulhayo@gmail.com

Tashpolatov Jorabek Alisher o'g'li
toshpolatovjorabek@gmail.com

Ashurova Lobar Olimjon qizi
ashurovalobar@gmail.com

Tashkent Medical Academy Termiz branch
Assistant of the Department of Medical and Biological Chemistry

Abstract: Hypofunction of the pancreas in hepatitis diseases is as follows:

1. The functioning of the gastric gland is disturbed, the digestive system loses its condition, besides, all cells in the body begin to fight against hepatitis.
2. The activity of the pancreas is inextricably linked with the liver. The production of hormones also changes somewhat, besides, all tissues in the body are damaged by the hepatitis virus.

Key words: hepatitis, acute hepatitis, liver cirrhosis, dichlofos, chlorofos, karbofos, alcohol, liver function, chronic hepatitis.

Hepatitis (Greek: hepar; heptos - liver) is a group of diseases accompanied by inflammation of the liver. Infectious (viral hepatitis A, V, C, Ye, D) or non-infectious hepatitis. (eg, food poisoning) and primary and secondary infectious hepatitis. will be. Hepatitis. brucellosis, malaria, wounds, etc. observed in infectious diseases, as well as chronic gastrointestinal diseases. Hepatitis can also be caused by poisoning from arsenic, poisonous mushrooms, elderflower (heliotrope), poisons used in industry, agriculture and household (dichlorphos, chlorophos, karbophos, alcohol). In alcoholism, hepatitis can become severe and the liver may rot (necrosis). Hepatitis can be acute or chronic. In acute hepatitis, the whites of the eyes and the body turn yellow, the liver enlarges, heaviness and pain appear in the liver area, the patient has nausea, vomiting, loss of appetite, and drooling. Acute hepatitis sometimes occurs in toxicoses of pregnancy. If acute hepatitis is not treated in time, if the patient does not diet, the special (parenchymatous) tissue of the liver is replaced by connective tissue (see Cirrhosis of the liver). Acute hepatitis sometimes lasts for 2-3 months and turns into chronic hepatitis. At the beginning of the disease, the patient's condition almost does not change, he even continues to work, and the

disease worsens. When the whites of the eyes and the body of the patient turn yellow, even if the temperature is normal, it is necessary to put him to bed and call a doctor. If hepatitis is a consequence of poisoning, the patient should be hospitalized immediately. A patient with hepatitis should lie down and keep the area of the liver warm. The patient's food should contain enough easily digestible carbohydrates, proteins and vitamins, and should be low in fat. More wet fruit, vegetable juice, sugar, jam, honey, white bread, as well as easily digestible foods are prescribed - porridge, cottage cheese, milk, yogurt, cheese and cottage cheese (dairy foods and especially cottage cheese contain substances that protect liver cells from destruction have). Liver function recovers very slowly after the disease. To prevent chronic hepatitis, the patient must be patiently treated for a long time (sometimes up to one to two years) under the supervision of a family doctor, follow a certain routine (diet and rest).

The pancreas is a large gland in humans and animals. According to anatomical and physiological characteristics, external (exocrine) and internal (endocrine) secretion gland; secretes pancreatic juice and insulin and glucagon hormones; they go directly to the blood and control the metabolism of carbohydrates and fats; participates in digestion. The pancreas is a group of complex glands. It is second in size after the liver. It is located in the abdominal cavity, behind the stomach, near the duodenum (see Intestine), transversely opposite the lumbar vertebrae. Its length is 12-18 cm, its weight is about 70-80 g, the capsule of the gland is very thin. Glandular cells secrete gastric secretions. The excretory ducts of the pancreas enlarge and join together and flow into the cephalic excretory duct, which goes along the gland and opens into the duodenum along with the common bile duct. Pancreas b. Pancreatitis, tumor formation, and diabetes are observed when insulin production is disturbed. The "jaundice period" of the disease also takes place in its own way. With the yellowing of the whites of the eyes, the peak period of V. g. begins; As soon as the patient turns yellow in form A, his condition becomes much lighter and he recovers. In V. g. transmitted by parenteral route, compared to those transmitted by mouth, the period of jaundice is longer, the patient does not recover quickly, the medicine dries up, nausea, in some cases the body itches (cholestatic type). Depending on the stage of V. g., its clinical symptoms can be manifested in different ways: in the non-jaundic form, the patient does not turn yellow, the color of his urine and feces does not change, and the amount of bilirubin in the blood is normal. The patient's eyes turn yellow for a short time, and the amount of bilirubin quickly returns to its original value. In the subclinical form, clinical signs are almost not observed, only the lip. can be known from the tests. The form of viral transmission of V. g. is more complex, it passes in secret and gradually takes on a chronic character. The chronic form of the disease can cause severe complications (acute hepatic encephalopathy, hemorrhagic, edema-ascites syndrome, etc.).

References: R. Sobirova Biochemistry 2021, Wikipedia,

R. Sobirova Biochemistry 2021 Part II.

THE EFFECTIVENESS OF ONLINE TOOLS IN THE PROCESS OF
TEACHING AND LEARNING LANGUAGES

Mokhidil Dilmuradovna Berdimuradova

Termez State University, Foreign philology faculty

mohidilberdimurodova091@gmail.com

+998944146600

Abstract: One way to teach foreign languages remotely is to exploit online learning platforms. The article investigates the effectiveness of online learning platforms in Foreign English language learning. The students from institutions of higher education were divided into two groups according to the online learning platform. The research finds that Tutor and Moodle platforms are effective in teaching English language remotely. The language competences have improved significantly. The study highlights the benefits of distance learning and advises universities on how to use that information to develop effective online learning programs that can later be implemented during crises. The study results can be used to organize the educational process with learning platforms.

Keywords: online platform; distance learning; English language; reading and listening; communicative competences;

The ever increasing globalization has caused a huge increase in the use of information and communication technology (ICT) in the educational sector which in turn has transformed the way of learning, training and teaching. The extensive use of the various digital technologies along with other suitable forms of learning materials has created an interactive, learner centered, open and flexible environment of online learning. The usefulness of online learning as an effective mode of teaching and learning has not only caught the attention of language educators and practitioners, but has also 'expanded their views on how to create student-oriented and open ended learning environments' [17], the two important aspects of the communicative language teaching. Communicative approach of language teaching which is considered as the most effective theoretical model since early 1970s demands natural language learning strategies and more open-ended types of activities, such as roleplays, information gap activities, and simulations in a communicative situation, in order to understand the potential communicative functions and social meanings of Manuscript received May 22, 2015; revised August 03, 2015. S. S. Jabeen is with the BITS Pilani, Dubai Campus, DIAC, Dubai, UAE phone: 00971503568318; fax: 0097144200555; e-mail: shazi@dubai.bitspilani.ac.in. A. J. Thomas was with BITS Pilani, Dubai Campus, DIAC, UAE. the linguistic forms [18]. However, research indicates that the communicative approach appears to have brought innovation more on the level of theory than on the level of actual classroom practices [6], [18]. Although challenging, it is necessary to overcome the shortcomings of the traditional language teaching and learning methods by integrating appropriate technologies and instructional strategies in the second or foreign language education field. Therefore, most teachers and students seem to feel that there is a need to make increased use of ICT, particularly computers, CD-ROM multimedia and the Internet in ESL/EFL. This is probably because they

think that these materials are flexible, interesting, and entertaining [3]. The Emirate of Dubai launched Dubai Electronic Government in 2001 as part of its initiative to transform itself into a Smart City. The aim of the e-government is not only to facilitate government operations and to provide effective government services, but also to facilitate various e-learning projects. As a consequence of this, several online learning programs have been launched by various educational institutions in the UAE including Hamdan Bin Mohammed Smart University in Dubai to meet an increasing demand of a more flexible learning environment in the country. According to Abdullah Karam [1], online learning is gaining momentum in the UAE due to the shortage of faculty and staff, the cultural background of male and female students, and the need to continue education. Although online learning system has become a major priority in the UAE [8], there is hardly any evidence of empirical examination of the effectiveness of online language learning. Therefore, it is essential to have a clear understanding of the factors that affect the quality of an online language learning system and are required for an effective implementation of the system. To create an effective, interactive, easily accessible, and distributed online learning system, institutions need to understand and investigate these factors that play a role in online language learning effectiveness. By studying current trends in online learning around the world and conducting a survey on the same, the current research intends to find out how effectively the online learning programmes are implemented and wants to comprehend the difficulties learners face while learning languages online. Simultaneously, the present study intends to assess whether the latest trends in web technology have been applied in today's teaching scenario, especially with respect to language learning. During the course of the study, the individual's learning of each of these language skills, i.e. reading, writing, speaking and listening was assessed for effectiveness. The study sought to obtain quantitative evidence on the potential effectiveness of VR in teaching Maltese. The majority of the participants, 19 out of 25 (76%), strongly agree that VR is effective for educational purposes. This indicates a high level of confidence and positive perception among the participants regarding the potential of VR in education. Additionally, 6 participants (24%) agree that VR is effective for educational purposes. This further supports the overall positive sentiment towards VR as an educational tool. It is noteworthy that none of the respondents expressed a neutral stance, disagreement, or strong disagreement regarding the effectiveness of VR for educational purposes.

The majority of the participants, 14 individuals (56% of the respondents), strongly agreed that VR is effective in facilitating language learning. Additionally, 11 participants (44% of the respondents) agreed with this statement. Notably, none of the respondents expressed a neutral, disagree, or strongly disagree opinion regarding the effectiveness of VR in language learning.

The participants were also asked to rate the positive impact of VR on students' learning outcomes based on their professional knowledge and experience, using a 5-point rating scale. The average score of 3.40 indicates that the majority of the participants were confident that using VR could significantly influence their students' learning outcomes. This assessment was somewhat based on their experience, despite not having implemented VR in their classrooms yet. Therefore, the risk of bias related to this question was minimal. The study's findings on the effectiveness of VR in language learning, as reported in [Parmaxi \(2023\)](#), provide compelling evidence for the potential of VR to improve ML2 teaching.

References

1. [Ames et al., 2019](#) H. Ames, C. Glenton, S. Lewin
Purposive sampling in a qualitative evidence synthesis: A worked example from a synthesis on parental perceptions of vaccination communication
BMC Medical Research Methodology, 19 (26) (2019), [10.1186/s12874-019-0665-4](https://doi.org/10.1186/s12874-019-0665-4) [View PDF](#)
This article is free to access. [Google Scholar](#)
2. [Aspers and Corte, 2019](#) Aspers, P., & Corte, U. What is Qualitative in Qualitative Research. *Qualitative Sociology*, 42, 139–160. <https://doi.org/10.1007/s11133-019-9413-7>.
[Google Scholar](#)
3. [Attard, 1989](#) L.E. Attard *The great exodus (1918–1939)* Publishers Enterprises Group, Malta (1989) [Google Scholar](#)
4. [Ball et al., 2021](#) C. Ball, K.T. Huang, J. Francis Virtual reality adoption during the COVID-19 pandemic: A uses and gratifications perspective
Telematics and Informatics, 65 (2021), [10.1016/j.tele.2021.101728](https://doi.org/10.1016/j.tele.2021.101728) [View PDF](#) This article is free to access. [Google Scholar](#)
5. [Camilleri Grima and Żammit, 2020](#) A. Camilleri Grima, J. Żammit The acquisition of verbal tense and aspect in Maltese by adult migrants: Implications for pedagogical grammar *Journal of Multilingual Theories and Practices*, 1 (2) (2020), pp. 149-167, [10.1558/jmtp.13426](https://doi.org/10.1558/jmtp.13426) [View article](#) [Google Scholar](#)

EFFECTIVE METHODS OF TEACHING GEOMETRIC DESIGNS OF ABU NASR FARABI IN ENGINEERING GRAPHICS

Omonov Qavmiddin Karimovich

"TIAME" NRU Bukhara Institute of Natural Resources Management

"Head of the Department of Engineering Graphics and Digital Technologies"

Abstract: This article provides information on the quick and easy execution of Abu Nasr Farabi's geometric designs in Engineering graphics through modern graphic programs, as well as the execution of computer graphics in Auto CAD graphic programs in the formation of curves and in animated views to improve the graphic literacy of students.

Key words: Abu Nasr Farabi, Central Asia, architecture, IX-XV centuries, "Ilmi Handasa", girih, Auto CAD, animation.

As in the development stages of any field, in the development of engineering graphics in the 9th-15th centuries in Central Asia, the science of geometry (geometry) was widely used in various fields of architecture and crafts. Through these geometric constructions, it is reflected in today's modern national architecture.

Abu Nasr Farabi, a Kumsu scientist who lived and worked in the 9th century, is considered one of the scientists who deeply studied the science of geometry in addition to several other sciences [1]. Let's see how one of its geometric constructions is performed in modern graphic programs.

Let's consider the formation of a regular octagon using an arbitrary given section AB [2].

It shows how to create a regular octagon using an arbitrary given straight line length (Figure 1), a process that is more complicated and time-consuming to do conventionally when done using a graphics program. It is very easy and convenient to do.

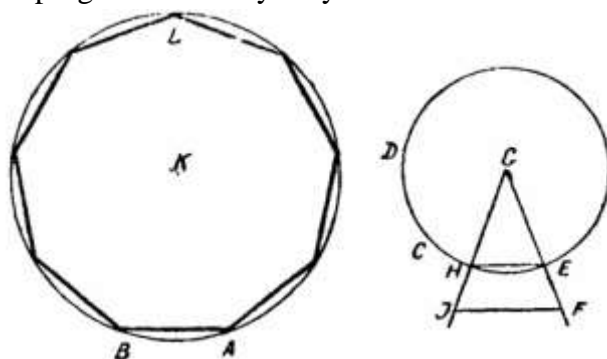
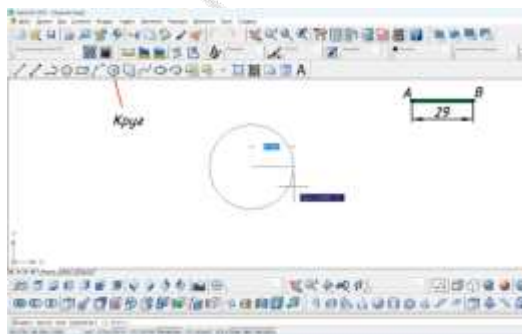


fig-1.

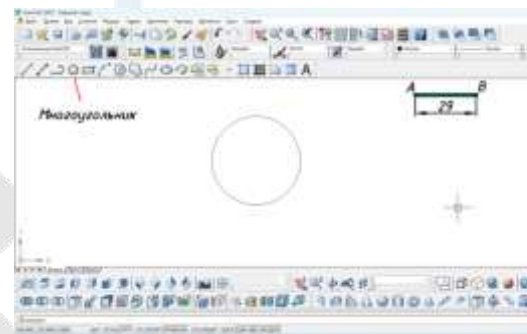
In order to increase students' graphic imagination, we use the Auto CAD graphic program to create a regular octagon equal to the length of the straight line AB (for example, 29 mm) of the above given regular octagon [3].

For this, a circle with an arbitrary radius is drawn (Fig. 2, a). When the command to draw a polygon is selected (Fig. 2, b), the number of sides is entered as nine, the center of the circle is marked and a size equal to the radius of the circle is entered (Fig. 2, c) and an internal

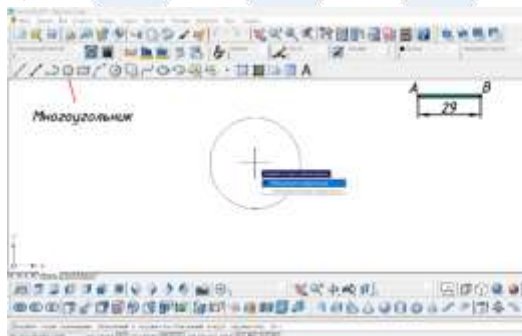
regular nine-cornered circle is formed. (Fig. 2, d), straight lines are drawn from the center of the circle to points 4 and 5, and a perpendicular line is drawn from the center to the section 4 5, a straight line equal to the length of the section AB is perpendicular to the drawn perpendicular is drawn (Fig. 2, e) and parallel straight lines are drawn from the ends A and B of the section AB to the straight lines passing through the ends of the section 4 5 drawn through the center of the circle to the perpendicular drawn from the center. The distance between the intersecting points is equal to the section AB (Fig. 2, e). A circle is drawn from the center of the polygon to the ends of the section AB. A regular octagon is formed if AB is rotated nine times around the cross-sectional circle using array commands (Fig. 2, k). If the vertices of a regular octagon are connected with straight lines in the sequence 1, 3, 5, 7, 9, 2, 4, 6, 8, 1, the base of a nine-angled gyri (star view) is formed. (Fig. 2, k). If parallel lines are drawn at a certain distance to the resulting nine-pointed star-shaped lines, a knot is formed (Fig. 2, l). Surplus lines are removed and the surfaces are colored (Fig. 2, m) [4].



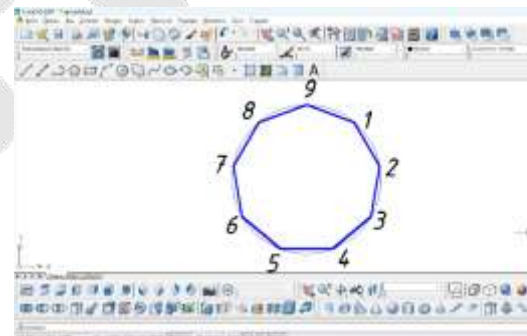
a)



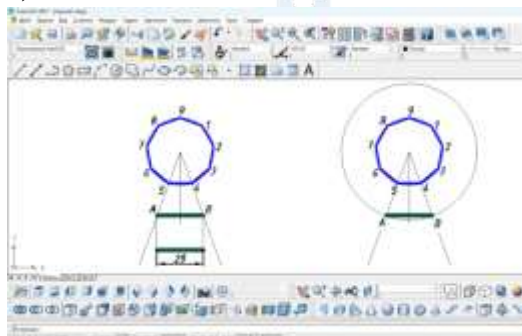
b)



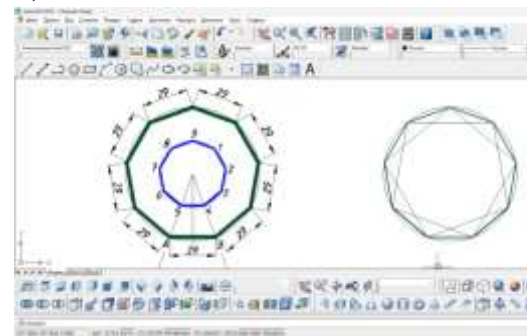
c)



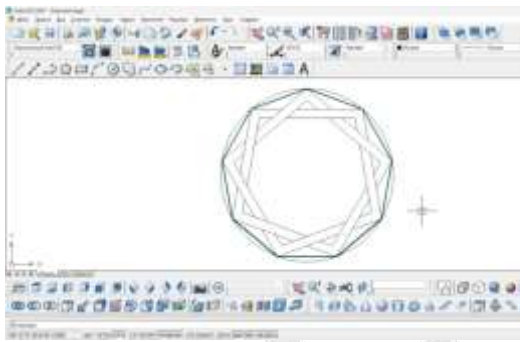
d)



e)



k)



l)

m)

2-rasm.

We present this geometric creation in animated frames using the following practical methods when performing drawing tools (Fig. 3).

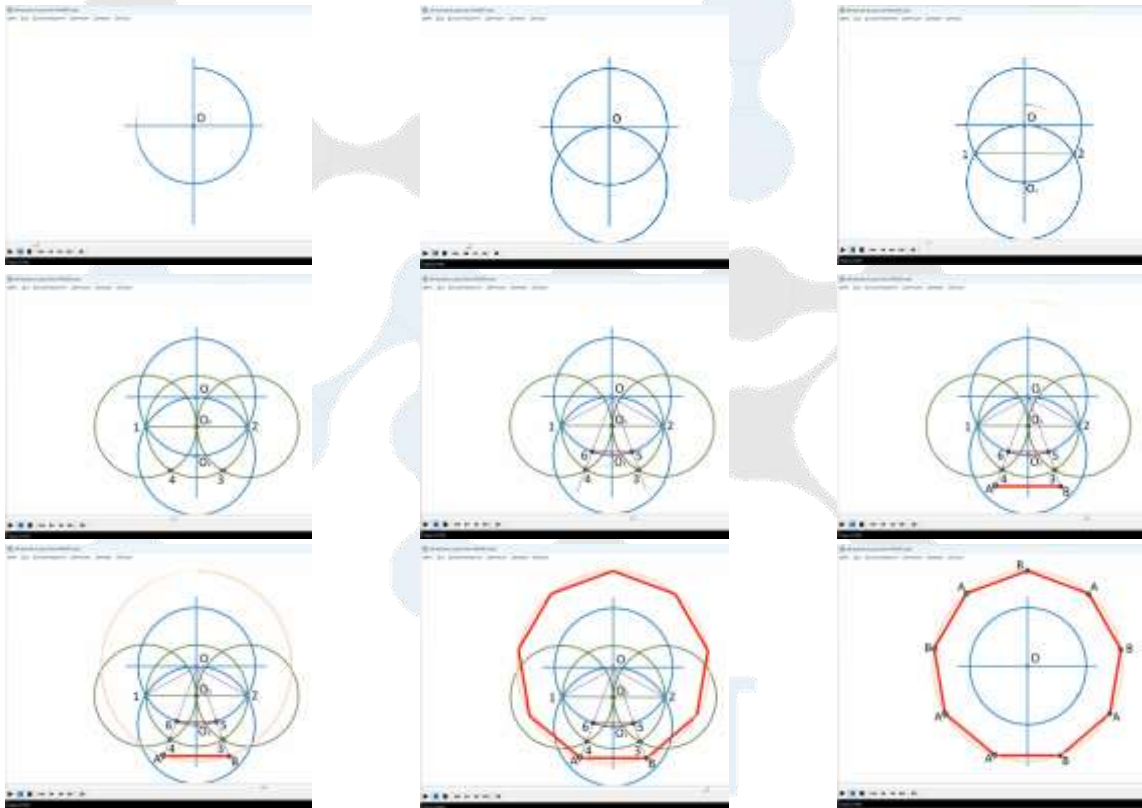


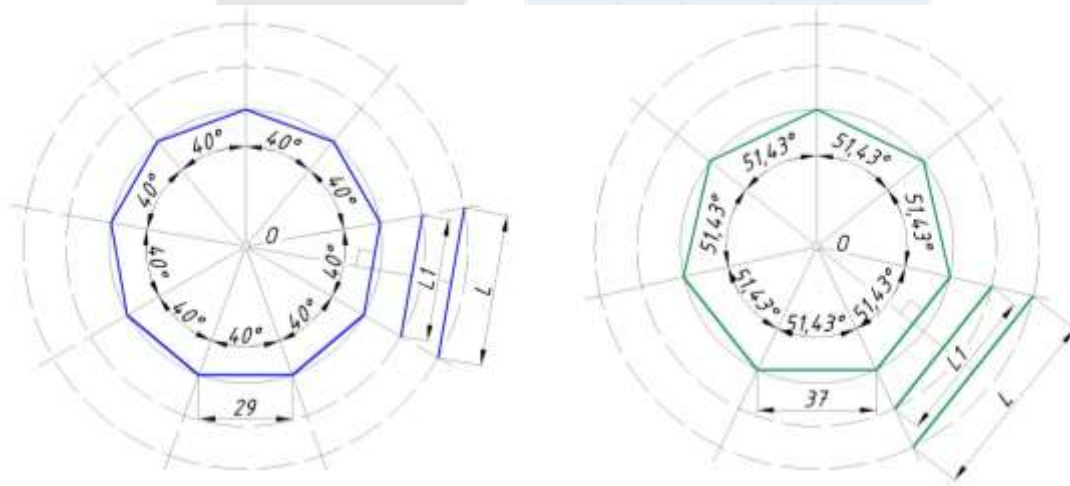
fig-3.

We have recommended the following practical method for teaching the regular octagon with sides equal to the length of the section AB, depicted in the animation frames above, in the science of engineering graphics.

First of all, intersecting perpendicular straight lines are drawn and an arbitrary circle is drawn from the point of intersection. Without changing the radius of this circle, a circle is drawn trying to reach its center from the lower point where it intersects with the center line, and if the intersecting points 1 and 2 of the two circles are marked and joined by a straight line, the center O₂ is determined. A circle is drawn at a distance of 1 point from the center O₂. Without changing the radius of this circle, circles are drawn from points 1 and 2 and points 3 and 4 are determined. Straight lines are drawn from the center O to points 3 and 4, and points 5 and 6 intersecting the first drawn circle are determined and connected with a straight line. A cross section AB is drawn

parallel to sections 5 and 6. A circle is drawn from the center O to the intersection points AB. A regular octagon is formed if circular arcs equal to AB are drawn on top of this circle and their points are marked and connected by straight lines.

In the practical method above, as another addition, if the circle starts from one point and ends at this point, it is 3600, which is equal to 400 when divided by the vertex, and if the intermediate distances are combined, a regular octagon is formed. (Fig. 4, a), it is possible to make a regular octagon from a straight line of any length (L1, L, ...) passing perpendicular to one side from the center, or if dividing by seven is done in the same way, the angles between them is 51,430 (Fig. 4, b).



a) b)
fig-4.

This method can be applied to any polyhedron, making it a convenient and effective tool for students in engineering graphics to divide a circle into equal parts and make any polyhedron from any length of section.

References

1. P. Zohidov. Zeb ichra ziynat // Toshkent-1985
2. Аль-Фараби. МАТЕМАТИЧЕСКИЕ ТРАКТАТЫ // АЛМА-АТА 1972 г.
3. Омонов, К. К. Создание 3D-тела или поверхности путем сечений двумя или более кривыми в Auto CAD / К. К. Омонов. — Текст : непосредственный // Молодой ученый. — 2015. — № 2 (82). — С. 185-187. — URL: [https:// moluch.ru/archive/82/15096](https://moluch.ru/archive/82/15096)
4. <https://docplayer.net/205237197-Graphical-basis-of-girikh-used-in-traditional-applied-decorative-art-of-central-asia-in-the-9-15-th-centuries.html>

IMPORTANCE OF FIBER OPTIC DEVICES IN MEDICINE.

Mukhtaram Khamroyevna Bobokulova

Asian International University

Assistant of the "General Technical Sciences" department

e-mail: Bobokulova607@gmail.com

Abstract: This article provides information about fiber optic devices and their importance in medicine.

Key words: microscope, ophthalmoscope, endoscope, ophthalmologist, optical prisms, microscope lenses, contact lenses, biomedical imaging.

Аннотация:

В этой статье представлена информация об оптоволоконных устройствах и их значении в медицине.

Ключевые слова: микроскоп, офтальмоскоп, эндоскоп, офтальмолог, оптические призмы, линзы микроскопа, контактные линзы, биомедицинская визуализация.

Abstract:

This article provides information about fiber optic devices and their importance in medicine.

Key words: microscope, ophthalmoscope, endoscope, ophthalmologist, optical prisms, microscope lenses, contact lenses, biomedical imaging.

The practice of optical equipment is very important in the field of medicine. This equipment is one of the main parts for instruments such as optical microscope, ophthalmoscope, endoscope, etc. Optical equipment is used in the medical field for visual inspection and inspection of complex processes. For example, ophthalmoscopes are used by ophthalmologists to examine the inside of the eye and to check for cancer in the hospital. In medicine, optical instruments consist of eye examination instruments such as optical prisms, microscope lenses, contact lenses, and ophthalmoscopes. These devices aid in imaging, diagnosis and treatment using optical principles used in medicine.

The most commonly used fiber optic devices are:

1. Optical Prisms: Optical prisms are used to manipulate images or separate light of different colors using the refraction and reflection properties of light. In the medical field, optical prisms are used to determine and correct prescriptions for glasses or contact lenses.

2. Microscopes: Microscopes allow us to examine small and invisible objects through magnification. Microscopes used in the field of medicine; It is used to examine cell and tissue samples in fields such as pathology, histology, microbiology, and hematology.

3. Contact Lenses: Contact lenses are plastic lenses that are placed on the eye instead of glasses. It provides a more natural vision than glasses and allows freedom of movement. Contact lenses are used to correct eye defects to ensure correct vision.

4. Ophthalmoscope: An ophthalmoscope is an instrument used to examine the internal structure of the eye. An ophthalmoscope used in a fundus examination is used to view the retina, optic nerve, blood vessels, and other structures. In this way, it helps in the diagnosis and treatment of eye diseases.

These fiber optic instruments play an important role in medical diagnosis and treatment processes. They are used to provide clear and precise vision, early diagnosis of diseases and determine appropriate treatment methods.

Important aspects of the use of optical instruments in the field of medicine:

1. Eye examination: Optical instruments are used in eye examination. Optical devices such as glasses, contact lenses, and spectacle lenses are used to detect and correct vision defects (myopia, hypermetropia, astigmatism). In addition, optical instruments are used in the diagnosis and treatment of eye diseases.

2. Biomedical Imaging: Optical instruments are used in biomedical imaging techniques. For example, optical coherence tomography (OCT) is used to diagnose problems with the retina and detect nerve damage in the eye cavity. Optical microscopes are also used to perform investigations at the cellular level.

3. Surgery: Optical instruments play an important role in medical surgeries. For example, laser surgery is a procedure that uses optical lasers. Lasers are used in eye surgery for corneal shaping, cataract surgery, and retinal treatment. Fiber optics are also used in endoscopic surgery.

4. Diagnostic tests: Optical instruments are used in medical diagnostic tests. For example, optical spectroscopy is used to perform analyzes at the tissue and cellular level. Optical quantitative imaging is also used to detect molecular changes in tissue samples.

5. Optical medical instruments: Optical instruments are used with medical instruments. For example, optical coherence tomography (OCT) machines are used to create images of the retina. Optical fibers are flexible and thin cables used to transmit images or light.

These examples show the importance of optical instruments in the field of medicine. Optical instruments help protect and improve patient health through applications in a wide range of fields, including medical diagnosis, treatment, and imaging.

Optical equipment is also used in other areas of the medical field. For example, optical microscopes are used in laboratories to view micro-organisms and dissected parts, and to study the life processes of individuals, plants and animals.

Thus, in medicine, optical equipment is important for viewing, examining and studying complex processes, and plays an important role in the development of instrumentation in this field.

References:

1. Mukhtaram Bobokulova Khamroyevna. (2023). Radiation Protection. Dosimetry . Central Asian Journal of Medical and Natural Science, 4(6), 134-139.
2. Bobokulova, M. X. (2023). STOMATOLOGIK MATERIALLARNING FIZIK-MEXANIK XOSSALARI. Educational Research in Universal Sciences, 2(9), 223-228.
3. Bobokulova, M. X. (2023). ORGANIZM TO'QIMALARINING ZICHLIGINI ANIQLASH. GOLDEN BRAIN, 1(34), 50-58.
4. Oghly, J. S. Z. (2023). PHYSICO-CHEMICAL PROPERTIES OF POLYMER COMPOSITES. American Journal of Applied Science and Technology, 3(10), 25-33.
5. Oghly, J. S. Z. (2023). THE RELATIONSHIP OF PHYSICS AND ART IN ARISTOTLE'S SYSTEM. International Journal of Pedagogics, 3(11), 67-73.
6. Oghly, J. S. Z. (2023). BASIC PHILOSOPHICAL AND METHODOLOGICAL IDEAS IN THE EVOLUTION OF PHYSICAL SCIENCES. Gospodarka i Innowacje., 41, 233-241.
7. Oghly Jurakulov, S. Z. (2023). FIZIKA TA'LIMI MUVAFFAQIYATLI OLISH UCHUN STRATEGIYALAR. Educational Research in Universal Sciences, 2(14), 46-48.
8. Oghly, J. S. Z. (2023). A Japanese approach to in-service training and professional development of science and physics teachers in Japan. American Journal of Public Diplomacy and International Studies (2993-2157), 1(9), 167-173.

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-3, ISSUE-5

9. Oghly, J. S. Z. (2023). STRATEGIES FOR SUCCESSFUL LEARNING IN PHYSICS. American Journal of Public Diplomacy and International Studies (2993-2157), 1(9), 312-318.
10. Jurakulov, S. Z. O., & Turdiboyev, X. (2023). TA'LIM SOHASIDA FIZIKANING SAN'AT BILAN ALOQALARI. GOLDEN BRAIN, 1(33), 144-147.
11. Jurakulov, S. Z. O., & Turdiboyev, K. (2023). STUDYING PHYSICS USING A COMPUTER. GOLDEN BRAIN, 1(33), 148-151.
12. Jurakulov, S. Z. O., & Nurboyev, O. (2023). IN THE EDUCATIONAL FIELD OF PHYSICS LEVEL AND POSITION. GOLDEN BRAIN, 1(33), 157-161.
13. Jurakulov, S. Z. O., & Nurboyev, O. (2023). FIZIKA FANINING BO'LIMLARINING RIVOJLANISHDAGIDAGI ASOSIY AHAMIYATI. GOLDEN BRAIN, 1(33), 162-167.
14. Jurakulov, S. Z. O., & Nurboyev, O. (2023). RELATIONSHIPS BETWEEN THE DIRECTIONS OF FINANCE AND PHYSICAL SCIENCE. GOLDEN BRAIN, 1(33), 168-172.
15. Jurakulov, S. Z. O., & Hamidov, E. (2023). YADRO ENERGIYASINING XOSSA VA XUSUSIYATLARI. GOLDEN BRAIN, 1(33), 182-186.
16. Jurakulov, S. Z. O., & Turdiboyev, X. (2023). FIZIKA FANINI O'RGANISHNING YUQORI DARAJADAGI STRATEGIYALAR. GOLDEN BRAIN, 1(33), 152-156.
17. Муродов, О. Т. (2023). РАЗРАБОТКА АВТОМАТИЗИРОВАННОЙ СИСТЕМЫ УПРАВЛЕНИЯ ТЕМПЕРАТУРЫ И ВЛАЖНОСТИ В ПРОИЗВОДСТВЕННЫХ КОМНАТ. GOLDEN BRAIN, 1(26), 91-95.
18. Murodov, O. T. R. (2023). ZAMONAVIY TA'LIMDA AXBOROT TEXNOLOGIYALARI VA ULARNI QO'LLASH USUL VA VOSITALARI. Educational Research in Universal Sciences, 2(10), 481-486.
19. Murodov, O. T. R. (2023). INFORMATIKA DARSLARINI TASHKIL ETISHDA INNOVATSION USULLARDAN FOYDALANISH. GOLDEN BRAIN, 1(32), 194-201
20. Tursunbek Sadriddinovich Jalolov. (2023). PYTHON DASTUR TILIDADA WEB-ILOVALAR ISHLAB CHIQISH. TECHNICAL SCIENCE RESEARCH IN UZBEKISTAN, 1(5), 160-166.
21. Tursunbek Sadriddinovich Jalolov. (2023). SUN'IY INTELLEKTDA PYTHONNING (PYTORCH) KUTUBXONASIDAN FOYDALANISH. TECHNICAL SCIENCE RESEARCH IN UZBEKISTAN, 1(5), 167-171.
22. Tursunbek Sadriddinovich Jalolov. (2023). WORKING WITH MATHEMATICAL FUNCTIONS IN PYTHON. TECHNICAL SCIENCE RESEARCH IN UZBEKISTAN, 1(5), 172-177.
23. Tursunbek Sadriddinovich Jalolov. (2023). PARALLEL PROGRAMMING IN PYTHON. TECHNICAL SCIENCE RESEARCH IN UZBEKISTAN, 1(5), 178-183.
24. Junaydullaevich, T. B. (2023). ANALYSIS OF OIL SLUDGE PROCESSING METHODS. American Journal of Public Diplomacy and International Studies (2993-2157), 1(9), 139-146.
25. Junaydullaevich, T. B. (2023). BITUMENS AND BITUMEN COMPOSITIONS BASED ON OIL-CONTAINING WASTES. American Journal of Public Diplomacy and International Studies (2993-2157), 1(9), 147-152.
26. Турсунов, Б. Ж., & Шомуродов, А. Ю. (2021). Перспективный метод утилизации отходов нефтеперерабатывающей промышленности. TA'LIM VA RIVOJLANISH TAHLILI ONLAYN ILMIY JURNALI, 1(6), 239-243.

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-3, ISSUE-5

27. qizi Sharopova, M. M. (2023). RSA VA EL-GAMAL OCHIQ KALITLI SHIFRLASH ALGORITMI ASOSIDA ELEKTRON RAQMLI IMZOLARI. RSA OCHIQ KALITLI SHIFRLASH ALGORITMI ASOSIDAGI ELEKTRON RAQAMLI IMZO. Educational Research in Universal Sciences, 2(10), 316-319
28. Sharipova, M. P. L. (2023). CAPUTA MA'NOSIDA KASR TARTIBLI HOSILALAR VA UNI HISOBLASH USULLARI. Educational Research in Universal Sciences, 2(9), 360-365.
29. Sharipova, M. P. (2023). MAXSUS SOHALARDA KARLEMAN MATRITSASI. Educational Research in Universal Sciences, 2(10), 137-141.
30. Madina Polatovna Sharipova. (2023). APPROXIMATION OF FUNCTIONS WITH COEFFICIENTS. American Journal of Public Diplomacy and International Studies (2993-2157), 1(9), 135–138.
31. Madina Polatovna Sharipova. (2023). Applications of the double integral to mechanical problems. International journal of sciearchers, 2(2), 101-103.
32. Sharipova, M. P. L. (2023). FINDING THE MAXIMUM AND MINIMUM VALUE OF A FUNCTION ON A SEGMENT. American Journal of Public Diplomacy and International Studies (2993-2157), 1(9), 245-248.
33. Quvvatov Behruz Ulug`bek o`g`li. (2023). Mobil ilovalar yaratish va ularni bajarish jarayoni. International journal of scientific researchers, 2(2).
34. Behruz Ulugbek og, Q. (2023). TECHNOLOGY AND MEDICINE: A DYNAMIC PARTNERSHIP. International Multidisciplinary Journal for Research & Development, 10(11).
35. Jurakulov Sanjar Zafarjon Oghly. (2023). A Current Perspective on the Relationship between Economics and Physics. American Journal of Public Diplomacy and International Studies (2993-2157), 1(10), 154–159.
36. Jurakulov Sanjar Zafarjon Oghly. (2023). New Computer-Assisted Approaches to Teaching Physics. American Journal of Public Diplomacy and International Studies (2993-2157), 1(10), 173–177.
37. qizi Latipova, S. S. (2023). KASR TARTIBLI HOSILA TUSHUNCHASI. SCHOLAR, 1(31), 263-269.
38. qizi Latipova, S. S. (2023). RIMAN-LUIVILL KASR TARTIBLI INTEGRALI VA HOSILASIGA OID AYRIM MASALALARNING ISHLANISHI. Educational Research in Universal Sciences, 2(12), 216-220.
39. qizi Latipova, S. S. (2023). MITTAG–LIFFLER FUNKSIYASI VA UNI HISOBLASH USULLARI. Educational Research in Universal Sciences, 2(9), 238-244.
40. Shahnoza, L. (2023, March). KASR TARTIBLI TENGLAMALARDA MANBA VA BOSHLANG'ICH FUNKSIYANI ANIQLASH BO'YICHA TESKARI MASALALAR. In " Conference on Universal Science Research 2023" (Vol. 1, No. 3, pp. 8-10).
41. Axmedova, Z. I. (2023). LMS TIZIMIDA INTERAKTIV ELEMENTLARNI YARATISH TEXNOLOGIYASI. Educational Research in Universal Sciences, 2(10), 368-372.
42. Ikromovna, A. Z. (2023). USING THE USEFUL ASPECTS OF THE MOODLE SYSTEM AND ITS POSSIBILITIES. American Journal of Public Diplomacy and International Studies (2993-2157), 1(9), 201-205.
43. Axmedova, Z. (2023). MOODLE TIZIMI VA UNING IMKONIYATLARI. Development and innovations in science, 2(11), 29-35.

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-3, ISSUE-5

44. Zulxumor, A. (2022). IMPLEMENTATION OF INTERACTIVE COURSES IN THE EDUCATIONAL PROCESS. *ILMIY TADQIQOT VA INNOVATSIYA*, 1(6), 128-132.
45. Tursunbek Sadriiddinovich Jalolov. (2023). ARTIFICIAL INTELLIGENCE PYTHON (PYTORCH). *Oriental Journal of Academic and Multidisciplinary Research*, 1(3), 123-126.
46. Jalolov, T. S. (2023). ADVANTAGES OF DJANGO FEMWORKER. *International Multidisciplinary Journal for Research & Development*, 10(12).
47. Jalolov, T. S. (2023). ARTIFICIAL INTELLIGENCE PYTHON (PYTORCH). *Oriental Journal of Academic and Multidisciplinary Research*, 1(3), 123-126.
48. Jalolov, T. S. (2023). SPSS YOKI IJTIMOYIY FANLAR UCHUN STATISTIK PAKET BILAN PSIXOLOGIK MA'LUMOTLARNI QAYTA ISHLASH. *Journal of Universal Science Research*, 1(12), 207–215.
49. Tursunbek Sadriiddinovich Jalolov. (2023). THE MECHANISMS OF USING MATHEMATICAL STATISTICAL ANALYSIS METHODS IN PSYCHOLOGY. *TECHNICAL SCIENCE RESEARCH IN UZBEKISTAN*, 1(5), 138–144.
50. Tursunbek Sadriiddinovich Jalolov. (2023). PROGRAMMING LANGUAGES, THEIR TYPES AND BASICS. *TECHNICAL SCIENCE RESEARCH IN UZBEKISTAN*, 1(5), 145–152.
51. Tursunbek Sadriiddinovich Jalolov. (2023). PYTHON TILINING AFZALLIKLARI VA KAMCHILIKLARI. *TECHNICAL SCIENCE RESEARCH IN UZBEKISTAN*, 1(5), 153–159.

**PHYSICO-CHEMICAL PROPERTIES OF BIOLOGICAL MEMBRANES,
BIOPHYSICAL MECHANISMS OF MOVEMENT OF SUBSTANCES IN THE
MEMBRANE.**

Mukhtaram Bobokulova Khamroyevna

Asian International University

Assistant of the "General Technical Sciences" department

e-mail: Boboqulova607@gmail.com

Abstract:

This article provides information on the physico-chemical properties of biological membranes, biophysical mechanisms of movement of substances in the membrane.

Key words: Biological membrane, chloroplasts, lysosome, nucleus, fat, carbohydrate, protein, mechanic, matrix, barrier.

Biological membranes are very small lipid-protein structures that surround the cell and its internal structures (mitochondria, chloroplasts, lysosome, nucleus, etc.). It has a selective effect and controls the amount of metabolic products in the cell and its components, their transfer and exchange.

According to modern concepts, biological membranes actively participate in ensuring the conversion of energy from one type to another, in controlling the activity of enzymes, in the transmission of nerve impulses and intercellular information, in the functional properties of hormones and in the implementation of other processes in the cell. The cell membrane consists of proteins, fats, carbohydrates and other organic and inorganic substances, which ensure the passage of substances into and out of the cell. Accordingly, biomembranes have their own physical and chemical properties. It is known that the lipid bilayer of the membrane forms a unique liquid phase in the cell.

Between the water and lipid phases there are many enzymes and their substrates, various proteins, receptors, glycolipids, glyco- and lipoproteins (more precisely, they "float"). The main properties of the membrane bilayer, such as viscosity, polarity, surface charge, are related to the activity of enzymes located in almost all membranes, as well as the activity of receptors.

The three main functions of biomembranes are mechanical, matrix and barrier functions depending on their properties. Mechanical function ensures the stability and autonomy of the cell and its organelles. The function of the matrix ensures mutual location and orientation of membrane proteins, which in turn is the basis for the optimal functioning of these protein systems.

For example, for the interaction of membrane enzymes, or the activity of polyezyme systems in the membrane, the ensemble that makes up the respiratory chain, and other activities, the order of location in the membrane is definitely important.

Biomembranes have a barrier function, that is, the membrane does not pass foreign substances to the cell, only the necessary substances for the cell are selected, the entry of these substances into the cell is controlled, that is, depending on the functional state of the cell permeates the membrane.

Also, biomembranes have functions such as selective permeability, flexibility, excitability, phagocytosis, energy production, and receptors, these functions are provided by the unique properties of the membrane. Biomembranes are an active system that controls the interaction of the cell with the external environment, the selective entry or exit of various substances, including ions, from the external environment into the cell, the binding of hormones and other regulatory

molecules, the passage of various reactions catalyzed by enzymes, the transmission of electrical impulses. ensures formation and transfer.

Each membrane performs its own function. In general, the structure of membranes is adapted to perform a certain task.

In the membrane, systems can be in two main phase states:

- 1) solid bilayer crystal state or gel state;
- 2) it is in liquid crystal state.

In both cases, the bilayer structure of the lipid phase is preserved.

When the temperature of the membrane is increased, the ratio of the solid phase to the liquid phase changes. The temperature at which half of the phospholipids that make up the membrane are solid and the other half is liquid is called the transition temperature. This temperature depends on the length of the hydrocarbon chain of lipids and its degree of saturation.

As the length of the hydrocarbon chains of phospholipids increases, the phase transition temperature also increases, and this temperature decreases as the degree of saturation decreases. Changes occurring during the phase transition are based on spatial changes of hydrocarbon chains of lipids.

During the interphase transition in the gel-liquid crystalline state, the transition of hydrocarbon chains from the trans state to the disordered state occurs. In this case, the value of the surface occupied by one lipid molecule increases and the thickness of the hydrocarbon layer decreases.

It was found that the outer layers are composed of protein molecules and the middle layer is composed of lipid molecules arranged in two rows.

Since the protein molecules located on the outer side of the membrane are not in a single state, the lipid molecules directly interact with hydrophobic substances that exist outside the cell. As a result, water-insoluble substances can easily pass through the membrane by dissolving in the layer of lipid molecules.

Various ions are transferred into the internal environment of the cell or expelled based on a special selectivity through the ion channels formed by the special conformation of the protein molecules located on the outside of the cell membrane.

At the same time, the protein molecules located on the outer part of the membrane form special molecular structures called receptors that selectively interact with enzyme systems, ion channels, and biologically active substances located on the inner and outer layers of the membrane.

Based on the activity of these structures, the cell receives the effects of the external environment. Measuring the mobility of biomembrane molecules and the diffusion of particles passing through the membrane indicates that the bilipid layer behaves like water. On the other hand, the membrane is an ordered structure. Living organisms are open systems. Therefore, the movement of substances through biological membranes is a necessary condition for life.

Cell metabolism processes, bioenergetic processes, generation of biopotentials and other processes are connected with the transfer of substances through membranes. If there are disturbances in the transfer of substances through biomembranes, various pathologies appear in the body.

The transport of substances through biological membranes can be divided into two main types: passive and active.

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-3, ISSUE-5

Passive migration refers to the movement of a substance from a place with a high concentration or electrochemical potential to a place with a small one.

There are the following types of passive migration: 1) free diffusion; 2) facilitated diffusion.

In active migration, matter moves against an electrochemical potential gradient, which consumes energy.

References.

1. Mukhtaram Bobokulova Khamroyevna. (2023). Radiation Protection. Dosimetry . Central Asian Journal of Medical and Natural Science, 4(6), 134-139.
2. Bobokulova, M. X. (2023). STOMATOLOGIK MATERIALLARNING FIZIK-MEXANIK XOSSALARI. Educational Research in Universal Sciences, 2(9), 223-228.
3. Bobokulova, M. X. (2023). ORGANIZM TO'QIMALARINING ZICHLIGINI ANIQLASH. GOLDEN BRAIN, 1(34), 50–58.
4. Oghly, J. S. Z. (2023). PHYSICO-CHEMICAL PROPERTIES OF POLYMER COMPOSITES. American Journal of Applied Science and Technology, 3(10), 25-33.
5. Oghly, J. S. Z. (2023). THE RELATIONSHIP OF PHYSICS AND ART IN ARISTOTLE'S SYSTEM. International Journal of Pedagogics, 3(11), 67-73.
6. Oghly, J. S. Z. (2023). BASIC PHILOSOPHICAL AND METHODOLOGICAL IDEAS IN THE EVOLUTION OF PHYSICAL SCIENCES. Gospodarka i Innowacje., 41, 233-241.
7. Oghly Jurakulov, S. Z. (2023). FIZIKA TA'LIMI MUVAFFAQIYATLI OLISH UCHUN STRATEGIYALAR. Educational Research in Universal Sciences, 2(14), 46-48.
8. Oghly, J. S. Z. (2023). A Japanese approach to in-service training and professional development of science and physics teachers in Japan. American Journal of Public Diplomacy and International Studies (2993-2157), 1(9), 167-173.
9. Oghly, J. S. Z. (2023). STRATEGIES FOR SUCCESSFUL LEARNING IN PHYSICS. American Journal of Public Diplomacy and International Studies (2993-2157), 1(9), 312-318.
10. Jurakulov, S. Z. O., & Turdiboyev, X. (2023). TA'LIM SOHASIDA FIZIKANING SAN'AT BILAN ALOQALARI. GOLDEN BRAIN, 1(33), 144–147.
11. Jurakulov, S. Z. O., & Turdiboyev, K. (2023). STUDYING PHYSICS USING A COMPUTER. GOLDEN BRAIN, 1(33), 148–151.
12. Jurakulov, S. Z. O., & Nurboyev, O. (2023). IN THE EDUCATIONAL FIELD OF PHYSICS LEVEL AND POSITION. GOLDEN BRAIN, 1(33), 157–161.
13. Jurakulov, S. Z. O., & Nurboyev, O. (2023). FIZIKA FANINING BO'LIMLARINING RIVOJLANISHDAGIDAGI ASOSIY AHAMIYATI. GOLDEN BRAIN, 1(33), 162–167.
14. Jurakulov, S. Z. O., & Nurboyev, O. (2023). RELATIONSHIPS BETWEEN THE DIRECTIONS OF FINANCE AND PHYSICAL SCIENCE. GOLDEN BRAIN, 1(33), 168–172.
15. Jurakulov, S. Z. O., & Hamidov, E. (2023). YADRO ENERGIYASINING XOSSA VA XUSUSIYATLARI. GOLDEN BRAIN, 1(33), 182–186.
16. Jurakulov, S. Z. O., & Turdiboyev, X. (2023). FIZIKA FANINI O'RGANISHNING YUQORI DARAJADAGI STRATEGIYALAR. GOLDEN BRAIN, 1(33), 152–156.

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-3, ISSUE-5

17. Муродов, О. Т. (2023). РАЗРАБОТКА АВТОМАТИЗИРОВАННОЙ СИСТЕМЫ УПРАВЛЕНИЯ ТЕМПЕРАТУРЫ И ВЛАЖНОСТИ В ПРОИЗВОДСТВЕННЫХ КОМНАТ. GOLDEN BRAIN, 1(26), 91-95.
18. Murodov, O. T. R. (2023). ZAMONAVIY TA'LIMDA AXBOROT TEXNOLOGIYALARI VA ULARNI QO'LLASH USUL VA VOSITALARI. Educational Research in Universal Sciences, 2(10), 481-486.
19. Murodov, O. T. R. (2023). INFORMATIKA DARSLARINI TASHKIL ETISHDA INNOVATSION USULLARDAN FOYDALANISH. GOLDEN BRAIN, 1(32), 194-201
20. Junaydullaevich, T. B. (2023). ANALYSIS OF OIL SLUDGE PROCESSING METHODS. American Journal of Public Diplomacy and International Studies (2993-2157), 1(9), 139-146.
21. Junaydullaevich, T. B. (2023). BITUMENS AND BITUMEN COMPOSITIONS BASED ON OIL-CONTAINING WASTES. American Journal of Public Diplomacy and International Studies (2993-2157), 1(9), 147-152.
22. Tursunbek Sadriddinovich Jalolov. (2023). PROGRAMMING LANGUAGES, THEIR TYPES AND BASICS. TECHNICAL SCIENCE RESEARCH IN UZBEKISTAN, 1(5), 145-152.
23. Tursunbek Sadriddinovich Jalolov. (2023). PYTHON TILINING AFZALLIKLARI VA KAMCHILIKLARI. TECHNICAL SCIENCE RESEARCH IN UZBEKISTAN, 1(5), 153-159.
24. Tursunbek Sadriddinovich Jalolov. (2023). PYTHON DASTUR TILIDADA WEB-ILOVALAR ISHLAB CHIQUISH. TECHNICAL SCIENCE RESEARCH IN UZBEKISTAN, 1(5), 160-166.
25. Tursunbek Sadriddinovich Jalolov. (2023). SUN'IY INTELLEKTDA PYTHONNING (PYTORCH) KUTUBXONASIDAN FOYDALANISH. TECHNICAL SCIENCE RESEARCH IN UZBEKISTAN, 1(5), 167-171.
26. Tursunbek Sadriddinovich Jalolov. (2023). WORKING WITH MATHEMATICAL FUNCTIONS IN PYTHON. TECHNICAL SCIENCE RESEARCH IN UZBEKISTAN, 1(5), 172-177.
27. Tursunbek Sadriddinovich Jalolov. (2023). PARALLEL PROGRAMMING IN PYTHON. TECHNICAL SCIENCE RESEARCH IN UZBEKISTAN, 1(5), 178-183.
28. Турсунов, Б. Ж., & Шомуродов, А. Ю. (2021). Перспективный метод утилизации отходов нефтеперерабатывающей промышленности. ТА'LIM VA RIVOJLANISH TAHLILI ONLAYN ILMIY JURNALI, 1(6), 239-243.
29. qizi Sharopova, M. M. (2023). RSA VA EL-GAMAL OCHIQ KALITLI SHIFRLASH ALGORITMI ASOSIDA ELEKTRON RAQMILI IMZOLARI. RSA OCHIQ KALITLI SHIFRLASH ALGORITMI ASOSIDAGI ELEKTRON RAQMILI IMZO. Educational Research in Universal Sciences, 2(10), 316-319
30. Sharipova, M. P. L. (2023). CAPUTA MA'NOSIDA KASR TARTIBLI HOSILALAR VA UNI HISOBLASH USULLARI. Educational Research in Universal Sciences, 2(9), 360-365.
31. Sharipova, M. P. (2023). MAXSUS SOHALARDA KARLEMAN MATRITSASI. Educational Research in Universal Sciences, 2(10), 137-141.
32. Madina Polatovna Sharipova. (2023). APPROXIMATION OF FUNCTIONS WITH COEFFICIENTS. American Journal of Public Diplomacy and International Studies (2993-2157), 1(9), 135-138.
33. Madina Polatovna Sharipova. (2023). Applications of the double integral to mechanical problems. International journal of sciearchers, 2(2), 101-103.

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-3, ISSUE-5

34. Sharipova, M. P. L. (2023). FINDING THE MAXIMUM AND MINIMUM VALUE OF A FUNCTION ON A SEGMENT. *American Journal of Public Diplomacy and International Studies* (2993-2157), 1(9), 245-248.
35. Quvvatov Behruz Ulug`bek o`g`li. (2023). Mobil ilovalar yaratish va ularni bajarish jarayoni. *International journal of scientific researchers*, 2(2).
36. Behruz Ulugbek og, Q. (2023). TECHNOLOGY AND MEDICINE: A DYNAMIC PARTNERSHIP. *International Multidisciplinary Journal for Research & Development*, 10(11).
37. Jurakulov Sanjar Zafarjon Oghly. (2023). A Current Perspective on the Relationship between Economics and Physics. *American Journal of Public Diplomacy and International Studies* (2993-2157), 1(10), 154–159.
38. Jurakulov Sanjar Zafarjon Oghly. (2023). New Computer-Assisted Approaches to Teaching Physics. *American Journal of Public Diplomacy and International Studies* (2993-2157), 1(10), 173–177.
39. qizi Latipova, S. S. (2023). KASR TARTIBLI HOSILA TUSHUNCHASI. *SCHOLAR*, 1(31), 263-269.
40. qizi Latipova, S. S. (2023). RIMAN-LUIVILL KASR TARTIBLI INTEGRALI VA HOSILASIGA OID AYRIM MASALALARNING ISHLANISHI. *Educational Research in Universal Sciences*, 2(12), 216-220.
41. qizi Latipova, S. S. (2023). MITTAG–LIFFLER FUNKSIYASI VA UNI HISOBLASH USULLARI. *Educational Research in Universal Sciences*, 2(9), 238-244.
42. Shahnoza, L. (2023, March). KASR TARTIBLI TENGLAMALARDA MANBA VA BOSHLANG`ICH FUNKSIYANI ANIQLASH BO`YICHA TESKARI MASALALAR. In "Conference on Universal Science Research 2023" (Vol. 1, No. 3, pp. 8-10).
43. Axmedova, Z. I. (2023). LMS TIZIMIDA INTERAKTIV ELEMENTLARNI YARATISH TEXNOLOGIYASI. *Educational Research in Universal Sciences*, 2(10), 368-372.
44. Ikromovna, A. Z. (2023). USING THE USEFUL ASPECTS OF THE MOODLE SYSTEM AND ITS POSSIBILITIES. *American Journal of Public Diplomacy and International Studies* (2993-2157), 1(9), 201-205.
45. Axmedova, Z. (2023). MOODLE TIZIMI VA UNING IMKONIYATLARI. *Development and innovations in science*, 2(11), 29-35.
46. Zulxumor, A. (2022). IMPLEMENTATION OF INTERACTIVE COURSES IN THE EDUCATIONAL PROCESS. *ILMIY TADQIQOT VA INNOVATSIYA*, 1(6), 128-132.
47. Tursunbek Sadriddinovich Jalolov. (2023). ARTIFICIAL INTELLIGENCE PYTHON (PYTORCH). *Oriental Journal of Academic and Multidisciplinary Research* , 1(3), 123-126.
48. Jalolov, T. S. (2023). ADVANTAGES OF DJANGO FEMWORKER. *International Multidisciplinary Journal for Research & Development*, 10(12).
49. Jalolov, T. S. (2023). ARTIFICIAL INTELLIGENCE PYTHON (PYTORCH). *Oriental Journal of Academic and Multidisciplinary Research*, 1(3), 123-126.
50. Jalolov, T. S. (2023). SPSS YOKI IJTIMOY FANLAR UCHUN STATISTIK PAKET BILAN PSIXOLOGIK MA`LUMOTLARNI QAYTA ISHLASH. *Journal of Universal Science Research*, 1(12), 207–215.
51. Tursunbek Sadriddinovich Jalolov. (2023). THE MECHANISMS OF USING MATHEMATICAL STATISTICAL ANALYSIS METHODS IN PSYCHOLOGY. *TECHNICAL SCIENCE RESEARCH IN UZBEKISTAN*, 1(5), 138–144.

INTRODUCING "PROGRAM CONTROL OPERATORS" IN THE JAVA PROGRAMMING LANGUAGE

Muxayyo Muxtor qizi Sharopova

Asian International University

Teacher of "General technical sciences" department

mukhayyosharopova4@gmail.com

ANNOTATION

This article introduces operators in the Java programming language and their functions. Including comparison operator if-else, ternary operators, loop operators for, while, do-while, selection operator switch, break and continue operator. Solutions to problems associated with each operator are shown.

Keyword SWITCH ,Break,Continue.

Enter

1. Comparison operators.
2. Logical operators.
3. Ternary operator "if-else" return operator.
4. WHILE loop statement.
5. DO – WHILE loop statement.
6. FOR loop operator.
7. SWITCH operator.
8. BREAK operator.
9. CONTINUE operator.

Comparison operators.

To compare two expressions, JAVA has a set of operators that represent relation and equality. The table below lists them.

Operator	Result
!=	Not equal
>	Big
<	Small
>=	Greater than or equal to
<=	Less than or equal to

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-3, ISSUE-5

Any kind of meaning, including integers and real numbers, symbols, logical meanings, and dependencies can be represented by equality " = " and inequality -

" != " can be compared using the validation operator.

Logical operators.

Logical operators work only with Boolean operators. All binary logical operators accept one of two values of type Boolean as operands and return a result of that type.

Boolean logical operators.

Operator	Result
&	Logical AND
	Logical OR
^	Logical XOR
&=	Logical AND
=	Logical OR
^=	Mastering the logical XOR by cancellation (XOR).
	The OR operator is a quick evaluation of an expression (short circuit OR)
&&	AND operator quick evaluation of the expression (short circuit AND)
!	Logical negation (NOT)
==	Eq
!=	Not equal
?:	If-then-else ternary operator

There are two complements to the set of logical operators. This is AND and OR

is an alternative variant of operators that serves for quick evaluation of logical expressions. You know that if the first operand of the OR operator is true, the result of the operation will be true regardless of the meaning of the second operand. Similarly, the AND operator, if the first operand is false, the meaning of the second operand does not affect the result - it is always false. As you see the usual & and | instead of the operators && and || operators, JAVA does not evaluate a Boolean expression on its operand, the answer is obvious from the meaning of the left operand.

If - then - else is a ternary operator.

The overview of the if - then - else operator is as follows:

expression1? expression2 : expression3

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY**VOLUME-3, ISSUE-5**

As the first operand "expression1", an arbitrary expression can be used, the result of which has a value of type Boolean. If the result is true, the operator specified in the second operand is executed, i.e. "expression2". If the result is false, the third operand - "expression3" is executed. The second and third operands, expression2 and expression3, must return values of the same type and must not be void.

Conditional operators of JAVA.

if-else statement. In its generalized form, this operator is written as follows:

```
if (boolean expression) operator1; [else operator2;]
```

There is no need for an else section. Any "operator1" and "operator2" can be replaced by a structural operator enclosed in curly braces. A boolean expression is an optional expression that returns a Boolean value.

```
static int test(int testval) {
    int result = 0;
    if (testval > target)
        result = - 1;
    else if (testval < target)
        result = + 1;
    otherwise
        result = 0; // match
    return result;
}
```

return

A return statement can be placed anywhere in the program, which immediately terminates the work and transfers control to the program that calls this method. Here is an example of using the return operator = to return control immediately when using the Java environment.

```
class ReturnDemo {
    public static void main (String args [ ]) {
        boolean t = true;
        System.out.println ("before return statement"); // before the return statement.
        if (t) return;
        System .out .println("This cannot be done"); // This will fail
    }
}
```

```
}
```

Cycles.

Any loop can be divided into 4 parts – setup (initial value), body, iteration and termination condition. There are three types of loop constructions in JAVA: while (condition before), do-while (condition after) and for (with parameter).

while This loop is executed until the value of the logical expression is equal to true. The general form of the while operator is as follows:

```
[ sur natish;]  
while (end)  
{  
the body;  
[iteration;]  
}
```

Installation and iteration are not required. Below is an example of how the while loop works.

```
public class WhileTest {  
public static void main(string [] args) {  
double r = 0;  
while (r<0.99d) {  
r = Math.Random ();  
system .out .println(r)  
}  
}  
} /// : ~
```

do-while. Sometimes there is a requirement to execute the loop body at least once even if the boolean evaluates to false. For such cases, do-while loop structure is used in JAVA. Its general appearance is as follows:

```
[ install ;] do  
{  
the body; [iteration;]  
} while (end);
```

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY**VOLUME-3, ISSUE-5**

In the example below, the loop body executes until the first check of the termination condition. This allows the iteration code to be combined with a termination condition:

```
class DoWhile {
    public static void main (String args [ ]) {
        int n = 10;
        do {
            System.out.println("tich" + n);
        } while (--n>0);
    }
}
```

for. This loop operator provides space for all four parts of the loop.

```
for ( set ; end ; iteration ) body ;
```

When entering a loop, if the termination condition is not met according to the initial condition, then the loop body and iteration operators are not executed even once. In the canonical form of the for loop, the integer value of the counter is incremented from the minimum value to a specified limit.

```
public class ListCharacters {
    public static void main(String[] args) {
        for (char c = 0; c < 128; c++)
            if (c != 26) // ANSI Clear screen
                System.out.println("value :" + (int) c + "character :" + c);
    }
} // : ~
```

The operator ``," sometimes occurs when the setup or iteration sections of a for loop require multiple operators. We know that you can't put a structural operator in curly braces in a for loop header, so JAVA shows an alternative way. A comma (,) can be used inside the parentheses of the for operator to separate multiple operators. Below is a trivial example of a for loop with several operators in the setup and iteration sections:

```
class Comma {
    public static void main (string args [ ]) {
        int a, b;
        for (a = 1, b = 4; a < b; a ++, b --) {
            system .out .println("a =" + a),
        }
    }
}
```

```
system.out.println("b =" + b),
```

The output of this program shows that the loop is executed only twice.

```
a = 1
```

```
b = 4
```

```
a = 2
```

```
b = 3
```

SWITCH. This operator provides the ability to select different parts of the program code depending on the value of a variable or expression. The general form of this operator is as follows:

```
switch (expression)
```

```
{
```

```
case value1:
```

```
break;
```

```
case value2:
```

```
break;
```

```
case valueN:
```

```
break;
```

```
[default:]
```

```
}
```

The result of the evaluated expression can be any value of the simple type, where the type of each of the values specified in the case-operators must match the type of the expression in the switch operator. If two case operators specify the same value, the translator reports an error.

If the value of the expression does not match any of the case operators, control is passed to the code following the default keyword. Note that default is not a necessary operator.

the break operator. This operator tells the execution environment to stop execution of the named block and pass control to the operator next to the given block. Symbols are used as a named block in the JAVA programming language. The break operator can be used unsigned when used in loops and switch statements. In this case, it performs the task of stopping the work of the current block and exiting it.

An unsigned switch inside a break statement causes control to pass to the code following the switch statement. If there is no A gar break, the one after the current case section is executed.

The break operator can be used to jump to one of the currently inserted blocks.

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY**VOLUME-3, ISSUE-5**

Continue operator. In some cases, there is a need to prematurely jump to the next iteration by rejecting the part of the loop body operators that the current iteration has not yet executed. For such purposes, JAVA provides the continue operator. below is an example of using this operator.

```
class Continue Demo {
    public static void main (String args [ ]) {
        for (int i = 0; i < 10; i++) {
            system .out .print (i + " ");
            if (i % 2 == 0) continue;
            system .out .println (" ");
        }
    }
}
```

If the cycle index is even, it does not go to a new line, but continues to print. The result of running this program is as follows:

```
0 1
2 3
4 5
5 7
8 0
```

As in the case of the break operator, the continue operator can be used to indicate at which of the set iterations you want to terminate the execution of the current iteration before the deadline.

REFERENCES

1. qizi Sharopova, M. M. (2023). RSA VA EL-GAMAL OCHIQ KALITLI SHIFRLASH ALGORITMI ASOSIDA ELEKTRON RAQMLI IMZOLARI. RSA OCHIQ KALITLI SHIFRLASH ALGORITMI ASOSIDAGI Jurakulov, S. Z. (2023). NUCLEAR ENERGY. *Educational Research in Universal Sciences*, 2(10), 514-518.
2. Oghly, J. S. Z. (2023). PHYSICO-CHEMICAL PROPERTIES OF POLYMER COMPOSITES. *American Journal of Applied Science and Technology*, 3(10), 25-33.
3. Oghly, J. S. Z. (2023). THE RELATIONSHIP OF PHYSICS AND ART IN ARISTOTLE'S SYSTEM. *International Journal of Pedagogics*, 3(11), 67-73.
4. Oghly, J. S. Z. (2023). BASIC PHILOSOPHICAL AND METHODOLOGICAL IDEAS IN THE EVOLUTION OF PHYSICAL SCIENCES. *Gospodarka i Innowacje.*, 41, 233-241.
5. ugli Jurakulov, S. Z. (2023). FIZIKA TA'LIMI MUVAFFAQIYATLI OLIH UCHUN STRATEGIYALAR. *Educational Research in Universal Sciences*, 2(14), 46-48.

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-3, ISSUE-5

6. Oghly, J. S. Z. (2023). A Japanese approach to in-service training and professional development of science and physics teachers in Japan. *American Journal of Public Diplomacy and International Studies (2993-2157)*, 1(9), 167-173.
7. Oghly, J. S. Z. (2023). STRATEGIES FOR SUCCESSFUL LEARNING IN PHYSICS. *American Journal of Public Diplomacy and International Studies (2993-2157)*, 1(9), 312-318.
8. Jurakulov, S. Z. O., & Turdiboyev, X. (2023). TA'LIM SOHASIDA FIZIKANING SAN'AT BILAN ALOQALARI. *GOLDEN BRAIN*, 1(33), 144-147.
9. Jurakulov, S. Z. O., & Turdiboyev, K. (2023). STUDYING PHYSICS USING A COMPUTER. *GOLDEN BRAIN*, 1(33), 148-151.
10. Jurakulov, S. Z. O., & Nurboyev, O. (2023). IN THE EDUCATIONAL FIELD OF PHYSICS LEVEL AND POSITION. *GOLDEN BRAIN*, 1(33), 157-161.
11. Jurakulov, S. Z. O., & Nurboyev, O. (2023). FIZIKA FANINING BO'LIMLARINING RIVOJLANISHDAGI ASOSIY AHAMIYATI. *GOLDEN BRAIN*, 1(33), 162-167.
12. Jurakulov, S. Z. O., & Nurboyev, O. (2023). RELATIONSHIPS BETWEEN THE DIRECTIONS OF FINANCE AND PHYSICAL SCIENCE. *GOLDEN BRAIN*, 1(33), 168-172.
13. Jurakulov, S. Z. O., & Hamidov, E. (2023). YADRO ENERGIYASINING XOSSA VA XUSUSIYATLARI. *GOLDEN BRAIN*, 1(33), 182-186.
14. Jurakulov, S. Z. O., & Turdiboyev, X. (2023). FIZIKA FANINI O'RGANISHNING YUQORI DARAJADAGI STRATEGIYALAR. *GOLDEN BRAIN*, 1(33), 152-156.
15. Муродов, О. Т. (2023). РАЗРАБОТКА АВТОМАТИЗИРОВАННОЙ СИСТЕМЫ УПРАВЛЕНИЯ ТЕМПЕРАТУРЫ И ВЛАЖНОСТИ В ПРОИЗВОДСТВЕННЫХ КОМНАТ. *GOLDEN BRAIN*, 1(26), 91-95.
16. Murodov, O. T. R. (2023). ZAMONAVIY TA'LIMDA AXBOROT TEXNOLOGIYALARI VA ULARNI QO'LLASH USUL VA VOSITALARI. *Educational Research in Universal Sciences*, 2(10), 481-486.
17. Murodov, O. T. R. (2023). INFORMATIKA DARSLARINI TASHKIL ETISHDA INNOVATSION USULLARDAN FOYDALANISH. *GOLDEN BRAIN*, 1(32), 194-201
18. Junaydullaevich, T. B. (2023). ANALYSIS OF OIL SLUDGE PROCESSING METHODS. *American Journal of Public Diplomacy and International Studies (2993-2157)*, 1(9), 139-146.
19. Junaydullaevich, T. B. (2023). BITUMENS AND BITUMEN COMPOSITIONS BASED ON OIL-CONTAINING WASTES. *American Journal of Public Diplomacy and International Studies (2993-2157)*, 1(9), 147-152.
20. Турсунов, Б. Ж., & Шомуродов, А. Ю. (2021). Перспективный метод утилизации отходов нефтеперерабатывающей промышленности. *ТА'LIM VA RIVOJLANISH TAHLILI ONLAYN ILMIY JURNALI*, 1(6), 239-243.
21. Bakhodir, T., Bakhtiyor, G., & Makhfuza, O. (2021). Oil sludge and their impact on the environment. *Universum: технические науки*, (6-5 (87)), 69-71.
22. Турсунов, Б. Ж. (2021). АНАЛИЗ МЕТОДОВ УТИЛИЗАЦИИ ОТХОДОВ НЕФТЕПЕРЕРАБАТЫВАЮЩЕЙ ПРОМЫШЛЕННОСТИ. *Scientific progress*, 2(4), 669-674.

23. ТУРСУНОВ, Б., & ТАШПУЛАТОВ, Д. (2018). ЭФФЕКТИВНОСТЬ ПРИМЕНЕНИЯ ПРЕДВАРИТЕЛЬНОГО ОБОГАЩЕНИЯ РУД В КАРЬЕРЕ КАЛЬМАКИР. In *Инновационные геотехнологии при разработке рудных и нерудных месторождений* (pp. 165-168).
24. Турсунов, Б. Д., & Суннатов, Ж. Б. (2017). Совершенствование технологии вторичного дробления безвзрывным методом. *Молодой ученый*, (13), 97-100.
25. Турсунов, Б. Ж., Ботиров, Т. В., Ташпулатов, Д. К., & Хайруллаев, Б. И. (2018). ПЕРСПЕКТИВА ПРИМЕНЕНИЯ ОПТИМАЛЬНОГО ПРОЦЕССА РУДООТДЕЛЕНИЯ В КАРЬЕРЕ МУРУНТАУ. In *Инновационные геотехнологии при разработке рудных и нерудных месторождений* (pp. 160-164).
26. Tursunov, B. J. (2021). ANALYZ METHODODOV UTILIZATsII OTKHODOV NEFTEPERERABATYVAYushchey PROMYSHLENNOSTI. *Scientific progress*, 2(4), 669-674.
27. Tursunov, B. J., & Shomurodov, A. Y. (2021). Perspektivnyi method utilizatsii otkhodov neftepererabatyvayushchey promyshlennosti. *ONLINE SCIENTIFIC JOURNAL OF EDUCATION AND DEVELOPMENT ANALYSIS*, 1(6), 239-243.
28. Tursunov, B. Z., & Gadoev, B. S. (2021). PROMISING METHOD OF OIL WASTE DISPOSAL. *Academic research in educational sciences*, 2(4), 874-880.
29. Jumaev, Q. K., Tursunov, B. J., Shomurodov, A. Y., & Maqsudov, M. M. (2021). ANALYSIS OF THE ASSEMBLY OF OIL SLAMES IN WAREHOUSES. *Science and Education*, 2(2).
30. Tursunov, B. J., Botirov, T. V., Tashpulatov, D. K., & Khairullaev, B. I. (2018). PERSPECTIVE PRIMENENIYA OPTIMAL PROCESS RUDOOTDELENIYA V KARERE MURUNTAU. *Innovative geotechnologies pri razrabotke rudnykh i non-rudnykh mestorojdenii*, 160-164.
31. Boboqulova, M. X. (2023). STOMATOLOGIK MATERIALLARNING FIZIK-MEXANIK XOSSALARI. *Educational Research in Universal Sciences*, 2(9), 223-228.
32. ELEKTRON RAQAMLI IMZO. *Educational Research in Universal Sciences*, 2(10), 316-319
33. Sharipova, M. P. L. (2023). CAPUTA MA'NOSIDA KASR TARTIBLI HOSILALAR VA UNI HISOBLASH USULLARI. *Educational Research in Universal Sciences*, 2(9), 360-365.
34. Sharipova, M. P. (2023). MAXSUS SOHALARDA KARLEMAN MATRITSASI. *Educational Research in Universal Sciences*, 2(10), 137-141.
35. Madina Polatovna Sharipova. (2023). APPROXIMATION OF FUNCTIONS WITH COEFFICIENTS. *American Journal of Public Diplomacy and International Studies (2993-2157)*, 1(9), 135-138.
36. Madina Polatovna Sharipova. (2023). Applications of the double integral to mechanical problems. *International journal of sciearchers*, 2(2), 101-103.
37. Sharipova, M. P. L. (2023). FINDING THE MAXIMUM AND MINIMUM VALUE OF A FUNCTION ON A SEGMENT. *American Journal of Public Diplomacy and International Studies (2993-2157)*, 1(9), 245-248.
38. Quvvatov Behruz Ulug`bek o`g`li. (2023). Mobil ilovalar yaratish va ularni bajarish jarayoni. *International journal of scientific researchers*, 2(2).

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-3, ISSUE-5

39. Behruz Ulugbek og, Q. (2023). TECHNOLOGY AND MEDICINE: A DYNAMIC PARTNERSHIP. *International Multidisciplinary Journal for Research & Development*, 10(11).
40. Jurakulov Sanjar Zafarjon Oghly. (2023). A Current Perspective on the Relationship between Economics and Physics. *American Journal of Public Diplomacy and International Studies (2993-2157)*, 1(10), 154–159.
41. Jurakulov Sanjar Zafarjon Oghly. (2023). New Computer-Assisted Approaches to Teaching Physics. *American Journal of Public Diplomacy and International Studies (2993-2157)*, 1(10), 173–177.
42. qizi Latipova, S. S. (2023). KASR TARTIBLI HOSILA TUSHUNCHASI. *SCHOLAR*, 1(31), 263-269.
43. qizi Latipova, S. S. (2023). RIMAN-LUIVILL KASR TARTIBLI INTEGRALI VA HOSILASIGA OID AYRIM MASALALARNING ISHLANISHI. *Educational Research in Universal Sciences*, 2(12), 216-220.
44. qizi Latipova, S. S. (2023). MITTAG-LIFFLER FUNKSIYASI VA UNI HISOBLASH USULLARI. *Educational Research in Universal Sciences*, 2(9), 238-244.
45. Shahnoza, L. (2023, March). KASR TARTIBLI TENGLAMALARDA MANBA VA BOSHLANG'ICH FUNKSIYANI ANIQLASH BO'YICHA TESKARI MASALALAR. In " *Conference on Universal Science Research 2023*" (Vol. 1, No. 3, pp. 8-10).
46. Axmedova, Z. I. (2023). LMS TIZIMIDA INTERAKTIV ELEMENTLARNI YARATISH TEXNOLOGIYASI. *Educational Research in Universal Sciences*, 2(10), 368-372.
47. Ikromovna, A. Z. (2023). USING THE USEFUL ASPECTS OF THE MOODLE SYSTEM AND ITS POSSIBILITIES. *American Journal of Public Diplomacy and International Studies (2993-2157)*, 1(9), 201-205.
48. Axmedova, Z. (2023). MOODLE TIZIMI VA UNING IMKONIYATLARI. *Development and innovations in science*, 2(11), 29-35.
49. Zulxumor, A. (2022). IMPLEMENTATION OF INTERACTIVE COURSES IN THE EDUCATIONAL PROCESS. *ILMIY TADQIQOT VA INNOVATSIYA*, 1(6), 128-132.

Working with folders in the JAVA programming language

Muxayyo Muxtor qizi Sharopova

Asian International University

Teacher of "General technical sciences" department

mukhayyosharopova4@gmail.com

ANNOTATION

This article looks at classes and class-related issues, including folders, in the JAVA programming language. Also, solutions to these problems are provided

Keywords : package , classpath, Friendly

Enter

All the identifiers we've used in our examples so far are in the same place in the names. (namespace). This meant that we had to worry about each class having its own unique name to avoid problems. Folders are a mechanism for working with namespaces and limiting visibility. Each extension JAVA file has 4 identical internals, of which we have used only one in our examples so far. Below is the initial form of the JAVA file.

1. Package single operator (optional)
2. Import any number of operators (optional)
3. Public class single announcement.
4. (private) folder any number of private classes (optional).
5. Package operator. The first thing that appears in a JAVA initialization file

is the package operator, which tells the compiler in which folder the classes in this file should be defined. Packages. Folders provide a separate collection of names where class names are stored. If the package operator is not specified, the classes fall into the unsigned namespace of silent names. If you declare a class as belonging to a specific folder, e.g.

Package java. out image; then the initialization code of this class must be stored in the java / awt / image directory.

The directory that the JAVA compiler treats as the root of the folder hierarchy can be specified using the CLASSPATH environment variable. This variable can be used to specify multiple root directories for a folder hierarchy.

Import operator. After the Package operator, but before any classes are defined in the initial JAVA file, there may be a list of import operators. Folders are a good mechanism for keeping classes separate, so all classes implemented in JAVA are stored in folders. The general form of the import operator is as follows:

Import volume 1 [. volume 2]. (classname / *),

Here, folder 1 is the name of the top level folder, folder 2 is the folder name of the folder inside the first folder and not necessarily separated by a dot. And, therefore, after the path in the folder hierarchy, either the class name or the metacharacter "*" (asterisk) is displayed. The asterisk indicates that if the JAVA translator needs a class for which a folder is not specified, it should look at the contents of the asterisked folder instead of the class name. The code snippet below shows both forms of the import operator:

Import java. wtil . Date

Import java. io. *

JAVA Access Specifiers.

- public : path to the interface.

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-3, ISSUE-5

- «friendly» (Dustana).
- private : the path is forbidden.
- protected : path for subclasses.

JAVA path specification public, protected and private class precedes every definition of its members, whether they are information, structure, or style. Each routing specifier controls the routing of the member definition it precedes.

public : open a path to the interface.

When a path of type public is used, it means that the member following the word public is open to everyone. Any class can access classes defined as public from any folder.

Public typecasting can be used for data objects, as long as it does not cause unwanted inconvenience when using it outside the class.

```
public int a;
```

"Friendly" (Friendly).

No specifier is defined before this or that class member

If so, when it (a member of this class) is silent, it opens a path without a keyword. This way opening is understood as friendly dek (friendly). This means that all other classes in the current folder have access to this class member. But for classes outside the folder, the path to this member of the class is closed. Friendly type routing allows you to group related classes within a folder.

Let's use the definitions of public and friendly as an example.

```
package food. desserts;  
public class Cookie {  
    public Cookie () {  
        system. out. println("Cookie constructor");  
    }  
    void decorate () { system . out. println ("Cookie decorated"); }  
}
```

To a separate file:

```
// import food dessert * ;  
public class Dinner {  
    public static void main (string args [ ]) {  
        Cookie C = new Cookie ( );  
        // !c. decorate ( ); // freight  
    }  
}
```

private : the path is denied.

The private keyword tells these members that no one outside of that class's methods has access. Other classes in that folder have no access to members defined as private, which is the most restricted access level.

Information finders defined as private are only accessible to the class they belong to. This type of path is used: for variables that make the object wild when referenced outside the class;

methods that expose the object when invoked at run time outside the class;

```
class Resource {
```

```
private static count = 5;  
private Resource ( ) { }  
static Resource make A Resource ( ) {  
if (count > 0) { count - -; return new Resource
```

REFERENCES

1. qizi Sharopova, M. M. (2023). RSA VA EL-GAMAL OCHIQ KALITLI SHIFRLASH ALGORITMI ASOSIDA ELEKTRON RAQMLI IMZOLARI. RSA OCHIQ KALITLI SHIFRLASH ALGORITMI ASOSIDAGI ELEKTRON RAQAMLI IMZO. *Educational Research in Universal Sciences*, 2(10), 316-319
2. Jurakulov, S. Z. (2023). NUCLEAR ENERGY. *Educational Research in Universal Sciences*, 2(10), 514-518.
3. Oghly, J. S. Z. (2023). PHYSICO-CHEMICAL PROPERTIES OF POLYMER COMPOSITES. *American Journal of Applied Science and Technology*, 3(10), 25-33.
4. Oghly, J. S. Z. (2023). THE RELATIONSHIP OF PHYSICS AND ART IN ARISTOTLE'S SYSTEM. *International Journal of Pedagogics*, 3(11), 67-73.
5. Oghly, J. S. Z. (2023). BASIC PHILOSOPHICAL AND METHODOLOGICAL IDEAS IN THE EVOLUTION OF PHYSICAL SCIENCES. *Gospodarka i Innowacje.*, 41, 233-241.
6. ugli Jurakulov, S. Z. (2023). FIZIKA TA'LIMI MUVAFFAQIYATLI OLISH UCHUN STRATEGIYALAR. *Educational Research in Universal Sciences*, 2(14), 46-48.
7. Oghly, J. S. Z. (2023). A Japanese approach to in-service training and professional development of science and physics teachers in Japan. *American Journal of Public Diplomacy and International Studies (2993-2157)*, 1(9), 167-173.
8. Oghly, J. S. Z. (2023). STRATEGIES FOR SUCCESSFUL LEARNING IN PHYSICS. *American Journal of Public Diplomacy and International Studies (2993-2157)*, 1(9), 312-318.
9. Jurakulov, S. Z. O., & Turdiboyev, X. (2023). TA'LIM SOHASIDA FIZIKANING SAN'AT BILAN ALOQALARI. *GOLDEN BRAIN*, 1(33), 144-147.
10. Jurakulov, S. Z. O., & Turdiboyev, K. (2023). STUDYING PHYSICS USING A COMPUTER. *GOLDEN BRAIN*, 1(33), 148-151.
11. Jurakulov, S. Z. O., & Nurboyev, O. (2023). IN THE EDUCATIONAL FIELD OF PHYSICS LEVEL AND POSITION. *GOLDEN BRAIN*, 1(33), 157-161.
12. Jurakulov, S. Z. O., & Nurboyev, O. (2023). FIZIKA FANINING BO'LIMLARINING RIVOJLANISHDAGIDAGI ASOSIY AHAMIYATI. *GOLDEN BRAIN*, 1(33), 162-167.
13. Jurakulov, S. Z. O., & Nurboyev, O. (2023). RELATIONSHIPS BETWEEN THE DIRECTIONS OF FINANCE AND PHYSICAL SCIENCE. *GOLDEN BRAIN*, 1(33), 168-172.
14. Jurakulov, S. Z. O., & Hamidov, E. (2023). YADRO ENERGIYASINING XOSSA VA XUSUSIYATLARI. *GOLDEN BRAIN*, 1(33), 182-186.
15. Jurakulov, S. Z. O., & Turdiboyev, X. (2023). FIZIKA FANINI O'RGANISHNING YUQORI DARAJADAGI STRATEGIYALAR. *GOLDEN BRAIN*, 1(33), 152-156.
16. Jurakulov Sanjar Zafarjon Oghly. (2023). A Current Perspective on the Relationship between Economics and Physics. *American Journal of Public Diplomacy and International Studies (2993-2157)*, 1(10), 154-159.
17. Jurakulov Sanjar Zafarjon Oghly. (2023). New Computer-Assisted Approaches to Teaching Physics. *American Journal of Public Diplomacy and International Studies (2993-2157)*, 1(10), 173-177.

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-3, ISSUE-5

18. Boboqulova, M. X. (2023). STOMATOLOGIK MATERIALLARNING FIZIK-MEXANIK XOSSALARI. *Educational Research in Universal Sciences*, 2(9), 223-228.
19. qizi Sharopova, M. M. (2023). RSA VA EL-GAMAL OCHIQ KALITLI SHIFRLASH ALGORITMI ASOSIDA ELEKTRON RAQMLI IMZOLARI. RSA OCHIQ KALITLI SHIFRLASH ALGORITMI ASOSIDAGI ELEKTRON RAQAMLI IMZO. *Educational Research in Universal Sciences*, 2(10), 316-319
20. Sharipova, M. P. L. (2023). CAPUTA MA'NOSIDA KASR TARTIBLI HOSILALAR VA UNI HISOBLASH USULLARI. *Educational Research in Universal Sciences*, 2(9), 360-365.
21. Sharipova, M. P. (2023). MAXSUS SOHALARDA KARLEMAN MATRITSASI. *Educational Research in Universal Sciences*, 2(10), 137-141.
22. Madina Polatovna Sharipova. (2023). APPROXIMATION OF FUNCTIONS WITH COEFFICIENTS. *American Journal of Public Diplomacy and International Studies (2993-2157)*, 1(9), 135-138.
23. Madina Polatovna Sharipova. (2023). Applications of the double integral to mechanical problems. *International journal of sciearchers*, 2(2), 101-103.
24. Sharipova, M. P. L. (2023). FINDING THE MAXIMUM AND MINIMUM VALUE OF A FUNCTION ON A SEGMENT. *American Journal of Public Diplomacy and International Studies (2993-2157)*, 1(9), 245-248.
25. Quvvatov Behruz Ulug'bek o'g'li. (2023). Mobil ilovalar yaratish va ularni bajarish jarayoni. *International journal of scientific researchers*, 2(2).
26. Behruz Ulugbek og, Q. (2023). TECHNOLOGY AND MEDICINE: A DYNAMIC PARTNERSHIP. *International Multidisciplinary Journal for Research & Development*, 10(11).
27. qizi Latipova, S. S. (2023). KASR TARTIBLI HOSILA TUSHUNCHASI. *SCHOLAR*, 1(31), 263-269.
28. qizi Latipova, S. S. (2023). RIMAN-LUIVILL KASR TARTIBLI INTEGRALI VA HOSILASIGA OID AYRIM MASALALARNING ISHLANISHI. *Educational Research in Universal Sciences*, 2(12), 216-220.
29. qizi Latipova, S. S. (2023). MITTAG-LIFFLER FUNKSIYASI VA UNI HISOBLASH USULLARI. *Educational Research in Universal Sciences*, 2(9), 238-244.
30. Shahnoza, L. (2023, March). KASR TARTIBLI TENGLAMALARDA MANBA VA BOSHLANG'ICH FUNKSIYANI ANIQLASH BO'YICHA TESKARI MASALALAR. In " *Conference on Universal Science Research 2023*" (Vol. 1, No. 3, pp. 8-10).
31. Axmedova, Z. I. (2023). LMS TIZIMIDA INTERAKTIV ELEMENTLARNI YARATISH TEXNOLOGIYASI. *Educational Research in Universal Sciences*, 2(10), 368-372.
32. Ikromovna, A. Z. (2023). USING THE USEFUL ASPECTS OF THE MOODLE SYSTEM AND ITS POSSIBILITIES. *American Journal of Public Diplomacy and International Studies (2993-2157)*, 1(9), 201-205.
33. Axmedova, Z. (2023). MOODLE TIZIMI VA UNING IMKONIYATLARI. *Development and innovations in science*, 2(11), 29-35.
34. Zulxumor, A. (2022). IMPLEMENTATION OF INTERACTIVE COURSES IN THE EDUCATIONAL PROCESS. *ILMIY TADQIQOT VA INNOVATSIYA*, 1(6), 128-132.
35. Муродов, О. Т. (2023). РАЗРАБОТКА АВТОМАТИЗИРОВАННОЙ СИСТЕМЫ УПРАВЛЕНИЯ ТЕМПЕРАТУРЫ И ВЛАЖНОСТИ В ПРОИЗВОДСТВЕННЫХ КОМНАТ. *GOLDEN BRAIN*, 1(26), 91-95.

36. Murodov, O. T. R. (2023). ZAMONAVIY TA'LIMDA AXBOROT TEXNOLOGIYALARI VA ULARNI QO'LLASH USUL VA VOSITALARI. *Educational Research in Universal Sciences*, 2(10), 481-486.
37. Murodov, O. T. R. (2023). INFORMATIKA DARSLARINI TASHKIL ETISHDA INNOVATSION USULLARDAN FOYDALANISH. *GOLDEN BRAIN*, 1(32), 194-201
38. Junaydullaevich, T. B. (2023). ANALYSIS OF OIL SLUDGE PROCESSING METHODS. *American Journal of Public Diplomacy and International Studies (2993-2157)*, 1(9), 139-146.
39. Junaydullaevich, T. B. (2023). BITUMENS AND BITUMEN COMPOSITIONS BASED ON OIL-CONTAINING WASTES. *American Journal of Public Diplomacy and International Studies (2993-2157)*, 1(9), 147-152.
40. Турсунов, Б. Ж., & Шомуродов, А. Ю. (2021). Перспективный метод утилизации отходов нефтеперерабатывающей промышленности. *ТА'LIM VA RIVOJLANISH TAHLILI ONLAYN ILMIY JURNALI*, 1(6), 239-243.
41. Bakhodir, T., Bakhtiyor, G., & Makhfuza, O. (2021). Oil sludge and their impact on the environment. *Universum: технические науки*, (6-5 (87)), 69-71.
42. Турсунов, Б. Ж. (2021). АНАЛИЗ МЕТОДОВ УТИЛИЗАЦИИ ОТХОДОВ НЕФТЕПЕРЕРАБАТЫВАЮЩЕЙ ПРОМЫШЛЕННОСТИ. *Scientific progress*, 2(4), 669-674.
43. ТУРСУНОВ, Б., & ТАШПУЛАТОВ, Д. (2018). ЭФФЕКТИВНОСТЬ ПРИМЕНЕНИЯ ПРЕДВАРИТЕЛЬНОГО ОБОГАЩЕНИЯ РУД В КАРЬЕРЕ КАЛЬМАКИР. In *Инновационные геотехнологии при разработке рудных и нерудных месторождений* (pp. 165-168).
44. Турсунов, Б. Д., & Суннатов, Ж. Б. (2017). Совершенствование технологии вторичного дробления безвзрывным методом. *Молодой ученый*, (13), 97-100.
45. Турсунов, Б. Ж., Ботиров, Т. В., Ташпулатов, Д. К., & Хайруллаев, Б. И. (2018). ПЕРСПЕКТИВА ПРИМЕНЕНИЯ ОПТИМАЛЬНОГО ПРОЦЕССА РУДОТДЕЛЕНИЯ В КАРЬЕРЕ МУРУНТАУ. In *Инновационные геотехнологии при разработке рудных и нерудных месторождений* (pp. 160-164).
46. Tursunov, B. J. (2021). ANALYZ METHODOV UTILIZATsII OTXHODOV NEFTEPERERABATYVAYushchey PROMYSHLENNOSTI. *Scientific progress*, 2(4), 669-674.
47. Tursunov, B. J., & Shomurodov, A. Y. (2021). Perspektivnyi method utilizatsii otkhodov neftepererabatyvayushchey promyshlennosti. *ONLINE SCIENTIFIC JOURNAL OF EDUCATION AND DEVELOPMENT ANALYSIS*, 1(6), 239-243.
48. Tursunov, B. Z., & Gadoev, B. S. (2021). PROMISING METHOD OF OIL WASTE DISPOSAL. *Academic research in educational sciences*, 2(4), 874-880.
49. Jumaev, Q. K., Tursunov, B. J., Shomurodov, A. Y., & Maqsudov, M. M. (2021). ANALYSIS OF THE ASSEMBLY OF OIL SLAMES IN WAREHOUSES. *Science and Education*, 2(2).
50. Tursunov, B. J., Botirov, T. V., Tashpulatov, D. K., & Khairullaev, B. I. (2018). PERSPECTIVE PRIMENENIYA OPTIMAL PROCESS RUDOOTDELENIYA V KARERE MURUNTAU. *Innovative geotechnologies pri razrabotke rudnykh i non-rudnykh mestorojdenii*, 160-164.

Teachers by before school education organization in pupils passable training in the process to the children applied pedagogical communication styles classification

Asian International University

Teacher of the Department of Pedagogy and Psychology

Xalilova Shakhlo Ravshanovna

Abstract: The article analyzes the classification of pedagogical communication styles used by pedagogues during training. In addition, by using the method of pedagogical communication correctly, the manners of preschoolers, aspects related to information acquisition are reflected in the article. The impact of pedagogical communication methods on the mastering process in the teacher's professional activity has been thoroughly analyzed.

Аннотация: В статье анализируется влияние методов педагогического общения на процесс усвоения в профессиональной деятельности учителя. Кроме того, в статье отражены правильное использование метода педагогического общения, манеры поведения дошкольников, аспекты, связанные с усвоением информации. Подробно проанализировано влияние методов педагогического общения на процесс усвоения в профессиональной деятельности учителя.

mastering process in the teacher's professional activity has been thoroughly analyzed.

Key words: Communication, pedagogical communication, educational system, communication methods, way of thinking, speech culture, learning process and etiquette, professional activity.

Ключевые слова: Общение, педагогическое общение, образовательная система, методы общения, образ мышления, культура речи, учебный процесс и этикет, профессиональная деятельность.

When a person comes into the world, he begins to study the environment and analyze it. The universe first his parents through after he begins to perceive before school education in the institution education givers , later at school pedagogues by realize developed goes _ He begins to study all the creatures in the world around him through his senses. As he develops mentally and quantitatively, he needs to express his opinion. His interest in getting more pleasure from the things he likes increases. It tries to explain the aspects that it does not like. And this him wrapping standing universe and in it people with to communicate introduction just like that is enough Through this n win development and communication process forming goes _ Speech development at the time it is many the words first no _ not understanding until school _ education at the age of When he arrived, he said the words the meaning mentally understand use starts _ In this process parents asset activity shows socialization _ as a result before school education in the institution education givers by strengthened , the surrounding with conscious to communicate enters , own his opinion means and others the word understand goes _

Dialogue is a Greek word that means conversation, interpersonal conversation, and exchange of ideas, and occurs in the speech of two or more people . Two and more than that, it is a process of exchange of ideas between people.¹

Pedagogical communication means the system, methods and skills of mutual action between the pedagogue and the group of students consisting of information exchange, educational impact and mutual cooperation. The teacher is the initiator of this process, organizes

¹PEDAGOGICAL SKILLS; Tashkent; "ECONOMY-FINANCE"-2011 page 117

it and leads it. ANLeontev, evaluating the educational and didactic importance of pedagogical communication, expresses the following points. Active pedagogical communication is the key of the teacher, the pedagogical team in general, to know and learn the students in the educational process, and the creative character of the educational activity, which creates the best conditions for the formation of the student's personality. providing an acceptable emotional environment in education, including preventing the emergence of mental and psychological barriers, ensuring proper management of social and psychological processes in the children's community, and in the educational process is an important tool that creates opportunities for the teacher to use his pedagogical skills wisely.² The didactic and especially educational tasks of the teacher's activity cannot be carried out in a sufficiently productive manner without organizing a productive process of communication between the teacher and the group of students.

V.A. Kan-Kalik emphasizes that pedagogical communication is made up of relationships and methods of interaction and categorizes them as follows:

1) communication based on interest in collaborative creative work. In a dialogue based on interest in creative work carried out in cooperation, the pedagogue has a positive attitude towards learners and work.

2) communication based on friendly relations. Communication based on friendly relations is close to the type of communication discussed above. Some pedagogues misunderstand friendly communication and cross the line. There should be a certain distance between the teacher and the student. The teacher's culture and pedagogical tact play an important role in determining this distance.

3) communication that keeps the teacher and students at a certain distance. Communication that keeps a certain distance cannot be considered effective either. However, this is a common method. There is a certain boundary between the pedagogue and the students, which can be described as follows: "I know - you don't know", "Do as I say - I am older, more experienced, we cannot be equal". This method is closer to the authoritarian one, which from the outside seems to help to implement orderly activities, but does not give high efficiency.

4) communication based on intimidation. A high-level form of communication that keeps teachers and learners at a distance is bullying communication. It embodies a negative attitude towards learners and authoritarian rule. As a vivid expression of this style, the following statements can be cited: "Listen carefully, otherwise I will leave you two", "I will still show you your days". This style creates a negative atmosphere during training.

that a person is not born into the world with a fully formed character, moral characteristics program, his characteristic qualities, moral standards are the product of social life and family upbringing. During this formation, the role of the information given in the preschool educational institution and the activities conducted is significant.

First of all, it is necessary to teach children to overcome fear, hesitation and lack of courage. Because you can't teach a child to swim without putting him in the water. In fact, it is difficult to overcome the fear and lack of courage in children or young school students without testing them in situations that require courage and bravery.

² Khalikov A. Pedagogical skill Tashkent "ECONOMY-FINANCE" 2011
www.ziyouz.com library page 78

Kaikovus (11th century) in his "Nightmare" talked about teaching children a trade, and in his advice to his children, he also talked about the culture of treatment of children by parents and teachers. For example, he says that a parent can influence a child through a teacher in order to inculcate knowledge and moral qualities in his ³child : (Father) show compassion, be kind , my young son learns manners with a stick and does not learn by his own will. But if the child is impudent and you get angry because of that , don't beat him with your own hand, scare him with the teacher's stick. Let the teachers teach the children so that your son does not hold a grudge against you .⁴

If we want to raise our young people to be brave, brave and fearless, we need a different approach to this work. Because the romantic stage of the history of education, the education of courage, is behind us. Developed countries have already moved to its technological stage.

Raising children to be intelligent and wise, active and resourceful, brave and courageous depends first of all on the parents and then on the educators who are responsible for the upbringing of the child. We should try to arm them with the most modern advanced knowledge.

Therefore, educators should educate students to be the most reliable young people on earth . We can become one of the leading nations only if we are willing to do this . Otherwise, they will have to live by buying rather than discovering and buying products.

The more pedagogues are on this path, the more different methods and tools are used, the faster the goal is achieved. Pedagogy does not create its methods out of nothing, it does not invent them. He selects from life the real factors of people's behavior, those who meet the tasks of organizing students' lives in a pedagogically appropriate way, and uses the quality of methods of pedagogical influence in educational work. Pedagogical impact methodology consists of a system of tools used to organize children's social and useful activities in a pedagogically appropriate manner. These tools are aimed at the individual of the student, stimulate the behavior of those who enter the dialogue, their difficult and complex tasks become a source of creative pleasure, their personal interests.

The communication style chosen by the pedagogue plays an especially important role in the initial period of working with the group of communicators, in the first lessons. At this stage, how things go in the group, how accurately this or that action is performed by the students, and how the relationship between the teacher and the student begins, the students consider him a respected friend - their leader. Whether they will admit it or not, all this is closely related to the requirements of the educator.

Thus, in the initial period of working with communication starters and organizing new types of their activities, the requirements of the pedagogue are an important means of encouraging the necessary behavior of students, as well as a means of preventing and stopping undesirable and useless actions. will be We will look at the main groups and forms of demand.

Educator's demands can be direct demands, in which they are aimed at such students that the educator expects them to achieve certain actions, or the educator's demands can be instrumental demands, in which the teacher with his demands makes the students next in line with their peers. makes demands.

³Malla Ochilov "Teacher is the architect of the heart" Tashkent "Teacher" 2001 p. 27

⁴Nightmare. Tashkent, "Heritage", 1992, p. 83

First of all, we will describe the main forms of demand, the choice of one or another form of this method is related to taking into account the pedagogical situation. Pedagogical situation for direct requirements arises from two main conditions, two factors. First factor - from whom Demand kilinsa, that's it Demand to the doer has been is a relationship. Second factor is _ of the pupil pedagogue encouraging to activity i is a relationship. In general when this relations we are positive, neutral and negative we define as relations, whereas in practice this of relationships very more and more to have appearances as well can _

Now Demand to the forms stopping let's go Demand straight up to be can, in this of the teacher address « So and only so do » according to the formula b' in a strong, bold mood _ expressed sure to the instruction have will be Such without students _ to action exclamation point factor of demand himself is considered

The ball is right Demand the team with of work the first stage especially impressive will be This one writer showing past was: " Sincere, open, convincing, passionate strictly Demand if not, the team to educate starting from it won't happen, therefore, anyone has it of the ambiguities, given and _ _ shuvab from those who leave the work to start if he thinks, he is wrong did will be ".

Teacher students for new has been activity organize doing the ball is right in the place Demand is necessary. Here _ straight up Demand of education initial method has been the road is the path to give like go to himself attention attraction does _ Saying that _ let 's go straight Demand most of the time of the student to the pedagogue or he started to the activity neutral in relation to be conditions is used. Such in the situation ball- directly, directly of demand the following to the rules compliance to do especially important _

First rule: usually, requirement positive to be, that is absolutely certain behavior cause output, students' it or this actions just not to prohibit, not to stop Of course, the teacher from prohibitions especially, students defined behavior the rules each different way has been h ols is used. However pedagogues requirements main content prohibitions organize ca n't In the requirements main thing students behavior and of activity positive is a program.

Second rule: the ball is correct Demand guidance in the style, that is one different meaningful, clear and clear, concrete to be it is necessary Initial times of students new actions when encouraged Demand the road is the path to give with by joining as if gone it will be actions detailing them _ sure by describing will give.

Third rule: pedagogue's somehow reasonable, clear and prepared straight up demand of course completion, to the end delivered need. That remember catch should be similar pedagogical movement of the law manifestation to be as a result each one new of demand execution of the pedagogue next requirements of power and effectiveness increases student - teacher intelligence with sure submission habit forms. And on the contrary, har one not done Demand from that next of requirements efficiency lower a di. The ball is correct of requirements technical performance about when speaking, them to put firm, reliable tone emphasizing tooth _ need _ He is calm about the situation look, seriously to be, but never time to shout, child an insult to do turning around not stay need _ Demand-consultation trainee to his mind distrust from reporting consists of is, it is or this behavior, practical task different method of solving to the goal compatibility about includes the teacher's recommendation to make a decision independently. Like a request, the advice is not forced, the right to choose remains with the child. This form develops a conscious attitude to work and, in addition, teaches to

consider the pedagogue as an older comrade, whose reputation is based on the fact that it is hidden in wide knowledge, great life experience, skill. At the same time, the problem is not a guide that describes everything from thread to needle, but often encourages independent search for solutions.

This form of direct demand is also useful in that it teaches students to consult with fellow students in certain situations, especially when difficulties arise. In turn, pedagogues should teach themselves to value students' requests for advice, not just to tell their own reaction, but to provide natural support to their younger peers.

Demand is a hidden form and one of the subtlest means of inspiring students to certain actions. Sha'ma is a kind of conditional reduction of previously used, well-known demands, demands whose meaning cannot be revealed. For an experienced pedagogue, sometimes it is enough to ask students a stare, a movement of the eyebrows, a rhetorical question to ensure that students perform the necessary actions. In certain conditions, the sham plays the role of a "hidden" form of demand, which is understandable only to two people and does not attract the attention of others.

A conditional requirement is that an activity that is pleasant for the child appears as a motivating factor for an unpleasant or difficult activity.

In conclusion, it should be said that what communication methods are chosen for a child from a young age, from the period of his early formation, and to what extent the factors affecting his upbringing are used appropriately, will be of great importance in his personal development in the future. This is one of the most important tasks of parents, then preschool educators, and then teachers and pedagogues.

List of used literature

1. Mustafoyev, K. (2023). LOOPER MECHANISM OF THE SEWING MACHINE. *Евразийский журнал академических исследований*, 3(4), 16-18.
2. Mustafoyev Komiljon Ilxom o'g'li. (2023). New Construction of the Loper Mechanism. *American Journal of Public Diplomacy and International Studies* (2993-2157), 1(9), 255–257.
3. A'zamjon Xoliqov Pedagogik mahorat Toshkent «IQTISOD-MOLIYA» 2011
4. Malla Ochilov "Muallim qalb me'mori" Toshkent "O'qituvchi" 2001 yil
5. Qobusnoma. Toshkent, "Meros", 1992 yil
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. 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>

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-3, ISSUE-5

9. 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.
10. XALILOVA, S. (2021). JAHON PEDAGOGIKASIDA ZAMONAVIY PEDAGOGIK MULOQOT VA MILLIY PEDAGOGIK MULOQOT USLUBLARIGA TRANSFORMATSIYASI. *ЦЕНТР НАУЧНЫХ ПУБЛИКАЦИЙ (buxdu. uz)*, 1(1).
11. Xalilova Shaxlo Ravshanovna. (2023). O'qituvchi kasbiy faoliyatida pedagogik muloqot usullarining o'zlashtirish jarayoniga ta'siri va ahamiyati. *Journal of Universal Science Research*, 1(10), 803–816.
12. Ravshanovna, K. S. (2023). Factors Affecting the Formation of a Positive Attitude to the Learning Activity in Students. *American Journal of Public Diplomacy and International Studies (2993-2157)*, 1(9), 116–122.
13. Isomova, F. A. T. Q. (2022). MAKTABGACHA TALIM TASHKILOTLARIDA BOLALARNI MAKTAB TA'LIMIGA TAYYORLASHDA NUTQ O'STIRISH MASHG'ULOTLARINING AHAMIYATI. *Oriental renaissance: Innovative, educational, natural and social sciences*, 2(1), 947-949.
14. Bahodirovna, H. N. (2023). BOSHLANG'ICH SINFLARDA ONA TILI O'QITISH METODIKASI FANINING METODOLOGIK VA ILMIY ASOSLARI.
15. Hojiyeva, N. (2023). METHODS OF TEACHING MOTHER TONGUE IN PRIMARY CLASSES SCIENTIFIC AND METHODOLOGICAL BASIS. *Modern Science and Research*, 2(9), 424-428.
16. Bahodirovna, H. N. (2023). TA'LIM JARAYONIDA BOSHLANG 'ICH SINFLARDA TEXNOLOGIYA FANINI O 'QITISH MUAMMOSINING YORITILISH MAZMUNI. *PEDAGOGS jurnali*, 1(1), 209-209.
17. Kozimova, N. A. (2023). BUGUNGI TA'LIM TIZIMIDA ZAMONAVIY O 'QUVCHI SHAXSINING IJTIMOIIY VA PSIXOLOGIK JIHATLARI. *Educational Research in Universal Sciences*, 2(10), 44-46.V
18. Abduqahhorovna, N. K. (2023). PSIXOLOGIK KONSULTATSIYAGA MUROJAAT QILUVCHI OTA-ONALARNING FARZAND TARBIYASI MUAMMOLARINI O 'RGANISHDA HADISLARDAN TERAPIYA SIFATIDA FOYDALANISH.
19. Sobirovna, S. Y. (2023). O 'YIN ORQALI BOLA TAFAKKURI VA NUTQINI OSTIRISH. *SAMARALI TA'LIM VA BARQAROR INNOVATSIYALAR*, 1(3), 93-99.
20. Yulduz, S. (2023). KREATIV YONDASHUVLAR ASOSIDA BOLALAR NUTQI VA TAFAKKURINI RIVOJLANTIRISH. *ОБРАЗОВАНИЕ НАУКА И ИННОВАЦИОННЫЕ ИДЕИ В МИРЕ*, 23(2), 87-92.
21. Tursunova, Z. (2023). METHODOLOGY OF MOTHER TONGUE TEACHING IN PRIMARY SCHOOLS. *Modern Science and Research*, 2(9), 350-352
22. Лукмонова, С. (2022). BO 'LAJAK BOSHLANG 'ICH SINF O 'QITUVCHISINING RAQAMLI TA'LIM RESURSLARIDAN FOYDALANISHGA TAYYORLIGINI SHAKLLANTIRISH: Lukmonova Salomat Gafurovna, Boshlang'ich ta'lim nazariyasi kafedresi o'qituvchisi, Buxoro davlat universiteti orcid 0000-0001-9040-0232. *Образование и инновационные исследования международный научно-методический журнал*, (1), 221-226.

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-3, ISSUE-5

23. Gafurovna, L. S. (2021). BOSHLANG'ICH SINFLARDA RAQAMLI TA'LIM RESURSLARIDAN FOYDALANISH IMKONIYATLARI. In *Научно-практическая конференция*.
24. Ikromova Sitora Akbarovna. (2023). NEUROPHYSIOLOGY BASIS OF HORMONES. TECHNICAL SCIENCE RESEARCH IN UZBEKISTAN, 1(5), 68–77.
25. Mahmudova Nigora Hikmatovna. (2023). Goals and Tasks of Education. American Journal of Public Diplomacy and International Studies (2993-2157), 1(9), 360–362. Retrieved from <https://grnjournal.us/index.php/AJPDIS/article/view/1567>
26. Maxmudova, N. (2018). THE ROLE OF COMPUTER TECHNOLOGIES IN THE INNOVATIVE TRAINING PROCESS. Экономика и социум, (3 (46)), 34-36.
27. Narziyeva Shaxnoza Rustamjon qizi. (2023). PSYCHOLOGICAL CHARACTERISTICS OF THE MANIFESTATION OF ADOLESCENT EMPATHY. American Journal of Public Diplomacy and International Studies (2993-2157), 1(9), 132–134.
28. Narziyeva, S. (2023). PSYCHOLOGICAL VIEWS ON THE CHOICE OF PROFESSION. Modern Science and Research, 2(10), 333-336.
29. Akbarovna, I. S. (2023). MILLIY HARAKATLI O'YINLARNING BOLALAR TARBIYASIDAGI IJTIMOIIY-PSIXOLOGIK XUSUSIYATLARI.
30. Sitora Akbarovna Ikromova. (2023). Formation of Ideological Immunity to Destructive Information. *Intersections of Faith and Culture: American Journal of Religious and Cultural Studies (2993-2599)*, 1(9), 50–54.
31. Akbarovna, I. S. (2023). Study of the Formation of Ideological Immunity By Foreign and Russian Researchers. American Journal of Public Diplomacy and International Studies (2993-2157), 1(9), 235-239.
32. Akbarovna, I. S. (2023). Adolescence during Destructive Behavior Appearances the Problem Learning Condition. *Intersections of Faith and Culture: American Journal of Religious and Cultural Studies (2993-2599)*, 1(9), 105-109.

Резюме

В данной статье анализируются такие проблемы, как период жизни Захириддина Мухаммада Бабура, кризис тимуридской династии, нестабильность общественно-политического режима в Мавераннахре и Хорасане, образование империи бабуридов и Индии, победы и поражения Бабура, их психологическая интерпретация, эволюция его мировоззрения и душевного состояния.

Ключевые слова: Бабур, кризис империи тимуридов, общественно-политическая обстановка в Хорасане, Мавераннахре, победитель, побежденный, изменения в душевном состоянии автора.

Resume

In this article analysed such problems, like the period life of Zakhriddin Muhammad Babur, crisis of temurids' dynasty, non stability of social-political regime in Mavraunahr and Xorasan, education of Boburids' impire and India echievements and defeat of Babur, heir psychological interpretation, evolution of his overlook and spiritual condition.

Key words: Babur, crisis of temurids' impire, social-polical posession in Xorasm, Mavraunahr, winner, being winner, change in spiritual condition of autlor.

Время жизни Захириддина Мухаммад Бабур – конец XV начало XVI веков – характеризуется кризисом империи тимуридов, нестабильностью общественно-политической обстановки в Мавераннахре и Хорасане, а также формированием в Индии империи бабуридов, просуществовавшей 332 года. Бабур, на долю которого выпало жить в такой беспокойный век, познал всю радость победы и горечь поражения, которые постоянно заменяли друг друга. Его душевное состояние в таких моментах нашли свое яркое отражение в «Бабурнаме». Изучение этих аспектов даёт возможность более глубже оценить психологическое состояние тимуридских полководцев, беков и придворных, простого солдата и гражданина, исторические события и общественно-политическую ситуацию той эпохи, вместе с тем, выявить мастерство художественное мастерство Бабура как прозаика, в частности, детально исследовать использованные им слова, фразы, определения в контексте «победителя» и «побежденного».

Так, профессор Н.Г. Низамиддинов отмечает: «Отлучившийся от Родины под жестокими гонениями и нашедший приют в землях Индии, Бабур, в своём творчестве передал все жестокости того времени. Быть может, именно поэтому Бабур, имея корону монарха и царский трон, не остался равнодушным к несправедливостям «бренного мира», «злого рока», беспомощности общества, и как все прогрессивные писатели не вписался в свою эпоху» [3;106-107].

Для рассмотрения психологизма «победителя» и «побежденного» Бабура трудно найти более подходящее произведение, чем «Бабурнаме». Как отметил сам автор:

В этом мире увидел множество удивительных миров,
От рук людей сего мира познал различные горести.
Кто прочитает «Вақоъ», тот поймёт,
Сколько горя я увидел, сколько труда и сколько печали. (перевод четверостишия осуществлен автором статьи И.С.)

Наше мнение подтверждается ещё и рядом примеров из его «Записок».

Во введении «Бабурнаме» читаем: «... конфликты между Хусейном Байкарой и его сыновьями, кровавые войны за Мавераннахр, проведенные тимуридами и Шейбаниханом, пиршества и заговоры во дворцах некоторых невежественных правителей, а также завоевание Бабуром Афганистана и Индостана, сопротивления индийских, афганских племён и их подавления – все это излагается с максимальной объективностью, точно и лаконично без высокопарности и витиеватости, свойственных прозе того периода» [1;21].

В своем шедевре Бабур при изображении Афганистана старается дать объективную характеристику афганскому народу, его сопротивлению в битве за Кабул. Описывая события столкновения с афганцами на Гумале, он старается придать тексту максимальную художественность. Здесь дано изображение взятия трофеев воинами Бабура у побежденных афганцев. В тексте я очень реалистично описывается, как афганцы были разгневаны («несколько афганцев с остановленной кровью»), как торопились воины Бабура на поле битвы за трофеями («Всадники ринулись в эту сторону»).

При анализе этой картины становится ясно, что хотя победителями являются воины Бабура, духовная победа принадлежит афганцам, поскольку они сражаются за свои дома и семьи, умирают за них и за свои убеждения – в этом их идеологическая победа: «На склоне другой горы Кутлук Кадам схватился и порубился с одним афганцем, и оба они полетели с высоты десяти или двенадцати кари. Кутлук Кадам отрезал афганцу голову и принес ее... Многие из этих афганцев попали к нам в плен, все были освобождены» [1;122].

В изображении Афганистана автор раскрывает тему победителя и побежденного не только на поле брани, но и в сознании и идеологии персонажей. На триумфатора Бабура бросает тень поражения то, что у воинских коней закончился корм и провизия, и они отстали от войска. Это было привычным делом в XVI веке. Не только кони, но и целые отряды переходили в армию другого полководца, нехватка оружия, несоответствие поле битвы – всем этим в «Бабурнаме» автор изменениями, прежде всего, в своем сознании затем в умах своих беков, их воздействие на психику полководцев и простых солдат на поле битвы. Данные обстоятельства, несомненно, сделали «Бабурнаме» одним из шедевров мировой литературы.

Обратим внимание на следующую характеристику из предисловия к «Бабурнаме»: «Бабурнаме» является мемуарным произведением. В произведениях данного жанра, особенно, в мемуарах, где события описываются несколько лет позже, вместе с художественными зарисовками, непосредственным описанием событий, свойственно обобщенное изображения исторических явлений... Он стремится избегать изображения случайных, мелких, обыденных ситуаций, отдавая предпочтение основным эпизодам, их отборе» [1;21].

Следующий фрагмент также, свидетельствует о личных переживаниях Бабура при виде гибнувших коней. Вспомним, что в то время исход битвы определялся природными условиями и прочими факторами. Итак, мы видим признание побежденности в настроении

Бабура: «На этих стоянках кони наших воинов начали сильно отставать; бывали дни, когда отставало двести или триста коней; лучшие отборные йигиты остались пешими... до самого Газни кони моих воинов были в таком положении [1;123].

В описании военных баталий в Афганистане у Бабура прослеживается отточенное художественное мастерство. Очевидно, автор писал эти строки, будучи в спокойном состоянии. При этом и внутренний мир Бабура, и его стремление захватить земли в рассвете сил, и время отдыха, и процесс охоты, и наблюдения утонченного правителя, упивающегося вкусом победы, за красотой природы – все это нашло высокую художественную интерпретацию: «Нашли жирного верблюда, принадлежащего хазарейцам, и привели его; этого верблюда убили, и мы сделали из части его мяса шашлык, а остальное сварили в котле и съели. Никогда не едали мы такого вкусного верблюжьего мяса, некоторые не могли отличить его от баранины. Утром мы снялись с лагеря и двинулись на зимовье хазарейцев... Услышав это, мы быстро двинулись вперед, проехали часть дороги и достигли того места, где хазарейцы подстерегли наших и дрались. В ту зиму выпал очень глубокий снег, идти без дороги было трудно, берега и ложе реки сплошь покрылись льдом; из-за льда и снега нельзя было перейти реку против тех мест, где не было дороги [1;129].

Для Бабура было очень важно сохранить победу, поскольку многие близкие и противники, окружающие его эгоистичные и праздные наследники престола Амира Темура желали ему поражения. Они действовали тайно и явно, пытаясь убрать его с пьедестала истории. В таких случаях Бабура хотелось продемонстрировать своё превосходство над ними, доказать, что время ему прочит царствование, показать всем, что он ПОБЕДИТЕЛЬ.

Бабура выступает как опытный психолог при изображении поступков, манер и поведения принцев-тимуридов. Внимательно наблюдая за каждым действием тимуридов, он объективно передает сведения об общественно-политической обстановке той эпохи. Таким образом, сегодня по мемуарам писателя можно проследит не только цепь исторических событий, но и психологическое состояние, внутренний мир исторических личностей. В поведении и политике каждого представителя династии тимуридов Бабура пытается художественно изобразить его вклад в сохранении империи Темура или отсутствие этой цели. Все это говорит о высоком таланте писателя, чье умение использовать средства художественной изобразительности даже в историческом трактате настолько утонченно, что каждая историческая личность получила детальную историческую, политическую, объективную, и в то же время, художественно-психологическую характеристику. Свою поездку в Герат по приглашению сыновей Хусейна Байкары автор описал следующим образом: «Ко мне тоже прибыли послы; потом явился также Мухаммед Бурундук Барлас (Один из самых авторитетных беков Мавераннахра – И.С.). А я —почему мне было не пойти? Я ведь прошел ради этого дела сто-двести йигачей пути... Абул-л-Мухсин мирза проехал мне навстречу полкуруха. Мы приблизились друг к другу. Я сошел с коня с одной стороны, Абул-л-Мухсин мирза спешился с другой стороны. Подойдя один к другому и поздоровавшись, мы [снова] сели на коней. Когда мы направлялись перед, то возле лагеря к нам подъехали Музаффар мирза и Ибн Хусейн мирза. Они были младше Абу-л-Мухсин мирзы годами и им следовало бы выйти навстречу раньше; вероятно, задержка была с похмелья, а не от гордости; упущение это произошло из-за наслаждений и развлечений, а не от удовольствия. Музаффар мирза проявил великое усердие; мы поздоровались на конях; обмен приветствиями с Ибн Хусейн мирзой произошел таким же образом [1;148-149].

Его формальное приветствия принцов тимуридов вполне обоснованно. Бабур, прибывший в Герат по приглашению старшего сына Байкары – Бадиуззамани Мирзо, своим поведением и манерами пытается показать, что является истинным наследником Амира Темура. Он искренне верил в то, что является единственным тимуридом, обеспокоенным судьбой империи после смерти Хусейна Байкары, противопоставляя себя остальным беспечным, недалёковидным тимуридским правителям: «При втором посещении Бади' аз-Заман мирза не оказал мне такого почета (т.е. поприветствовал Бабура не очень уважительно, не поклонился ему – И.С.), как раньше. Я велел сказать Мухаммед Бурундук беку и Зу-н-Нун беку: «Хотя года мои невелики, но род мой высок; в столице моего отца, то есть в Самарканде, я два раза воссел на престол, выдержав битву. Кто столько сражался и бился за [наш] род с пришлым врагом, сколько бился я? Промедление в оказании мне почета – безосновательно» [1;149]. Этот эпизод показывает как духовное, так и историческое превосходство Бабура над другими тимуридами той эпохи, его эта победа решила вопрос борьбы за престол.

Битву при Кандагаре Захириддин Бабур изобразил настолько живо и красочно, что читатель порой не успевает за сменяющимся друг друга событиями, где победитель через миг может превратиться в побежденного. Сила этого динамизма сделала «Бабурнаме» одним из читаемых произведений: «Со стороны Аргунов, Халвачи Тархан вступил в воде в бой с Камбар Али и Тенгри Берди. Камбар Али был ранен, Касим беку попала в лоб стрела. Гури Барласа ранили в бровь стрелой, которая вышла у него выше щеки[1;166-167].

Точной изображение всего упорства Бабура на поле битвы, его самоотверженности по отношению к близким создаёт такие художественные моменты, редко встречающиеся в исторических произведениях: «... Когда переходили речки увидел маленькую толпу людей, которая намеревались идти то в одну, то в другую сторону. **Поколебавшись миг они, наконец, двинулись в одну из сторон. Шохбек, надумал я. Оказалось, это был Шохбек**», «... Положившись на волю Всеvyšнего, прибав подковы, двинулись мы на врага».

В эпизодах, где автор обрисовал Индию, битвы и войны на её землях, нередко встречаются моменты, где выражены характер и личные качества, эволюция мировоззрения победителя Бабура. Автор зачастую не замечает, как бессознательно переходит от историзма и мемуарного стиля на художественную плоскость. Вероятно, осознания победы побуждают любителя жизни-лирика Бабура изображать даже столь реалистичные события в ракурсе художественности.

В характеристике беков и придворных, воинов и солдат в «Бабурнаме» можно увидеть столь богатые и насыщенные строки, от которых становится очевидным, что автор писал их в добром расположении духа, под воздействием чувства победы над противниками. Бабур также переносит в текст настроение своего войска, особенно, в моменты его победы: «и некоторые парни, ни чуть не обращая внимания на атаки и удары врага, невзирая на стрелы и камни, были заняты разрушением и тараном крепости», «в то же мгновение люди поднялись на крепость по передвижным лестницам», «солдаты создали себе призвание богатыря и доброе имя».

Победа Бабура и Индии, разумеется, принесла ему мировую славу. Для сохранения этой победы он приложил много усилий, превратив Индию, состоявшей из мелких раджей

и феодальных владений в укрепленное централизованное государство. Наверное, по этой причине первый президент Индии Джавахарлал Неру, отмечая место Бабура в истории государства, написал следующее: «Бабур был одним из выдающихся среди культурных и прекрасных людей в истории. Он был далек от ограниченностей, как сектанство и схоластика...»[1;166-167].

«Бабурнаме» содержит эпизоды захвате Индии, где художественно описаны личные переживания индийских полководцев. Так, автор раскрывает психологию побежденного военачальника Газихана через следующий фрагмент: «я приказал повесить ему на шею те две сабли, которые он повязал вокруг пояса, чтобы сражаться с нами. Это был столь неотесанный и тупой человек, что даже, когда дело зашло так далеко, продолжал придумывать всякие отговорки. Его вывели вперед, и я приказал снять ему сабли с шеи. Когда надо было поздороваться, он медлил преклонить колени; я велел потянуть его за ноги и поставить на колени силой. Потом я приказал одному человеку, который знал по-хиндустански: « [Переведи ему] одно за другим такие слова и пусть он их запомнит: - Я называл тебя отцом и оказывал тебе почтение и уважение; я поступал с тобой лучше, чем ты мог ждать; тебя самого и твоих сыновей я избавил от необходимости просить милостыню у белуджей, я вызволил ваших женщин и домочадцев, которые были в плену у Ибрахима; я пожаловал тебе владения Татар хана, приносящие три крора дохода. Разве я поступил с тобой дурно, что ты повесил на грудь и на пояс два меча, повел войска на наши земли и поднял там смуту и мятеж?». Этот ошалевший старик невнятно пробормотал несколько слов, но не мог ничего возразить; да и где ему было ответить на такие убедительные слова» [1;203].

При составлении психологического портрета Газихана Бабур употребляет сравнение «мускат». Таким образом, мастер словесности Бабур все свои острые и пронизывающие речи обозначает словом «мускат». Этим обозначением он выразил состояние укачки и бессилия Газихана. В то же время, данное сравнение говорит о высоком мастерстве писателя в искусстве слова.

Вступая в бой с султаном Индии Ибрахимом Луди, Бабур пишет, что сильно волновался в битве за город Панипат, «... мы проделали двух- трехмесячный путь от дома. Было сложно найти взаимопонимание вражеским с чужестранцами. Ни мы не понимаем их язык, ни они нам». При этом такие качества Бабура, как мужество, хладнокровие и умение объективно принимать решения, помогли ему поправить ситуацию. На самом деле Бабуру придется иметь дело с «гариб кавме», т.е. с «чужестранцами» не один раз, а дышат с ними одним воздухом, жить на одной земле. Осознание этого факта угнетало великого полководца, но он не теряя самообладания и гордости заключает: «Некоторые воины очень боялись и волновались, хотя для страха и волнения не было причин; кроме того, что от века предопределил господь, ничего не могло случиться. Однако и упрекать этих людей тоже не за что – они имели право тревожиться. Ведь они прошли два или три месяца пути от родины, им приходилось иметь дело с чужим народом. Ни мы не знали их языка, но они не понимали нашего» [1;207].

В «Бабурнаме» встреча лицом к лицу между Бабуром и Ибрахимом Луди произошла всего один раз на поле битвы. Бабур дал живое описание состояния Ибрахима Луди, который впал в панику при виде тимуридского правителя, предвидя свое поражение. Так прошла встреча победителя Бабура и побежденного Ибрахима: «Войска Султан Ибрахима,

показавшись издали, немедля шли прямо на нас. Завидев наши войска и убедившись, что они стоят в боевом строю и порядке, враги замялись, словно раздумывая: «Стоять – не стоять, идти – не идти?» и не могли ни остановиться, ни идти без задержки вперед, как раньше» [1;209].

Обратим внимание на приведенную картину. В ней больше художественности, чем историзма, что даёт полное основание причислить «Бабурнаме» к художественной литературе. В душевном состоянии Луди произошли столь резкие изменения с появлением на поле боя Бабура, после чего индийского полководца обуял ужас.

Эти горделивые строки автора «Бабурнаме» о победе над Ибрахимом Луди представляют собой «внутренний монолог», который включает в себя повествование о всех достижениях в стране, битвах и победах, горести и печали: «С девятьсот десятого года, когда был покорен Кабул, и до этого времени я всегда мечтал завладеть Хиндустаном, но иногда этому препятствовало скудоумие беков, а иногда — отсутствие поддержки со стороны родичей, так как поход в Хиндустан и покорение земель этой страны не осуществлялось. С тех пор и до девятьсот тридцать второго года я усиленно стремился завоевать Хиндустан, и за семь или восемь лет пять раз водил туда войска. На пятый раз господь великий, по своей милости и великодушию, ослабил и поверг в ничтожество такого противника, как Султан Ибрахим, и подчинил нашей власти страну, подобную Хиндустану» [1;211].

Хотя как истинный мусульманин Бабур неоднократно повторяет, что все победы одержаны им по воле Аллаха, он бы не достиг всего этого без сильного стремления к победе, силы и железной воли.

Среди многих характеристик в «Бабурнаме» встречаются описания и индийских воинов, которые, по мнению автора, воевали за свою Родину, за свои семьи намного отважнее, чем солдаты Бабура. Вместе с тем, внутри войска великого полководца находились те, кто сеял панику среди солдат по поводу многочисленности армии противника. Бабур беспощадно боролся с ними, пытаясь поддерживать в своих воинах боевой дух и волю к победе: «Отряды, ушедшие в дозор, не могли доставить никаких сведений и даже не были в состоянии проникнуть в крепость. Люди, находившиеся в крепости, вышли оттуда далеко вперед, весьма неосторожно. Враг учинил сильное нападение и разбил их. Сангар хан Джанджуха погиб там смертью мученика. В пылу боя Китта бек выскочил на коне вперед без кольчуги. Он сбил с коня одного из нечестивых и забрал его в плен, но [индус] выхватил саблю у одного из нукеров Китта бека и ударил последнего по плечу. Китта бек перенес много мучений и не мог больше участвовать в священной войне с Рана Санкой. Через некоторое время ему стало лучше, но он остался калекой. Касамтай, Шах Мансур Барлас и все те, которые пришли из Бианы, не знаю из страха или чтобы утратить других, очень восхваляли и превозносили ловкость и храбрость войска нечестивых [1;240-241].

При этом Бабур, излагая свою борьбу за сохранение веры в победу у своих солдат, попутно даёт сведения об их о внутреннем мире и личных переживаниях. Разумеется, как писал Бабур, солдатам тоже было нелегко. Чужая страна, непривычная погода, непонятный язык, не могли не повлиять на психику воинов. Несмотря на это, отдавая предпочтение истине, Бабур беспристрастно реалистично даёт описание атаки противника по армии его военачальника. Придав художественную окраску данному событию, автор с данной

стороны показывает отвагу вражеских солдат, с другой – изобличает предательские действия своих воинов, распространивших слух о многочисленности армии противника.

Индийский период жизни Бабура, в основном, является временем его победы. Владение землями, захваченными некогда Амиром Темуром, возрождение империи своего великого предка – вот какие грандиозные планы строил полководец Бабур. К этому Бабур шёл очень долго, не щадя никого, даже тимуридских правителей, которые вставали у него на пути. Высокое мастерство поэта проявилось в изображении битвы за провинцию Чандери. Пронизаны реализмом строки, где говорится о храбрости и патриотизме индийцев: «...решив, что крепость придется сдать, они изрубили насмерть своих женщин и красивых [девушек] и, избрав для себя смерть, обнажились и ринулись в бой [1;259].

Фразы про то, как индийцы убили своих жен, раздевшись, пошли на явную смерть придают произведению реалистичность: «Через короткое время язычники, совершенно обнаженные, снова выбежали и начали драться; многих [наших] людей они обратили в бегство и сбросили со стены; а несколько человек зарубили насмерть и погубили. Причина, почему они так быстро ушли со стены, была, как говорят, такова: решив, что крепость придется сдать, они изрубили насмерть своих женщин и красивых [девушек] и, избрав для себя смерть, обнажились и ринулись в бой. В конце концов мои люди напали на них со всех сторон и сбросили со стены. Двести или триста нечестивых вошли во двор Мидини Рао; многие из них поубивали друг друга следующим образом: один стоял с мечом в руках, а прочие один за другим добровольно подставляли шеи под удар. Большинство их таким способом отправилось в ад» [1;259].

Бабур проникает в сознание индийского войска для точной передачи в текст его душевного состояния. Для того, чтобы показать патриотизм индийского народа, автор изображает с каким достоинством они встречают смерть. Во фразах, «многие из них поубивали друг друга следующим образом: один стоял с мечом в руках, а прочие один за другим добровольно подставляли шеи под удар», «многие из них поубивали друг друга следующим образом: один стоял с мечом в руках, а прочие один за другим добровольно подставляли шеи под удар». Бабур усиливает логику своих слов. Каждое новое слово повышает экспрессию предыдущего слова, что воссоздаёт картину войны перед глазами читателя.

Раскрытие бинарной оппозиции «победитель»-«побежденной» на примере «Бабурнаме» позволяет более глубоко и многоаспектно изучить творчество Захириддина Мухаммада Бабура, а также дать объективную психологическую характеристику его личности.

Использованная литература

1. Захир ад-Дин Бабур. Бабурнаме. Т.: Главная редакция энциклопедий, 1992. – 312 с.
2. Захириддин Мухаммад Бобур энциклопедияси. Тошкент.: Шарқ. 2014. – 744.
3. Низомиддинов Н.Ф. Буюк бобурийлар тарихи (XVI-XIX аср). Монография. Тошкент.: Fan va texnologiya, 2012 йил. – 516.
4. Сингх Н.К. Банержи А.У. История Индии. М., 1954. С. - 214.
5. Сулаймонов И. Голиблик сурури, мағлублик изтироблари. Монография. Самарқанд, 2019. – 220.

6. Қаюмов А. Асарлар. 5-жилд. Захириддин Муҳаммад Бобур ижодиёти. Т.: Мумтоз сўз, 2009. – 303 б.
7. Қудратуллаев Ҳ. Бобурнинг давлатчилик сиёсати ва дипломатияси. Тошкент.: Шарқ, 2011. – 431 б.
8. Sulaymonov, I. (2019). BOBUR'S POINT OF VIEW ON THE HISTORY OF THE PAST AND ORDEAL. *European Journal of Research and Reflection in Educational Sciences* Vol, 7(12).
9. Sulaymonov, I. I. (2017). Analysis of Babur's opinion about Shaybanikhan. Philadelphia, USA. *ISJ Theoretical & Applied Science*, 9(53), 196-200.
10. Сулаймонов, И. И. (2019). РОЛЬ СУФИЙСКОГО ОРДЕНА НАКШБАНДИЯ В ФОРМИРОВАНИИ И ЭВОЛЮЦИИ МИРОВОЗЗРЕНИЯ БАБУРА. *Вестник Таджикского национального университета*, (9), 181-184.
11. Sulaymonov, I. I. (2018). Description of Victorious and Vanquished Man psychology in «Boburnoma». *International Journal of Science and Research (IJSR)-India*, 7(1), 1220-1223.
12. Sulaymonov, I. I. (2020). An artistic interpretation of Babur's personality in world literature. *Journal of critical reviews*. Received, 24, 6218-6223.
13. THE ISSUE OF HISTORICITY AND ARTISTIC INTERPRETATION. (2022). *Journal of Pharmaceutical Negative Results*, 2750-2756. <https://doi.org/10.47750/pnr.2022.13.S07.367>
14. Akbarovna, I. S. (2023). Study of the Formation of Ideological Immunity By Foreign and Russian Researchers. *American Journal of Public Diplomacy and International Studies* (2993-2157), 1(9), 235-239.
15. Akbarovna, I. S. (2023). Adolescence during Destructive Behavior Appearances the Problem Learning Condition. *Intersections of Faith and Culture: American Journal of Religious and Cultural Studies* (2993-2599), 1(9), 105-109.
16. Ikromova Sitora Akbarovna. (2023). NEUROPHYSIOLOGY BASIS OF HORMONES. *TECHNICAL SCIENCE RESEARCH IN UZBEKISTAN*, 1(5), 68–77.

Sayipova Dilafruz, in the name of Sharof Rashidov

Researcher of SamSU

"Boburnoma" depicts the mental state of a historical person

Annotation: This article analyzes the literary portrait, mental state, and personality of some historical figures widely depicted in Babur's work "Boburnoma".

Key words: Zahiriddin Muhammad Babur, "Boburnoma", historical person, literary portrait, historicity, artistic interpretation, mental image.

After Alisher Navoi, Zahiriddin Muhammad Babur is a writer who became famous in the history of Uzbek classical literature by creating prose works, ghazals of dillrabo, qita, rubai, and masnavi. In particular, his work "Boburnoma" is translated into 32 languages of the world today, the treatise "Aruz" is a reflection on the rules of literary theory after Navoi's "Mezon ul-Avzan", the science of aruz and its intricacies, the author's thorough knowledge of poetic arts, his skill in choosing poems. , every stanza, the use of verse in place shows that he gave high importance to the poetic terms.

The simple narrative of the author of "Boburnoma" and the realistic expression of historical events, as the author noted, "For this history, the truth of every word must be known and the facts of every case must be edited ¹. " The assessment of all the historical figures mentioned in the work, facts, events, proofs prove that they are true.

Interest in "Boburnoma" began during Babur's lifetime, the work was translated into Persian, then English scholars Lane Poole, Monstewart Elphinstone, Edward Dawson, Mrs. Anetta Beveridge, her husband Henry Beveridge and others not only brought Babur's work to English readers, but also analyzed it. with the help of dictionaries, they tried to make the work readable and understandable to the students.

the complex political and social processes between the end of the 15th century and the 30s of the 16th century, the struggle for the throne between the heirs of Amir Temur continued violently, and sometimes one or another Timurizade took the throne at the top of the kingdom, as a result of which the armies belonging to one sultan are now the crown prince of another. joining the ranks and entering the struggle made the management of the kingdom in the political arena much more complicated. As a historical, autobiographical, scientific work, "Boburnoma" describes this complex process through historical events, the struggle for power, the frequent changes in the mental state of rulers, begs, and visionaries, the history of ownership and distribution of property, its consequences, and deep conspiracies. and we witness it described in a comprehensive, analytical manner.

If we look at "Boburnoma" only as a historical, adventurous work, we limit the skill of the author. It is literally a spiritual and psychological source. It depicts the history of Movarounnahr, Khurasan and India, the lifestyle of the crown princes of the three regions and the nobles around them, the lifestyle of their women, ordinary soldiers, poets and artisans, and the mental state of people related to the spiritual life of the time are described in connection with the most complex processes. Foreign and Uzbek scholars have also emphasized this feature of the work. For example, English historian Lane Poole, who was seriously engaged in Babur's work, writes about it: "His memoirs are not a simple diary of a soldier's military campaigns and retreats; In these memoirs,

¹Boburnama. Prepared for publication by S. Hasanov. Tashkent. East. 2002. p. 21. In the following examples taken from this source, the page of the source is shown.

personal impressions and subtle thoughts about the world are given by the owner of an impressive heart who knows Eastern literature very well, is a sensitive and knowledgeable observer, who carefully studies people, who can think about them objectively and justly². " Or let's look at the opinion of the English orientalist Monstuart Elphinstone: "In these memoirs, the life of the great Turkish king is described in detail, his personal feelings are free from any exaggeration and veiling. His style is simple and manly, as well as lively and imaginative. He describes the faces, traditions, aspirations, actions of his contemporaries as clearly as a mirror... But the bright character of the author gives the work the most charm»³.

If we draw a conclusion based on the opinions of the scientists mentioned above, based on the variety of artistic images in "Boburnoma", the description of the person's character and mental state in the depiction of historical figures, it is necessary to consider the victory and defeat, which is a typical situation in the life of the people of the time, in the context of the spiritual and psychological process. After all, historical events in "Boburnoma" were able to show themselves clearly in this aspect. In no other period have historical events changed so rapidly as in the end of the 15th century and the 30s of the 16th century. While describing the events of the same period in "Boburnoma", typological processes in the position and character of contemporary people are revealed before our eyes. This process alternates with the reality of time and space, bravery and cowardice on the battlefield, bravery and treachery, the joy of victory and the pain of defeat, especially in the depiction of winners and losers. Determining complex situations in the psyche of a historical person, observing and explaining changes in it is evidence of Babur's high skill. In the work, the changes in the mentality of not only the ruler, but also the common man, sometimes the triumphant celebration of victory or the bitter pain of defeat, or even the change in the fate of a person, is an extraordinary situation, which is described by Babur with a unique skill. Approaching this issue in this way, we intend to analyze, first of all, the situation of the tragic period for our society and history, people, their spiritual experiences through the materials of "Boburnoma".

The rapid exchange of events, the strength of dynamism, the sudden change of the mental and psychological process, and the impact on the psyche of individuals are skillfully described by the author of the work. Babur, the winner on the battlefield, soon becomes a loser, and again due to conflicts, he triumphs and becomes the winner. This change occurs several times almost from the beginning to the end of the work.

Victory and defeat occur in the mental state of Shaibani Khan, Husayn Boygaro, Khisravshah, Baqi Chaganiyoni, Kasimbek, Shahbegim, Ibrahim Lo'di and others, as well as the author of the work. In the artistic perception of victory and defeat situations, we come across such images as the high psychology of the writer, the spiritual change that occurs suddenly in the natural character and character, the signs of life beginning to fade and, on the contrary, the rebirth, which are important because of the artistic interpretation by the author.

Victory and defeat in the form of historical figures in "Boburnoma", the change of mental state that occurs in them, is such a wide and revealing aspect of literary skill that this situation requires in-depth analysis and comprehensive research in Boburology. After all, the scientific research of the mental state of the people of the time allows to determine the changes in the character of the person and the aspects that happened in it.

²Lane Poole. Babur. Oxford. 1899. S. 9.

³Singh N.K. Banerjee A.U. History India. M., 1954. S. 214.

In the framework of this article, we decided to consider the mental state of the winner and the loser in the person of Babur with the help of some examples.

of 1494-95 . Of the young prince Babur father for the first time Umarshaikh taking the city of Samarkand, where Mirza ruled, from the hands of Boysungur Mirza take to the throne at the time of possession . Young Babur's joy is endless . His grandfather is Amir Temur made the capital and great to the kingdom founded the famous city of Samarkand on the throne sitting d i. From victory shout drunk the prince in " Baburnoma". so writes : " Kill the throne of Samarkand, follow the begs of Samarkand like arrows and grace I got it . Let the begs who are with us be happy education and I had mercy . "4

At first glance, this text does not seem to show the artistic image of the victorious Babur's state of mind. In fact, based on the course of events in "Boburnoma" and the author's style of description, it is not difficult to notice the characteristics of the victorious Babur from the above passage. In the text above, phrases such as "I killed the throne of Samarkand, I obeyed and favored the begs of Samarkand as much as I could," "I trained and showed compassion" also indicate the mental state of the victorious prince.

In Babur Such a winning streak will last for a long time ca n't The long siege of the city , Babur around individuals , especially the betrayal of Beki Uzun Hasan because of this, Samarkand is out of control. Impossible Babur be k lar , lashkars I'm starting to leave . Just yesterday, Babur, the winner , suddenly becomes a defeated prince , and he himself writes about it like this : " Cherik of the world prey finished _ When Samarkand was captured, Samarkand was ruined I got it , help and egg and there was a need for piety . Chi place ulkim , the person is Andin what go ahead" 5. All together three months later, Babur , the winner , was overcome with depression and defeat . This too leaving Samarkand as he did not Road to Andijan received Babur again one conspiracy waits _ This Uncle Ali Dost " Babur is seriously ill " - that Andijan opponents with agreed _ Visit Andijan Castle the door Babur and for his loved ones closes _ Babur this is it describes the severity of his mental state at the moment as follows : " Andijong'a , Samarkand we gave Andijan was also out of the marrow . We are told that "heedless is less happy. " ronda and a little more in the world " - as if it happened Bisyar shaqq and shower came _ Why did he become a king? I'm sorry , that's it variety navcardin and province is not separated I melted , even myself knowing I'm sorry , it's a pain in the ass and does not know hardship I melted . "6

Babur expresses this state of mind very clearly , vividly in every way . In it sorry and nadomat , feeling sorry for one's worth and to traitors hatred , complaining about fate and to help did not come , on the contrary to the opposition side the eyes of admiration for the relatives who clicked looked at the question answer the defeated young prince who did not find - Babur's There is a state of depression .

A short time later later , in Babur's battles quite a bit mature , experience and conquer Samarkand for the second time ... It is impossible to lose it again in a situation he turns to Andijon . This text in "Boburnoma" now expresses the high state of mind of the victorious Babur, the victorious cry of the defeated Babur, who was in a whirlwind of hardships, which is important: "My father region, I have been growing closer for two years, but it has come out." By God's grace, he became a good man again in the month of Zulqada in 904. Sultan Ahmed Tanbalkim, Jahangir

⁴Boburnama. Prepared for publication by S. Hasanov. Tashkent. East. 2002. 62 p.

⁵ That's it source , p. 62

⁶Baburnama, p. 64.

Mirza and Jahangir were marching towards Osh. When they entered Osh, they beat Osh with a red foot and a black foot ⁷.

this text Babur – the winner, the victory over Babur's conquest, his Nashida directed by Ahmad Tanbal the defeat of the armies in an artistic, bright way sang – The phrase "Red-legged, black-legged". That's it in the sense of all its inhabitants. If it comes, the phrase "hit the target, hit the target, hit the target" says that this image the author by with great skill that it is described shows.

In general in other words, in "Baburnoma" only the author is the winner and defeated mental state alternating without standing, this process almost all of its characters is a typical event for Babur period and the price of time, its surrounded – studying the mental state of individuals not without benefits. This while Babur views that through period in people happened it also allows us to know the psychological process that will take place.

Used literature

1. Boburnama. Prepared for publication by S. Hasanov. Tashkent. East. 2002. – 335.
2. Nizomiddinov N.G'. History of the Great Baburids (XVI - XIX century). Monograph. Tashkent.: Science and Technology, 2012. - 516.
3. Singh N.K. Banerjee A.U. History India. M., 1954. S. - 214.
4. Sulaymanov I. The joy of victory and the agony of defeat. Monograph. Samarkand, 2019.
5. Sulaymonov, I. (2019). BOBUR'S POINT OF VIEW ON THE HISTORY OF THE PAST AND ORDEAL. European Journal of Research and Reflection in Educational Sciences Vol, 7(12).
6. Sulaymonov, I. I. (2017). Analysis of Babur's opinion about Shaybanikhan. Philadelphiya, USA. ISJ Theoretical & Applied Science, 9(53), 196-200.
7. Сулаймонов, И. И. (2019). РОЛЬ СУФИЙСКОГО ОРДЕНА НАКШБАНДИЯ В ФОРМИРОВАНИИ И ЭВОЛЮЦИИ МИРОВОЗЗРЕНИЯ БАБУРА. Вестник Таджикского национального университета, (9), 181-184.
8. Sulaymonov, I. I. (2018). Description of Victorious and Vanquished Man psychology in «Boburnoma». International Journal of Science and Research (IJSR).-India, 7(1), 1220-1223.
9. Sulaymonov, I. I. (2020). An artistic interpretation of Babur's personality in world literature. Journal of critical reviews. Received, 24, 6218-6223.
10. THE ISSUE OF HISTORICITY AND ARTISTIC INTERPRETATION. (2022). Journal of Pharmaceutical Negative Results, 2750-2756. <https://doi.org/10.47750/pnr.2022.13.S07.367>
11. Akbarovna, I. S. (2023). Study of the Formation of Ideological Immunity By Foreign and Russian Researchers. American Journal of Public Diplomacy and International Studies (2993-2157), 1(9), 235-239.
12. Akbarovna, I. S. (2023). Adolescence during Destructive Behavior Appears the Problem Learning Condition. Intersections of Faith and Culture: American Journal of Religious and Cultural Studies (2993-2599), 1(9), 105-109.
13. Ikromova Sitora Akbarovna. (2023). NEUROPHYSIOLOGY BASIS OF HORMONES. TECHNICAL SCIENCE RESEARCH IN UZBEKISTAN, 1(5), 68–77.

⁷Baburnama, p. 69.

" Baburnoma" historical figures mental image

Abstract: This article focuses on the analysis of the image of creators and rulers depicted in "Boburnoma" by Zahiriddin Muhammad Babur. The work explores issues such as historicity and artistic interpretation, the author's skill in creating a literary portrait of a historical person.

Key words: Babur, "Boburnoma", creative person, image of the ruler, historical fact, artistic interpretation.

After Alisher Navoi, Zahiriddin Muhammad Babur is a writer who became famous in the history of Uzbek classical literature by creating prose works, ghazals of dillrabo, qita, rubai, and masnavi. Especially, his work "Boburnoma" is translated and read in 32 countries of the world today. The simple narration of the author of the work, the realistic expression of historical events, as the author noted, "For the purpose of this history, let the truth of every word be known and the facts of every case be edited¹." The assessment of all the historical figures mentioned in the work, facts, events, proofs prove that they are true.

Interest in "Boburnoma" began during Babur's lifetime, the work was translated into Persian, then English scholars Lane Poole, Monstewart Elphinstone, Edward Dawson, Mrs. Anetta Beveridge, her husband Henry Beveridge and others not only brought Babur's work to English readers, but also analyzed it. with the help of dictionaries, they tried to make the work readable and understandable to the students.

Uzbek scientists also made a great contribution to the study of Babur's work. Ya. Gulomov, H. Yakubov, V. Zohidov, S. Azimjonova, S. Jalilov, P. Shamsiev, S. Mirzaev, B. Valikho'jaev, A. Hayitmetov, G. Salomov, H. Nazarova, H. Quadratullaev, N. Komilov, S. Hasanov, N. Otajonov, A. Ibrohimov, I. Hakkulov, Z. Kholmanova among writers, Oybek, P. Kadirov, B. Boyqabilov, Kh. Sultonov, A. Eshonov are among them.

After independence, it was important to comprehensively research Babur's work, to give a wide place to the issues of his artistic skills. In particular, in the scientific works of scientists such as A. Qayumov, A. Hayitmetov, A. Abdurashidov, I. Hakkulov, H. Quadratullaev, A. Ibrohimov, I. Sulaymonov, some aspects of the human psyche were studied in "Boburnoma".

Among the complex political and social processes from the end of the 15th century to the 30s of the 16th century, the struggle for the throne between the successors of Amir Temur continued violently, and sometimes one or another Timurizade took the throne at the top of the kingdom, as a result of which today the armies belonging to one sultan are crowned by another. joining the ranks and entering the battle made the management of the kingdom in the political arena much more complicated. As a historical, autobiographical, scientific work, "Boburnoma"

¹Boburnoma . To the publication preparer S. Hasanov . Tashkent . East . 2002. 201 p. In the following examples taken from this work, the page of the work is indicated.

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-3, ISSUE-5

describes this complex process through historical events, the struggle for power, the frequent changes in the mental state of rulers, begs, and visionaries, the history of ownership and distribution of property, its consequences, and deep conspiracies. and we witness it described in a comprehensive, analytical manner.

"Boburnoma" is literally a spiritual and psychological source. It depicts the history of Movarounnahr, Khurasan and India, the lifestyle of the crown princes of the three regions and the nobles around them, the lifestyle of their women, ordinary soldiers, poets and artisans, and the mental state of people related to the spiritual life of the time are described in connection with the most complex processes. Foreign and Uzbek scholars have also emphasized this feature of the work. For example, English historian Leigh Poole, who was seriously engaged in Babur's work, writes: "Babur's memoirs are not a simple diary of a soldier's military campaigns and retreats; In these memoirs, personal impressions and subtle thoughts about the world are given by the owner of an impressive heart who knows Eastern literature very well, is a sensitive and knowledgeable observer, who carefully studies people, who can think about them objectively and justly ². " Or let's look at the opinion of the English orientalist Monstuart Elphinstone: "In these memoirs, the life of the great Turkish king is described in detail, his personal feelings are free from any exaggeration and veiling. His style is simple and manly, as well as lively and imaginative. He describes the faces, traditions, aspirations, actions of his contemporaries as clearly as a mirror... But the bright character of the author gives the work the most charm» ³.

If we draw a conclusion based on the opinions of foreign and Uzbek scientists, based on the variety of artistic images in "Boburnoma", the description of the person's character and mental state in the depiction of historical figures, it is necessary to consider the victory and defeat, which is a typical situation in the life of the people of the time, in the context of the spiritual and psychological process. After all, historical events in "Boburnoma" were able to show themselves clearly in this aspect. In no other period have historical events changed so rapidly as in the end of the 15th century and the 30s of the 16th century. While describing the events of the same period in "Boburnoma", typological processes in the position and character of contemporary people are revealed before our eyes. This process alternates with the reality of time and space, bravery and cowardice on the battlefield, valor and betrayal, the joy of victory and the pain of defeat, especially in the depiction of winners and losers. Determining complex situations in the psyche of a historical person, observing and explaining changes in it is evidence of Babur's high skill. In the work, the changes in the mentality of not only the ruler, but also the common man, sometimes the triumphant celebration of victory or the bitter pain of defeat, or even the change in the fate of a person, is an extraordinary situation, which is described by Babur with a unique skill.

The rapid exchange of events, the strength of dynamism, the sudden change of the mental and psychological process, and the impact on the psyche of individuals are skillfully described by the author of the work. Babur, the winner on the battlefield, soon becomes a loser, and again due to conflicts, he triumphs and becomes the winner. This change occurs several times almost from the beginning to the end of the work.

² Lane Poole. Babur. Oxford. 1899. S. 9.

³ Singh N.K. Banerjee A.U. History India. M., 1954. S. 214.

Evolutions in the psyche of a historical figure occur in the mental state of Shaibani Khan, Husayn Boygaro, Khusravshah, Baqi Chaganiyoni, Kasimbek, Shahbegim, Ibrahim Lo'di and others as well as the author of the work. In the artistic reflection of the mental state of a historical person, we come across such images as the high psychology of the writer, the sudden spiritual change in the natural character and character, the fading of the signs of life and, on the contrary, the rebirth, which are important because of the artistic interpretation by the author.

Used literature

1. Бобурнома. Нашрга тайёрловчи С.Хасанов. Тошкент. Шарк. 2002. – 335.
2. Низомиддинов Н.Ғ. Буюк бобурийлар тарихи (XVI-XIX аср). Монография. Тошкент.: Fan va texnologiya, 2012 йил. – 516.
3. Сингх Н.К. Банержи А.У. История Индии. М., 1954. С. - 214.
4. Сулаймонов И. Голиблик сурури ва мағлуб изтироблари. Монография. Самарқанд, 2019 й.

The pedagogical category of physical exercise.

Spatial exercises.

Saidova Mahbuba Ayubovna

mahubasaidova@gmail.com

Asia International university of Physical Culture , department of teacher
(Asian International University)

Anatatsiya: in the process of many years of physical training physical exercise, physical education and power factors are used as a means of gigenik sog'lomlashtiruvchi nature. Physical exercise is the main tool of physical education, it historically gymnastics, games, sports and tourism as a tool of the education process in the way groups are separated and has been using. Physical exercise - that is, the requirements of physical education qonuniyat consciously fulfilled the category of voluntary movement is understood to be a variety of activities. The activities of such action gymnastics, games, sports, tourism workout as was historically tizimlashti, balls and usuliyati have been filled.

Keywords: *exercise, gigenik factors, sog'lomlashtiruvchi the power of nature, exercise technique, basic bo'gin of the technical details, the technical basis.*

That man's actions have reached a stage of the integrity of the complex is noted. The action of the integrity of the act, which was founded at the effects of this interaction are mutually associated and will show up in the action; the action of the details of the change as a result of one phase, a number of other details in terms of time, the change will take place. The theory and practice of physical education in the structure of the movement is talking about. The structure of the movement – its of all the components is legally bound as a single whole, we have mutual.

Happens at a certain time in the space of all human action, so the action of spatial, time and space - time characteristics can talk about the structure containing kinematik. Kinematik action with the dynamic structure of the structure, that is, this is determined by the interplay of external and internal forces that cause them to act.

Made another important move in motion a complicated a whole side – side to the rhythm of the action and the allocation of the time of power relations in complex cases, the reflecting side is shown.

The dynamic interaction of structure and action kinematik bound, one of them leads to the change of two legally change.

In doing physical exercise in the context of each specific pedagogical the importance of each of these characteristics will be different. Some of them play the main role in various stages of teaching one of the other time is of secondary importance. However, all the characteristic of action come together in times of physical exercises that may appear technically provides a very straightforward implementation with due regard.

The trajectory of movement of the part's condition gavin and gavin (path) technique is related to the spatial characteristics of physical exercise.

Performing physical exercise at the time of gavin and many of its parts in relation to each other o'zgartiribgina the condition does not remain static tension of the muscles in the photo but arguably at the expense of free will retain her position as inactive.

Many will not depend on the usefulness of physical exercise in many cases only the initial condition, but the condition of its state or action in the whole process of certain parts of certain

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-3, ISSUE-5

gavin, related also to be in a situation much more useful. For example, the pool's horizontal location, and this reduces the resistance of the external environment to take konki velosipedchi bukchayib allows you to move forward faster with gavin's. Gavin's more than extra work in each of the appointing gavin tramlindan jump down and result in increases the resistance of the air, at the same time move ahead of gavin and this reduces the resistance of the air in the distance with a jump to prolong.

In the process of moving with the change of the direction of change and the same dynamic condition gavin gavin base reactions due to the terms of this direction are comfortable to tezlanish can give. Them running short and long distances, standing jump to the complexity and come from a place beyond the limit gavin ran uzunlikka depsinib be going in a different example cases in phase.

A common condition in some type of physical exercise and gavin is poured into certain parts of the special requirements of the position. Compliance with these requirements biomexanik angles from the goal is not just physical exercise, but the beautiful view of implementation of the action from the point came out too. For example, in figurali konki flying, jump into the water is not only the complexity of the coordination of exercise and gymnastics, but gavin environment of the state as to the accuracy, bold action and freedom, sophistication, and other similar external appearances also taken into account and assessed.

Any action you need to know the trajectory of moving on gavin's part separate. Trajectory at three things: the shape of the trajectory, and the transition amplituda can show the direction of movement.

Linear linear curve type according to the shape of the trajectory and actions can be. Observations of the people make the effort shows that no linear time. Any part of gavin in cases where a short distance you need to move with great speed into (for example, in boxing to give the tattoo on the linear movement of the importance of more. Active movements of the diversity of the shape of the trajectory of a certain consolidation gavin mainly determined by the nerve centre to be part of the development of competence.

Gavin's trajectory also depends on the complexity of the shape of the moving parts; this is how big the part is, its shape is so simple. For example, the number of the pelvis muscles around the joints too much, the location of them are also diverse, but a lot of hand movement, as the movement of the legs and not smart.

The effectiveness of physical exercise workout technique involved the successful implementation of effects on the body show and moving on to gavin, its components or moving parts to give direction on how depends on. The direction of movement in physical education in the practice of either the surface of a body, or external is determined by intentions. For example, the hands forward or side to side unless we are raised, we will determine the direction of hand movement gavin relation of our own. Up-down, forward-back, right-left, the recipe called to the main direction of gavin adopted people.

Amplituda of action – this is the width of the act. Amplituda large-angle is determined by the level of small. General gavin of the zveno movement sometimes a few amplituda linear measure (for example, the step length – 80 cm) or conditional characters (for example, to cho'qqayib half) will identify with. Some of the actions of the joints of the composition of human gavin zveno amplituda, linking the hardware and depends on the elasticity of the muscles.

The unit of time represents the speed of the mobility of solids in space. The speed that is passed the length of the path is determined by the ratio passed on to the time I spent in the same way. Usually, you define the speed in meters/second is measured. The point is the same in the speed of movement all of you the way if such action the action is flat, it changes you, uneven movement is called. Tezlanish of the change in unit time is called speed.

From the perspective of psychological and methodological allocated to the optimal speed and maximum speed. Sports plays an important role in the speed of action at the technical: how speed is great that is so high sports results.

However, for you to achieve the highest results is often not the maximum speed, but speed is important to the optimal action for every athlete. Speed can be free and compulsory. For example, in the rise of a hill chang'ichi free speed is speed, while tepalikdan shall be binding on down.

How much time his pace and movement characteristic of the time of action continue to be of the expression.

Continue to the condition and movements of the body plays an important role in changes in activity. Total size of downloads, you can edit change both with the duration of exercise performance. At some phase of technical action of physical exercise (rowing and rowing go out the back, wrapped in the throw of removal or movement of some part of the gavin is of great importance. The work carried out, how much time giving information about the last time enhancing the participation of the delegations time to stand increases.

The pace of the action. When the frequency of the recurrence of pace, try a cycle or the amount of movement in the unit of time is understood to be. For example, the pace of our walk – about 120-140 step listened to it, wrapped in pace about rowing – rowing listened wrapped it 30-40 times we will speak.

The pace of the action depends on the weight or part of moving on gavin inersiya moment. For example, a hand moving paws than trying to gavin (1-2 moves per second) much higher rate (per second trying 8-10) you can keep. With the change of pace of the movement is often in terms of quality and also the whole structure will change. For example, the limit increased from you goes a certain pace to walk, if running becomes.

Downloads pedagogical practice in order to enhance or reduce the use of different rates of physiological action.

“Rhythm” is the word is very common, applies to diverse phenomena. From time to time the rhythm of repeated itself consists of. The main terms of the rhythm in this act strong, the moment to highlight any aspects of the change and display the presence of different time interval, the more likely it is to exchange. Thus, the rhythm of movements (complex dynamics-time) is characteristic.

To the rhythm of the movement strong, fulfilled with a special power belongs the part of diverse in terms of time to be in a relationship. Bo'shashtirilishining muscles physical exercise in tension and master the technique of taking accurate and timely exchange of sport that is seen in one of the most important indicators. The rhythm of motion in highly qualified athletes ordinary conditions it is very clear.

Technically perfect action of a certain kind of person do you can see clearly the purpose of each is carried out in accordance with the rhythm. Depending on the individual characteristics of each athlete that his action should be both out of their rhythm.

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-3, ISSUE-5

The action of doing physical exercise in accordance with the rhythm of the lens qonuniyat technique created by man is rational and regulated.

Gavin the man to the effects of internal and external forces that will affect the movement of power.

Internal forces include the following:

a) the musculoskeletal apparatus of the passive force – elastic strength of the muscles, the muscles of cho'ziluvchanlik and b.;

b) the apparatus and the action of the active force – the power of pull of the muscle;

b) reactive power – up of gavin in the process of the action of the executive power zveno otherwise at the time of connection to each other.

The man on the outside of the power of external forces affecting gavin is called. Physical exercise is the power of outside of doing the following:

a) the weight of gavin in their power;

b) the power base of the reactions;

v) of the external environment (water, air) and physical properties of solids (the opponent in the fight, in partnership akrobatika) the power of resistance to external weights, the power of people who move from place inersion of the solids.

Distributed in accordance with the physical exercise, which constitute a particular action in which the action begins with activities of which one finished with. For the purposes of teaching and research, it is desirable to divide it into the third phase of physical exercise.

Action the system	Running-depsinib to-flight-yto fall to the ground			
trying phase	1	2	3	4
Action part of the	Preparation	of the main		Closing

Depending on the intensity of physical exercise and continue to be the phase of the process you are indicating changes in the body.

SIQDI - CHTO - sports the ability to work in the dynamics of fatigue and recovery.

FF - some active functional dynamics of the body systems.

BMS - bioenergetik and spend the dynamics of the recovery of substances.

SS - superkompensatsiya effectiveness.

The importance of the preparation phase is to create the most favorable conditions for the implementation of the action in the main phase. For example, to go running in the preparation phase is rushed and jumped in.

Jump from place to bend your legs and pushing hands before doing so finds depsinib rocking to the phase of whom is from the main action, with his help, the main function of the movement is removed. For example, jump from place to depsinib to fly.

The main action is aimed at solving immediate action in the main phase of the task. Biodynamic driving force in the appropriate place in context the most important thing in this phase is in the direction of at the moment is to use appropriate and necessary. For example, the method

of doing so in hand in the pool with the secretary finds time to lift from the water and the waves moving from whom gavin previously active will cause you to appear.

In the last phase of the movement is completed, imaginative words, in this phase, working out of the situation allows. This jump include inlanding on the ground, dash is running a bit after you finish

The main phase of action which constitute the basis of the technique, with the help of the organization, while the remaining two phase, the details of the technique is carried out with the help of the executive action.

In the category of physical exercise to be linked to each other in accordance with the character of this most important of them distribution to the group. With the help of the teacher will determine the features of physical exercise category, consequently, exercise to select Lightemergency will this meet the requirements of the pedagogical task. As long as advancing the science of physical education, since it is continuous is enriched with new information, does not always remain the same category in a while.

Every workout is not one, but a few specific character. Shcan be represented exactly the same in the same category for her every workout. For example, to draw on the anatomical characters (hands and muscles for exercise) is also in the category, basically, the quality of the action (more power) reflect the development of the in that category will show up. Consequently, unsuitable for any condition, can not be created from a single category; the category of pedagogical tasks for withdrawals, you need to take into account the most significant signs.

Historically composed of the system of physical education on the symptoms of the content to the category of physical exercise (gymnastics, games, tourism, sport) is. This category into five groups are distributed on physical exercise.

1. Gymnastic exercises were created artificially in the activity characterize the diversity of action, their effectiveness to the body, the influence of its composition, as well as the combination is determined by the complexity and the coordination of all the action.

Sog'lomlashtiruvchi content types composed from action play exercises (running, to throw and so on.k.) game is made in conformity with the situation changing in different variants and in general on the effectiveness of exposure to the organism and the action will be evaluated on the ultimate result.

Travel workouts in walking, running, jumping, overcoming obstacles in each extra walking, cycling, walking, swimming and others in the boat included.

Sog'lomlashtiruvchi conditions for walking, running and jumping to overcome obstacles, each extra walking, cycling, walking, rowing the boat and wrapped with added, organizes travel for a workout. Complex influence of their effectiveness to the organism to cope with the results of the distance and the barriers in place will be evaluated.

Sports sport exercise to achieve maximum results for ixtisoslash subject to and in compliance with the standardized artificial sports category only the last group, are noted them appropriate if the characters of the first three can be included in the group (sports gymnastics workout, exercise and sports games, sports travel is an exercise).

The descriptive character of this category of exercise seems to be shartlilik variations in this group. So, for example running, though expressed in different variants to'rttala group, even if just a general mo'ljali given in a similar category of physical exercises.

2. Signs of muscle activity issued on exercise of the category (on the character of influencing the development of the quality of the action).

Speed-strength exercises will require you to make the maximum effort involved in a relatively short time (for example: short-distance running, jump review); to show durability, which requires physical exercise (e.g., running long distances, each extra walk, etc.).

Give regular exchange of excellent reference level according to changing conditions, driving to show the quality of which requires a set of physical exercises (games, tete-a-tete fight). This category shartlilik on the one hand, allows you to choose the physical exercise. With his help you can achieve the effective development of the quality of the movement. On the second hand, this is what he is know to have the quality necessary to successfully complete the exercise of which or featured.

3. Ilmiylik function of the category of physical exercise on their importance for withdrawals. This category will shartlilik iboratki, in which movement of skills, skills formation and movement will be allocated on the basis of the quality of exercise aimed at the development of artificial, ajralmasdir process both at the same time. However, the major practical meaning of such a category does not lose. Exercise it to teach the tasks in each stage of maturity on many levels and will help you to choose to take off, leading them to take off assist.

4. Basically the character of physical exercise on the development of certain muscle groups category: belt of the neck muscles and the muscles in the hands for gavin to yelka, waist and leg muscles are provided. Boldir exercises in this category-the muscle for the heel, laptop etc for the muscle to stand erect, sit, lay, and if the individual pairs with the subject, and the subject is used for the development of the quality fulfilled without exercise physical exercises.

5. Physical exercise on the category of sports.

Have exercise specific to the category of each type of sport. Biomexanika provide in addition to teaching in the category (static, dynamic, cycle, atsikli, and other exercise kombinatsiyalashtirilgan) to exercise physiologist with different power while in (maximum, submaksimal, and big mo', with a capacity of drake passage to the south) to be taken to exercise fulfilled.

Used literature

1. Saidova, M. A. (2023). SPORT VA FALSAFANING ALOQASI. SALOMATLIKGA TA'SIRI. *Educational Research in Universal Sciences*, 2(10), 288-293.
2. Saidova Mahbuba Ayubovna. (2023). Sportda murabbiylik faoliyatining psixologik tadqiqoti. *American Journal of Public Diplomacy and International Studies (2993-2157)*, 1 (9), 344–352. <http://grnjournal.us/index.php/AJPDIS/article/view/1565> dan olindi
3. Saidova, M., & Sayfiyev, H. (2023). CONTENT-IMPORTANCE AND PRINCIPLES OF PHYSICAL EDUCATION CLASSES. *Modern Science and Research*, 2(9), 192-199.
4. Saidova , M. A. (2023). BO'SH VAQTDA QILADIGAN SPORTNING STRESS VA SALOMATLIKGA TA'SIRI. *Educational Research in Universal Sciences*, 2(11), 294–299. Retrieved from <http://erus.uz/index.php/er/article/view/3974>
5. Saidova , M. A. (2023). SPORT VA FALSAFANING ALOQASI. SALOMATLIKGA TA'SIRI. *Educational Research in Universal Sciences*, 2(11), 288–293. Retrieved from <http://erus.uz/index.php/er/article/view/3973>

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-3, ISSUE-5

6. Ayubovna, S. M. (2023). JISMONIY TARBIYA DARSLARINING MAZMUNI-AHAMIYATI VA TAMOYILLARI.
7. Saidova , M. A. (2023). BO‘SH VAQTDA QILADIGAN SPORTNING STRESS VA SALOMATLIKGA TA‘SIRI. *Educational Research in Universal Sciences*, 2(11), 294–299. Retrieved from
8. Saidova Mahbuba Ayubovna. (2023). Physiological Basics of Forming Movement Skills and Teaching Sports Techniques. *Intersections of Faith and Culture: American Journal of Religious and Cultural Studies* (2993-2599), 1(9), 87–94. Retrieved from <https://grnjournal.us/index.php/AJRCS/article/view/1485>
9. Saidova Mahbuba Ayubovna. (2023). Physical Education And Sports Training Are An Integral Part Of A Healthy Lifestyle. *American Journal of Public Diplomacy and International Studies* (2993-2157), 1(9), 338–343. Retrieved from <https://grnjournal.us/index.php/AJPDIS/article/view/1564>
10. Saidova Mahbuba Ayubovna. (2023). Sportda murabbiylik faoliyatining psixologik tadqiqoti. *American Journal of Public Diplomacy and International Studies* (2993-2157) , 1 (9), 344–352. <http://grnjournal.us/index.php/AJPDIS/article/view/1565> dan olindi
11. Saidova Mahbuba Ayubovna. (2023). SPORT, ESTETIKA VA ESTETIK TARBIYA. *Sharqiy akademik va ko‘p tarmoqli tadqiqotlar jurnali* , 1 (3), 82-89. <https://inno-world.uz/index.php/ojamr/article/view/68>
12. Azamat Orunbayev, (2023) NONUSHTANING MASHQ BAJARISHGA TA‘SIRI. *International journal of scientific researchers* 2(2), 3-6.
13. Azamat Orunbayev. (2023). USING TECHNOLOGY IN A SPORTS ENVIRONMENT. *American Journal Of Social Sciences And Humanity Research*, 3(11), 39–49. <https://doi.org/10.37547/ajsshr/Volume03Issue11-07>
14. Azamat Orunbayev. (2023). FITNES VA SOG‘LOMLASHTIRISH BO‘YICHA MURABBIYLIK YO‘NALISHIGA KONTSEPTUAL YONDASHUV. *Research Focus International Scientific Journal*, 2(8), 23–28. Retrieved from <https://refocus.uz/index.php/1/article/view/431>
15. Azamat Orunbayev. (2023). PANDEMIYA DAVRIDA MOBIL SOG‘LIQNI SAQLASH VA FITNES DASTURLARI (PROGRAM). *Research Focus International Scientific Journal*, 2(7), 37–42. Retrieved from <https://refocus.uz/index.php/1/article/view/414>
16. Azamat Orunbayev. (2023). APPROACHES, BEHAVIORAL CHARACTERISTICS, PRINCIPLES AND METHODS OF WORK OF COACHES AND MANAGERS IN SPORTS. *American Journal Of Social Sciences And Humanity Research*, 3(11), 133–151. <https://doi.org/10.37547/ajsshr/Volume03Issue11-16>
17. Azamat Orunbayev. (2023). GLOBALIZATION AND SPORTS INDUSTRY. *American Journal Of Social Sciences And Humanity Research*, 3(11), 164–182. <https://doi.org/10.37547/ajsshr/Volume03Issue11-18>
18. Hikmatullo Xayrullayevich Sayfiev. (2023). The Place of Gymnastics in A Person’s Life and the Terms Used in Training. *American Journal of Public Diplomacy and International*

- Studies* (2993-2157), 1(9), 353–359. Retrieved from <https://grnjournal.us/index.php/AJPDIS/article/view/1566>
19. Sirojev, S., Nuriddinov, A., & Sayfiyev, H. (2023). THE CONCEPT AND IMPORTANCE OF SHOOTING SPEED IN VOLLEYBALL. *Modern Science and Research*, 2(9), 187-191.
20. Сайфиёв, Х., & Саидова, М. (2023). БАДМИНТОНИСТЫ ФИЗИЧЕСКИЙ ПОДГОТОВКА И ЕМУ РАЗРАБОТКА МЕТОДЫ. *Инновационные исследования в науке*, 2(4), 45-54.
21. Xayrullayevich, S. H., & Ayubovna, S. M. (2023). BADMINTONCHILAR JISMONIY TAYYORGARLIGI VA UNI RIVOJLANTIRISH METODIKALARI. *FORMATION OF PSYCHOLOGY AND PEDAGOGY AS INTERDISCIPLINARY SCIENCES*, 2(18), 201-208.
22. Ayubovna, S. M., & Xayrullayevich, S. H. (2023). YOSH BOLLALARDA SPORT SPORT GIMNASTIKASINING PEDAGOGIK O'LCHOVLAR NAZARIYASI VA TASHKILY-METODIK ASOSLARINI TADQIQ ETISHNING MAQSADI, VAZIFALARI. *PEDAGOGICAL SCIENCES AND TEACHING METHODS*, 2(22), 108-118.
23. Saidova, M., & Sayfiyev, H. (2023). CONTENT-IMPORTANCE AND PRINCIPLES OF PHYSICAL EDUCATION CLASSES. *Modern Science and Research*, 2(9), 192-199.
24. Sayfiyev, H. X. (2023). SPORT GIMNASTIKASINING PEDAGOGIK O'LCHOV USULLARI. *Educational Research in Universal Sciences*, 2(11), 307–315. Retrieved from <http://erus.uz/index.php/er/article/view/3976>
25. Sayfiyev, H. X. (2023). SPORT GIMNASTIKASI ORQALI YOSH BOLALARNING HARAKAT KO'NIKMASI RIVOJLANTIRISH PEDAGOGIK MUAMMO SIFATIDA. *Educational Research in Universal Sciences*, 2(11), 300–306. Retrieved from <http://erus.uz/index.php/er/article/view/3975>
26. Sirojev Shoxrux. (2023). THE CONNECTION BETWEEN SPORTS AND LOGIC. *American Journal Of Social Sciences And Humanity Research*, 3(11), 97–106.
27. Sirojev Shoxrux. (2023). APPLICATIONS OF SPORT PSYCHOLOGY IN THE WORLD. *American Journal Of Social Sciences And Humanity Research*, 3(11), 107–120.
28. Xayrulloevich, S. H. (2023). SPORT GIMNASTIKA MASHG'ULOTLARIDA ASOSIY HARAKAT QOBILYAT (FMS), POSTURAL (MUVOZANAT) NAZORAT VA O'ZINI O'ZI IDROK ETISHGA SPORT GIMNASTIKASINING TA'SIRI.
29. Xayrulloevich, S. H. (2023). SPORT GIMNASTIKA MASHG'ULOTLARIDA ASOSIY HARAKAT QOBILYAT (FMS), POSTURAL (MUVOZANAT) NAZORAT VA O'ZINI O'ZI IDROK ETISHGA SPORT GIMNASTIKASINING TA'SIRI.
30. Sayfiyev Hikmatullo Xayrullayevich. (2023). Use of Acrobatic Exercises and Their Terms In The Process of Teaching Gymnastics. *Intersections of Faith and Culture: American Journal of Religious and Cultural Studies* (2993-2599), 1(9), 80–86. Retrieved from <https://grnjournal.us/index.php/AJRCS/article/view/1483>
31. Sayfiyev by Hikmatullo Xayrullayevich. (2023). Gimnastikachilarga the Initial Exercise of Teaching Methodology. *American Journal of Public Diplomacy and International Studies* (2993-2157), 1(9), 373–382. Retrieved from <https://grnjournal.us/index.php/AJPDIS/article/view/1606>

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

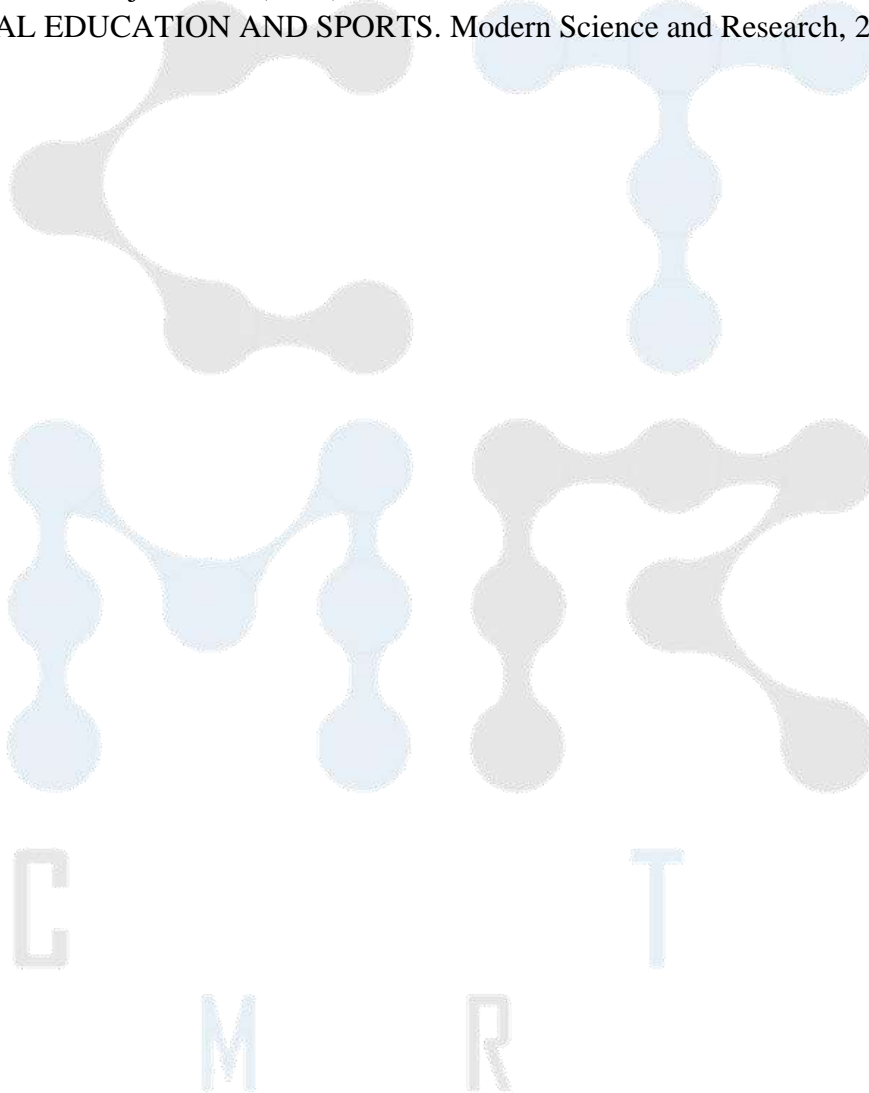
VOLUME-3, ISSUE-5

32. Hikmatullo Xayrullayevich Sayfiev. (2023). The Place of Gymnastics in A Person's Life and the Terms Used in Training. *American Journal of Public Diplomacy and International Studies* (2993-2157), 1(9), 353–359. Retrieved from <https://grnjournal.us/index.php/AJPDIS/article/view/1566>
33. Yarasheva Dilnoza. (2023). SPORTS, CULTURE AND SOCIETY. *American Journal Of Social Sciences And Humanity Research*, 3(11), 152–163. <https://doi.org/10.37547/ajsshr/Volume03Issue11-17>
34. Yarasheva Dilnoza. (2023). FOCUS ON AEROBIC (LI) TYPE OF MOTOR ACTIVITY BASED ON FITNESS PROGRAMS. *American Journal Of Social Sciences And Humanity Research*, 3(11), 81–90.
35. Yarasheva Dilnoza. (2023). METHODS OF ORGANIZING NON-TRADITIONAL FITNESS CLASSES. *American Journal Of Social Sciences And Humanity Research*, 3(11), 61–72. <https://doi.org/10.37547/ajsshr/Volume03Issue11-09>
36. Yarasheva Dilnoza Ismail Qizi. (2023). TECHNICAL AND TACTICAL SKILLS IN SPORTS. *American Journal Of Social Sciences And Humanity Research*, 3(10), 105–116. <https://doi.org/10.37547/ajsshr/Volume03Issue10-16>
37. Yarashova, D. (2023). THE IMPACT OF PLAYING SPORTS IN EARLY CHILDHOOD ON SOCIAL DEVELOPMENT. *Modern Science and Research*, 2(10), 230–234. Retrieved from <https://inlibrary.uz/index.php/science-research/article/view/24325>
38. Ярашева, Д. (2023, April). ФИТНЕС КАК ОЗДОРОВИТЕЛЬНАЯ ДЕЯТЕЛЬНОСТЬ. In *Proceedings of International Conference on Modern Science and Scientific Studies* (Vol. 2, No. 4, pp. 278-283).
39. Yarasheva, D. (2022). BOLALARDA MASHQ QILISHNING ANAMIYATI. *PEDAGOGS jurnali*, 19(1), 139-142.
40. Ярашева, Д. (2023). СТИЛИ ОРГАНИЗАЦИИ НЕТРАДИЦИОННЫХ ОЗДОРОВИТЕЛЬНЫХ ЗАНЯТИЙ. *ОБРАЗОВАНИЕ НАУКА И ИННОВАЦИОННЫЕ ИДЕИ В МИРЕ*, 19(5), 6-10.
41. Yarashova, D. (2023). STRENGTH TRAINING AND STRENGTH TRAINING IN CHILDREN. *Modern Science and Research*, 2(9), 211-215.
42. Akhrorjon Nuriddinov. (2023). A STUDY OF THE AGGRESSIVE STATUS OF FOOTBALL FANS. *American Journal Of Social Sciences And Humanity Research*, 3(11), 73–80. <https://doi.org/10.37547/ajsshr/Volume03Issue11-10>
43. Bahodir o'g'li, N. A. (2023). YEVROPA MAMLAKATLARIDA YUQORI MALAKALI FUTBOLCHI VA MURABBIYLARNI TEXNIK TAKTIK HARAKATLARINI TADBIQ QILISH METODIKASI. *THEORY AND ANALYTICAL ASPECTS OF RECENT RESEARCH*, 2(14), 187-189.
44. Bahodir o'g'li, N. A. (2023). NIMA UCHUN FUTBOL BUGUNGI KUNDA SPORT DEB ATALGANIDA BIRINCHI NAVBATDA AQLGA KELADI.
45. Nuriddinov Axrorjon Bahodir o'g'li, (2023) Futbol zo'ravonligi, fanatizm va millatchilik *International journal of scientific researchers* 2(1), 451-456.
46. Sirojev Shoxrux. (2023). BEHAVIORAL CHARACTERISTICS, PRINCIPLES AND WORKING METHODS OF COACHES. *American Journal Of Social Sciences And Humanity Research*, 3(11), 50–60. <https://doi.org/10.37547/ajsshr/Volume03Issue11-08>

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-3, ISSUE-5

47. Shoxrux, S. (2023). VOLEYBOLDA OTISH TEZLIGI TUSHUNCHASI VA AHAMIYATI. Новости образования: исследование в XXI веке, 1(11), 913-917.
48. Sirojev, S. (2023). THE CONCEPT AND IMPORTANCE OF SHOOTING SPEED IN VOLLEYBALL. Modern Science and Research, 2(9), 187-191.
49. Sirojev Shoxrux. (2023). THE CONNECTION BETWEEN SPORTS AND LOGIC. American Journal Of Social Sciences And Humanity Research, 3(11), 97-106.
50. Sirojev Shoxrux. (2023). APPLICATIONS OF SPORT PSYCHOLOGY IN THE WORLD. American Journal Of Social Sciences And Humanity Research, 3(11), 107-120.
51. Sirojev, S. (2023). TEACHING ACTIVITIES AND PHILOSOPHY IN PHYSICAL EDUCATION AND SPORTS. Modern Science and Research, 2(10), 235-243.



Quvvatov Behruz Ulug'bek o'g'li

Asian International University Assistant of the "General Technical Sciences" department

Abstract: The use of artificial nervous systems (ANS) in modeling has gained significant attention for its ability to mirror the complex behavior of biological nervous systems. This article provides an overview of the existing literature on the use of ANS in various modeling applications, including robotics, neuroscience, and artificial intelligence. The advantages and limitations of ANS in modeling are discussed, along with potential future developments in this rapidly evolving field.

Keywords: Artificial Nervous Systems, Modeling, Robotics, Neuroscience, Artificial Intelligence, Bio-inspired Computing

Artificial Nervous Systems (ANS) have emerged as a promising approach for modeling complex systems due to their ability to replicate the dynamics of biological nervous systems. ANS, inspired by the human nervous system, consist of interconnected artificial neurons and synapses that enable the simulation of complex behaviors and adaptive responses. The use of ANS has been widely applied in various domains, including robotics, neuroscience, and artificial intelligence. In this article, we review the literature on the use of ANS in modeling and discuss its potential implications for future advancements in these fields.

The application of ANS in modeling has been a subject of extensive research in recent years. In the field of robotics, ANS has been utilized to design robotic systems capable of autonomous navigation, learning, and decision-making, emulating the cognitive capabilities of living organisms. ANS-based models have also been employed in neuroscience to study the behavior of neuronal networks and the mechanisms underlying learning and memory. Additionally, in the realm of artificial intelligence, ANS has shown promise in enabling machines to adapt to changing environments and learn from experience, leading to the development of more intelligent and autonomous systems.

One notable example of the use of ANS in modeling is the development of neuromorphic computing, which aims to mimic the parallel processing and learning abilities of the human brain. By leveraging ANS-based architectures, researchers have demonstrated advancements in pattern recognition, image processing, and cognitive tasks, paving the way for the next generation of intelligent computing systems.

Despite the promising potential of ANS in modeling, certain limitations and challenges exist, such as the complexity of emulating the full intricacies of biological nervous systems and the need for efficient hardware implementation. Nevertheless, ongoing research efforts are focused on addressing these challenges and harnessing the capabilities of ANS to develop innovative solutions in various fields.

The field of artificial intelligence continues to evolve at an exponential rate, with researchers seeking to replicate the complex functions of the human nervous system in machines. Artificial nervous systems (ANS) have emerged as a key area of research, aiming to model the intricate network of neurons and synapses found in the human brain.

The use of ANS in modeling has the potential to revolutionize a wide range of industries, from healthcare and robotics to information technology and beyond. By simulating the nervous system, researchers are able to develop advanced models that can mimic the cognitive processes and decision-making capabilities of biological organisms.

One of the key applications of ANS in modeling is in the field of robotics. By integrating ANS into robotic systems, researchers are able to create machines that can adapt to changing environments, learn from their experiences, and make autonomous decisions. This has the potential to revolutionize industries such as manufacturing, healthcare, and service, where robots can work alongside humans in a collaborative and intelligent manner.

In the field of healthcare, ANS modeling has the potential to revolutionize the diagnosis and treatment of neurological disorders. By simulating the behavior of the nervous system, researchers can better understand the underlying causes of conditions such as Parkinson's disease, Alzheimer's, and epilepsy, leading to more effective treatments and therapies. Additionally, ANS modeling can be used to develop advanced prosthetics and assistive devices that can seamlessly integrate with the body's own nervous system, restoring mobility and function to individuals with disabilities.

In the realm of information technology, ANS modeling is paving the way for the development of advanced AI systems that can learn, adapt, and make decisions in a manner that mirrors human cognitive processes. This has the potential to revolutionize industries such as finance, cybersecurity, and customer service, where AI systems can process vast amounts of data, identify patterns, and make intelligent decisions in real-time. Despite the promising applications of ANS modeling, there are several challenges that researchers must overcome. Replicating the complexity of the human nervous system in a machine is a daunting task, requiring advanced computational power and sophisticated algorithms. Additionally, ethical considerations surrounding the use of ANS in autonomous systems must be carefully addressed, particularly in areas such as autonomous vehicles and healthcare.

In conclusion, the use of artificial nervous systems in modeling represents a significant breakthrough in the field of artificial intelligence, with wide-reaching implications for numerous industries. As researchers continue to push the boundaries of ANS modeling, we can expect to see the emergence of advanced technologies that can learn, adapt, and make decisions in a manner that closely resembles human cognition. It is imperative that ethical considerations are carefully addressed, and that research in this area is guided by a commitment to the responsible and beneficial use of ANS in society.

The use of artificial nervous systems in modeling has opened up new frontiers in robotics, neuroscience, and artificial intelligence, offering a bio-inspired approach to understanding and replicating complex behaviors and adaptive responses. As research in this field continues to advance, ANS-based models are expected to play a pivotal role in shaping the future of intelligent systems, paving the way for innovative applications and advancements across diverse domains.

References:

1. Livi, L., Miri, A., Mazzoni, A., & Mansour, R. (2020). Artificial Nervous Systems in Robotics: A Review. *Frontiers in Neurorobotics*, 14, 24.
2. Indiveri, G., & Liu, S. C. (2015). Memory and Information Processing in Neuromorphic Systems. *Proceedings of the IEEE*, 103(8), 1379-1397.

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-3, ISSUE-5

3. Sharipova, M. P. L. (2023). CAPUTA MA'NOSIDA KASR TARTIBLI HOSILALAR VA UNI HISOBLASH USULLARI. Educational Research in Universal Sciences, 2(9), 360-365.
4. Sharipova, M. P. (2023). MAXSUS SOHALARDA KARLEMAN MATRITSASI. Educational Research in Universal Sciences, 2(10), 137-141.
5. Madina Polatovna Sharipova. (2023). APPROXIMATION OF FUNCTIONS WITH COEFFICIENTS. American Journal of Public Diplomacy and International Studies (2993-2157), 1(9), 135–138.
6. Madina Polatovna Sharipova. (2023). Applications of the double integral to mechanical problems. International journal of sciearchers, 2(2), 101-103.
7. Sharipova, M. P. L. (2023). FINDING THE MAXIMUM AND MINIMUM VALUE OF A FUNCTION ON A SEGMENT. American Journal of Public Diplomacy and International Studies (2993-2157), 1(9), 245-248.
8. Sharipova, M. P. (2023). FUNKSIYALARNI KOEFFITSIENTLAR ORQALI FUNKSIYALARNI YAKINLASHTIRISH HAQIDA MA'LUMOTLAR. GOLDEN BRAIN, 1(34), 102–110.
9. qizi Latipova, S. S. (2023). KASR TARTIBLI HOSILA TUSHUNCHASI. SCHOLAR, 1(31), 263-269.
10. qizi Latipova, S. S. (2023). RIMAN-LUIVILL KASR TARTIBLI INTEGRALI VA HOSILASIGA OID AYRIM MASALALARNING ISHLANISHI. Educational Research in Universal Sciences, 2(12), 216-220.
11. qizi Latipova, S. S. (2023). MITTAG-LIFFLER FUNKSIYASI VA UNI HISOBLASH USULLARI. Educational Research in Universal Sciences, 2(9), 238-244.
12. Shahnoza, L. (2023, March). KASR TARTIBLI TENGLAMALARDA MANBA VA BOSHLANG'ICH FUNKSIYANI ANIQLASH BO'YICHA TESKARI MASALALAR. In " Conference on Universal Science Research 2023" (Vol. 1, No. 3, pp. 8-10).
13. Latipova, S. S. qizi . (2023). BETA FUNKSIYA XOSSALARI VA BU FUNKSIYA YORDAMIDA TURLI MASALALARNI YECHISH. GOLDEN BRAIN, 1(34), 66–76.
14. Axmedova, Z. I. (2023). LMS TIZIMIDA INTERAKTIV ELEMENTLARNI YARATISH TEXNOLOGIYASI. Educational Research in Universal Sciences, 2(11), 368-372.
15. Ikromovna, A. Z. (2023). USING THE USEFUL ASPECTS OF THE MOODLE SYSTEM AND ITS POSSIBILITIES. American Journal of Public Diplomacy and International Studies (2993-2157), 1(9), 201-205.
16. Axmedova, Z. (2023). MOODLE TIZIMI VA UNING IMKONIYATLARI. Development and innovations in science, 2(11), 29-35.
17. Zulxumor, A. (2022). IMPLEMENTATION OF INTERACTIVE COURSES IN THE EDUCATIONAL PROCESS. ILMIY TADQIQOT VA INNOVATSIYA, 1(6), 128-132.
18. Муродов, О. Т. (2023). РАЗРАБОТКА АВТОМАТИЗИРОВАННОЙ СИСТЕМЫ УПРАВЛЕНИЯ ТЕМПЕРАТУРЫ И ВЛАЖНОСТИ В ПРОИЗВОДСТВЕННЫХ КОМНАТ. GOLDEN BRAIN, 1(26), 91-95.
19. Murodov, O. T. R. (2023). ZAMONAVIY TA'LIMDA AXBOROT TEXNOLOGIYALARI VA ULARNI QO 'LLASH USUL VA VOSITALARI. Educational Research in Universal Sciences, 2(10), 481-486.

20. Murodov, O. T. (2023). INFORMATIKA FANINI O'QITISHDA YANGI INNOVATSION USULLARDAN FOYDALANISH METODIKASI. GOLDEN BRAIN, 1(34), 130–139.
21. Sharopova, M. M. qizi . (2023). JAVA TILI YORDAMIDA OB'YEKTGA YUNALTIRILGAN DASTURLASH ASOSLARI BILAN TANISHISH. GOLDEN BRAIN, 1(34), 111–119.
22. qizi Sharopova, M. M. (2023). RSA VA EL-GAMAL OCHIQ KALITLI SHIFRLASH ALGORITMI ASOSIDA ELEKTRON RAQMLI IMZOLARI. RSA OCHIQ KALITLI SHIFRLASH ALGORITMI ASOSIDAGI ELEKTRON RAQAMLI IMZO. Educational Research in Universal Sciences, 2(10), 316-319
23. Behruz Ulugbek og, Q. (2023). TECHNOLOGY AND MEDICINE: A DYNAMIC PARTNERSHIP. International Multidisciplinary Journal for Research & Development, 10(11).
24. . Quvvatov Behruz Ulug'bek o'g'li. (2023). Mobil ilovalar yaratish va ularni bajarish jarayoni. International journal of scientific researchers, 2(2).
25. Behruz Ulugbek og, Q. (2023). TECHNOLOGY AND MEDICINE: A DYNAMIC PARTNERSHIP. International Multidisciplinary Journal for Research & Development, 10(11).
26. Турсунов, Б. Ж., Гайбуллаев, С. А., & Жумаев, К. К. (2020). Влияние технологических параметров на гликолевую осушку газа. Sciences of Europe, (55-1 (55)), 33-36.
27. Турсунов, Б. Ж., & Алланазаров, Г. О. (2019). Перспективные технологии производства по улучшению качества бензина. Теория и практика современной науки, (3 (45)), 305-308.
28. Турсунов, Б. Д., & Суннатов, Ж. Б. (2017). Совершенствование технологии вторичного дробления безвзрывным методом. Молодой ученый, (13), 97-100.
29. Турсунов, Б. Ж., & Шомуродов, А. Ю. (2021). Перспективный метод утилизации отходов нефтеперерабатывающей промышленности. ТА'ЛИМ ВА RIVOJLANISH TAHLILI ONLAYN ILMIY JURNALI, 1(6), 239-243.
30. Bakhodir, T., Bakhtiyor, G., & Makhfuz, O. (2021). Oil sludge and their impact on the environment. Universum: технические науки, (6-5 (87)), 69-71.
31. Турсунов, Б. Ж. (2021). АНАЛИЗ МЕТОДОВ УТИЛИЗАЦИИ ОТХОДОВ НЕФТЕПЕРЕРАБАТЫВАЮЩЕЙ ПРОМЫШЛЕННОСТИ. Scientific progress, 2(4), 669-674.
32. Турсунов, Б. Ж., Ботиров, Т. В., Ташпулатов, Д. К., & Хайруллаев, Б. И. (2018). ПЕРСПЕКТИВА ПРИМЕНЕНИЯ ОПТИМАЛЬНОГО ПРОЦЕССА РУДООТДЕЛЕНИЯ В КАРЬЕРЕ МУРУНТАУ. In Инновационные геотехнологии при разработке рудных и нерудных месторождений (pp. 160-164).
33. ТУРСУНОВ, Б., & ТАШПУЛАТОВ, Д. (2018). ЭФФЕКТИВНОСТЬ ПРИМЕНЕНИЯ ПРЕДВАРИТЕЛЬНОГО ОБОГАЩЕНИЯ РУД В КАРЬЕРЕ КАЛЬМАКИР. In Инновационные геотехнологии при разработке рудных и нерудных месторождений (pp. 165-168).
34. Турсунов, Б. Ж., Ботиров, Т. В., Ташпулатов, Д. К., & Хайруллаев, Б. И. (2018). ПЕРСПЕКТИВА ПРИМЕНЕНИЯ ОПТИМАЛЬНОГО ПРОЦЕССА

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-3, ISSUE-5

РУДОТДЕЛЕНИЯ В КАРЬЕРЕ МУРУНТАУ. In Инновационные геотехнологии при разработке рудных и нерудных месторождений (pp. 160-164).

35. Jalolov, T. S. (2023). PEDAGOGICAL-PSYCHOLOGICAL FOUNDATIONS OF DATA PROCESSING USING THE SPSS PROGRAM. INNOVATIVE DEVELOPMENTS AND RESEARCH IN EDUCATION, 2(23), 220-223.

36. Jalolov, T. S. (2023). ADVANTAGES OF DJANGO FEMWORKER. International Multidisciplinary Journal for Research & Development, 10(12).

37. Jalolov, T. S. (2023). ARTIFICIAL INTELLIGENCE PYTHON (PYTORCH). Oriental Journal of Academic and Multidisciplinary Research, 1(3), 123-126.

38. Jalolov, T. S. (2023). SPSS YOKI IJTIMOYIY FANLAR UCHUN STATISTIK PAKET BILAN PSIXOLOGIK MA'LUMOTLARNI QAYTA ISHLASH. Journal of Universal Science Research, 1(12), 207-215.

39. Jalolov, T. S. (2023). THE MECHANISMS OF USING MATHEMATICAL STATISTICAL ANALYSIS METHODS IN PSYCHOLOGY. TECHNICAL SCIENCE RESEARCH IN UZBEKISTAN, 1(5), 138-144.

40. Jalolov, T. S. (2023). PROGRAMMING LANGUAGES, THEIR TYPES AND BASICS. TECHNICAL SCIENCE RESEARCH IN UZBEKISTAN, 1(5), 145-152.

41. Jalolov, T. S. (2023). PYTHON TILINING AFZALLIKLARI VA KAMCHILIKLARI. TECHNICAL SCIENCE RESEARCH IN UZBEKISTAN, 1(5), 153-159.

42. Jalolov, T. S. (2023). PYTHON DASTUR TILIDADA WEB-ILOVALAR ISHLAB CHIQISH. TECHNICAL SCIENCE RESEARCH IN UZBEKISTAN, 1(5), 160-166.

43. Jalolov, T. S. (2023). SUN'IY INTELLEKTDI PYTHONNING (PYTORCH) KUTUBXONASIDAN FOYDALANISH. TECHNICAL SCIENCE RESEARCH IN UZBEKISTAN, 1(5), 167-171.

44. Jalolov, T. S. (2023). WORKING WITH MATHEMATICAL FUNCTIONS IN PYTHON. TECHNICAL SCIENCE RESEARCH IN UZBEKISTAN, 1(5), 172-177.

45. Jalolov, T. S. (2023). PARALLEL PROGRAMMING IN PYTHON. TECHNICAL SCIENCE RESEARCH IN UZBEKISTAN, 1(5), 178-183.

46. Tursunbek Sadriiddinovich Jalolov. (2023). STUDY THE PSYCHOLOGY OF PROGRAMMERS. American Journal of Public Diplomacy and International Studies (2993-2157), 1(10), 563-568.

47. Jalolov, T. S. (2023). PYTHON INSTRUMENTLARI BILAN KATTA MA'LUMOTLARNI QAYTA ISHLASH. Educational Research in Universal Sciences, 2(10), 320-322.

48. Jalolov, T. S., & Usmonov, A. U. (2021). "AQLLI ISSIQXONA" BOSHQARISH TIZIMINI MODELLASHTIRISH VA TADQIQ QILISH. Экономика и социум, (9 (88)), 74-77.

49. Sadriiddinovich, J. T. (2023). Capabilities of SPSS Software in High Volume Data Processing Testing. American Journal of Public Diplomacy and International Studies (2993-2157), 1(9), 82-86.

**SQL (STRUCTURED QUERY LANGUAGE) CAPABILITIES OF THE STATISTICAL
DATABASE LANGUAGE**

Akhmedova Zulhumor Ikromovna

Asia International University General technician Department of Sciences teacher

akhmedovazulkhumor85@gmail.com

INTRODUCTION

The world in experience higher of education important from the goals one is this students professional develop their to know skills formation and received knowledge , skill , qualification and competencies to life practical apply technologies app done
As you know, teaching tools - training process organize reach main from the elements one is considered The main task of the teacher to students own the subject interesting by doing show and that's it with together students to science has been interests from increase consists of In this place of teaching modern technical and software of means to use right will come . Modern multimedia from technologies use of the teacher pedagogical skills , technological opportunities more expands .

Modern information and communication technologies possibilities very wide system to him known has been computer , multimedia tools , computer networks , such as the Internet from concepts except series new concepts are also included . To these information systems , information systems management , information transmission systems , data warehouse , information warehouse manage systems , knowledge warehouse etc example to be possible

SQL (Structured Query Language) Statistical packages of capabilities i

SQL(Structured Query Language) – This query language consists of many operators through which users and programs can access the database in Oracle(MBBT). Oracle utilities or various programs can perform database access without SQL operators, but it is impossible not to use this query language when executing queries.

In June 1970, EF Codd made his paper EF Codd, "A Relational Model of Data for Large Shared Data Banks" public. This article was published in Communications of the ACM. Nowadays, this model of Codd is accepted as the final model of "relational database management system (RMBBT)". IBM developed the SEQUEL (Structured English Query Language) language to implement Codd's model. This language was later changed to SQL, but is still referred to as a "sequel". 1979 Relational Software (now Oracle) Corporation released the first commercial development of SQL. Currently, SQL is the standard language of RMBBT.

The SQL language works in query-result form. Queries are issued not for each element, but for a whole group, and the result is obtained. For SQL, it doesn't matter what form or order the data in the database is, and users don't need to know this data either. Only by writing the operators correctly will it be possible to extract the desired data.

SQL is the common standard language for all database management systems. It follows that if you learn this language once, you can work with any MBBT. A set of sql operators (small query program) created in one MBBT can be moved to any MBBT.

The following tasks can be performed using SQL statements:

- Obtaining data by request.
- Adding data to the rows of the table, deleting and updating the rows.

- Create, modify and delete objects.
- Set database and object permissions.
- Create database users and ensure database security.

There are 2 types of SQL: interactive and built-in. These 2 types of SQL work the same but are used in different places.

Interactive SQL refers to making a query to the database and getting the result immediately. That is, the process takes place based on the sequence. It works in query-result mode.

Embedded SQL means that a set of queries is used in a programming language. In Pascal, Delphi, Java, we refer to the base, load the result into a variable and use this result in the necessary place. That is, we cannot send a request and get the result immediately. The result is obtained only for the continuation of the program and is used where required.

SQL operators are divided into several groups. This division is divided on the basis of the task performed by the operators. They are as follows:

- DDL(Data Definition Language) , ANSI this group is called SDL(Schema Definition Language). This group includes operators that create objects (tables, indexes) in the database ;
- DML (Data Manipulation Language) is a group of data manipulation operators. Operators that determine what data is stored in the table at any time ;
- DCL (Data Control Language) - data management operators ;

By permission of ANSI, DCL is considered part of DDL. These groups should not be confused. These are not separate languages, but groups of SQL operators.

SQL and data analysis . In the world of IT and business, fads and fads come and go very quickly. The best HYIPs change every few months. The marketing departments of almost all tech companies compete to repackage and rebrand the old, emphasizing the coolness and appeal of their products. The strategy seems to be working, at least for some.

As Stonebreaker points out, big data is Stonebreaker's buzzword of the day. As with other words, this term does not have a fixed definition. What is the difference between big data, databases and data warehouses, they all deal with large amounts of data.

E-commerce sites, sensors, cameras, mobile applications generate large amounts of data at different time intervals. This mountain of data needs to be processed and analyzed to identify patterns, explain and predict business events. A basic assumption about big data is that we can learn from data.

According to Jacobs, big data should be defined as data at any time whose dimensions force us to look beyond the tried and true methods commonly used at the time, for Cuzzocrea et al. (2011) Big data refers to large amounts of unstructured data generated by high-performance applications belonging to a broad and heterogeneous family of scenarios, from scientific computing applications to social networks, from e-government applications to medical information systems, etc. . Stonebraker (2012) identifies four types of big data:

- Big data, but little analysis ;
- Big Data Analytics ;
- High speed ;
- Great variety.

Big data but little analysis usually means using simple SQL queries (MIN, MAX, SUM, COUNT, AVG, GROUP BY, HAVING functions and SELECT with clauses) on large data sets. All types of SQL databases (relational), commercial (Oracle, IBM DB2, Microsoft SQL Server) or open source databases (PostgreSQL, MySQL) can be platforms/tools for this type of processing. Big data analysis requires the integration of ETL (Extract-Transform-Load) tools with a statistical packager. Big analytics means regression, data mining, machine learning, and other more complex types of processing. Data can be extracted from various data sources using SQL queries and/or ETL tools. Complex analysis requires packages like SPSS, R, SAS, etc. and sometimes a lot of code.

The great variety is due to the heterogeneity of data sources and data formats (XLS, relational databases, CSV, flat files, etc.) that must be imported and converted for processing/analysis.

Big data management means dealing with three types of operations: data collection, data storage, and data processing. Therefore, the main components of twp for big data are databases and statistical packages.

SQL and Statistics packages. Here is a large offer of statistical packages dedicated to data analysis and other types of complex processing. Most famous commerce from products some : SPSS, SAS, Stata, S-PLUS, Minitab. They are usually simple user (developer for those who are not very comfortable to interfaces have has been wide scope statistics functions and options present is enough But theirs never when not some of them own expenses also known as Small and medium business as well as many universities a lot didn't happen licenses for sometimes to spend a thousand dollars able it's not . Of course , the prices and licensing systems from each other difference does , but our to our experience according to the price still from them use for the most wide spread out is an obstacle . That's it although many universities such as SPSS, SAS packages donations , research grants , industry with depends projects and others through buy they took

Last in years higher education and research in the world open coded statistics software to supply , mainly R, Tsoukalos and to others relatively common trend witness it has been . (2013). R gradually universities , companies and researchers to the dominant platform for turning around going , they software to supply very a lot money spend didn't get , especially present financial in problems . R is final user for never how cost without doing statistics , information digging get the car learning and etc according to the most last achievements constant respectively done which increases passionate work of exits huge to the community have

This documents goals with depends of R without two main limitation there is . Of them one to R special and user to the interface belongs to Some open source extensions (such as RStudio) . dialog box softened though the R command string and to scripts based on programming as well inclined Otherwise by doing in other words , R is still commercial of products from its elegance far away

Second restriction all statistics to packages is typical and data to the source applies . Requests and laboratory information straight away statistics package to his age the introduction possible , but analysis to be done real of companies information wide on platforms located : SQL data databases , web logs , sensors , mobile applications , Excel files and others As a result , many in cases R or another in packages information collection for some extraction - transformation -load (ETL) mechanisms need will be

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-3, ISSUE-5

Usually statistics packages usually the following from solutions one or one how many using again work for own information uploads :

- External data from files (Excel, CSV- comma with separated values , text files and others) their menus (available if) using direct import ;
- Information from sources (data databases , Excel and others) intermediate the results common format to files keep and after this intermediate files import into package ; the most famous exchange XML, CSV and JSON formats ;
- ODBC (Object Data Base Connectivity) or JDBC (Object Data Base Connectivity) drivers using data sources create and straight away package ODBC/JDBC data sources connect
- Information source and the goal package for adaptation possible has been from custom ETL procedures use
- Import for comfortable formats data collection present which custom API (App programming interfaces) or web / data services connection Google Analytics is like that service years during famous being going on ;
- User by defined or standard ETL procedures using web servers from the magazine import data . These are NoSQL systems strong there is has been is a field; ODBC/JDBC connections through from a simple import except sometimes data base on the server data base request directly statistics from the package done increase can For example , R users straight away SQLite data bases to ask and the results R work from tables import to the field can

References:

1. Livi, L., Miri, A., Mazzoni, A., & Mansour, R. (2020). Artificial Nervous Systems in Robotics: A Review. *Frontiers in Neurorobotics*, 14, 24.
2. Indiveri, G., & Liu, S. C. (2015). Memory and Information Processing in Neuromorphic Systems. *Proceedings of the IEEE*, 103(8), 1379-1397.
3. Sharipova, M. P. L. (2023). CAPUTA MA'NOSIDA KASR TARTIBLI HOSILALAR VA UNI HISOBLASH USULLARI. *Educational Research in Universal Sciences*, 2(9), 360-365.
4. Sharipova, M. P. (2023). MAXSUS SOHALARDA KARLEMAN MATRITSASI. *Educational Research in Universal Sciences*, 2(10), 137-141.
5. Madina Polatovna Sharipova. (2023). APPROXIMATION OF FUNCTIONS WITH COEFFICIENTS. *American Journal of Public Diplomacy and International Studies* (2993-2157), 1(9), 135–138.
6. Madina Polatovna Sharipova. (2023). Applications of the double integral to mechanical problems. *International journal of sciearchers*,2(2), 101-103.
7. Sharipova, M. P. L. (2023). FINDING THE MAXIMUM AND MINIMUM VALUE OF A FUNCTION ON A SEGMENT. *American Journal of Public Diplomacy and International Studies* (2993-2157), 1(9), 245-248.
8. Sharipova, M. P. (2023). FUNKSIYALARNI KOEFFITSIENTLAR ORQALI FUNKSIYALARNI YAKINLASHTIRISH HAQIDA MA'LUMOTLAR. *GOLDEN BRAIN*, 1(34), 102–110.
9. qizi Latipova, S. S. (2023). KASR TARTIBLI HOSILA TUSHUNCHASI. *SCHOLAR*, 1(31), 263-269.

10. qizi Latipova, S. S. (2023). RIMAN-LUIVILL KASR TARTIBLI INTEGRALI VA HOSILASIGA OID AYRIM MASALALARNING ISHLANISHI. Educational Research in Universal Sciences, 2(12), 216-220.
11. qizi Latipova, S. S. (2023). MITTAG-LIFFLER FUNKSIYASI VA UNI HISOBLASH USULLARI. Educational Research in Universal Sciences, 2(9), 238-244.
12. Shahnoza, L. (2023, March). KASR TARTIBLI TENGLAMALARDA MANBA VA BOSHLANG'ICH FUNKSIYANI ANIQLASH BO'YICHA TESKARI MASALALAR. In " Conference on Universal Science Research 2023" (Vol. 1, No. 3, pp. 8-10).
13. Latipova, S. S. qizi . (2023). BETA FUNKSIYA XOSSALARI VA BU FUNKSIYA YORDAMIDA TURLI MASALALARNI YECHISH. GOLDEN BRAIN, 1(34), 66-76.
14. Axmedova, Z. I. (2023). LMS TIZIMIDA INTERAKTIV ELEMENTLARNI YARATISH TEXNOLOGIYASI. Educational Research in Universal Sciences, 2(11), 368-372.
15. Ikromovna, A. Z. (2023). USING THE USEFUL ASPECTS OF THE MOODLE SYSTEM AND ITS POSSIBILITIES. American Journal of Public Diplomacy and International Studies (2993-2157), 1(9), 201-205.
16. Axmedova, Z. (2023). MOODLE TIZIMI VA UNING IMKONIYATLARI. Development and innovations in science, 2(11), 29-35.
17. Zulxumor, A. (2022). IMPLEMENTATION OF INTERACTIVE COURSES IN THE EDUCATIONAL PROCESS. ILMIY TADQIQOT VA INNOVATSIYA, 1(6), 128-132.
18. Муродов, О. Т. (2023). РАЗРАБОТКА АВТОМАТИЗИРОВАННОЙ СИСТЕМЫ УПРАВЛЕНИЯ ТЕМПЕРАТУРЫ И ВЛАЖНОСТИ В ПРОИЗВОДСТВЕННЫХ КОМНАТ. GOLDEN BRAIN, 1(26), 91-95.
19. Murodov, O. T. R. (2023). ZAMONAVIY TA'LIMDA AXBOROT TEXNOLOGIYALARI VA ULARNI QO 'LLASH USUL VA VOSITALARI. Educational Research in Universal Sciences, 2(10), 481-486.
20. Murodov, O. T. (2023). INFORMATIKA FANINI O'QITISHDA YANGI INNOVATION USULLARDAN FOYDALANISH METODIKASI. GOLDEN BRAIN, 1(34), 130-139.
21. Sharopova, M. M. qizi . (2023). JAVA TILI YORDAMIDA OB'JEKTA YUNALTIRILGAN DASTURLASH ASOSLARI BILAN TANISHISH. GOLDEN BRAIN, 1(34), 111-119.
22. qizi Sharopova, M. M. (2023). RSA VA EL-GAMAL OCHIQ KALITLI SHIFRLASH ALGORITMI ASOSIDA ELEKTRON RAQMLI IMZOLARI. RSA OCHIQ KALITLI SHIFRLASH ALGORITMI ASOSIDAGI ELEKTRON RAQAMLICHI IMZO. Educational Research in Universal Sciences, 2(10), 316-319
23. Behruz Ulugbek og, Q. (2023). TECHNOLOGY AND MEDICINE: A DYNAMIC PARTNERSHIP. International Multidisciplinary Journal for Research & Development, 10(11).
24. . Quvvatov Behruz Ulug'bek o'g'li. (2023). Mobil ilovalar yaratish va ularni bajarish jarayoni. International journal of scientific researchers, 2(2).
25. Behruz Ulugbek og, Q. (2023). TECHNOLOGY AND MEDICINE: A DYNAMIC PARTNERSHIP. International Multidisciplinary Journal for Research & Development, 10(11).

26. Турсунов, Б. Ж., Гайбуллаев, С. А., & Жумаев, К. К. (2020). Влияние технологических параметров на гликолевую осушку газа. *Sciences of Europe*, (55-1 (55)), 33-36.
27. Турсунов, Б. Ж., & Алланазаров, Г. О. (2019). Перспективные технологии производства по улучшению качества бензина. *Теория и практика современной науки*, (3 (45)), 305-308.
28. Турсунов, Б. Д., & Суннатов, Ж. Б. (2017). Совершенствование технологии вторичного дробления безвзрывным методом. *Молодой ученый*, (13), 97-100.
29. Турсунов, Б. Ж., & Шомуродов, А. Ю. (2021). Перспективный метод утилизации отходов нефтеперерабатывающей промышленности. *TA'LIM VA RIVOJLANISH TASHLIL ONLAYN ILMIY JURNALI*, 1(6), 239-243.
30. Bakhodir, T., Bakhtiyor, G., & Makhfuz, O. (2021). Oil sludge and their impact on the environment. *Universum: технические науки*, (6-5 (87)), 69-71.
31. Турсунов, Б. Ж. (2021). АНАЛИЗ МЕТОДОВ УТИЛИЗАЦИИ ОТХОДОВ НЕФТЕПЕРЕРАБАТЫВАЮЩЕЙ ПРОМЫШЛЕННОСТИ. *Scientific progress*, 2(4), 669-674.
32. Турсунов, Б. Ж., Ботиров, Т. В., Ташпулатов, Д. К., & Хайруллаев, Б. И. (2018). ПЕРСПЕКТИВА ПРИМЕНЕНИЯ ОПТИМАЛЬНОГО ПРОЦЕССА РУДООТДЕЛЕНИЯ В КАРЬЕРЕ МУРУНТАУ. In *Инновационные геотехнологии при разработке рудных и нерудных месторождений* (pp. 160-164).
33. ТУРСУНОВ, Б., & ТАШПУЛАТОВ, Д. (2018). ЭФФЕКТИВНОСТЬ ПРИМЕНЕНИЯ ПРЕДВАРИТЕЛЬНОГО ОБОГАЩЕНИЯ РУД В КАРЬЕРЕ КАЛЬМАКИР. In *Инновационные геотехнологии при разработке рудных и нерудных месторождений* (pp. 165-168).
34. Турсунов, Б. Ж., Ботиров, Т. В., Ташпулатов, Д. К., & Хайруллаев, Б. И. (2018). ПЕРСПЕКТИВА ПРИМЕНЕНИЯ ОПТИМАЛЬНОГО ПРОЦЕССА РУДООТДЕЛЕНИЯ В КАРЬЕРЕ МУРУНТАУ. In *Инновационные геотехнологии при разработке рудных и нерудных месторождений* (pp. 160-164).
35. Jalolov, T. S. (2023). PEDAGOGICAL-PSYCHOLOGICAL FOUNDATIONS OF DATA PROCESSING USING THE SPSS PROGRAM. *INNOVATIVE DEVELOPMENTS AND RESEARCH IN EDUCATION*, 2(23), 220-223.
36. Jalolov, T. S. (2023). ADVANTAGES OF DJANGO FEMWORKER. *International Multidisciplinary Journal for Research & Development*, 10(12).
37. Jalolov, T. S. (2023). ARTIFICIAL INTELLIGENCE PYTHON (PYTORCH). *Oriental Journal of Academic and Multidisciplinary Research*, 1(3), 123-126.
38. Jalolov, T. S. (2023). SPSS YO'KI IJTIMO'IY FANLAR UCHUN STATISTIK PAKET BILAN PSIXOLOGIK MA'LUMOTLARNI QAYTA ISHLASH. *Journal of Universal Science Research*, 1(12), 207-215.
39. Jalolov, T. S. (2023). THE MECHANISMS OF USING MATHEMATICAL STATISTICAL ANALYSIS METHODS IN PSYCHOLOGY. *TECHNICAL SCIENCE RESEARCH IN UZBEKISTAN*, 1(5), 138-144.
40. Jalolov, T. S. (2023). PROGRAMMING LANGUAGES, THEIR TYPES AND BASICS. *TECHNICAL SCIENCE RESEARCH IN UZBEKISTAN*, 1(5), 145-152.

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-3, ISSUE-5

41. Jalolov, T. S. (2023). PYTHON TILINING AFZALLIKLARI VA KAMCHILIKLARI. TECHNICAL SCIENCE RESEARCH IN UZBEKISTAN, 1(5), 153-159.
42. Jalolov, T. S. (2023). PYTHON DASTUR TILIDADA WEB-ILOVALAR ISHLAB CHIQISH. TECHNICAL SCIENCE RESEARCH IN UZBEKISTAN, 1(5), 160-166.
43. Jalolov, T. S. (2023). SUN'Y INTELLEKTDI PYTHONNING (PYTORCH) KUTUBXONASIDAN FOYDALANISH. TECHNICAL SCIENCE RESEARCH IN UZBEKISTAN, 1(5), 167-171.
44. Jalolov, T. S. (2023). WORKING WITH MATHEMATICAL FUNCTIONS IN PYTHON. TECHNICAL SCIENCE RESEARCH IN UZBEKISTAN, 1(5), 172-177.
45. Jalolov, T. S. (2023). PARALLEL PROGRAMMING IN PYTHON. TECHNICAL SCIENCE RESEARCH IN UZBEKISTAN, 1(5), 178-183.
46. Tursunbek Sadriiddinovich Jalolov. (2023). STUDY THE PSYCHOLOGY OF PROGRAMMERS. American Journal of Public Diplomacy and International Studies (2993-2157), 1(10), 563–568.
47. Jalolov, T. S. (2023). PYTHON INSTRUMENTLARI BILAN KATTA MA'LUMOTLARNI QAYTA ISHLASH. Educational Research in Universal Sciences, 2(10), 320-322.
48. Jalolov, T. S., & Usmonov, A. U. (2021). "AQLLI ISSIQXONA" BOSHQARISH TIZIMINI MODELLASHTIRISH VA TADQIQ QILISH. Экономика и социум, (9 (88)), 74-77.
49. Sadriiddinovich, J. T. (2023). Capabilities of SPSS Software in High Volume Data Processing Testing. American Journal of Public Diplomacy and International Studies (2993-2157), 1(9), 82-86.

KNEE DISEASE ARTHRITIS AS A COMPLICATION OF COVID-19

Abduraimov Musurmonbek Mustafoyevich

TTATF internal medicine propaedeutics rehabilitation,
assistant of the department of folk medicine and endocrinology

ANNOTATION

The current COVID-19 pandemic raises several clinical challenges. Cases of COVID-19-associated arthritis have been reported, and inconsistently described as either COVID-19 viral arthritis or COVID-19 reactive arthritis. We aimed to review all the reported cases of 'COVID-19-associated arthritis', which we propose, is a better term to define the entire spectrum of new-onset arthritis believed to be associated with SARS-CoV-2 infection. We performed a systematic literature review using MEDLINE, EMBASE and the Cochrane Database of Systematic Reviews to search for articles published up to 13 December 2021. We included cohort studies, case series and case reports describing patients diagnosed with COVID-19 reactive or viral arthritis by a physician, irrespective of fulfilment of classification criteria. To identify relevant studies, medical subject headings and keywords related to 'COVID-19/SARS-CoV-2 infection' and 'reactive arthritis' were used. Our search retrieved 419 articles, of which 31 were included in the review. A total of 33 cases were reported in these 31 articles, the majority being adults (28/33=85%) with peripheral joint involvement (26/33=79%). Most of the patients responded well to treatment and the disease was self-limiting. These 33 case reports describe a possible causal relationship between exposure to SARS-CoV-2 and the onset of arthritis. However, since these cases were reported during a pandemic, other aetiologies cannot be fully excluded. The exact mechanism through which SARS-CoV-2 might trigger arthritis is not fully understood and robust epidemiological data to support a causal relationship are still lacking.

Key words: COVID-19, arthritis, reactive, arthritis, infectious.

INTRODUCTION

Coronavirus disease 2019 (COVID-19) is an emerging pandemic that is caused by severe acute respiratory distress coronavirus 2 (SARS-CoV-2). The virus mainly affects the respiratory system but has indirect effects on multiple organ systems including the musculoskeletal system [1]. Fatigue, arthralgia, and myalgia have been identified as common COVID-19 symptoms with considerable musculoskeletal dysfunction in some patients, but long-term follow-up and their prevalence have yet not been investigated [1–3].

A very recent study collected data of the past 5 months, from different studies published worldwide, to detect the frequency of musculoskeletal symptoms in COVID-19 patients. It included a total of 54 studies (12,045 patients), mostly from China, and found that, amongst the musculoskeletal symptoms, fatigue and arthralgia/myalgia were the most common symptoms [4]. Eight studies reported having a prevalence of greater than 50% of patients with fatigue [5–12] while three reported higher values of arthralgia/myalgia [13–15]. A retrospective single-center analysis conducted in Wuhan, China, included 84 confirmed cases of SARS-CoV-2 infection. Nearly two-thirds of patients had myalgia or fatigue [5]. Another city in China, Chengdu, evaluated the epidemiological characteristics of 99 test-positive cases who were admitted to the hospital. It was seen that after cough, fatigue (73%) was the most common symptom in these patients [10]. An article published in the New England Journal of Medicine discussed the clinical characteristics of COVID-19 in New York City. According to it, myalgias (23.8%) were not uncommon among 393 patients [11].

The use of nonsteroidal anti-inflammatory drugs (NSAIDs) is very common in COVID-19. Therefore, the persistence of musculoskeletal complaints is even more worrying because it may indicate that inflammatory reactions can overcome the anti-inflammatory effects of these drugs. We hereby present a case series of 5 patients who presented with inflammatory arthritis (symmetrical/polyarticular) as a sequela of COVID-19 infection. The current literature on inflammatory manifestations, especially symmetrical polyarthritis, is scarce.

DISCUSSION

This is a report of COVID-19 in a patient with septic arthritis. Septic arthritis (also called infectious arthritis) is an uncommon but serious medical emergency with microbial and immunological etiologies [5] and the main causative organism involved is *Staphylococcus aureus*, which can be isolated from 37 to 56% of cases [6]. It is well-documented that suppression of the immune system whether by immunosuppressant drugs or in autoimmune diseases is the key risk factor for the development of septic arthritis [7]. It has been reported that immunocompromised patients are more susceptible to the generation of septic arthritis [7]. For example, human immunodeficiency virus (HIV)-infected patients exhibit an increased prevalence of musculoskeletal infections [8]. However, in the current case report, the patient had no history of any diseases and had not received immunosuppressive therapy yet. Therefore, the incidence of an uncommon infection in this patient might be associated with COVID-19. Up to now, considerable literature has grown up around the impact of COVID-19 on host immune responses and functions [9], [10]. Recently, Remy et al. investigated the effect of COVID-19 on host immune responses and interaction with different immune cells and found that COVID-19 suppresses host innate and adaptive immune responses [11]. Indeed, the term “immunologic collapse” refers to the suppression of host immune responses by severe acute respiratory syndrome–coronavirus2 (SARS-CoV2) infection [12], [13].

As a consequence of this condition, patients with COVID-19 are more susceptible to opportunistic infectious microorganisms such as *Staphylococcus aureus*. Interestingly, Zhou et al indicated that 50% of patients with COVID-19 develop secondary hospital-acquired infections [14]. 5 cases of septic arthritis in hip were described after improvement of COVID19 with salmonella and coagulase negative staphylococci [3] and others reported a case of hip septic arthritis 3 month after COVID19 [15]. Furthermore, a case of shoulder septic arthritis was reported 1 week after Pfizer-BioNTech vaccine [16], but in present case, the patients did not receive any vaccine. Also there are case reports of inflammatory arthritis (rheumatoid arthritis, systemic lupus erythematosus, reactive arthritis, crystal-proven arthropathy flare, new-onset psoriatic arthritis and flare of preexisting inflammatory arthritis) after COVID19 [2], [17], [18]. This report describes the simultaneous existence of knee septic arthritis with *Staphylococcus aureus* and COVID 19. Due to the onset of pulmonary symptoms on the fourth day of hospitalization and as the incubation period COVID19 is about 2 weeks, he may have had COVID 19 at first and showed signs of septic arthritis before the onset of obvious pulmonary symptoms.

1. BUYRAK KASALLIKLARI PATOFIZIOLOGIYASI. Siydik ISHLAB CHIQRISH VA BO'LISHNI BUZISHLARI. BOLALARNING XUSUSIYATLARI XI Shodiqul o'g'li, XM Boboniyozovna, RS Ilxomovna Fan va texnologiya ko'p tarmoqli jurnali 3(4), 210-214 , 2023
2. GLOMERULONEFRIT KASALLIGINING KELIB CHIQISHI HAMDA USHBU KASALLIKDA KO'RILADIGAN CHORA TADBIRLAR M Aminova, A Ergashev, S Safarov, I Xushvaqto'v, M Turdimurodova Evrosiyo tibbiyot va tabiiy fanlar jurnali 3 (6-qism 2), 71-74 , 2023
3. JIRRAJYATNING ESTETIK TURLARI, PLASTIK JARROZIYA AJ Mirzaali o'g'li, XI Shodiqul o'g'li, SX Eminjon o'g'li EVROPA ZAMONAVIY TIBBIYOT VA AMALIYOT JURNALI 2 (10), 143-144 , 2022
4. ANESTEZIYA VA UNING UMUMIY XUSUSIYATLARI AJ Mirzaali o'g'li, XI Shodiqul o'g'li, NA Fozil o'g'li, SX Eminjon o'g'li, ... Gospodarka va Innovacje. 28, 191-192 , 2022 yil
5. TERMINAL HOLATLAR O'pka va yurak reanimatsiyasini o'tkazish tamoyillari AJ Mirzaali o'g'li, XI Shodiqul o'g'li, NA Fozil o'g'li, ... Galaxy xalqaro fanlararo tadqiqot jurnali 10(10), 729-731 , 2022
6. Tibbiy profilaktikaning tibbiyotdagi ahamiyati AJ Mirzaali o'g'li, XI Shodiqul o'g'li, SX Eminjon o'g'li, NB Aliqul o'g'li, ... Texas tibbiyot fanlari jurnali 13, 175-176 , 2022
8. Quartero AO, Meineche-Schmidt V, Muris J, et al. Bulking agents, antispasmodic and antidepressant medication for the treatment of irritable bowel syndrome. *Cochrane Database Syst Rev.* 2005;2:CD003460. [[PubMed](#)] [[Google Scholar](#)]
9. Stampfer MJ, Goldhaber SZ, Yusuf S, et al. Effect of intravenous streptokinase on acute myocardial infarction: pooled results from randomized trials. *N Engl J Med.* 1982;307:1180–1182. [[PubMed](#)] [[Google Scholar](#)]
10. Moher D, Cook DJ, Eastwood S, et al. Improving the quality of reports of meta-analyses of randomized controlled trials: the QUOROM statement. Quality of reporting of meta-analyses. *Lancet.* 1999;354:1896–1900. [[PubMed](#)] [[Google Scholar](#)]
11. Jadad AR, Cook DJ, Jones A, et al. Methodology and reports of systematic reviews and meta-analyses: a comparison of Cochrane reviews with articles published in paper-based journals. *JAMA.* 1998;280:278–280. [[PubMed](#)] [[Google Scholar](#)]
12. Chalmers TC, Buyse M. Meta-analysis. In: Chalmers TC, Blum A, Buyse M, et al., editors. *Data Analysis for Clinical Medicine: The Quantitative Approach to Patient Care.* Rome, Italy: International University Press; 1988. pp. 75–84. [[Google Scholar](#)]

Abstract: In recent decades, significant changes have occurred in the health status and nature of the pathology of the population of most economically developed countries of the world. Basically, these changes consist of unusually rapid changes in public health indicators for the history of mankind and transformation of pathology. There is a steady trend towards a decrease in mortality from a number of infectious and parasitic diseases, and a significant increase in the proportion of chronic non-infectious diseases. These changes occurred during the life of just one generation and led to a significant change in the structure of population mortality. This indicator is currently dominated by three groups of diseases: coronary artery disease (IHD), cerebrovascular diseases (CVD) and malignant neoplasms, which together account for more than half of all deaths [1].

Key words: hypertension, stroke, statistics, complications.

According to WHO, in 1996, a total of 52 million people died in the world. Of these, 15.3 million deaths are caused by diseases of the circulatory system (CVD), including ischemic heart disease - 10.7 million and CVD - 4.6 million. 6.3 million of all deaths are associated with oncological pathology. The structure of mortality among the population of economically developed countries of the world differs significantly from the global structure given above - BSKs come out on top and account for 45.6% of all deaths. The second most important cause of death is cancer – 21.0% [2].

Along with changes in the structure of population mortality, another stable trend in recent decades has been a decrease in overall population mortality in many countries of the world and, especially, a decrease in mortality from CSD. Thus, R. Bonita (2001) [3] notes the evolution of cerebrovascular pathology: at the beginning of the previous century, acute cerebrovascular accident (ACVA) was a more common pathology than heart disease, and its structure was dominated by cerebral hemorrhages. Later, the proportion of ischemic stroke and the number of patients with ischemic heart disease began to increase, which became more numerous than those with stroke. Currently, in economically developed countries, mortality from CSD (especially from stroke) is decreasing and the average age of stroke is increasing.

An analysis of the structure of population mortality shows that it corresponds to that in other economically developed countries - mortality rates from CVD (56.1%) and from malignant neoplasms (12.4%) together account for 2/3 of all deaths. The structure of mortality has not changed significantly over the past 8 years. At the same time, in contrast to other European countries, in the structure of mortality after CSD, oncological pathology follows, and mortality from external causes is relatively low (7.5%).

The average overall mortality rate in 15 European EU member countries is 665.9 per 100 thousand population. In Uzbekistan it is twice as high. The average mortality rate from vascular lesions of the brain in these same countries was 62.3 per 100 thousand population.

Thus, the overall mortality rates of the population are the highest in Europe. This is due to at least three reasons:

- relatively high infant mortality rate, which in 2002 amounted to 13.3 cases per 1000 children born alive (in economically developed countries the rate is 5–9 per 1000);
- high premature mortality from CSD;
- extremely high male mortality from external causes (accidents, injuries, poisoning, etc.) - 377.3 per 100 thousand men (according to 2002 data).

The important thing is that people die from the same causes at a much earlier age than in the West. In the USA, less than 10% of deaths from CSD occur among people under 65 years of age, while in Russia, up to 30% of people die from CSD in this age group [4].

The average age of stroke development in Russia is 63.1 years for men and 66.3 years for women. This is significantly lower than in Western populations (72.9 years for men and 77.7 years for women) (Feigin V. et al., 1995).

It should also be noted that the differences between mortality rates from CVD in Uzbekistan and other European countries are very large. In our country they are 7.5 times higher than in Switzerland and 5 times higher than in most other European countries. At the same time, the overall mortality rate in Russia, although high, does not differ so significantly. It is higher than in other countries, approximately 2.0–2.5 times.

Mortality statistics from acute myocardial infarction, at first glance, seem paradoxical. In our country, this figure for men in 1990 was 49.1 (per 100 thousand population), which is significantly lower than in many European countries. Thus, in Finland it is 211.4, in Germany – 127.6, in Greece – 108.1. It can be assumed that this is not due to huge differences in mortality rates from myocardial infarction, but solely to a statistical phenomenon, since in Russia many cases of death from myocardial infarction are not specified and are included in the section “other forms of coronary artery disease.” [5].

It should be borne in mind that foreign researchers usually use the terms “mortality from cerebrovascular diseases” and “mortality from stroke” as synonyms. In 1990, we analyzed the structure of mortality from CVD in Uzbekistan. It turned out that among all cases of death attributed to CVD, a diagnosis of stroke indicating its nature was made in only 20.6% of cases, and an undifferentiated diagnosis of “acute cerebrovascular accident” was made in another 38.6% of cases. In the remaining 40.8% of cases, an uncertain diagnosis of “cerebral atherosclerosis” appeared [6].

As studies in individual regions have shown, these features of domestic statistics continue to this day. Thus, an analysis of official statistics carried out in the city of Termez revealed that in 2000, 1039 people died from cerebrovascular accidents. Moreover, only in 38% of cases, stroke was indicated as the cause of death, and in 62% of cases an uncertain diagnosis was made – “other cerebrovascular diseases” [7].

A special analysis of the validity of the conclusions that cerebrovascular pathology was the cause of death of patients at home was carried out during the implementation of the Stroke Registry program. It has been shown that in half of such cases the diagnosis was not verified [8].

The data presented make us critical of the official statistics on mortality from CVD and, not without reason, to believe that they may be significantly overestimated.

Objective information about stroke and myocardial infarction, such as morbidity, mortality, mortality, hospitalization rates, the need of patients for rehabilitation care, etc. can only be provided by special studies - the Stroke and Myocardial Infarction Registers.

The total number of acute CVDs turned out to be 10.55 cases per 1000 residents of the corresponding age per year. At the same time, the frequency of cerebral hypertensive crises was 4.1, acute myocardial infarction – 3.5, stroke – 2.6 and transient ischemic attacks – 0.3 cases per 1000 inhabitants per year. The total mortality from acute CVD in this population per year was equal to 1.66 cases per 1000 inhabitants aged 25–64 years.

The studies carried out under the classical program of the Stroke Registry in cities allowed us to obtain new unique information about stroke.

- The incidence of all stroke cases is 2.5–3.5 per 1000 inhabitants per year, and the incidence of primary stroke is 2.0–2.5 per 1000. Calculations based on register data suggest that in Russia more than 400 thousand strokes.

- The incidence of stroke increases significantly with age. This figure is higher in the male population compared to the female population.

- The mortality rate for stroke is about 1 in 1000, or 100 in 100 thousand cases per year. At the same time, for the first time, significant discrepancies were revealed between the data of stroke registries and the official statistics of mortality from cerebrovascular diseases, which turned out to be almost three times higher.

- A high mortality rate of stroke patients has been established - 32–42% of patients die in the acute stage of the disease and 48–63% die by the 1st year from the onset of the disease.

- The number of ischemic strokes prevails over the number of hemorrhagic strokes in a ratio of 5: 1. However, in these studies, to clarify the type of stroke, practically no method was used to differentiate ischemic and hemorrhagic strokes (computed tomography of the head). Therefore, the figures given should be considered as indicative only.

- A high rate of recurrent strokes has been established – 26–32%. This indicator proves the need for the earliest possible start of secondary stroke prevention, along with emergency measures for hospitalization and treatment of the patient in a specialized medical institution.

- Insignificant proportion of “minor” stroke (only 8–10% of all cases of the disease).

- Low number of hospitalizations for stroke patients (average 40–52%).

- Analysis of the restoration of functions impaired due to stroke showed that a year after the development of the disease, 5–13% of patients are completely dependent on the help of others. 23% of people of working age return to work.

Arterial hypertension (AH) is the most important correctable risk factor for acute and chronic forms of cerebrovascular accidents (hemorrhagic and ischemic strokes, as well as transient cerebrovascular accidents and vascular dementia). [9].

There is a direct, continuous relationship between blood pressure levels and the risk of cardiovascular disease: the higher the systolic (SBP) and/or diastolic blood pressure (DBP) values (in all ranges of their values, including “normal” values), the higher the risk of both stroke and myocardial infarction. Therefore, the criteria for diagnosing hypertension based on blood pressure levels are conditional, based mainly on the results of studies on the prevention of cardiovascular complications and are periodically adjusted. For a long time (in the 60–80s of the twentieth

century), when basic data were obtained on the importance of hypertension as a risk factor for ischemic heart disease and stroke and the high effectiveness of controlling this disease, hypertension was diagnosed at a blood pressure level of 160/95 mm Hg. Art. and higher. Subsequently, in accordance with WHO recommendations of 1993, the criteria for hypertension changed and became the following for persons aged 18 years and older: SBP 140 mm Hg. Art. and above and/or DBP 90 mm Hg. Art. and higher. Since blood pressure is a variable value, to diagnose hypertension it is necessary to confirm the increase in blood pressure by repeating its measurements on different days.

The levels of both SBP and DBP are closely related to the development of stroke. Risk of stroke in patients with blood pressure more than 160/95 mm Hg. Art. increases approximately 4 times compared to persons with normal blood pressure, and with blood pressure more than 200/115 mm Hg. Art. – 10 times.

At the same time, the majority of people with hypertension in the population are patients with “mild” hypertension (grade I). Therefore, the total number of strokes in the population that developed in people with “mild” hypertension exceeds the number of strokes in patients with higher blood pressure levels [13].

Our screening of an open population of men aged 40–59 years showed that blood pressure was 160/95 mm Hg. Art. and higher is detected in 30% of men 40–49 years old and in 38% of men 50–59 years old. At the same time, in 65% of patients with hypertension, blood pressure does not exceed 180/105 mm Hg. Art., and only 12% register at the level of 200/115 mm Hg. Art. and higher [10].

It is of interest to analyze antihypertensive therapy (AHT) before the development of stroke.

According to the Stroke Register, hypertension alone or hypertension in combination with atherosclerosis was present in 78% of patients. Moreover, in the structure of hypertension in stroke patients, a significant place was occupied by “mild” hypertension (according to the 1993 criteria) - it was diagnosed in 61% of people who suffered an ischemic stroke, and in 39% of people with hemorrhagic stroke

Among stroke patients, hypertension was diagnosed in 74%, while 45% did not know about its existence or knew but did not receive AHT.

Hypertension was diagnosed in 68.3% of stroke patients, among whom persons with “mild” hypertension predominated (63.3% of all patients with hypertension). Patients with hypertension were significantly more identified among those with repeated stroke, which developed in them at an earlier age and was clinically more severe. Among patients with hypertension who suffered a stroke, a history of hypertensive cerebral crises was observed in 44.8%. Crises were detected more often in people with repeated strokes or in those who died from a primary stroke. They occurred more often in women. The severity of stroke was greater in hypertensive patients who were not taking antihypertensive drugs (AHD).

In the 2 years preceding the stroke, only 10.3% of patients received constant AHT (BP levels of 140/90 mm Hg and below reached 18.5%), 42% took drugs occasionally, 47% of patients were not treated. Immediately 2 weeks before the onset of stroke, only 18.7% of patients took antihypertensive drugs. Of the patients who were chronically taking medications, 26% stopped treatment several days before the onset of stroke.

Over the past 10–15 years, convincing evidence has been obtained that treatment of hypertension is an effective prevention of stroke. For the prevention of primary stroke in patients with uncomplicated hypertension, it is extremely important to achieve target blood pressure levels during treatment, with the exception of a number of cases: in elderly patients with hemodynamically significant stenoses of the main arteries of the head and especially in patients with severe cerebrovascular pathology (CVP). They should reduce blood pressure gradually, with target levels determined individually, depending on the state of the hemodynamic reserve of the brain. Continuous long-term treatment is important.

A study of the cerebroprotective properties of various classes of antihypertensive drugs (thiazide diuretics, β -blockers, ACE inhibitors and 2-3 generation dihydropyridine calcium antagonists) did not reveal significant advantages among them. Therefore, each of the drugs in these classes can be used to treat hypertension. In practice, combination therapy is more often used to more effectively control hypertension and achieve target blood pressure.

In recent years, many studies have been carried out to study the cardio-, cerebro-, and nephroprotective properties of angiotensin II receptor blockers. The largest study of this class of drugs was the LIFE study, which was notable not only for the large scale of included patients with hypertension (7.8 million), but also for its study of the medical and economic aspects of the treatment of hypertension as stroke prevention. This study was the largest clinical epidemiological study in Europe in recent years [11]. All 15 EU member countries took part in this scientific work. The study included patients with hypertension aged 55 to 80 years with a blood pressure level $\geq 160/95$ – $200/115$ mm Hg. Art. and severe LVH according to ECG criteria. Exclusion criteria were: secondary forms of hypertension, myocardial infarction or stroke within the last 6 months, angina pectoris requiring the use of β -blockers or calcium antagonists, chronic heart failure or left ventricular ejection fraction [14].

In patients with hypertension whose treatment complex included losartan (Cozaar), significantly fewer cases of stroke were recorded than in patients taking atenolol. These differences were observed after 6 months from the start of treatment, and after 3 years the results of therapy became more significant. At the end of the study, the risk of stroke with ADT that included losartan (Cozaar) was 25% lower than with ADT that included atenolol. At the same time, a comparable antihypertensive effect of the two treatment regimens was observed. This study convincingly demonstrated the possibility of effective prevention of primary stroke in patients with hypertension and LVH using the angiotensin II receptor blocker losartan (Cozaar) both as monotherapy and as part of combined AHT. The study showed a more pronounced effect on the regression of LVH, which is one of the risk factors for stroke, of losartan than of atenolol, which is obviously one of the explanations for the more significant cerebroprotective effect of losartan (Cozaar). In addition, a recently published new subanalysis of the LIFE study by Hoiegggen A. et al. put forward a view that explains the more pronounced cerebroprotective effect, reduction in cardiovascular mortality and myocardial infarction by the unique hypouricemic effect of Cozaar [12].

The LIFE study also established the prevalence of hypertension in the European Union. Thus, in Germany it was 60%, in the Netherlands – 34.2%. Mathematical modeling showed that the use of losartan in the treatment of hypertension for 5.5 years could prevent 125,269 cases of stroke, with the greatest effect in countries where hypertension is highly prevalent and where the risk of stroke is correspondingly high (Germany - 35,438, France - 18,430 cases, etc. .d.).

Literature:

1. Towards a healthy life // Policy of health promotion and disease prevention. M., 1994. 80 p.
2. The World Health Rep., 1997.
3. Bonita R. Stroke prevention: a global perspective // Stroke Prevention / Ed. Norris J.W., Hachinski V. N.Y., 2001. P. 259.
4. Varakin Yu.Ya. Epidemiological aspects of the prevention of acute cerebrovascular accidents: Abstract of thesis. dis. ... doc. honey. Sci. M., 1994.
5. Evzelman M.A., Gerasimov A.V. Analysis of mortality from CVD in Orel // Emergency conditions in neurology. Orel, 2002. P. 289.
6. Shchelchkova I.S. Epidemiology of stroke in Krasnodar (according to the register): Abstract of thesis. dis. ...cand. honey. Sci. M., 2001.
7. Shmidt E.V., Makinsky T.A. // Journal. neuropathol. and a psychiatrist. 1979. No. 4. P. 427.
8. Feigin V.L. Epidemiology and prevention of CVD in Siberia: Abstract of thesis. dis. ... doc. honey. Sci. M., 1991.
9. Shishkin S.V. Incidence and risk factors of transient ischemic attacks in Novosibirsk: a population-based epidemiological study: Author's abstract. dis. ...cand. honey. Sci. Novosibirsk, 1999.
10. Varakin Yu.Ya. Arterial hypertension and prevention of acute cerebrovascular accidents // Nevrol. magazine 1996. No. 3. P. 11.
11. Carlene M.M. et al. // Stroke. 2004. V. 35. P. 1024. 12. Hoiегgen A. et al. // Kidney Int. 2004. V. 65. P. 1041–1049.
12. <http://www.newjournal.org/index.php/01/article/download/7204/6940>
13. <http://newjournal.org/index.php/01/article/view/6947>
14. https://scholar.google.com/citations?view_op=view_citation&hl=ru&user=Hhwlrk4AAAAJ&citation_for_view=Hhwlrk4AAAAJ:eQOLeE2rZwMC

Abdullayeva Ozoda Islomovna - teacher of Jizzakh polytechnic institute

Abduqodirova Madina Nuriddin qizi – student of Jizzakh polytechnic institute

Xusanova Sabina Farxodovna - student of Jizzakh polytechnic institute

Annotation. Particular attention should be paid to the types of plants and flowers in the organization of the indoor landscape. Depending on the biological structure of the panel, it is necessary when the plants live in the interior. The article contains many solutions of many types of flowers that are useful for human health, how to take the file and how to transplant them.

Аннотация. Особое внимание уделено видам растений и цветов при организации ландшафтной структуры в помещении. В зависимости от биологической структуры панно необходимо, когда в интерьере живут растения. В статье дано множество решений о многих видах цветов, полезных для здоровья человека, о том, как взять пилку и как их пересадить.

Keywords: philodendron, purple, pelargonium, indoor flowering, transplant.

Ключевые слова: филодендрон, фиолетовый, пеларгония, комнатное цветение, пересадка.

Flowers and plants that grow indoors need special care. There are certain rules to follow when decorating a room with flowers. For example, some plants need a lot of light to flower normally, so you need to place them in a very bright place. In summer, many plants cannot live in the sun, but you can enjoy the sunshine in the morning and evening.

At the base we don't think about how much sunlight the plant will receive and where this room should be located. It looks really nice and can please us, but such a situation will only harm the plants. Plant disease is a very bad thing. Over time, this condition causes the wound to lengthen, bend, shrink, and eventually lose it. The lighting in each room is different. Even if the small room has a large window, only 40 percent of the street in front of the window, and as far as the corner of the room, here it is only 1 percent.

Based on this information, the best place to place indoor and decorative flowers and plants took the window. Located at a distance of no more than one meter, and in corners where it is not too dark, you can place aspidistra, philodendron, ficus, some grasses and the most shade-tolerant plants

If you have a lot of flowers collected in the window and this construction has a look, you can make it using thin boards to make it very soft, very effective. Better yet, or buy at a specialty store. In the steps of this staircase you can put pots of flowers. Those who love light should put it on the lower floors, and those who tolerate shade should put it on the upper rows. In some cases, we may not be able to put them in the office because they may not like too much light. They absorb a lot of light, weaken, and then die.

Purple, pelargoniums and balsam are sun-loving flowers. These and other plants are always exposed to sunlight, so they can sometimes have a very pleasing shape, one-sided rosettes and twisted stripes.

In order not to spoil this situation in your plants, you need to periodically rotate the pots so that they receive the same amount of light, evenly, without spoiling the appearance of the plant on each side of it. If you need to change your favorite plants in the room, it is permissible to place them in a place where there is less sunlight, for example, in the hallway, but this should not exceed two or three days. They are then returned to the window.

It's time to transplant every houseplant. After all, the amount of food they eat depends on the size of the pan. Each of the young plants should be replaced in the spring and in a few years, the old pots. For example, a palm tree under 3 years of age should be transplanted every 3-4 years, which is 5-7 years, and if it is more than 10 years - only after it has fallen asleep. Indoor flowers and plants need to be transplanted, as over time the available nutrients in the pot will decrease. In addition, its water permeability changes, the acidity of the soil increases, and the pot itself becomes smaller.

Most plants do not respond well to transplanting, so it is often not necessary to do so. Here's how to put one together for use with your indoor flower arrangement:

- you have noticed that the flowering of the plant is deteriorating, the flowers appear smaller and smaller than usual;

-The earth begins to crumble in the pot. This means that there are many roots in it;

-The roots begin to emerge from the bottom of the pot.

If you notice one or more of these, you should transplant immediately. As a rule, it is carried out in late winter or early spring. Approximately in February-March, that is, the plant is made from the rest period, sometimes - with the appearance of new leaves. If your plant is sick, you should definitely replant it without waiting for the right time.

Transplanted flowers should be stopped watering 3-4 days before transplanting, which is necessary to easily remove the soil from the pot. We take 2-3 inches from the top layer of earth and leave. Then we need to take another pan from the previous pan, which is 3-4 cm in diameter. Then, we need to cover the bottom holes of the new pan with a crack and fill it with a few inches of stone or you can use other drainage materials.

Then we need to prepare a ground mixture that is suitable for the plant. Now, with the right hand, we hit the bottom of the plant with a straw and shake it. We gently shake the roots off the ground using a wooden stick, when a large and rotten root is found, they should be cut off and sprinkled with charcoal dust on the sliced area. The previous pans are washed, rinsed with boiling water.

The roots of the newly transplanted plant should be carefully spread over the soil cone and filled with a little soil mixture. At the same time, shake a little to avoid gaps between the roots.

After the transplant process is done, we need to place the pot in a place where it is not exposed to direct sunlight. Such a plant should not be watered for another five days.

Bibliography;

1. T. Knyazeva, D. Knyazeva. Комнатные растения.–Москва, 2010.
2. Baron Emouf. L'art des jardins. 3-e éd.
3. Mangin A. Histoire des jardins anciens et modernes. 1887.

Internet saytlari

4. <https://www.gvozdem.ru/remont-stroyka/ozelenenie-kafe-i-restoranov/>
5. <https://olymp.in/news/mini-oranzherei/46>
6. <https://hobby.wikireading.ru/6461>.

Rasulova Raykhon Pardaevna

Termez Branch of Tashkent Medical Academy

Safarova Rokhatoy Shafaatovna

Termez Branch of Tashkent Medical Academy

Juraev Ilkhomjon Khujakulovich

Termez Branch of Tashkent Medical Academy

Annotation: Cerebrovascular diseases belong to a group of the major causes of cognitive impairments, in the elderly in particular. The paper presents current ideas on the etiology and pathogenesis of vascular cognitive impairments (VCI). The etiological factors of VCI may be divided into genetic, sociodemographic, and common risk factors for vascular and other diseases. The pathogenesis of VCI is multifactorial; cognitive function decrement results from brain damage due to cerebral circulatory disorders. Damage to the deep white matter portions and basal ganglia plays a leading role in the development of cognitive deficit in cerebral circulatory insufficiency, disrupting the connections between the frontal lobes and subcortical structures (a dissociation phenomenon). Regulatory functions are impaired; instability of volitional attention develops; the speed of thinking processes and the performance of professional and everyday skills are suffered, mnemonic functions being impaired to a lesser extent. Impairments in other higher cortical functions, such as speech, gnosis, praxis, thinking, generally occur in the later stages of cognitive deficit. The comprehensive approach to examining patients with cognitive dysfunctions, which encompasses physical examination with a mandatory evaluation of neurological symptoms, neuropsychological testing, laboratory studies, instrumental diagnostic methods, and structural and functional neuroimaging techniques, are most justified now. VCI therapy is a challenging task requiring the specific features of different types of cognitive deficit to be analyzed, by providing a rationale for the choice of medications. Therapeutic effectiveness may be enhanced by rational combined multimodal therapy, by keeping in mind a variety of factors for the pathogenesis of VCI.

Key words: vascular cognitive impairments; vascular dementia; diagnostic criteria; treatment.

Cerebrovascular diseases (CVD), along with Alzheimer's disease, are the main causes of cognitive impairment (CI), especially in the elderly. Considering the importance of not only the medical, but also the socio-economic component of the problem of CI, interest in it from doctors of various specialties is constantly growing.

The prevalence of dementia in older people in Europe averages 6.4%, with vascular dementia accounting for 1.6%; the incidence of the latter increases with age, amounting to 0.3% in people aged 65–69 years and 5.2% in people over 90 years of age [1]. The incidence of vascular dementia varies significantly - from 1.5 to 3.3 cases per 1000 elderly people, with men getting sick much more often than women [2].

Vascular CIs (VCs) represent a large group of conditions characterized by different clinical and morphological features and different pathophysiology.

Etiological factors for the development of SCI can be divided into genetic (presence of the epsilon-4 allele of the APOE gene, cerebral autosomal dominant arteriopathy with subcortical

infarctions and leukoencephalopathy - CADASIL), socio-demographic (age over 60 years, Mongoloid or Negroid race, male gender, low educational level level), general risk factors (RF) for the development of vascular diseases (arterial hypertension - hypertension, coronary heart disease, orthostatic hypotension, diabetes mellitus, hypercholesterolemia, hyperhomocysteinemia, obesity), others (smoking, alcoholism, sleep apnea) [3, 4].

The pathogenesis of SCI is multifactorial, and cognitive decline develops as a result of destructive brain damage caused by cerebrovascular accidents. The morphological basis of SCI is most often infarctions (more precisely, post-infarction cysts) or diffuse ischemic damage to the subcortical white matter (subcortical leukoencephalopathy) and strategically important areas (thalamus, frontobasal, limbic regions) [5].

There is experimental and clinical evidence of cholinergic deficits in vascular dementia, regardless of the presence or absence of signs of a neurodegenerative process. This position is confirmed by a decrease in the level of acetylcholine in the cerebrospinal fluid and a decrease in the activity of choline acetyltransferase in the brain. The cholinergic basal nucleus of Meynert is supplied by penetrating arterioles and is therefore very sensitive to the effects of hypertension and cerebral ischemia. Of great interest are also the results indicating the importance of glutamatergic disorders in the development of cognitive deficits. During ischemia of brain tissue, the functioning of cellular transport systems is disrupted. In addition, due to sustained pathological depolarization of the cell membrane, an increased release of glutamate from synaptic vesicles occurs, leading to hyperactivation of glutamate NMDA receptors and an excessive influx of Ca^{++} into the cell. Thus, glutamate, which is an essential component of the neurotransmitter systems of the brain, in the development of a number of pathological conditions, such as ischemia, can have a damaging effect on the nerve cell, acting as a neurotoxin [6].

In addition to cholinergic and glutamatergic transmission, other neurotransmitter terminals of cells projecting to the neocortical cortex are also affected: serotonergic terminals of the median raphe and noradrenergic terminals of the nucleus coeruleus, which may be associated with the development of affective and behavioral disorders in patients.

Damage to interneuronal transmission is closely related to various biochemical and metabolic pathogenetic reactions: disorders of glucose metabolism, decreased overall energy metabolism, oxidative stress and a number of other mechanisms. Glucose metabolism affects many cellular processes occurring in the brain, and primarily energy metabolism, which is determined by its participation in the synthesis of adenosine triphosphate. The free radical oxidation process that develops against the background of ischemia, which is closely associated with inflammatory reactions and endothelial dysfunction, is also of great importance. Activation of lipid peroxidation processes contributes to the accumulation of free radical molecules in the body, which react with polyunsaturated fatty acids and other chemical compounds of cellular structures, causing irreversible changes both at the cellular level and in the body as a whole.

CIs arising as a result of a cerebrovascular process are quite heterogeneous, which is explained, on the one hand, by different localizations of brain lesions, and on the other, by differences in the characteristics of the formation of dementia. In general, vascular dementia is characterized by a “mosaic pattern” of cognitive deficits, an inconsistent pattern of cognitive impairment, and fluctuations in symptoms.

The leading role in the formation of cognitive deficit in cerebrovascular insufficiency is played by damage to the deep parts of the white matter of the brain and the basal ganglia, which

leads to disruption of connections between the frontal lobes of the brain and subcortical structures (disconnection phenomenon) [7]. Regulatory functions are disrupted (planning, the sequence of performing certain actions, monitoring the results of actions, the ability to generalize the received material), instability of voluntary attention develops, the speed of thought processes, the performance of professional and everyday skills suffer, while mnemonic functions are damaged to a lesser extent. A reliable sign that allows us to distinguish the secondary nature of memory impairments in vascular lesions from primary mnemonic disorders of neurodegenerative origin is the distinct effect of prompts [4].

Violations of other higher cortical functions - speech, gnosis, praxis, thinking - arise, as a rule, at later stages of development of cognitive deficit and can be either caused by the development of a lesion in certain areas of the brain, or develop as a result of a violation of interneuronal relationships when deep parts of the brain. Patients with vascular dementia demonstrate greater deficits in speech fluency than patients with Alzheimer's disease. Although motor aspects of speech may be affected in patients with vascular dementia, primary speech function tends to be preserved. Agnosia is characterized by the inability to recognize sensory signals as a holistic image while maintaining the perception of its individual features; they are often modality-specific in nature, which is due to the localization of the lesion. Apraxia is manifested by a violation of purposeful motor activity, which may be based on various pathogenetic mechanisms. As a result of the loss of certain skills, disturbances in professional activity and daily activities, including dressing, are observed. Perseverations (stereotypical repetitions of the same movements) and violation of the sequence of actions are characteristic.

The uniqueness of the clinical picture of vascular dementia also appears in combination with other psychopathological and neurological disorders. The most significant correlations of vascular cognitive deficit are observed with the presence of pseudobulbar syndrome, gait dyspraxia, pyramidal symptoms, more pronounced in the legs, and dysfunction of the pelvic organs.

Currently, the most justified is a comprehensive approach to the examination of patients with impaired cognitive functions of varying severity, including a general examination with a mandatory assessment of neurological symptoms, neuropsychological testing, laboratory tests, instrumental diagnostic methods, structural and functional neuroimaging methods.

The collection of complaints and medical history must necessarily include a conversation with the patient himself and with his relatives or persons capable of providing the necessary information. Of great importance is the collection of information about problems associated with the performance of everyday and professional skills, the presence of behavioral and affective disorders. During an objective examination, it is necessary to pay attention to identifying symptoms indicating the presence of somatic, infectious pathology to exclude the secondary nature of dementia, as well as to identify possible risk factors for the development of dementia. A neurological examination can reveal symptoms indicating focal brain damage.

To verify and determine the severity of CI, it is mandatory to conduct a neuropsychological study. The scope of neuropsychological testing and the choice of methods are determined by the severity of cognitive disorders, the nature of the existing impairments, and the goals of the researcher. The most informative methods for identifying SCI are the frontal dysfunction battery, the clock drawing test, the Montreal Comprehensive Test (MoCA-test), the tracking test, and the verbal association test.

Laboratory diagnostics are carried out to identify current somatic diseases, other risk factors and include a general blood and urine test, a biochemical blood test (sugar, liver enzymes, urea, creatinine, electrolytes, thyroid hormones, homocysteine, lipid profile, folic acid, vitamin B12), serological reactions to syphilis and AIDS, determination of the APOE gene isoform, proinflammatory markers

Among the instrumental diagnostic methods, it is advisable to use vascular research methods, such as Doppler ultrasound and duplex scanning of extra- and intracranial arteries of the brain, which allow one to assess the speed of cerebral blood flow, cerebral vasomotor reactivity, and identify signs of an occlusive or stenotic process. Instrumental diagnostics can also be used to assess the severity of changes in other organs and systems, which may, in particular, reflect systemic damage in the pathology of small vessels (retinopathy, nephropathy).

It is mandatory to use structural neuroimaging methods in the diagnosis of vascular dementia, not only to confirm the vascular nature of brain damage, but also to identify possible curable diseases, such as tumor, normal pressure hydrocephalus and chronic subdural hematoma.

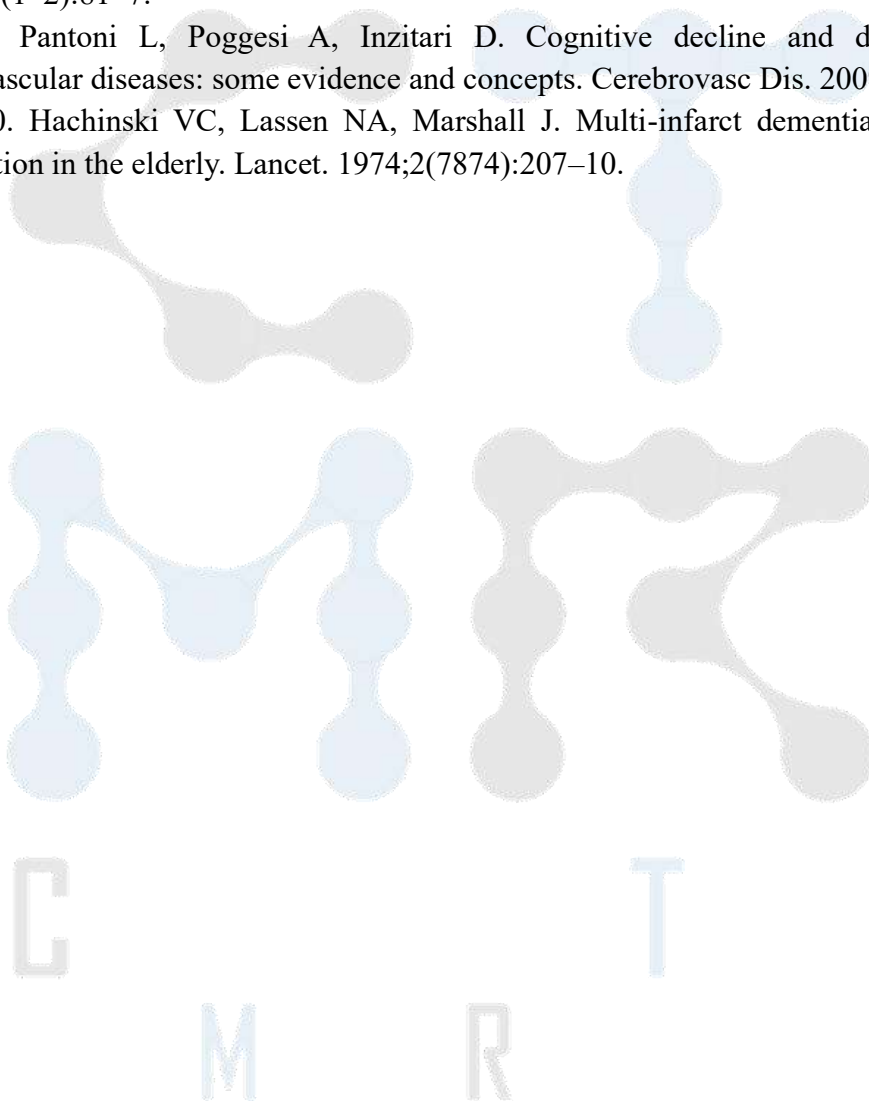
The neuroimaging picture in SCI of post-stroke origin is characterized by the presence of either multiple cortical or subcortical ischemic foci, or single post-ischemic foci located in areas of the brain that are especially significant for mnemonic-intellectual activity - the so-called strategic zones (thalamus, basal ganglia, mediobasal regions of the frontal and temporal lobes, angular gyrus) [7, 8]. However, the most common cause of vascular dementia is damage to small vessels, leading to the development of widespread leukoaraiosis, often combined with lacunar infarctions and post-hemorrhagic small lesions in the subcortical region. Almost always, in cases of vascular dementia, structural neuroimaging reveals signs of cerebral atrophy in the form of enlargement of the cerebral ventricles and subarachnoid spaces, which can cause certain difficulties in differential diagnosis with degenerative type dementia [9].

Functional neuroimaging methods (single photon emission computed tomography - SPECT, positron emission tomography - PET) have additional diagnostic capabilities, allowing to detect a decrease in perfusion and metabolism in the projection of the deep parts of the brain (thalamus, subcortical ganglia, caudate nucleus), even in the absence of pronounced structural changes [10].

Literature:

1. Lobo A, Launer L, Fratiglioni L, et al. Prevalence of dementia and major subtypes in Europe: a collaborative study of populationbased cohorts. Neurologic diseases in the elderly research group. *Neurology*. 2000;54(11 Suppl 5):S4–9.
2. Ruitenberger A, Ott A, van Swieten JC, et al. Incidence of dementia: does gender make a difference? *Neurobiol Aging*. 2001;22(4):575–80.
3. Roman G. Vascular dementia prevention: a risk factor analysis. *Cerebrovas Dis*. 2005;20(Suppl 2):91–100.
4. Одинак ММ, Емелин АЮ, Лобзин ВЮ. Нарушение когнитивных функций при цереброваскулярной патологии. Санкт-Петербург: ВМедА; 2006. 158 с. [Odinak MM, Emelin AYU, Lobzin VYu. Narushenie kognitivnykh funktsii pri tserebrovaskulyarnoi patologii [Violation of cognitive functions at cerebrovascular pathology]. St-Petersburg: VMedA; 2006. 158 p.]
5. Jellinger K. Morphologic diagnosis of «vascular dementia» – a critical update. *J Neurol Sci*. 2008;270(1–2):1–12.

6. Parsons C, Danysz W, Hesselink M, et al. Modulation of NMDA receptors by glycine – introduction to some basic aspects and recent developments. *Amino Acids*. 1998;14(1–3):207–16.
7. Яхно НН, Захаров ВВ. Когнитивные и эмоционально-аффективные нарушения при дисциркуляторной энцефалопатии. *Русский медицинский журнал*. 2002;10(12/13):531–51. [Yakhno NN, Zakharov VV. Cognitive and emotional and affective violations at discirculatory encephalopathy. *Rusckii meditsinskii zhurnal*. 2002;10(12/13):531–51. (In Russ.)]
8. Roman GC, Sachdev P, Royall DR, et al. Vascular cognitive disorder: a new diagnostic category updating vascular cognitive impairment and vascular dementia. *J Neurol Sci*. 2004;226(1–2):81–7.
9. Pantoni L, Poggesi A, Inzitari D. Cognitive decline and dementia related to cerebrovascular diseases: some evidence and concepts. *Cerebrovasc Dis*. 2009;27(S1):191–6.
10. Hachinski VC, Lassen NA, Marshall J. Multi-infarct dementia. A case of mental deterioration in the elderly. *Lancet*. 1974;2(7874):207–10.



CLINICAL AND IMMUNOLOGICAL CHARACTERISTICS OF COMMUNITY-
ACQUIRED PNEUMONIA IN PATIENTS WITH HEART FAILURE

Ismatullaev Sohijon Kudratovich

Termez branch of the Tashkent Medical Academy

Propaedeutics of childhood diseases, assistant of the Department of Pediatrics in childhood
diseases and family medicine

ANNOTATION

Despite advances in its prevention, pneumonia remains associated with high morbidity, mortality, and health costs worldwide. Studies carried out in the last decade have indicated that more patients with community-acquired pneumonia (CAP) now require hospitalization. In addition, pneumonia management poses many challenges, especially due to the increase in the number of elderly patients with multiple comorbidities, antibiotic-resistant pathogens, and the difficulty of rapid diagnosis. In this new call to action, we present a wide-ranging review of the information currently available on CAP and offer some reflections on ways to raise awareness of this disease among the general public. We discuss the burden of CAP and the importance of attaining better, faster microbiological diagnosis and initiating appropriate treatment. We also suggest that closer cooperation between health professionals and the population at large could improve the management of this largely preventable infectious disease that takes many lives each year.

Key words: pneumonia, community-acquired pneumonia, pneumonia burden, pneumonia epidemiology.

INTRODUCTION

Community-acquired pneumonia (CAP) is a pulmonary infection (parenchyma or pleura) acquired outside the hospital[1]. CAP is a significant cause of inpatient hospitalization and mortality in children. The annual incidence of CAP requiring hospitalization is over 20 million[2]. In 2015, data from Asia showed that 15% of all fatalities in children under five years of age were caused by pneumonia, with an estimated 922000 children in this age group dying[3]. Similarly, global mortality is estimated at 14%, ranging from 2% of those treated as outpatients to 37% of those admitted to intensive care units (ICUs)[4]. In China, the incidence density of pneumonia in children under five years of age is 0.06 to 0.27% per year. According to a systematic review of data from the China Mortality Surveillance System from 2001 to 2015, the mortality rate for children under the age of five was 153.2 per 100000 live births[5]. Multiple microorganisms drive the pathophysiology of CAP. Classical typical pneumonia is caused by bacteria, while atypical pneumonia is caused by atypical pathogens, such as *Mycoplasma pneumoniae* (MP), *Legionella pneumoniae*, and *Chlamydia pneumoniae*. These three pathogens combined are responsible for 21% to 28% of adult CAP worldwide[6]. MP is one of the most common pathogens causing respiratory illness in adolescents and children, accounting for up to 40% of CAP in children above five years of age[7]. *Mycoplasma* is a small cell wall-deficient prokaryote. Microbes are cell-free and malleable organisms that can grow and proliferate in a cell-free environment[8]. According to the *Mycoplasma pneumoniae* pneumonia (MPP) diagnostic criteria of CAP in children, MP patients are classified as mild *Mycoplasma pneumoniae* pneumonia (MMPP) and severe

mycoplasma pneumoniae pneumonia (SMPP) (revised in 2013). Typical clinical symptoms, such as cough and fever, radiological findings, elevated inflammatory markers, and the detection of serum specificity MP-IgM antibody are the diagnostic criteria of MMPP. SMPP is defined as MPP with protracted fevers, worsening clinical symptoms, and persistent radiological features following a week-long routine of macrolide antibiotic therapy[9]. Similarly, SMPP is defined as a fever ($> 38.5^{\circ}\text{C}$), persistent cough for more than two weeks, $\text{CRP} > 40 \text{ mg/L}$, radiological features showing consolidation in two or more pulmonary lobes, and extrapulmonary complications were the criteria to diagnose SMPP as per the algorithm of community-acquired pneumonia in children[10,11]. Consensus on the definition of SMPP is lacking because it can affect any part of the body, including the musculoskeletal system, neurological system, hematological system, and skin[12]. **Main.** However, MP infection most severely affects the respiratory system; hence, respiratory and metabolic acid-base disturbances may indirectly indicate severe disease. Therefore, prompt and effective treatment is recommended[13]. Moreover, immune evasion by specific pathogens via the transmission of host-derived lipid membranes can lead to uninhibited proliferation, resulting in overt clinical symptoms and a worsening disease course[14]. MP is contagious and can be transmitted through aerosols from coughing and sneezing, causing acute upper and lower respiratory tract inflammation[15]. These respiratory pathogens are ubiquitous on environmental surfaces, and mucous membrane contact with these contaminated surfaces aids in disease transmission. The propensity for children to play with toys and have poor hand hygiene make children a high-risk and susceptible group in daycare and school settings[16]. MP infection also causes nonrespiratory symptoms, including myocarditis, arthritis, and thrombosis, in newborns. If left untreated, multiple organ failures may ensue[17]. Acute myocardial injury in people hospitalized with community-acquired pneumonia (CAP) is caused by many different factors. These factors include type-2 myocardial infarction with or without prior coronary artery disease (CAD) due to an imbalance between demand and supply and non-CAD myocardial damage caused by toxins, direct myocardial infection, inflammatory mediators, and stress-induced cardiomyopathy[18]. MP-induced myocarditis is usually confirmed via an electrocardiogram (ECG), which shows conduction arrhythmias and myocardial atrioventricular block. Chest pain can be a sign of myocarditis or pericarditis and has been linked to anti-cardiolipin antibodies[19]. Although uncommon, the prevalence of myocarditis in children with MP ranges from 1% to 8%, and the prevalence rate is slightly higher in adults than in children[20]. Mycoplasma-associated carditis (myo- or pericarditis) is a rare condition that has affected 1%-5% of patients since Pönkä's study in 1979. However, individuals with mycoplasma carditis seem to be older on average. This study supports Pönkä's conclusion that the mean age was 32. This recurring finding is not fully understood. However, it may be related to the increased rates of mycoplasma infection in older persons appearing as pneumonia, which is more common in patients with carditis[21]. This study aims to assess the differences in the clinical characteristics of children diagnosed with CAP caused by MP and to further identify the cohort of patients who developed MP-induced myocardial damage and those without heart failure.

CONCLUSION.

Pneumonia continues to be a major global health problem and a significant cause of morbidity and mortality worldwide. Despite the wealth of information on pneumonia currently available, some of the recommendations for the management of CAP in international clinical guidelines are still based on expert comments; in fact, no guideline updates have been issued in

the past decade. The lack of specific evidence on the proper use of broad-spectrum antibiotics hampers the clinical management of pneumonia caused by MDR pathogens. Today, we have new technologies that could improve pneumonia management, but we must be sure to implement them in daily clinical practice.

The misperception of pneumonia among the general public is alarming. A great deal remains to be done to persuade people of the importance of healthy lifestyles and of the key role of vaccination for preventing pneumonia. To quote Chanderraj and Dickson once again, pneumonia continues to be a 21st-century problem treated with 20th-century therapies and diagnosed using 19th-century tools.

This call is addressed to the health authorities, urging them to attach more importance to pneumonia and to promote international and national projects, and to the scientific societies whose task it is to guarantee high quality standards among health professionals. It is also aimed at practitioners who have contact with patients and their families, because the provider–patient relationship is fundamental to the attempts to raise the public’s awareness of the importance of CAP and to involve it in its prevention.

REFERENCE

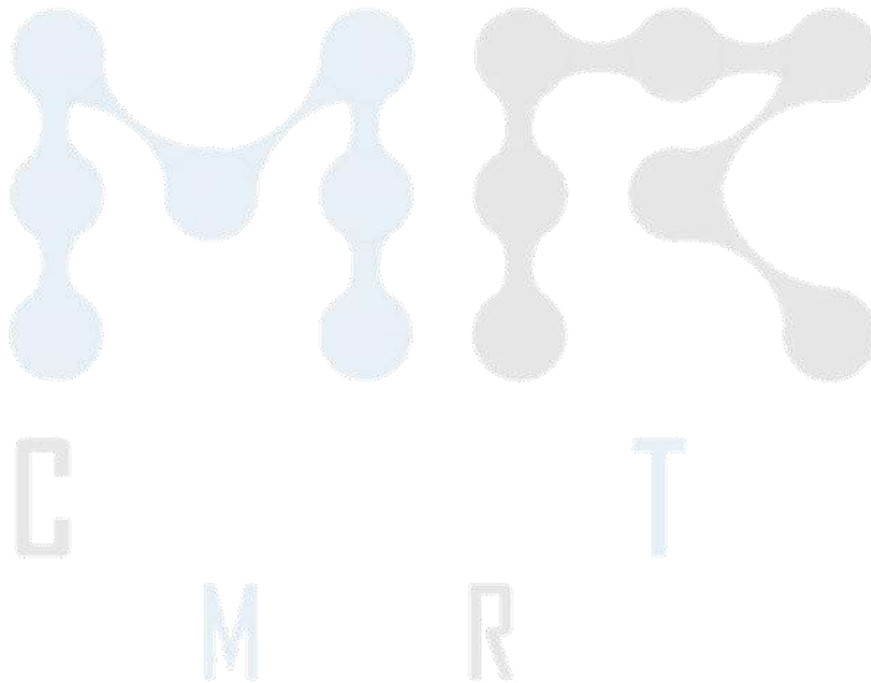
1. GBD 2016 Lower Respiratory Infections Collaborators Estimates of the global, regional, and national morbidity, mortality, and aetiologies of lower respiratory infections in 195 countries, 1990-2016: A systematic analysis for the Global Burden of Disease Study 2016. *Lancet Infect. Dis.* 2018;18:1191–1210. doi: 10.1016/S1473-3099(18)30310-4. [[PMC free article](#)] [[PubMed](#)] [[CrossRef](#)] [[Google Scholar](#)]
2. GBD 2017 Causes of Death Collaborators Global, regional, and national age-sex-specific mortality for 282 causes of death in 195 countries and territories, 1980–2017: A systematic analysis for the Global Burden of Disease Study 2017. *Lancet.* 2018;392:1736–1788. doi: 10.1016/S0140-6736(18)32203-7. [[PMC free article](#)] [[PubMed](#)] [[CrossRef](#)] [[Google Scholar](#)]
3. Kalil A.C., Thomas P.G. Influenza virus-related critical illness: Pathophysiology and epidemiology. *Crit. Care.* 2019;23:258. doi: 10.1186/s13054-019-2539-x. [[PMC free article](#)] [[PubMed](#)] [[CrossRef](#)] [[Google Scholar](#)]
4. Soriano J.B., Rojas-Rueda D., Alonso J., Antó J.M., Cardona P.-J., Fernández E., Garcia-Basteiro A.L., Benavides F.G., Glenn S.D., Krish V., et al. The burden of disease in Spain: Results from the Global Burden of Disease 2016. *Med. Clin.* 2018;151:171–190. doi: 10.1016/j.medeli.2018.05.011. [[PubMed](#)] [[CrossRef](#)] [[Google Scholar](#)]
5. Rivero-Calle I., Pardo-Seco J., Aldaz P., Vargas D.A., Mascarós E., Redondo E., Díaz-Maroto J.L., Linares-Rufo M., Fierro-Alacio M.J., Gil A., et al. Incidence and risk factor prevalence of community-acquired pneumonia in adults in primary care in Spain (NEUMO-ES-RISK project) *BMC Infect. Dis.* 2016;16:645. doi: 10.1186/s12879-016-1974-4. [[PMC free article](#)] [[PubMed](#)] [[CrossRef](#)] [[Google Scholar](#)]
6. Rivero-Calle I., Cebey-López M., Pardo-Seco J., Yuste J., Redondo E., Vargas D.A., Mascarós E., Díaz-Maroto J.L., Linares-Rufo M., Jimeno I., et al. Lifestyle and comorbid conditions as risk factors for community-acquired pneumonia in outpatient adults (NEUMO-ES-RISK project) *BMJ Open Respir. Res.* 2019;6:e000359. doi: 10.1136/bmjresp-2018-000359. [[PMC free article](#)] [[PubMed](#)] [[CrossRef](#)] [[Google Scholar](#)]

7. De Miguel-Díez J., Jiménez-García R., Hernández-Barrera V., Jiménez-Trujillo I., de Miguel-Yanes J.M., Méndez-Bailón M., López-de-Andrés A. Trends in hospitalizations for community-acquired pneumonia in Spain: 2004 to 2013. *Eur. J. Intern. Med.* 2017;40:64–71. doi: 10.1016/j.ejim.2016.12.010. [[PubMed](#)] [[CrossRef](#)] [[Google Scholar](#)]

8. De Miguel-Díez J., López-de-Andrés A., Hernández-Barrera V., Jiménez-Trujillo I., Méndez-Bailón M., de Miguel-Yanes J.M., Jiménez-García R. Impact of COPD on outcomes in hospitalized patients with community-acquired pneumonia: Analysis of the Spanish national hospital discharge database (2004–2013) *Eur. J. Intern. Med.* 2017;43:69–76. doi: 10.1016/j.ejim.2017.06.008. [[PubMed](#)] [[CrossRef](#)] [[Google Scholar](#)]

9. López-de-Andrés A., de Miguel-Díez J., Jiménez-Trujillo I., Hernández-Barrera V., de Miguel-Yanes J.M., Méndez-Bailón M., Pérez-Farinós N., Salinero-Fort M.Á.N., Jiménez-García R. Hospitalisation with community-acquired pneumonia among patients with type 2 diabetes: An observational population-based study in Spain from 2004 to 2013. *BMJ Open.* 2017;7:e013097. doi: 10.1136/bmjopen-2016-013097. [[PMC free article](#)] [[PubMed](#)] [[CrossRef](#)] [[Google Scholar](#)]

10. Turktan M., Ak O., Erdem H., Ozcengiz D., Hargreaves S., Kaya S., Karakoc E., Ozkan-Kuscu O., Tuncer-Ertem G., Tekin R., et al. Community acquired infections among refugees leading to Intensive Care Unit admissions in Turkey. *Int. J. Infect. Dis.* 2017;58:111–114. doi: 10.1016/j.ijid.2017.02.022. [[PubMed](#)] [[CrossRef](#)] [[Google Scholar](#)]



THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-3, ISSUE-5

BADIIY GRAFIKA SOHASIDAGI PEDAGOGIK FAOLIYAT, NATYURMORTNI RANG-TASVIRDA QAYTA ISHLASH

Turaeva Mohinur Sattorovna – Buxoro pedagogika instituti 1-kurs magistranti

Annotatsiya: maqola bilim olishning samarali yo'llarini ochib berishga yordam bera oladigan yo'llarni ko'rsatib beradi, unda ta'lim maqsadlari o'qituvchiga qanday shaxsni shakllantirish kerakligi haqida aniq tasavvur beradi va tabiiyki, uning ishiga kerakli ma'no va yo'nalish beradi. Pedagogik faoliyat - ma'naviy va amaliy tajribani uzatish jarayonida odamlar o'rtasida yuzaga keladigan munosabatlarni ta'minlaydigan faoliyat. Pedagogik faoliyat ikki turdan iborat: ilmiy va amaliy. O'qituvchining pedagogik faoliyati - o'quvchilarning bilim, ko'nikma va malakalari tizimini, shu jumladan, bir vaqtning o'zida shaxsni rivojlantirish va tarbiyalash maqsadlarini rivojlantirishga qaratilgan faoliyat.

Kalit so'zlar: *badiiy grafika, pedagogik faoliyat, natyurmort, kompozitsiya, vizual til*

ПЕДАГОГИЧЕСКАЯ ДЕЯТЕЛЬНОСТЬ В ОБЛАСТИ ХУДОЖЕСТВЕННОЙ ГРАФИКИ, ОБРАБОТКИ НАТЮРМОРТА В ЦВЕТНОМ ИЗОБРАЖЕНИИ

Тураева Мохинур Сатторовна – магистрант 1 курса
Бухарского педагогического института.

Аннотация: в статье раскрыты пути, которые могут помочь выявить эффективные способы обучения, при которых образовательные цели дают учителю четкое представление о том, какой человек должен формироваться и, конечно, необходимый смысл, и направление его работы. Педагогическая деятельность – это деятельность, обеспечивающая взаимоотношения между учителем и учениками в процессе передачи духовного и практического опыта. Педагогическая деятельность состоит из двух видов: научной, и практической. Педагогическая деятельность учителя – это деятельность, направленная на развитие системы знаний, умений и навыков учащихся, включающая в себя одновременно цели личностного развития и образования.

Ключевые слова: *художественная графика, педагогическая деятельность, натюрморт, композиция, визуальный язык*

PEDAGOGICAL ACTIVITY IN THE FIELD OF ARTISTIC GRAPHICS, PROCESSING OF STILL LIFE IN COLOR IMAGE

Turaeva Mohinur Sattorovna – 1st year master's student
Bukhara Pedagogical Institute.

Abstract: the article reveals ways that can help identify effective ways of teaching, in which educational goals give the teacher a clear idea of what kind of person should be formed and, of course, the necessary meaning and direction of his work. Pedagogical activity is an activity that ensures the relationship between teacher and students in the process of transmitting spiritual and practical experience. Pedagogical activity consists of two types: scientific and practical. The pedagogical

activity of a teacher is an activity aimed at developing the system of knowledge, skills and abilities of students, which simultaneously includes the goals of personal development and education.

Key words: *artistic graphics, teaching activities, still life, composition, visual language*

Grafika- qadimgi yunoncha so'zdan olingan bo'lib yozma - yozib olish degan ma'noni anglatadi. Badiiy grafika tasviriy san'atning bir turi bo'lib, unda asosiy vizual vositalar (grafik) tasvir yuzasining (odatda oq varaq) xususiyatlari va ranglarning bir – biri bilan uyg'uligi munosabatlari tasvirlanadi. Badiiy grafikaning ajralmas qismi chizmadir. Har bir asarga jilov berish uchun uning andazasi chizilib, so'ngra unga rang berishga kirishiladi. Badiiy grafika san'atining o'ziga xos xususiyatlarini va chegaralarini aniqlab boruvchi mohiyati rassomlarni va san'at nazariyotchilarini doimo qiziqish uyg'otib kelmoqda. Badiiy grafikaning rang – barangligini namoyon qila oladigan bosib chiqarish texnikalarida namoyon bo'lishi, yog'och va metall o'ymakorligi, litografiya – quyib, uning qolipi yasalgandan keyin bosma qolip tayyorlash usuli, monotip – bir xil shakldagi materiallarni tayyorlashda hamda chiqarishda qo'llaniladi.

Ingliz modernist rassomi V.Kren o'zining "Chiziq va shakl" kitobida tasviriy shaklning turli darajadagi abstraktsiyasiga asoslanib, san'atdagi grafik va tasvir tamoyillari tushunchalarini mohiyatini ochib berishga harakat qildi. Nemis rassomi M. Klinger grafik san'atning umumlashtirilgan sifatiga "slate art" deb nomlanishini taklif qildi.

Natymort tasviriy san'atning bir turi - janri bo'lib, unda "jonsiz tabiat ob'yektlari tasvirlangan bo'ladi. Natymortning asosiy janri va kompozitsion shartliligi tasvirlangan ob'ektlarni atrof-muhitdan ajratib chizishdan iborat bo'lishi kerakligini ilgari surdi. Oddiy qilib aytganda, tabiat jismlarini baliqlar, gullar va boshqalarni tasvirlash tushiniladi. Bunday yondashuv tasviriy san'atning asosiy namunasi bo'lib xizmat qiladi, kuzatuvchilarga o'zgacha estetik zavq bag'ishlaydi. Natymortda tasvirlangan tasvirlar o'zining jonlilik xususiyatlarini yoqotmagan holda saqlanib qolishi kerak.

Bundan tashqari natymort janri orqali jonsiz tabiat ob'ektlari ham tasvirlanishi mumkin. Bularga misol qilib, Qadimgi Misr va Qadimgi Yunonistonda tasvirlangan gullar, mevalar, oziq-ovqat va ichimliklar solingan idishlarni aytish mumkin. Biroq, bunday tasvirlar hali alohida janr sifatida aniqlanmagan va maxsus belgiga ega emas deb aytiladi. Gent qatl qilinadigan maydonni tasvirlar ekan, uning markazida aka-uka Van Eyk tomonidan 1432-yilda qatl qilishi e'lon qilish sahnasida, sochiq bilan oddiy yuvinish moslamasi tasvirlanganligi, bu tasvirlar orqali voqelik tuyg'usi, sodir bo'layotgan narsaning o'ziga xos haqiqiylikni tasavvur qilishimiz mumkin.

Natymort elementlarini Italiya proto-Uyg'onish davri rassomlari: Giotto, P. Lorenzetti, T. Gaddi va boshqalar o'z rasmlarida aks ettirishgan. An'anaviy tarzda, Yangi asr san'atida "trompe-loel" janridagi birinchi natymort - deb ishoniladi. Haqiqiy illyuziyani yaratadigan narsalarning naturalistik tasviri 16-asr boshlarida italyan rassomi Yakopo de' Barbari tomonidan yozilgan. Biroq, 15-16-asrlarda ob'ektlarning tasvirlari odatda tarixiy, landshaft yoki kundalik janr kompozitsiyasining bir qismi sifatida, turar-joy interyeri tasvirlari yoki interyerdagi portretlar sifatida ko'rib chiqildi.

Uzoq vaqt davomida natymortlar diniy kompozitsiyalar bilan bog'liq bo'lib kelgan. Masalan bularga ramkalar, gul gulchambarlari, Xudoning onasi va Masihning figuralari bilan bog'liq tasvirlarni misol qilib keltirish mumkin. Natymortlar qurbongoh tasvirining teskari tomoniga joylashtirilgan bo'lgan. Shuningdek, 16-asrda bosh suyagi va shamni tasvirilaydigan vanitas rasmlarning keng tarqalgan an'anasi mavjud edi, masalan, bunga misol Jan Gossaertning Jan Karondel portreti hisoblanadi. Gollandiyada yaralgan natymort 17-asrning noyob ma'daniy

hodisasi bo'ldi va butun Evropa san'atining rivojlanishiga ta'sir ko'rsatdi. Natyurmort san'atining unday tez rivojlanishiga bir qancha muhim omillar ta'sir ko'rsatdi. Birinchidan, ijtimoiy fanlar, matematika, fizika va tabiiy fanlar kabi natyurmort san'atining ham yutuq darajasi kichik mamlakat uchun hayratlanarli bo'di.

17-asrning 40-yillaridan boshlab Gollandiya rangtasviridagi natyurmort mustaqil janr sifatida keng tarqaldi. Birinchilardan biri Ambrosius Bosshaert Elder va Baltasarvan der Ast kabi rassomlarning asarlaridagi gulli natyurmortlar tasvirlanib, ikkinchisida Yan Davids de Xem va uning izdoshlarining hashamatli natyurmortlarida o'z rivojlanishini davom ettirdi.

Natyurmort rasmning mustaqil janri sifatida 18-asr boshlarida Rossiyada paydo bo'lgan. Uning g'oyasi dastlab yer va dengiz in'omlari, insonni o'rab turgan narsalarning xilma-xil dunyosi bilan bog'liq edi. 19-asrning oxirigacha natyurmort, portret va tarixiy rasmlardan farqli o'laroq, "pastki" janr hisoblangan. U asosan o'quv mahsuloti sifatida mavjud bo'lgan va faqat gullar va mevalarning rasmi sifatida cheklangan tushunchada qabul qilingan.

20-asr boshlari rus natyurmort rasmining gullab-yashnashi bilan ajralib turdi, bu birinchi marta boshqa janrlar orasida tenglikka erishdi. Rassomlarning vizual til imkoniyatlarini kengaytirishga intilishi rang, shakl va kompozitsiya sohasidagi faol izlanishlar bilan birga keldi. Bularning barchasi ayniqsa natyurmortda yaqqol namoyon bo'ldi. Yangi mavzular, tasvirlar va badiiy texnikalar bilan boyitilgan rus natyurmorti juda tez rivojlandi: o'n yarim yil ichida u impressionizmdan mavhum shakl yaratishga o'ta oldi

1930-1940-yillarda bu rivojlanish to'xtadi, ammo 1950-yillarning o'rtalaridan boshlab natyurmort sovet rassomchiligida yangi yuksalishni boshdan kechirdi va shu vaqtdan boshlab u boshqa janrlar bilan bir qatorda mustahkam turadi.

O'qituvchining o'quv materialini tasvirlash, og'zaki tushuntirishni to'ldirish bilan bog'liq va bevosita dars davomida amalga oshiriladigan vizual faoliyati odatda pedagogik rasm deb ataladi. Rassomlik va grafika fakulteti talabalari birinchi marta o'qituvchilik amaliyotida doskaga duch kelishadi va ko'pincha uning oldida adashib qolishadi. Noaniqlikning sababi nafaqat chizmaga yomon tayyorgarlik ko'rishda, balki ko'plab omillardan iborat. Birinchidan, talaba hali format hissini rivojlantirmagan. Agar shu paytgacha u Vatman qog'ozi varag'ida ishlashi kerak bo'lgan bo'lsa, unda qora taxta uning oldida bir necha barobar kattaroq maydon bilan paydo bo'ladi. Qog'ozga chizilgan rasm ikki metr dan uch metrgacha idrok qilish uchun mo'ljallangan; doskadagi tasvir 4-sinf o'lchamlariga mos kelishi kerak va orqa partalarda o'tirgan o'quvchilar tomonidan tasvirni normal idrok etishi uchun mo'ljallangan bo'ladi.

To'rtinchidan, pedagogik rasmlarni yaratish bo'yicha ishlar o'quv materialini og'zaki taqdim etish bilan bir vaqtda amalga oshiriladi. "Majoziy ma'noda aytadigan bo'lsak, o'qituvchining qo'lidagi bo'r uning nutqidan hamqadam bo'lishi kerak, nutq esa qo'ldan ortda qolmasligi kerak. Bu izchillikka o'qish davridagi qat'iyatli mashg'ulotlar va keyingi mustaqil ish yillarida uzoq muddatli amaliyot orqali erishiladi. Didaktik talablar nuqtai nazaridan, bularning barchasiga ahamiyat berish lozim.

Doskada rasm chizish jarayonining estetik mohiyatini hisobga olish lozim. Masalan, o'qituvchi vaqt o'tishi bilan oqartirilgan eski doskaga bo'r bilan rasm chizsa, bo'r izini olib tashlab bo'lmaydi, bu o'quvchilarga bir muncha noqulayliklarni keltirib chiqaradi.

Pedagogik rasmning bir turi - o'qituvchi tomonidan o'quvchi ishining hoshiyalarida chizilgan tushuntirish chizmasi, shuningdek, o'quv materialini aniqlashtirish va to'ldirish uchun dars davomida

dokada turli xil materiallardan yasalgan lakonik katta o'lchamdagi eskizlar hisoblanadi. Ushbu chizmalarni qo'llash usullariga ko'ra ikkita asosiy turga bo'lish mumkin:

1. Sinfdagi barcha o'quvchilarga frontal ko'rsatish uchun mo'ljallangan katta o'lchamli chizmalar.

2. O'quv materialining individual tushuntirishini ko'rsatish uchun o'qituvchi tomonidan o'quvchilarning ishlarining hoshiyalarida yoki alohida qog'ozlarda tuzilgan kichik eskizlar.

Pedagogik chizmalar quyidagi funktsiyalarni bajarishi mumkin:

a) dars davomida o'qituvchining og'zaki tushuntirishini tasvirlash;

b) chizmalar ustida ishlashning uslubiy ketma-ketligini ko'rsatish;

v) chizish bosqichlaridan birini ko'rsatish;

d) tasvirlangan predmetlar tuzilishining mohiyatini tushuntirish;

e) chizmalarni kompozitsion loyihalash tamoyillarini ko'rsatish;

f) turli materiallar bilan ishlashning texnik usullarini ko'rsatish;

g) dars mavzusiga oid ko'rgazmali masalalarning to'g'ri va noto'g'ri yechimlarini vizual tahlil qilish;

h) muayyan mavzudagi chizmalarining xususiyatlarini tushuntirish.

Tasviriy san'atdan amaliy mashg'ulotlarda pedagogik chizmalardan foydalanishning boshqa holatlari ham mavjud. Tushuntiruvchi chizmalar juda qisqa vaqt ichida tuziladi va qo'llanilgan texnika va materiallarda farqlanadi.

Dokada ma'lum tasvirlarni yaratishda ular odatda turli xil materiallardan foydalangan holda faqat chiziq yoki qisqa chiziqdan foydalanadilar: ko'mir, sanguine, sous, pastel, bo'r, va boshqa turlarini misol qilib olish mumkin. Tasviriy san'at o'qituvchisi ishida, shuningdek, kelajakdagi tasvirning konturlarini belgilamasdan, siyoh, akvarel yoki gouache yordamida cho'tka bilan tayyorlangan tezkor eskizlardan ko'proq foydalanish tavsiya etiladi. Bunday eskizlarda ikkita asosiy element faoldir: rangli nuqta va fon, buning yordamida ob'ekt silueti aniq o'qilishi mumkin.

Adabiyotlar:

1. Мастера искусства об искусстве: избр. отрывки из писем, дневников, речей и трактатов: в 7-и т. / ред. А. А. Грубер и др. - М. : Искусство, 1966-69. - Т. 2. -496 с. - С. 108.

2. Мастера искусства об искусстве: избр. отрывки из писем, дневников, речей и трактатов: в 7-и т. / ред. А. А. Грубер и др. - М. : Искусство, 1967. - Т. 3. - 632 с. - С. 411.

3. Урванов, И. Ф. Краткое руководство к познанию рисования в живописи исторического рода, основанное на умозрении и опытах / И. Ф. Урванов // Рисунок. Живопись. Композиция : хрестоматия : учебное пособие / Сост. Н. Н. Ростовцев, С. Е. Игнатъев, Е. В. Шорохов. - М. : Просвещение, 1989. - С. 156.

4. Ростовцев, Н. Н. Развитие творческих способностей на занятиях рисованием / Н. Н. Ростовцев, А. Е. Терентьев. - М., Просвещение, 1987. - 176 с. - С. 11.

5. Кузин, В.С. Психология (учебник для художественных училищ) / В. С. Кузин. -М.: Высшая школа, 1982. - 256 с.

6. Кузин, В.С. Психология живописи / В. С. Кузин. - М.: Оникс 21век, 2005. - 304 с.

7. Шпикалова, Т. Я. Модель развития инновационных процессов этнохудожественного образования / Т. Я. Шпикалова //Наука и Школа. -2007.-№5.- С. 49-51.

8. Неменский, Б. М. Искусство, нравственность и ... идеология гламура / Б. М. Неменский // Философия художественной культуры: традиции и современные тенденции : сб. статей. - М. : МГПУ, 2010. - 244 с. - С. 41-48.
9. Юсов, Б. П. Современная концепция образовательной области «Искусство» в школе / Б. П. Юсов // Виды искусств и их взаимодействие. - М. : Педагогика, 2001. - 28 с.
10. Полуянов, Ю. А. Изобразительное искусство. Содержание, методика и организация занятий в начальной школе / Ю. А. Полуянов. - М. : ИНТОР, 1997. - 48 с. - С. 18.
11. Фаворский, В. А. О композиции / В. А. Фаворский // Искусство. - 1933. - № 1-2. - С. 1-3. - С. 1-7.
12. Волков, Н. Н. Композиция в живописи / Н. Н. Волков. - М. : Искусство, 1977. - 524 с.
13. Шорохов, Е. В. Основы композиции / Е. В. Шорохов. - М. : Просвещение, 1979. - 303 с.
14. Аксенов, К. Н. Рисунок (В помощь начинающему художнику-оформителю) / К. Н. Аксенов. - М. : Плакат, 1987. - 192 с.
15. Баммес, Г. Изображение фигуры человека: пособие для художников, преподавателей и учащихся / Баммес, Г.; пер. с нем. В. А. Виталса. - М. : Сварог и К, 1999. - 336 с. - С. 55.
16. Ли, Н. Г. Основы учебного академического рисунка / Н. Г. Ли. - М.: Эксмо, 2005. - 480 с.
17. Кандинский, В. В. О духовном в искусстве (живопись). Из архива русского авангарда / В. В. Кандинский. - Л. : Фонд «Ленинградская галерея», 1990. - 67 с.
18. Иттен, И. Искусство формы. Мой форкурс в Баухаусе и других школах / И. Иттен; пер. с нем. и предисловие Л. Монаховой. - М. : Издатель Д. Аронов, 2001. - 136 с. - С. 7.
19. Арнхейм Р. Искусство и визуальное восприятие / Р. Арнхейм; пер. с англ. - М.: Архитектура -С, 2007. - 392с.
20. Гелб, М. Дж. Научитесь мыслить и рисовать как Леонардо да Винчи / М. Дж. Гелб; пер. с англ. - Минск: Попурри, 2000. - 304 с.
21. Эдвардс, Б. Откройте в себе художника / Б. Эдвардс; пер. с англ. - Минск: Попурри, 2009. - 285 с.
22. Левин, И.Л. Живописная ассоциативная композиция в архитектурном образовании: практико-ориентированная монография / И.Л. Левин, Г. И. Панксенов, В. И. Андреева. - Saarbrücken, Deutschland: LAP LAMBERT Academic Publishing: 2014. - 296 с.
23. Бакушинский, А. В. Художественное творчество и воспитание. Опыт исследования пространственных искусств / Бакушинский, А. В. - М. : Новая Москва, 1925. - 240 с.

Teacher of the "Automation and Control" Department of TMTI:

Mengatova Khurshida Tashmukhamatovna

khurshidamengatova@gmail.com

Teacher of the "Automation and Control" department of TMTI:

Jakhongir Salokhidinov Alisher o'g'li

jakhongir.salokhidinov@gmail.com

Abstract:

Educational technologies are one of the main factors in improving the quality of training of specialists in higher education. In particular, we believe that improving the teaching of subjects in higher education institutions based on the methods of using mobile applications in the educational process, with a new approach to the development of educational technologies in the training of personnel in various fields, will create a basis for achieving high results in increasing the effectiveness of education.

Keywords: WAP, GPRS, EDGE, Bluetooth, Wi-Fi, Mobile, BOYD.

In the educational system of advanced countries, research aimed at effective use of computer equipment and modern information and communication technologies is ongoing. These circumstances indicate the importance of computer science in the personnel training system. One of the main concepts of computer science is information communication technology. Technology, translated from the Greek (techne), means art, skill, knowledge, which in turn are processes. Processes are a set of certain actions to achieve a set goal.

Mobile learning is a special form of learning that has the ability to combine individual, group and collective learning with curricular and extracurricular activities using mobile technologies. In the educational process, the phrase "Mobile learning" can be interpreted as follows:

- Devices in education (optional mobile devices and network technologies);
- Teacher (in the course of teaching, the device is in the classroom or
- may be located outside the audience);
- Application to the educational process depending on the type of lesson (another school, a virtual teacher on the Internet from two regions of the city). In order to apply mobile teaching to the educational process in a mass way, it is necessary to pay attention to the following organizational and pedagogical requirements:

- Organization of mobile classes based on tablets, netbooks and laptops in educational practice;

Send an opinion

Side panel

History

Sokhranennye

Predlojit perevod

The advantages of mobile learning are:

1. Gives students the opportunity to freely change the place;
2. Enables students with disabilities to study using mobile devices;

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

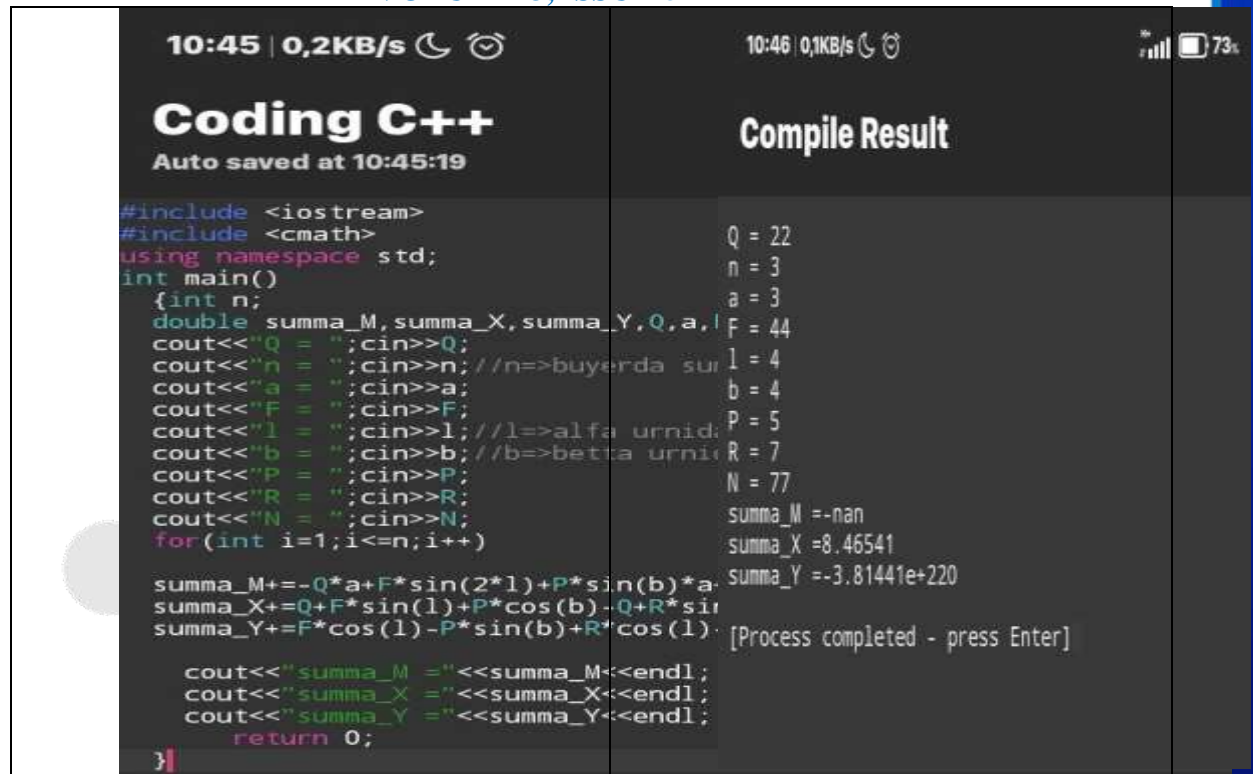
VOLUME-3, ISSUE-5

3. There will be no need for a personal computer and paper educational literature;
4. With the help of modern wireless technologies, the distribution of educational resources among users is facilitated (WAP, GPRS, EDGE, Bluetooth, Wi-Fi);
5. Mobile education uses multimedia content, that is, information is expressed in various forms: text, graphics, audio. In such a case, the effectiveness of learning and memorization of educational resources increases, motivation to learn develops. If the learners are interested in completing the tasks, in this case

A volunteer teacher will be able to say without hesitation that the audience will be enlivened, the motivation to learn will develop, and the efficiency of learning will increase.

The use of mobile applications in studying subjects in education, including higher education, along with the above-mentioned results, creates an opportunity for the listener to study without choosing space and time. For example: the implementation of problems and examples in mathematics using the ++ coding application gives a quick, high-quality and accurate answer, encouraging the student to think innovatively. Using the program for calculating the sum of this product, it is possible to get an infinite result.

```
#include <iostream>
#include <cmath>
using namespace std;
int main()
{
    int n;
    double summa_M, summa_X, summa_Y, Q, a, F, l, b, P, R, N;
    cout<<"Q = "; cin>>Q;
    cout<<"n = "; cin>>n; //n=>buyerda summa yuqori chegarasi
    cout<<"a = ";<<endl; cin>>a;
    cout<<"F = ";<<endl; cin>>F;
    cout<<"l = ";<<endl; cin>>l; //l=>alfa urnida
    cout<<"b = ";<<endl; cin>>b; //b=>beta urnida
    cout<<"P = ";<<endl; cin>>P;
    cout<<"R = ";<<endl; cin>>R;
    cout<<"N = ";<<endl; cin>>N;
    for(int i=1; i<=n; i++)
        summa_M += -Q*a + F*sin(2*i) + P*sin(b)*a + P*cos(b)*2*a + Q*2*a - R*cos(l)*4*a -
        R*sin(a)*2*a + N*sin(b)*4*a + N*cos(b)*2*a;
    summa_X += Q + F*sin(l) + P*cos(b) - Q + R*sin(l) - N*cos(b);
    summa_Y += F*cos(l) - P*sin(b) + R*cos(l) - N*sin(b);
    cout<<"summa_M = ";<<summa_M<<endl;
    cout<<"summa_X = ";<<summa_X<<endl;
    cout<<"summa_Y = ";<<summa_Y<<endl;
    return 0;
}
```



The screenshot shows a C++ code editor on the left and a terminal window on the right. The code in the editor is as follows:

```
#include <iostream>
#include <cmath>
using namespace std;
int main()
{int n;
double summa_M, summa_X, summa_Y, Q, a, l, F;
cout<<"Q = ";cin>>Q;
cout<<"n = ";cin>>n; //n=>buyurda sur
cout<<"a = ";cin>>a;
cout<<"F = ";cin>>F;
cout<<"l = ";cin>>l; //l=>alfa urnid;
cout<<"b = ";cin>>b; //b=>beta urnid;
cout<<"P = ";cin>>P;
cout<<"R = ";cin>>R;
cout<<"N = ";cin>>N;
for(int i=1; i<=n; i++)

summa_M+=-Q*a+F*sin(2*l)+P*sin(b)*a;
summa_X+=Q+F*sin(l)+P*cos(b)-Q+R*sin
summa_Y+=F*cos(l)-P*sin(b)+R*cos(l);

cout<<"summa_M ="<<summa_M<<endl;
cout<<"summa_X ="<<summa_X<<endl;
cout<<"summa_Y ="<<summa_Y<<endl;
return 0;
}
```

The terminal window on the right shows the output of the program:

```
Q = 22
n = 3
a = 3
F = 44
l = 4
b = 4
P = 5
R = 7
N = 77
summa_M = -nan
summa_X = 8.46541
summa_Y = -3.81441e+220
[Process completed - press Enter]
```

Literature

1. Burlakov M.V. CorelDRAW 12, St. Petersburg, 2004. -682 p.
2. Voinova M.G. Pedagogical technology and pedagogical master's degree. - Tashkent: "ECONOMY-FINANCE", 2006. - 160 p.
3. Gudkov S.A. Formirovanie znaniy i umeniy v oblasti computernoy graphicy u uchashchikhsya uchrejdeniy srednego spetsialnogo obrazovaniya (na primere podgotovki chudojnikov-designerov): Autoref. dis. ... cand. ped. nauk. - Moscow, 2014. - 21 p.
4. Ruziev E., Ashirbayev A. Methodology of teaching engineering graphics (textbook) - T.: "Fan va tekhnologiya" publishing house, 2010 (248 pages).
5. Ashirbayev A., Ergashev T. Common Mistakes and Their Warning in Teaching Drawing. Eastern European Scientific Journal. Abgabe No. 5-2018. ISSN: 2199-7977 Copyright: Kommuniikations-und Verlagsgesellschaft mbH, Dusseldorf – Germany 378-380 p.
6. Alisher oglu, J. S., & Tursunpol'latovich, A. S. (2023). THE REVOLUTION OF ARTIFICIAL INTELLIGENCE IN EDUCATION: THE ROLE OF CHATBOTS IN EDUCATION. Journal of Universal Science Research, 1(12), 77-78.
7. Mamatkulov T.Ch., Salokhiddinov J.A., & Samatov, J. S. (2023). Sistema kontrolya i upravleniya territorialno-raspredelemnymi tekhnologicheskimi obektami vodnogo hozyaystvo. Journal of Universal Science Research, 1(12),79-87.
8. <file:///C:/Users/HP/Downloads/mobil-ilovalardan-talim-zharayonida-foydalanish-metodikasi.pdf>
9. <https://idum.uz/uz/archives/7958>

ПОНЯТИЕ ГРАДУОНИМИЯ В СОВРЕМЕННОМ ЛИНГВИСТИЧЕСКОМ
ИССЛЕДОВАНИИ

Уракова Шоира Турсунпулатовна

Термезский государственный университет

Аннотация: В данной статье рассматривается актуальность изучения категории градуальности в современной лингвистике. Градуальность, как языковая категория, позволяет выражать различные степени интенсивности, качества и количества в языке. Исследование градуальности имеет важное значение для понимания семантики, лексикологии и грамматики языка. Эта категория связана с когнитивными процессами и восприятием мира, что дает возможность лучше понять, как мы определяем и описываем окружающую среду. Кроме того, изучение градуальности имеет практическую значимость в областях машинного перевода, компьютерной лингвистики и анализа текстов.

Ключевые слова: градуонимия, степень, интенсивность, качество, корпусная лингвистика

Abstract: This article is devoted to the study and research of the category of graduonymy and the relevance of studying it in modern linguistics. Graduality, as a linguistic category, allows to express different degrees of intensity, quality and quantity in language. The study of graduonymy is important for understanding the semantics, lexicology and grammar of a language. This category is associated with cognitive processes and perception of the world, which provides an opportunity to better understand how we define and describe the environment. In addition, the study of graduonymy has practical significance in the fields of machine translation, computer linguistics and text analysis.

Key words: gradonymy, degree, intensity, quality, corpus linguistics

Язык – это удивительный и многогранный феномен, который играет центральную роль в нашей коммуникации и мышлении. В его природе заложены особые свойства и механизмы, которые обеспечивают его живость и непрерывное совершенствование. Он постоянно изменяется под влиянием множества внешних и внутренних факторов. Внешние факторы включают контакт с другими языками и культурами, смену поколений и социальные изменения. Влияние других языков может проявляться через заимствования, адаптацию и переработку слов и выражений. Культурные изменения также имеют важное значение, формируя новые концепты и подходы к мироустройству. Внутренние факторы, такие как лингвистические изменения внутри языка, фонетические, морфологические и синтаксические сдвиги, а также изменения в словарном запасе, создают условия для его эволюции и развития.

«В последнее время в области лингвистики все активнее развиваются новые направления: социолингвистика, лингвистика, корпусная лингвокультурология, корпусная лингвистика, компьютерная дискурсология, паралингвистика, психолингвистика, когнитивная лингвистика, этнолингвистика, лингвопрагматика. Они, в свою очередь, проясняют новшества в сфере лингвистики, которые еще не были изучены. Несмотря на то, что изначально язык рассматривался в качестве описательной единицы для человечества, на данный момент он представляет собой систему перехода от общего к частному (дедукция) и от частного к общему (индукция)»[1.С.64].

В современном лингвистическом исследовании градуонимия стала объектом обширного интереса, поскольку язык играет коренную роль в общении, а понимание структуры и механизмов градуационных отношений помогает снять ограничения в точности и точности выражения мыслей и идей. Изучение градуонимии позволяет лингвистам более полно раскрыть гибкость и огромный потенциал языка в выражении различных степеней интенсивности, качества и количества.

Следует подчеркнуть, что градуонимия в языке изучалась как в зарубежной, так и в отечественной лингвистике. При этом в терминологическом отношении наблюдается большой спектр конкретных терминов. К таковым относятся «градуальность», «градация», «градуонимия» и т. д. Иначе говоря, разные лингвисты и школы пользовались различными способами для обозначения одной и той же сущности.

«В мировом языкознании в фонологической системе градуальные отношения были исследованы эпизодически, отмечены на других языковых уровнях, но не обобщены и не введены в систему обобщающих языковых градуальных отношений» [2.С.20].

«Хотя первенство в исследовании данной проблемы принадлежит американскому лингвисту Э. Сэпиру, рассмотревшему вопрос градуирования и определившему группы слов, которые относятся к тому или иному типу градуирования, – предпосылки этого явления зародились в Античности» [3.С.37].

«Изучением градуальности как семантической категории занимались такие ученые, как Н. Д. Арутюнова, Е. М. Вольф, Ю. Л. Воротников, Е. А. Поцелуевский, А. А. Ховалкина и другие. При этом категорию градуальности трактовали и как логико-семантическую, и как лексико-семантическую, и как лексико-синтаксическую, а также включали ее в состав коммуникативно-прагматической категории усиления. Кроме того, в русистике и германистике к градуальности обращались в связи с изучением сочинительных союзов» [4.С.39].

В годы независимости республики было проведено обоснование и исследование явления градуонимии. Лексическая градуонимия была изучена в работах Ш. Орифжановой. О. Базаров впервые доказал, что лексическая градуонимия является языковой закономерностью, раскрыв естественно онтологическую, философскую логическую, гносеолого-методологическую сущность и механизм градуирования. В результате серии работ был создан словарь «Учебный словарь градуонимии слов в узбекском языке» под названием «Ўзбек тилининг сўзлар даражаланиши ўқув луғати» [5.С.].

Одной из причин возрастающего интереса к градуальности является ее важность для описания и анализа естественного языка. В современном лингвистическом исследовании градуальность стала одной из ключевых категорий при изучении семантики, лексикологии и грамматики. Исследователи стремятся понять, как языки выражают градуальность и какие механизмы лежат в основе этих выражений.

«Термин градуация отражает взаимное противодействие языковых единиц по возрастанию//уменьшению одного из их признаков, и он образован из части **-онимия** имеющихся в узбекском языкознании терминов синонимия, омонимия, антонимия, выражающие языковые смысловые отношения, а также соединены латинским словом **gradu-** («степень», «уровень»). В данное время термины градуонимия, градуонимик муносабат (градуальное отношение) «даражаланиш (градуирование)» употребляются в равной степени, почти как синонимы» [6.С.56].

Категория градуальности — это понятие, которое используется для описания явлений, которые могут быть оценены или измерены по некоторой шкале. Она включает в себя такие аспекты, как степень, интенсивность, качество и прочие факторы, которые могут изменяться постепенно или по мере развития событий.

Изучения категории градуальности в современной лингвистике обусловлена несколькими факторами. Во-первых, градуальность является неотъемлемой частью многих языков и используется во множестве языковых конструкций. Исследование этого аспекта языка позволяет лучше понять, как язык выражает и передает различные степени и уровни значений.

Во-вторых, категория градуальности играет важную роль в коммуникации и взаимодействии между говорящими. Понимание и использование градуальных конструкций языка позволяет точнее и эффективнее выражать свои мысли и эмоции. Изучение градуальности помогает лингвистам разработать более точные и емкие описания языковых явлений и конструкций.

Кроме того, градуальность как явление лежит в основе многих других научных дисциплин, таких как когнитивная психология, социология, экономика и другие. Исследование этой категории может способствовать развитию и совершенствованию этих дисциплин, а также помочь лучше понять взаимосвязь между языком и мышлением. Вместе с тем, изучение категории градуальности представляет определенные вызовы для исследователей. Во-первых, ее сложность заключается в том, что она связана с субъективными оценками и восприятием. Каждый человек может иметь разные представления о степени или интенсивности явления. Это требует от исследователей построения объективной шкалы для измерения градуальности. Во-вторых, градуальность может быть представлена различными лингвистическими средствами и конструкциями, что создает сложности в классификации и описании. Это требует от исследователей анализа большого объема текстов и данных, чтобы выявить общие закономерности и паттерны. Тем не менее, изучение градуальности имеет большой потенциал для развития лингвистики и других научных дисциплин. Это может помочь лучше понять, как язык функционирует и как влияет на мышление и восприятие мира. Кроме того, изучение градуальности может способствовать созданию лучших моделей и алгоритмов обработки естественного языка, а также помочь в разработке более точных систем машинного перевода и анализа текстов.

В заключение надо отметить, что категория градуальности представляет собой актуальную и важную тему исследования в современной лингвистике и её изучение позволяет лучше понять, как язык выражает и передает различные степени и уровни значений, а также помогает развитию и совершенствованию других научных дисциплин.

СПИСОК ЛИТЕРАТУРЫ

1. Дустмаматова Н. Градуонимия в исследовании узбекских лингвистов
https://tsuull.uz/sites/default/files/graduonimiya_0.pdf
2. Джумабаева Ж. Ш. Об исследовании лексической градуонимии
<https://pravo.hse.ru/data/2011/12/23/1261674422/k-13-3-11.pdf>
3. Долгих З.Б. Актуальные подходы исследования градуальных значений
<https://cyberleninka.ru/article/n/aktualnye-podhody-issledovaniya-gradualnyh-znacheniy>
4. Долгих З.Б. Актуальные подходы исследования градуальных значений

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-3, ISSUE-5

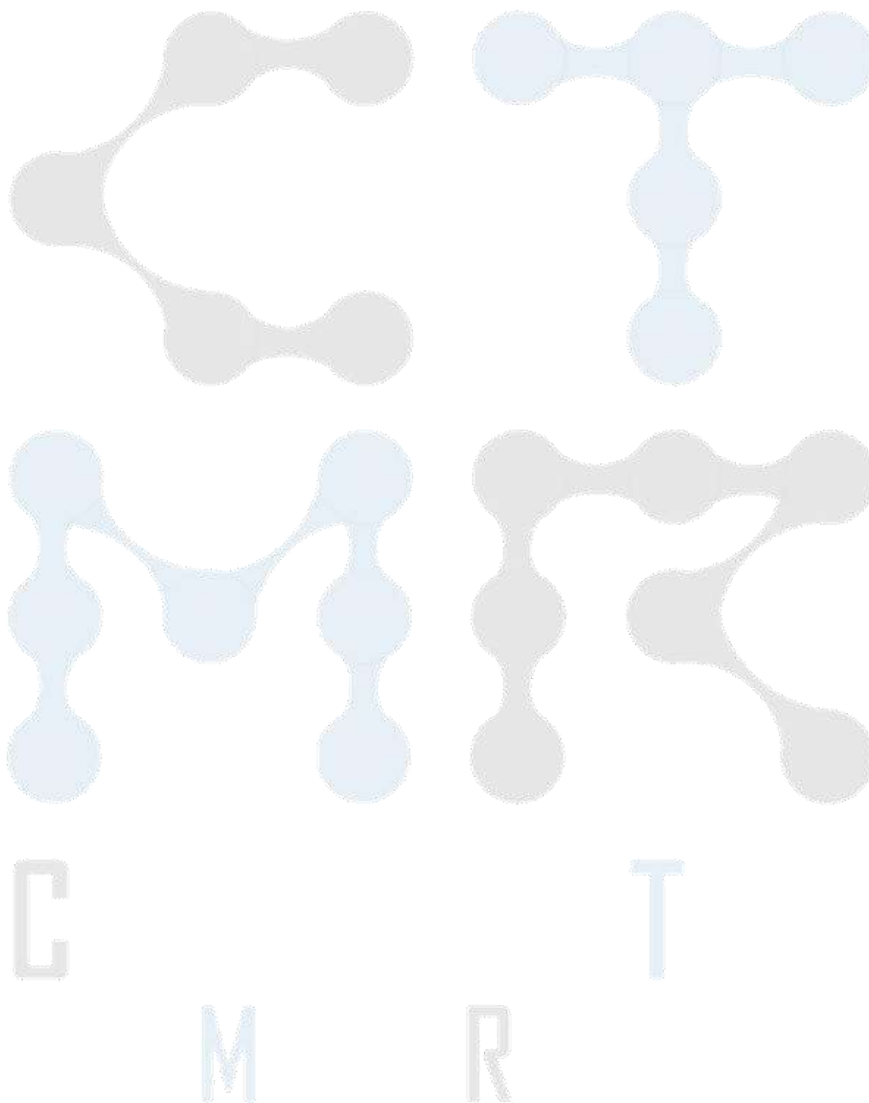
<https://cyberleninka.ru/article/n/aktualnye-podhody-issledovaniya-gradualnyh-znacheniy>

5. Джумабаева Ж.Ш. Градуонимия и другие семантические категории: сходства и различия.

https://www.researchgate.net/publication/341100134_Graduonimia_i_drujie_semanticeskie_kategorii_shodstva_i_razlicia

6. Джумабаева Ж.Ш. Плесиионимия и градуонимия в английском и узбекском языках.

<https://cyberleninka.ru/article/n/plesionimiya-i-graduonimiya-v-angliyskom-i-uzbekskom-yazykah>



Annotatsiya

Maqolada ichimlik suvining ayovsiz isrof qilinishi. Mavjud muammolarni hal qilishda xalqaro tajribadan foydalanish, suvni tejavchi texnologiyalarni har tomonlama qo'llash juda muhimligi va keltirib o'tilgan tadbirlar zudlik bilan amalga oshirilmasa biz qaytarib bo'lmaydigan oqibatlarga duchor bo'lishimiz mumkinligi keltirilgan.

**ЭКОНОМИТЬ ВОДУ НЕОБХОДИМО,
НО НАСКОЛЬКО МЫ ЭТО ДЕЛАЕМ?**

Эшкараев Улугбек Чориевич. доцент ДТПИ, к.т.н.

Аннотация

В статье приводится, что питьевая вода чрезмерно много используется и что очень важно использовать международный опыт в решении существующих проблем, всемерно использовать водосберегающие технологии и если указанные меры не будут немедленно реализованы, мы можем столкнуться с необратимыми последствиями.

Одним из важнейших и необходимых ресурсов для нужд человека на земле является вода. Хотя вода является возобновляемым ресурсом, количество территорий, испытывающих нехватку воды, увеличивается с каждым годом из-за растущего населения мира.

По данным Countrymeters, в 2023 году ежегодный прирост населения планеты составил 83 миллиона человек. Для сравнения, этот показатель равен 1,1% в год. Следует отметить, что объем использования пресной воды увеличивается в 17 раз за период, когда население Земли увеличивается в 3 раза. Более того, по некоторым прогнозам, через 20 лет объем потребности в пресной воде может увеличиться в 3 раза.

По данным Агентства по охране окружающей среды США (EPA), семья, живущая в многоквартирном доме, тратит более 700 литров воды в неделю. Еще выше этот показатель на континентах Азии, Африки и Австралии, где много пыли и жары.

Проблема нехватки воды не нова для Узбекистана. Узбекистан занимает 25-е место в списке стран с проблемами нехватки воды. Уровень дефицита воды в стране оценивается как высокий.

16 сентября 2020 года вопрос внедрения водосберегающих технологий обсуждался на видеоселекторном совещании, проведенном под руководством Президента Шавката Мирзиёева. Отмечается, что за последние 10 лет запасы воды в Узбекистане сократились на 12%, по сравнению с прошлым годом в этом году - на 15%.

Проект UzWaterAware Центральноазиатского регионального экологического центра (MOMEM), посвященный вопросам водосбережения, подготовил серию мультипликационных видеороликов при финансовой поддержке Европейского Союза на фоне проблем, связанных с водой. Министерство водного хозяйства Узбекистана является национальным партнером проекта. По мнению организаторов проекта, эти видеоролики на русском и узбекском языках могли бы стать полезным контентом для разъяснения

темы водных ресурсов во время онлайн- и офлайн-занятий в образовательных учреждениях. Ролики также можно показывать детям в лагерях.

Там сказано, что на мойку автомобиля резиновым шлангом в течение 15 минут расходуется более 120 литров пресной воды. Прюделав то же самое с ведром, можно сэкономить до 80 литров воды.

Вы когда-нибудь задумывались, что для стирки белья в домашних условиях за неделю расходуется более 1000 литров воды? При мытье рук, чистке зубов и мытье посуды, даже если кран постоянно открыт (из-под крана вытекает 7-8 литров воды за одну минуту), за неделю расходуется немалое количество воды. При использовании воды в стакане для чистки зубов расходуется всего 200 граммов воды.

По данным Агентства по охране окружающей среды, одно домохозяйство использует более 1000 литров воды только для принятия душа за один день. При высоком давлении из душа может вылиться 20 литров воды в минуту. Поэтому желательно принимать душ не более 5 минут, а увеличивать подачу воды только в случае крайней необходимости.

Кроме того, некоторые люди бросают в туалет мусор, состоящих из пищевых отходов и мелких отходов. Это увеличивает расход воды и вызывает засоры.

Давайте задумаемся, сколько литров чистой воды мы ежедневно выбрасываем в канализацию. Стоит отметить, что очистка такой воды гораздо сложнее, чем грунтовых и речных вод.

Сколько воды используется для полива газонов и деревьев. Поэтому нам следует как можно чаще использовать водосберегающие краны, стиральные и посудомоечные машины. Покупка водо- и энергосберегающей техники поможет нам экономить не только воду, но и электроэнергию.

Эксперты Евразийского банка развития (ЕАБР) изучили состояние ирригационной инфраструктуры в Центральной Азии, проблемы сельского хозяйства региона, значение орошаемого земледелия для этой отрасли экономики, развитие орошаемых земель и водных ресурсов в регионе.

Сельское хозяйство в странах Центральной Азии является основным потребителем воды. Земли сельскохозяйственного назначения занимают 73,5% территории области. Согласно отчету, в 2020 году 79% воды в Центральной Азии было использовано для орошения. Орошаемое земледелие остается не только основой сельского хозяйства, но и основой продовольственной безопасности региона.

Предлагается использовать международный опыт решения существующих проблем. Прежде всего, необходимо модернизировать ирригационную инфраструктуру путем привлечения инвестиций (в том числе на основе государственно-частного партнерства) и комплексного использования водосберегающих технологий.

По мнению экспертов ЕБРР, все это позволит странам Центральной Азии не только обеспечить свой рынок основными продуктами питания, но и расширить экспорт продуктов питания.

И так, как сэкономить питьевую воду:

1. Увеличить количество видеороликов, плакатов и слайдов о том, как экономить воду, во всех СМИ и социальных сетях. Семьи, которые экономят воду, должны получать стимулы и льготы.

2. Перед многоэтажными домами следует соорудить сооружения для сбора, отстаивания и очистки воды, выходящей из канализации. Перед вновь построенными многоэтажными домами проект очистного сооружения должен быть включен в строительный паспорт. Очищенную воду следует направлять в туалеты многоэтажных домов отдельным трубопроводом для повторного использования.

3. Мусорные осадки, образующиеся на очистных сооружениях, следует превращать в перегной и вывозить на поля в качестве органического удобрения. Чем больше мы вносим на поля органических удобрений, тем выше урожайность. Повышается влагоудерживающая способность почвы, экономится вода, используемая для полива сельскохозяйственных культур.

4. Необходимо немедленно прекратить пасти скота в горах. Скот превратил горы в пустыни. Газоны и полезные травы на склонах гор уничтожены. Листья, сохраняющие влагу, вообще не остаются. В результате чрезмерного нагревания в зимние и весенние месяцы камни на голых равнинах не способны удерживать снег и дождь. В результате снег быстро тает, вызывая наводнения и оползни.

5. Комплексы по выращиванию и племенному животноводству должны быть восстановлены. Эти животноводческие комплексы обеспечивают посевные поля органическими удобрениями.

6. Необходимо увеличить виды культур, используемых на корм скоту. У нас был такой вид культуры (люцерна). Всем известно, что люцерна обладает способностью повышать содержание азота в почве. Кроме того, люцерновое поле не покинули люцерновые пауки (кандалы) и паутиные клещи. В результате 5-6-кратной обрезки люцерны в год численность этих вредных насекомых не увеличивалась. Сейчас эти насекомые уничтожают деревья и другие посевы в фермерских и подсобных хозяйствах людей.

7. На полях необходимо увеличить виды культур, зерно которых является пищей для людей, а стебли - пищей для скота.

Если вышеуказанные меры не будут реализованы немедленно, то мы можем столкнуться с необратимыми последствиями. Мы не осознаем, что вызываем глобальное потепление.

Литература

1. Kun.uz/news/2022.
2. Snevs.ru/book/
3. Шавкат Мирзиёев. Материалы совещания видеоселектора, прошедшего под руководством Президента. 16 сентября 2020 г.

STUDY OF LAYER COMPOSITION DURING NITRIDING AND STEAM
OXIDATION OF COMPOSITE STEELS.*Sh.A.Berdiev – senior lecturer**Karshi Engineering and Economic Institute, Karshi*

Abstract. The article examines the structural and phase changes in surface diffusion nitride-oxide coatings obtained during nitriding in a gas environment followed by oxidation of ferrite-pearlite steels in water vapor, as well as the influence of phase changes on the corrosion properties.

Key words: *ferrite, pearlite, nitriding, oxidation, diffusion coating, nitride layer, corrosion resistance.*

Introduction. When the nitride layer is oxidized in the vapor of oxyethylidene biphonic acid solution by nitriding at a high nitrogen potential, in addition to iron, in the presence of carbon in the steel matrix, a high nitrogen nitride layer ϵ -phase ($Fe_{2-3}N$) can be obtained. As a result, the carbonitride ϵ' phase ($Fe_{2-3}(NC)$) is formed, and at the next stage, due to the dissociation of high nitrogen nitride by oxidation, creating a barrier oxide layer, the nitrogen layer carbonitride γ' -phase ($Fe_{2-3}(NC, \text{oxycarbonitride})$) consists of a mixture of ϵ'' -phase ($Fe_{2-3}(NSO)$), γ' -phase (Fe_4N) (Fig. 1).

Methods. As the duration of oxidation increases, the thickness of the oxide layer due to the release of dispersed nitride particles in the inner nitride zone and dissociation with the nitride zone leads to a mixture of ϵ' -, ϵ'' -phases and γ' - decrease in the thickness of the nitride layer (Fig. 1).

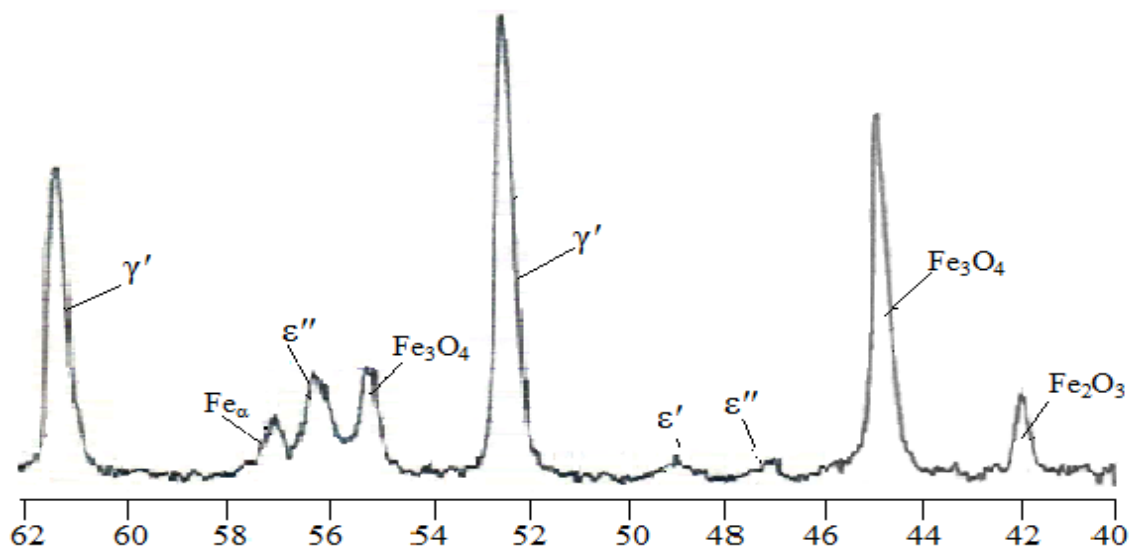


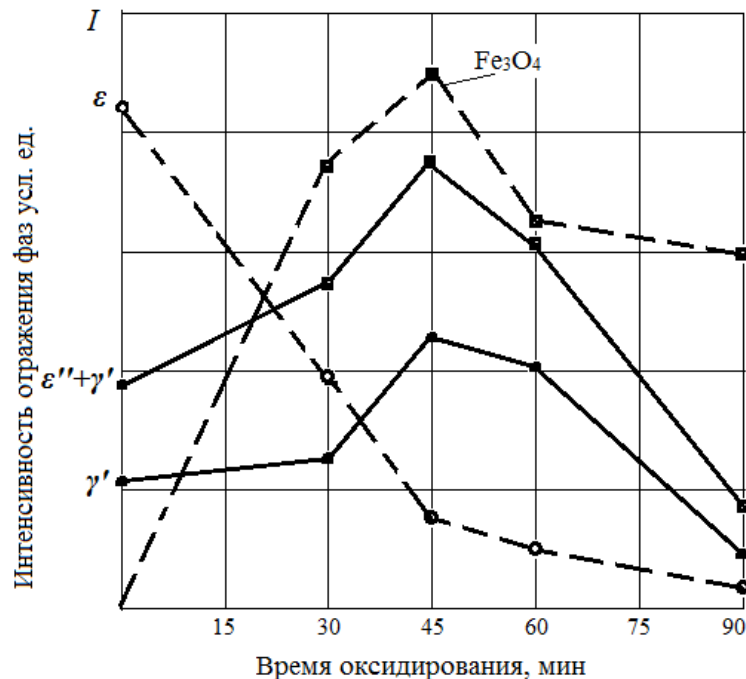
Figure 1. Diffractogram of the nitride-oxide coating surface

Nitriding and oxidation of Stal 45 at $580^{\circ}C$ for 3 hours, and nitriding and oxidation at $550^{\circ}C$ for 2.5 hours. $FeK\alpha$ radiation.

The desired structure and composition of the phase composition of the nitride phases in the nitride-oxide coating can be achieved by changing individual technological conditions at each stage of the nitro-oxidation process.

Results and its discussion

Dissociation of the γ' -phase takes place through the partial separation of the ε' -phase and the formation of a low-nitrogen ε'' -phase at the expense of carbon from the matrix, as well as the formation of the ε'' -phase at the expense of carbon and saturated atmospheric oxygen.



Picture. 2. Changes in the intensity of the $\varepsilon(101)$, $\varepsilon'+\gamma'(101)$, $\gamma'(200)$ and $Fe_3O_4(110)$ lines of the nitride layer depending on the duration of oxidation.

Nitriding of steel 45 at a temperature of 580°C for 3 hours and oxidation at a temperature of 550°C. FeK α radiation.

By forming a barrier oxide film on the surface, it is possible to ensure interdiffusion of nitrogen in the nitride layer, which allows changing the concentration of nitrogen between the phases, thereby achieving the desired composition and structure of the composition of the nitride phases.

The nitrided part of the nitride-oxide coating can obtain an oxide layer with the desired composition of Fe_3O_4 , which is responsible for the formation of anti-corrosion oxide coatings on the surface of metal objects.

As a result, the ε -phase is present in the concentration range of 4.55-11% with the γ' -phase, and undergoes dissociation of nitrides during isothermal exposure. [1].

Currently, there is very little information about the effect of the quantitative ratio of ε - and γ' -nitrides on the physico-chemical and physico-mechanical properties of the joint zone. At the same time, for the layers of compounds with a large proportion of the γ' -phase, it is possible to determine a higher corrosion resistance than the layers with a higher proportion of ε -nitrides in the composite nitride-oxide coating [2].

In the first stage of nitrification, nitrogen dissociation rate (nitrogen potential) during nitrogen oxidation at a temperature of 580°C according to the regime of two-stage change: $\alpha = 30-45\%$ in 1 hour and $\alpha = 45-60\%$ in 2 hours (total duration 3 hours) and in the second step, after oxidation at 550°C for 1 hour, a nitride layer is obtained, which is as follows:

- ε -phase, $\varepsilon+\gamma'$ -phase, γ' -phase, as well as the surface layer of Fe_3O_4 oxide (Fig. 2). [3].

A wide range of individual nitride phases lies between the saturation temperature and the eutectoid temperature of nitridation. By changing the degree of dissociation of ammonia on the surface of the treated part, it is possible to achieve the formation of high-nitrogen ϵ -phase, γ' -phase and supersaturated or low-nitrogen α -solid solution. In particular, stable nitrides consisting of separate phases are formed at wide dissociation levels in the temperature range of 560-580°C. [4].

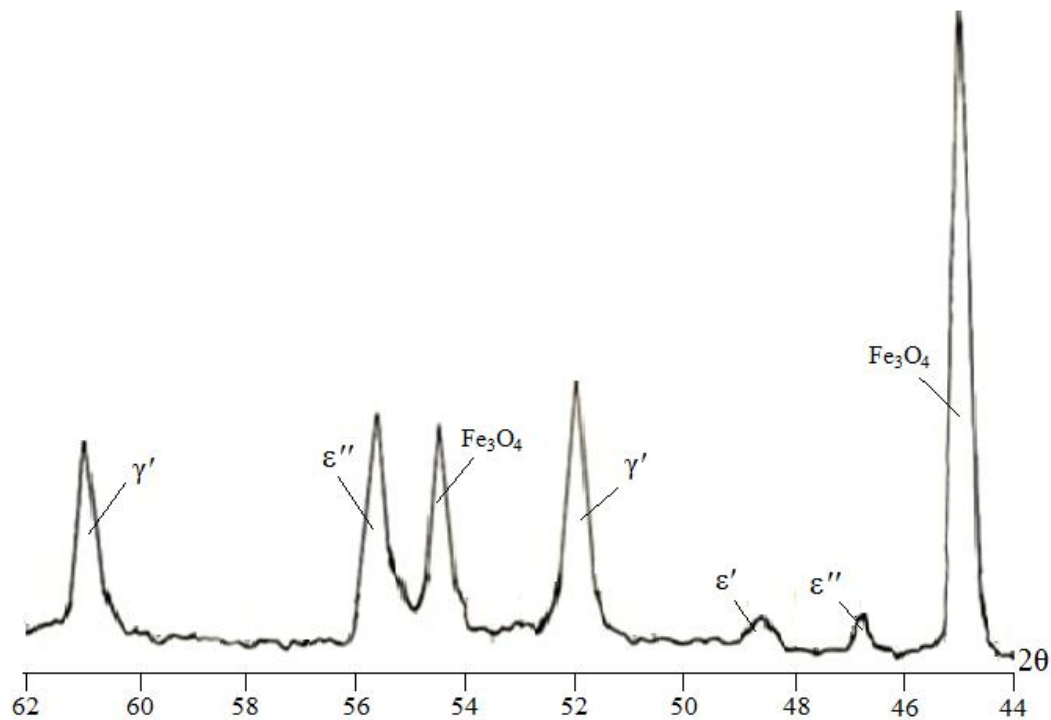
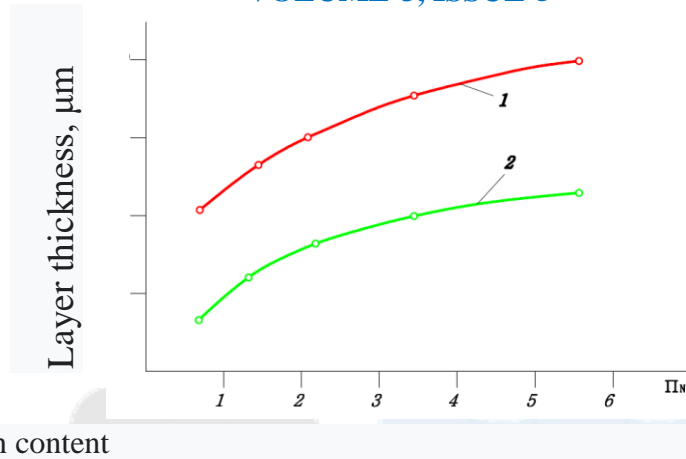


Figure 3. Diffractogram of the nitride-oxide coating surface

Nitriding at a temperature of 580°C in a two-step change in the degree of dissociation of Stal 45: 2 hours at $\alpha = 30-45\%$ and 1 hour at $\alpha = 45-60\%$ (3 hours in total) and 1 hour at 550°C oxidation. It is cooled in a vessel to 400°C, and then in oil. $FeK\alpha$ radiation.

Regulating the phase composition of the nitrided layer is also achieved by changing the nitrogen potential of the saturated atmosphere [5]. By keeping the nitrogen potential at the level of nitrogen solubility in one or another phase, it is possible to form γ' -phase (low nitride) or ϵ -phase with low nitrogen content on the surface. It is known from the obtained data that the thickness of the formed diffusion nitride layer increases with the increase of nitrogen potential. Therefore, the sample saturation conditions can be selected based on obtaining an optimal non-porous quality ϵ -phase during the nitriding step (Fig. 3) [6].



Nitrogen content

The saturation temperature is 580°C, the duration is 3 hours.

1 – the total thickness of the nitride layer; 2 is the thickness of the high-nitrogen ϵ -phase.

Figure- 4. Change of the total thickness of the nitride layer depending on the nitrogen potential of the atmosphere during nitriding

At $\pi_H > 1$ values of nitrogen potential, a quality nitride layer consisting of ϵ - and $(\epsilon + \gamma')$ - phases is obtained on the surface; with a further increase in nitrogen potential, the nitride and high-nitrogen ϵ -phase in it increase accordingly. As the nitrogen potential increases to $\pi_H < 6$, the share of the γ -phase in the nitride layer decreases, and the ϵ -phase increases. According to the phase composition of ϵ - and $(\epsilon + \gamma')$ -phases, the optimal nitride layer is formed at nitrogen potential values from 2 to 4. [7].

An increase in the thickness of the nitride layer results in blocking the diffusion of nitrogen through the nitride layer. If it is necessary to increase the duration of nitridation, due to the increase in the percentage of nitrogen potential, when $\pi_H > 5$ exceeds the high nitrogen nitride layer, the brittleness of the layer and the porosity of the ϵ -phase are determined.

Oxidation in the first stage of nitriding, reducing the duration of the nitriding process, saving ammonia and reducing the amount of nitrogen in the ϵ -phase, which increases the density of the nitride layer and reduces its brittleness.

The atmosphere in the furnace does not directly affect the process of deep absorption of nitrogen from the nitride layer to the metal surface, in this case the temperature and composition of the processed material (the amount of carbon in the steel matrix) are the decisive factors[8].

The potential of the atmosphere is then realized by reducing the amount of ammonia supplied to the furnace to a minimum and increasing the degree of dissociation.

During nitrogen saturation, a sufficient concentration gradient of nitrogen appears in the nitride layer for further diffusion processes to occur, and in the second stage of saturation, under conditions of reduced nitrogen potential, they can separate in two directions until equilibrium is reached:

Nitrogen is deeply absorbed from the nitride layer into the metal and diffuses into the external environment.

The atmosphere in the furnace does not directly affect the process of deep absorption of nitrogen from the nitride layer into the metal, in this case the temperature and composition of the processed material (the amount of carbon in the steel matrix) are the decisive factors [9].

Literature

- [1]. Лахтин Ю.М., Коган Я.Д. Азотирование стали. –М.: Машиностроение, 1976. - 256 с.
- [2]. David Pye. Practical Nitriding and Ferritic Nitrocarburizing. ASM Publication. 2003. - 256 p.
- [3]. Vanes S. E. The Nitrotec surface treatment process // Met. and Mat. 1984. V.1. № 4. p. 238-243.
- [4]. Лахтин Ю. М., Коган Я. Д., Шпис Г. И., Бемер З. Теория и технология азотирования. М. : Металлургия. 1991. 320 с.
- [5]. Лахтин Ю. М. Оксизазотирование (Нитрооксидирование) // МиТОМ. 1994, №9. -С. 2-5.
- [6]. Коган Я.Д., Эшкабилов Х.К. Оксизазотирование металлических изделий. //“Упрочняющие технологии и покрытия”, 2006, № 6. –С. 10-15.
- [7]. Коган Я.Д., Эшкабилов Х.К. Получение диффузионных нитрид-оксидных покрытий комбинированной технологией ХТО. //Материалы и упрочняющие технологии. Тезисы докл. респ. науч.-техн. конф.-Курск, 1992. –с.66.
- [8]. Kh.K.Eshkabilov, Sh.A.Berdiyev, B.Kamolov. [Hardening of cutting tools by combined gas nitriding method. IOP Conference Series: Materials Science and Engineering, Volume 1030, VII International Scientific Conference "Integration, Partnership and Innovation in Construction Science and Education" \(IPICSE 2020\) 11th-14th November 2020, Tashkent, Uzbekistan.](https://doi.org/10.1088/1757-899X/1030/1/012019) doi:10.1088/1757-899X/1030/1/012019.
- [9]. Kholikul Eshkabilov* ,Sherzod Berdiyev. Structure and properties of the modified diffusion nitride-oxide surface layer //E3S Web of Conferences 264, 05054 (2021) <https://doi.org/10.1051/e3sconf/202126405054> CONMECHYDRO - 2021
- [10]. Gulyamov, X. (2023). INTER-ETHNICITY IN THE FORMATION OF CIVIL SOCIETY IN UZBEKISTAN HARMONY AND RELIGIOUS TOLERANCE. Interpretation and Researches, 1(12). извлечено от <http://interpretationandresearches.uz/index.php/iar/article/view/1314>

UDC: 636.2.034

**“MOLECULAR GENETIC STUDIES OF THE BUSHUEV BREED OF CATTLE
IN UZBEKISTAN”**

Giyasov Khusanjon Abdullayevich

Head of the Cattle Breeding Department of the Research Institute
Livestock and Poultry Science, Ph.D. agricultural Sciences, senior researcher

Email id: giyasov@gmail.com

Annotation: Preliminary results of molecular genetic studies of the Bushuev cattle breed, which is on the verge of extinction, are presented as part of the scientific and practical project “Development of molecular panels for genetic certification of unique breeds of animals.”

The project is being carried out with the aim of preserving the valuable gene pool of the Bushuev breed, the only one bred in Uzbekistan, developing molecular panels for genetic certification and early prediction of breeding and productive qualities of animals.

In molecular genetic studies, which are being carried out on cattle for the first time in the republic, microsatellite DNA markers (short tandem repeats (STR), SNP and InDel markers) will be used.

At the first stage, stud bulls of the state breeding enterprise “Uznaslchilik” were selected for research and used for semen selection. Blood samples were taken from animals. Amplification of DNA fragments was carried out using the Rotor-Gene Q software apparatus from QIAGEN Hilden, Germany. Using invitrogen reagents from Thermo Fisher Scientific (USA), DNA from the blood of Bushuev breed bulls was isolated.

Preliminary findings have shown that the higher the level of purebred, the higher the genetic potential of the animals. Final conclusions based on the results of molecular genetic studies will be made after genotyping of animals is completed. Molecular genetic research continues.

Key words: Bushuev breed, gene pool, molecular genetic research, DNA, markers, genetic passport.

INTRODUCTION. The problem of preserving and restoring the genetic diversity of animals, especially endangered breeds, has now become a priority and is receiving great attention all over the world, including in Uzbekistan.

The Bushuev breed of cattle is one of the unique breeds of cattle breed in Uzbekistan. This breed has a number of advantages. Bushuev cattle differ from other breeds with their good adaptation to the hot conditions of the republic and resistance to parasitic blood diseases.

However, unfortunately, the number of this unique breed of cattle in the republic is sharply decreasing, the breed is on the verge of extinction. In the breeding farms of the republic, the number of purebred cows and heifers older than two years of the Bushuev breed today is less than 500 heads. Therefore, it is not for nothing that scientists note that the Bushuev breed was created within 65 years, but for 55 years they left it without attention, only exploited it.

According to S.A. Dankvert, S.K. Okhupkin, I.M. Dunin and others, the most common is the following classification of the quantitative status of breeds: Unreliable status. The number of females is 1000-5000 heads. The number of animals is rapidly declining.

1. Threatening status. The number of females is 100-1000 heads. The population is in danger of extinction; its size is insufficient to compensate for genetic losses. The degree of inbreeding increases and the viability of animals decreases.

2. Critical status. The number of females is less than 100 heads. The population is on the verge of extinction.

RELEVANCE OF THE TOPIC. To preserve the valuable gene pool of the Bushuev breed, it is necessary to conduct molecular genetic research, restore breeding farms for raising replacement heifers, and carry out purebred livestock breeding. In terms of fatty milk content, this breed ranks first among dairy and meat and dairy cattle breeds in Uzbekistan. The milk productivity of some record-breaking cows of this breed in the country's breeding farms previously amounted to 10-10.6 thousand kg per year. Under normal conditions of feeding, housing and selection and breeding work, each Bushuev cow produces an average of 3100-3400 kg of milk per year. It was registered as a breed in 1967.

The use of molecular methods and genetic markers in predicting the breeding and productive qualities of cattle is undoubtedly the greatest achievement of modern genetics.

Molecular genetic analysis methods based on the polymorphic nature of DNA make it possible to use certain genes that control the formation of economically useful traits in farm animals, despite the fact that most economically valuable indicators are quantitative traits, for the development and manifestation of which many genes are responsible. However, to date, a certain number of genes have been identified that have a pronounced effect on the phenotype of the animal. Such genes are usually called target genes, and they should be considered as DNA markers for assessing breeding traits of farm animals.

Using DNA markers, it is possible to estimate the frequency of preferred alleles for a breed or line, and taking this into account, animals are getting selected to increase the concentration of the desired allele in the studied population.

Microsatellite DNA markers (short tandem repeats, STR), SNP and InDel markers are widely used as genetic markers in world practice.

Currently, there are several dozen types of molecular markers. Microsatellites are repeating sections of DNA 2-6 bp-long. Wherein, different alleles are characterized by different numbers of repeats.

According to Getmantsev O.L., Klimenko A.I. and others DNA markers have a number of advantages: they allow one to clearly distinguish a homozygous genotype from a heterozygous one, are not influenced by environmental conditions and have a heritability coefficient $h^2=1,0$. In addition, DNA markers, as a rule, are determined regardless of age (in embryonic cells, in blood samples, animal tissue, etc.) and can be determined in both genders of the animal. Finally, it allows marking of a trait that can be determined after slaughter.

The introduction of these genetic markers into selection and breeding work allows for early prediction of breeding and productive performance of animals, as well as using this information to determine the hereditary potential of the Bushuev breed, increasing the accuracy of assessment and the efficiency of selection results.

In order to preserve the valuable gene pool, genetic certification and rational use of the unique Bushuev breed of cattle, scientists from the Uzbek Research Institute of Livestock and Poultry Breeding developed a scientific and practical project on the topic "Development of molecular panels for genetic certification of unique breeds of animals" (using the example of the Bushuev breed).

THE SCIENTIFIC SIGNIFICANCE OF THE PROJECT lies in the fact that for the first time in the conditions of the Republic of Uzbekistan, a genetic passport of the Bushuev breed

will be developed, polymorphisms of the kappa-casein (CSN3), beta-casein (CSN2), beta-lactoglobulin (BLG), alpha-lacto albumin (LALBA and others, an analysis of genotypes, haplotypes and linkage disequilibrium of LD alleles in Bushuev breed cows will be carried out. The association of polymorphism of these genes with indicators of milk productivity and milk quality will be investigated.

Also, for the first time in the conditions of the Republic of Uzbekistan, an STR analysis will be carried out for the purpose of molecular genetic identification and creation of a DNA passport of the Bushuev breed, as well as characterization of its genetic diversity and the degree of genetic differentiation.

OBJECT AND METHODS OF RESEARCH. On the farms of the Syrdarya region, three groups of experimental animals of the Bushuev breed (cows and stud bulls) were formed on the principle of analogues.

At the first stage, the object of research was breeding bulls used in semen selection at the State Breeding Enterprise "Uznaslchilik", located in the Tashkent region. Blood samples were taken from animals in accordance with the established procedure. The DNA of Bushuev breed bulls was isolated using invitrogen reagents and using molecular genetic methods on a device from Thermo Fisher Scientific USA.



Figure 1. Cow and bull of the Bushuev breed.

The reaction and amplification of DNA fragments were studied on a German-made Rotor-Gene Q QIAGEN Hilden software apparatus.

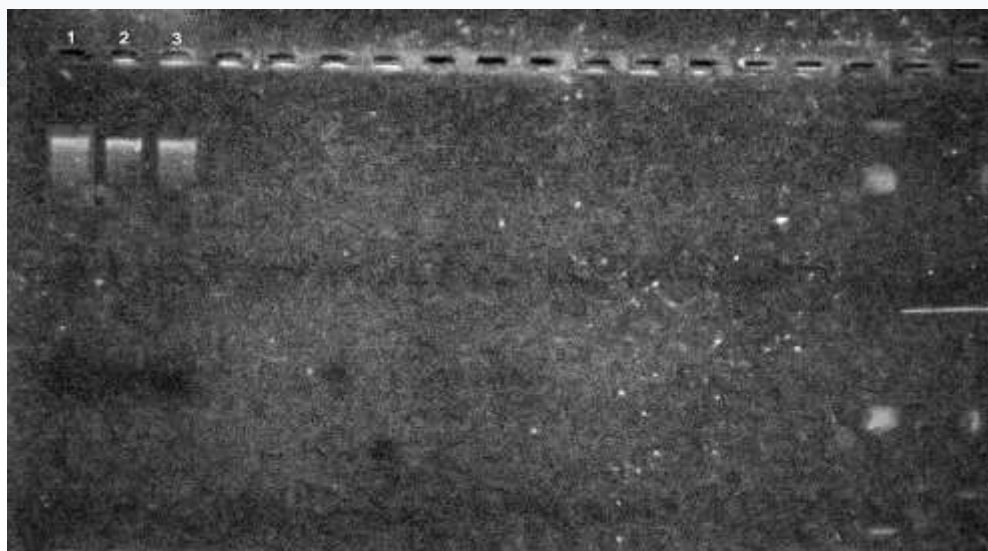


Figure 2. Electropherogram of the blood of bulls of the Bushuev breed of cattle.

PRELIMINARY RESULTS. As part of the project, scientists from the Research Institute of Livestock and Poultry Breeding, as well as the Institute of Genetics of Experimental Plant Biology of the Academy of Sciences of the Republic of Uzbekistan, took blood samples from bulls of the Bushuev breed used in the State Breeding Enterprise "Uznaslichilik", located in the Tashkent region, and carried out the first genetic research. Using invitrogen reagents from Thermo Fisher Scientific (USA), DNA from the blood of Bushuev breed bulls was isolated (Fig. 2).

CONCLUSIONS. Preliminary findings have shown that the higher the level of purebred, the higher the genetic potential of the animals.

Final conclusions based on the results of molecular genetic research of the Bushuev breed in Uzbekistan will be made after the completion of genetic analyzes of the animals.

As a result of the implementation of this project, for the first time in Uzbekistan, molecular panels for genetic certification of animals will be developed using the example of the unique Bushuev breed of cattle. A genetic data bank of biomaterials of the unique Bushuev breed will be created.

Molecular genetic research of the domestic Bushuev breed is the basis for preserving its valuable gene pool, for identification and genotyping at the population level and for further effective selection and breeding work. Molecular genetic research and experiments continue.

List of used literature:

1. Amirov Sh. Gapparov Sh., Kuzibaev G. "Bushuev cattle - national wealth", "Animal husbandry and breeding" № 2, 2020, p. 6-7
2. Getmantseva O.L., Klimenko A.I. and others. "Molecular genetic research of farm animals using the PCR-RFLP method" Textbook. Don State Agrarian University, Persianovsky, 2018. p.119
3. Giyasov Kh.A., Boybulov B.Sh. "Let's preserve the only breed of cattle in Uzbekistan", "Animal husbandry and breeding" Tashkent, 2021. № 03, p. 8-11.
4. Giyasov Kh.A., "An electronic genetic database of cattle will be developed." Journal "Agriculture and water management of Uzbekistan", 2021. № 9, p. 20.
5. Giyasov Kh.A. and others. "Genetic certification of animals to increase the efficiency of breeding work" Article in the magazine "AGRO NAUKA" 2022. № 2, p. 48-49.
6. Giyasov Kh.A. Scientific and practical project "Development of molecular panels for genetic certification of unique animal breeds" Tashkent, 2022.
7. Dankvert S.A., Okhapkin S.K., Dunin I.M. and others. "System of conservation, restoration and rational use of the gene pool of domestic small breeds of cattle" Moscow 2001.
8. Koltsov D.N. Dmitrieva V.I. and others. "EAF genotypes – blood group systems in cattle breeding for productivity", "Achievements of science and technology of the agro-industrial complex." 2019, T.33№10 p.58-61.
9. Leonova M.A., Kolosov A.Yu., Radyuk A.V. and others. "Promising marker genes for the productivity of farm animals" Moscow 2013.
10. Marzanova S.N., Devrishov D.A. and Alekseev Ya.I. "A set of primer sequences and allele specific probes for simultaneous gene diagnosis of four mutant kappa casein alleles in cattle." № RU 2646140. IPC (C12Q1/68).

Peculiarities of providing medical care in mountain areas

Ortikov Khairulla Toshnazarovich

Senior teacher of the Armed Forces Academy of the Republic of Uzbekistan

Abstract

We know that mountainous regions are regions characterized by rugged, high landforms and significant changes in elevation, often dominated by steep slopes, cliffs, and high peaks. These areas are usually characterized by difficult geographical features such as narrow valleys, deep gorges and rocky surfaces. Providing specialized medical care in mountainous areas is of great importance due to geographical features and specific problems of remote areas. Since these areas are often located far from city centers, it is difficult for patients to quickly access and reach medical facilities. In addition, mountainous terrain can exacerbate injuries and illnesses, requiring the availability of medical professionals experienced in dealing with specific medical issues that may arise in this environment. The main purpose of this article is to study the specific problems faced in the provision of medical care to military battalions operating in mountainous areas. He examines the logistical, environmental, and health-related barriers that health professionals and military personnel face in these areas. Additionally, the paper aims to identify and discuss strategies and solutions used to overcome these challenges to ensure soldiers receive the best possible medical care when deployed in mountainous terrain.

Key Keywords: Hypoxia, dehydration, telemedicine, telehealth, GPS, isolation, amphibious, evacuation, pulmonary edema, brain tumor.

Challenges in mountainous areas can be significant, making them unique and often difficult environments to navigate and develop. These challenges can be broadly categorized into geographic and environmental challenges, as you've listed. Here's a more detailed exploration of these challenges:

Geographic and Environmental Challenges in Mountainous Areas:

Steep and Uneven Terrain:

- Steep slopes and uneven terrain make construction, agriculture, and infrastructure development challenging.
- Landslides and erosion are common in these areas, posing a threat to communities and infrastructure.
- The rugged landscape can limit the available land for housing and agriculture.

Limited Road Access:

- Mountains can hinder the creation of transportation networks. Roads and bridges may be expensive and challenging to build.
- Limited road access can result in isolation for communities, impacting their access to goods, services, and emergency assistance.

Harsh Weather Conditions:

- Mountainous regions often experience extreme weather conditions. High altitudes can lead to colder temperatures, and snowfall can make roads impassable.

- Rapid weather changes, such as sudden storms and fog, can create hazards for residents and travelers.

- These conditions can also make it difficult to grow certain crops or raise livestock.

Limited Arable Land:

- Due to the steep terrain, the amount of flat, arable land is limited. This can restrict agricultural opportunities and food production.

- Terracing and other specialized farming techniques may be necessary to make the most of the available land.

Ecological Sensitivity:

- Mountain ecosystems are often delicate and sensitive to human activities. Overdevelopment and deforestation can lead to environmental degradation, habitat loss, and the depletion of natural resources.

Water Management:

- Mountains are often the source of major rivers and watersheds. Proper water management is crucial to prevent flooding downstream and ensure a consistent water supply for communities.

Cultural and Social Isolation:

- The isolation created by mountainous terrain can lead to cultural and social isolation for communities. This can result in unique cultural practices but also limit access to education and healthcare.

Tourism Impact:

- While mountainous regions can be attractive for tourism, the influx of visitors can strain local resources and infrastructure, leading to issues like overtourism.

Disaster Risk:

- Mountains are susceptible to various natural disasters, including avalanches, earthquakes, and flash floods. Preparedness and response systems must be in place to mitigate these risks.

Resource Extraction Challenges:

- Extracting resources like minerals and timber from mountainous regions can be costly and environmentally disruptive.

Addressing these challenges in mountainous areas often requires a combination of careful planning, engineering solutions, environmental preservation efforts, and community engagement. Sustainable development practices, disaster preparedness, and infrastructure improvements are key to overcoming these obstacles and improving the quality of life in mountainous regions.

These medical challenges are often encountered in remote or mountainous regions and can pose significant obstacles for medical professionals and emergency responders. Let's explore each of them in more detail:

High Altitude-Related Health Issues:

- Acute Mountain Sickness (AMS): This is a common condition that occurs at high altitudes when individuals ascend too quickly. Symptoms can include headache, nausea, dizziness, and fatigue. Severe AMS can lead to more serious conditions like High Altitude Pulmonary Edema (HAPE) and High Altitude Cerebral Edema (HACE).

- Hypoxia: At high altitudes, there is reduced oxygen in the atmosphere, which can lead to hypoxia. This can cause difficulty in breathing and can be especially problematic for individuals with pre-existing respiratory conditions.

- Dehydration: In arid high-altitude environments, dehydration can occur more quickly, and individuals may not realize they are losing fluids through increased respiration and sweat.

- Cold-Related Issues: High-altitude areas can be extremely cold, increasing the risk of frostbite and hypothermia.

- Altitude sickness prevention and management typically involve gradual acclimatization, maintaining proper hydration, and in severe cases, administering supplemental oxygen or descent to lower altitudes.

Remote Locations and Limited Resources:

- Access to medical facilities can be difficult in remote areas, especially during harsh weather conditions. Limited transportation options and communication infrastructure can impede rapid response.

- Medical supplies, including medications and medical equipment, may be in short supply or unavailable, making it challenging to provide comprehensive care.

- The remoteness of these areas can also hinder the recruitment and retention of healthcare professionals, leading to a shortage of skilled medical personnel.

- Telemedicine and telehealth solutions can be helpful in addressing some of these challenges by allowing remote consultations and medical guidance.

Unique Injury Patterns (e.g., falls, rockslides):

- In mountainous and remote regions, outdoor activities such as hiking, rock climbing, and mountaineering are common. These activities can lead to specific injury patterns, including falls from heights, sprains, fractures, and injuries related to rockslides or avalanches.

- Responding to and evacuating injured individuals from challenging terrains can be complex and time-consuming.

- Preemptive measures such as proper training, use of safety equipment, and well-marked trails can help reduce the risk of these injuries.

Overall, addressing these medical challenges in high-altitude and remote locations requires a combination of preventative measures, access to medical expertise, and adaptation to the unique environmental and logistical constraints of these regions. Public awareness, education, and preparedness are also essential to minimize the impact of these challenges on residents and visitors.

Specialized training for medical personnel plays a critical role in preparing them for various challenges that can arise in demanding environments. Specifically, training in altitude medicine, navigation and rescue techniques for difficult terrain, and

adaptation to extreme weather conditions is essential. Let's discuss each of these topics in detail:

Altitude Medicine and its Importance:

Altitude medicine primarily focuses on the health risks associated with high altitudes. Medical professionals who receive specialized training in altitude medicine are equipped to deal with conditions such as altitude sickness, hypoxia, and other altitude-related illnesses that individuals might experience at high elevations. Understanding the physiological changes that occur at high altitudes, the treatment of altitude-related illnesses, and the management of emergency situations in such environments are key components of this training. With the increasing popularity of high-altitude adventure tourism and the expansion of high-altitude living and working environments, the significance of this training cannot be overstated.

Navigation and Rescue Techniques for Difficult Terrain:

In remote and challenging terrains, medical personnel may need to navigate difficult landscapes to reach and provide aid to individuals in need. Specialized training in navigation and rescue techniques for such terrains is crucial for ensuring the timely and effective delivery of medical services. This training typically involves mastering skills such as using maps and compasses, understanding GPS systems, employing rope and rappelling techniques, and utilizing specialized equipment for rescues in rugged environments. By honing these skills, medical personnel can ensure efficient and safe access to patients, even in the most remote and challenging locations.

Adaptation to Extreme Weather Conditions:

Extreme weather conditions can significantly impact the provision of medical care and treatment. Training in adapting to such conditions involves understanding how different weather patterns can affect the human body and medical equipment. Medical professionals trained in this aspect are prepared to handle situations ranging from heat-related illnesses to cold-related injuries. They are also equipped to manage medical equipment effectively in adverse weather conditions. This training is particularly crucial in regions where weather fluctuations can be severe and sudden, posing a threat to the well-being of both patients and medical personnel.

By integrating these specialized training modules into the education and development of medical personnel, healthcare providers can ensure that they are well-prepared to handle the unique challenges presented by various environments and provide optimal care to individuals in need, regardless of the circumstances.

Portable Oxygen Systems

- Portable oxygen systems are essential for addressing altitude-related health issues in mountainous terrain, such as altitude sickness and hypoxia.
- Consider different types of oxygen delivery systems, including oxygen cylinders or concentrators, and ensure they are lightweight and easy to transport.
- Regularly check and maintain oxygen equipment to ensure it functions correctly in high-altitude conditions.

Lightweight, Portable Medical Kits

- Medical kits should be customized for mountainous environments and include essential supplies for addressing common injuries and illnesses in such settings.

- Ensure the medical kits are lightweight and compact for ease of transport during hikes and expeditions.

- Contents should include bandages, antiseptics, pain relievers, blister treatment, and medications for altitude sickness.

Medication and Supply Considerations

Adjusting Medical Kits for Specific Mountainous Needs

- Customize medical kits to address the unique health risks associated with high-altitude environments.

- Include medications for altitude sickness, such as acetazolamide (Diamox), and understand their proper use.

- Consider adding supplies for treating cold-related injuries, like frostbite and hypothermia, such as warm blankets, heat packs, and appropriate dressings.

Storing and Transporting Medication in Varied Conditions

- Medications are sensitive to temperature and humidity variations. Ensure proper storage and transport:

- Use temperature-resistant containers to protect medications from extreme cold or heat.

- Store medications in airtight, waterproof bags to shield them from moisture.

- Keep medications in a secure, easily accessible location within the medical kit.

- Rotate medications regularly to prevent expiration.

- Educate the team on the proper storage and handling of medications to maintain their efficacy.

In mountainous terrain, having the right equipment and supplies can mean the difference between life and death. It's crucial to be well-prepared, and your medical equipment and supplies should align with the specific challenges of high-altitude environments. Regular training and knowledge of how to use these supplies effectively are equally important for the safety of all involved.

Remote mountainous areas present unique challenges for communication due to their rugged terrain, isolation, and adverse weather conditions. Some of the key challenges include:

1. **Limited Infrastructure:** Mountainous regions often lack the necessary infrastructure for reliable communication. This includes the absence of cell towers, power sources, and internet connectivity.

2. **Terrain and Topography:** The steep and uneven terrain can obstruct signals and lead to signal dead zones. This can make it difficult to establish clear and consistent communication channels.

3. **Weather Conditions:** Mountainous areas are prone to rapidly changing weather conditions, such as heavy fog, rain, and snow. These conditions can further disrupt communication, especially for traditional radio signals.

4. **Distance and Isolation:** Remote mountain areas are often far from urban centers and emergency services, making communication crucial for safety and coordination during emergencies.

5. Line of Sight: Radio waves, such as VHF and UHF, rely on a clear line of sight between transmitting and receiving antennas. The presence of mountains and valleys can obstruct this line of sight, hindering communication.

To address the communication challenges in remote mountainous areas, various tools and technologies are utilized:

1. Satellite Phones: Satellite phones provide a reliable means of communication in areas with no cellular coverage. They connect to satellites in orbit, allowing users to make calls, send texts, and access data from virtually anywhere on the planet.

2. Two-Way Radios: Two-way radios, such as VHF and UHF radios, are commonly used by search and rescue teams in mountainous areas. They can function in areas with limited infrastructure and are often effective for short-range communication.

3. Personal Locator Beacons (PLBs): PLBs are handheld devices that use satellites to transmit distress signals in emergencies. They can pinpoint a user's location and send out an SOS signal for help.

4. GPS Devices: Global Positioning System (GPS) devices help teams and individuals in remote mountains accurately determine their location and navigate through challenging terrain.

5. Emergency Communication Apps: Some apps are designed for off-grid communication by utilizing smartphone technology and satellite connectivity. These apps can transmit messages and location information.

Coordination with Local Search and Rescue Teams:

Effective coordination with local search and rescue teams is essential for safety in remote mountainous areas. Here are some key points:

1. Pre-established Protocols: Establish clear protocols and communication channels with local search and rescue teams. Ensure that everyone involved understands their roles and responsibilities.

2. Information Sharing: Share critical information about the mission, location, and conditions with the local teams. This includes details like the number of missing individuals, their last known location, and any specific medical or logistical requirements.

3. Frequency of Updates: Maintain regular updates with local teams to keep them informed about your progress and any changes in the situation. Ensure a feedback loop for real-time information exchange.

4. Emergency Response Plans: Collaborate on emergency response plans, including evacuation routes and procedures in case of worsening conditions or unforeseen events.

5. Resource Sharing: In remote areas, resources may be limited. Collaborate on the sharing of equipment, personnel, and expertise to enhance the effectiveness of search and rescue operations.

Overall, communication and coordination in remote mountainous areas demand a combination of reliable technology and effective teamwork to address the challenges presented by the environment and ensure the safety of all involved.

Conclusions and suggestions

This study highlights the need for further research and development in the field of mountain battalion medicine. The challenges faced in mountainous areas are constantly increasing and therefore, continuous efforts are needed to improve the capacity and effectiveness of medical care in these areas. By investing in research and development, we can better equip military personnel with the tools, knowledge, and strategies needed to overcome the unique challenges of mountain environments, thereby saving lives and increasing the overall success of military operations in such terrain. As we continue to adapt to the complexities of mountain battalion medicine, we must be mindful of our commitment to addressing these challenges comprehensively, focusing on specialized training, equipment, and communication, and increasing our understanding and capabilities.

REFERENCES:

1. Medical Service in Divisions, Separate Brigades and the Armored Cavalry Regiment. United States. Department of the Army. 1968
2. Army Medical Bulletin. United States. Army Medical Department (1968), United States. Army Medical Service. May 5, 2022.
3. The Bulletin of the U.S. Army Medical Department. United States. Army Medical Dept. July 22, 2009.
4. Lex.uz website.
5. Kun.uz website.



UDK:631.674.1.

**ZAMONAVIY SUV TEJAMKOR SUG`ORISH TEXNOLOGIYALARIGA
O`TISH- ZAMON TALABI**

Egamurodov Shaxboz Shavkat o`g`li - "Tomchilatib va intensiv sug`orish texnologiyalar" kafedrasida o`qituvchisi, E-mail: egamurodovshaxboz8660@gmail.com, "TIQXMMI" MTU Buxoro tabiiy resurslarni boshqarish instituti

Soliyev Jaloliddin Sirojiddin o`g`li Suv Xo`jaligi va melioratsiya yo`nalishi talabasi, E-mail jalolkhansoliyev@gmail.com "TIQXMMI" MTU Buxoro tabiiy resurslarni boshqarish instituti

Anotatsiya. Ushbu maqolada zamonaviy, innovatsion sug`orish texnologiyalarining ahamiyati, ulardan foydalanish samaradorligining qishloq xo`jaligi ekinlari rivojiga ta`siri va ilmiy asoslarga tayanib takliflar bayon etilgan.

Kalit so`zlar. Zamonaviy sug`orish texnologiyasi, tomchilatib sug`orish, suv tejalishi, suvni iqtisod qilish.

**ПЕРЕХОД НА СОВРЕМЕННЫЕ ВОДОСБЕРЕГАЮЩИЕ ТЕХНОЛОГИИ
ОРОШЕНИЯ – ТРЕБОВАНИЕ ВРЕМЕНИ**

Эгамуродов Шахбоз Шавкатвич – преподаватель кафедры «Технологии капельного и интенсивного орошения», E-mail: egamurodovshaxboz8660@gmail.com, Бухарский институт управления природными ресурсами НИУ "ТИИИМСХ"

Солиев Джалолiddин Сироджиддин, студент кафедры водного хозяйства и мелиорации, E-mail jalolkhansoliyev@gmail.com Бухарский институт управления природными ресурсами НИУ "ТИИИМСХ"

Аннотация. В данной статье описывается важность современных инновационных технологий орошения, влияние их использования на развитие сельскохозяйственных культур, а также предложения, основанные на научных принципах.

Ключевые слова. Современные технологии орошения, капельное орошение, водосбережение, водосбережение.

**TRANSITION TO MODERN WATER- SAVING IRRIGATION TECHNOLOGIES
- THE NEED OF THE TIME**

Egamurodov Shakhboz Shavkat - teacher of the "Drip and intensive irrigation technologies" department, E-mail: egamurodovshaxboz8660@gmail.com, of the Bukhara Institute of Natural Resources Management of the NRU "TIAME"

Soliyev Jaloliddin Sirojiddin, student of Water Management and Reclamation Department,

E-mail jalolkhansoliyev@gmail.com of the Bukhara Institute of Natural Resources Management of the NRU "TIAME"

Annotation. This article describes the importance of modern, innovative irrigation technologies, the effect of their use on the development of agricultural crops, and suggestions based on scientific principles.

Key words. Modern irrigation technology, drip irrigation, water conservation, water economy

Introduction. Up to the present time, the water resources necessary for agriculture in our country are becoming scarce every year. This, in turn, requires the rational use of water resources, the involvement of modern, innovative irrigation technologies in the field. If we look at concrete facts, in 1990, our Republic used 64 billion m³ of water resources, but by 2018, this figure has decreased to 46.8 billion m³. It is noteworthy that the population of our Republic has increased from 16 million to 33.4 million people during this period, which shows the importance of the task before us.

According to the President's decision No. 3823 dated July 2, 2018 "Measures to increase the efficiency of water resources use" and "On measures to further improve the water resources management system" dated October 9, 2019 Resolution No. PQ-4486 aims to further improve the system of water resources management and the use of water management facilities, to introduce market principles and mechanisms in the field of water management, as well as to develop science in this field.

To ensure the implementation of these decisions, the Ministry of Water Management is tasked with developing a concept for 2020-2030 and putting it into practice. From this we can see that effective and rational use of water resources is one of the priority directions under the control of our head of state.

The use of modern irrigation technologies not only saves water resources, but also increases economic efficiency. If we consider drip irrigation, this irrigation method is an engineering technique designed to deliver the appropriate amount of water to the root layer of the crop using hoses. is a method of irrigation.

During drip irrigation, the water is delivered not to the entire field, but to the part of the field where crops are grown, to the root layer of the crop. Along with water, nutrients are also given in a dissolved state. In such conditions, the water reaches the crops completely without wasting nutrients.

In all parts of the field, the crop develops uniformly and gives a stable yield. When the crops are irrigated by drip, water is not absorbed into the soil in vain, and water is not released from the field. As a result, a large part of the water planned for irrigation is saved.

During drip irrigation, water is saved due to:

- The amount of water for irrigation (irrigation rate) is adapted to the daily water demand of the crop (irrigation rate and duration are determined based on the calculation of actual evaporation and transpiration);

- As water is given directly to the layer where the root of the plant develops, the wetted area decreases;

- Water evaporation from the soil surface is reduced due to the large part of the crop field remaining dry;

- Due to the reduced development of weeds in the field, only the crop receives all the water given for irrigation; -

- The absorption of water for irrigation into the soil is reduced;

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-3, ISSUE-5

- Water does not come out of the field.

In drip irrigation, only the part of the field where the crop is planted is irrigated, not the field, but the crop. For example: 30-65 m³/ha (on average 50-55 m³/ha) of water is used to irrigate 1 hectare of garden 1 time. During the whole season, the garden is irrigated 55-70 times, which means drip irrigation 2 times less water than usual is used when harvesting. As a result, drip irrigation saves 25% to 50% of water depending on the type of crop compared to other irrigation



methods.

Fig. 1.. Drip irrigation method.



Figure 2. Irrigation of agricultural crops.

In the method of sprinkler irrigation, water is transformed from runoff into a droplet state with the help of a special machine, device or aggregates, and sprinkled on the soil surface and plants as artificial rain. Features of the sprinkler irrigation method include moistening of the soil, plant and surface air layer, the soil moisture layer is not very deep, frequent irrigation with small irrigation rates and irrigation field. It is possible to evenly distribute water along



3 – picture. Sprinkler irrigation method.

Irrigation is the transfer of water from the state of flow to the state of soil moisture. The main essence of irrigation is to provide the necessary moisture for agricultural crops, to ensure and control the water, nutrient, air and heat regimes of the soil necessary for crops, as well as the optimal microclimate conditions in the irrigated area. Irrigation is divided into regular and one-time irrigation.

In regular irrigation, based on the natural and climatic conditions of the region and the water demand of the plant, the soil is regularly moistened and irrigated during the vegetation period. In one-time irrigation, the soil is watered once a year: in spring or autumn, moisture-accumulating irrigation is carried out with the help of ports. Crop irrigation is the irrigation of all crops used in arid regions. Selective irrigation is the irrigation of certain water-demanding and economically important crops (for example, vegetable crops in the crop rotation system) in arid and unstable regions.

Major irrigation is a large irrigation system implemented at the expense of the state budget. Small irrigation means areas irrigated using small (limited) water sources at the expense of water consumers. Depending on the duration of irrigation, it is divided into vegetation and non-vegetation irrigation. Vegetation irrigation is to ensure the water requirements of crops during the growing season. According to their function, they are moisturizing, nourishing, aerosol and

warming. No-vegetation irrigations are moisture-accumulating, plowing and pre-sowing irrigations, salt washing and provocation irrigations - weeding irrigations.

Irrigation water is used to form the dry mass of the plant during its growth. The rest is spent on evaporation through the leaves and trunk of the plant - transpiration.

Transpiration is the evaporation of water from the leaves of plants. The transpiration coefficient is the amount of water used to form one unit of dry mass of the plant.

Improper irrigation destroys the soil structure, the air and nutrient regime is disrupted, nutrients are washed down from the active layer where the root is located, the level of seepage water rises, waterlogging and salinity occur, plant productivity decreases, soil lead to leaching and environmental pollution.

Under the influence of irrigation, there are significant changes in the agronomic properties of the soil, water-weather, heat, nutrient regimes, microbiological activity of the soil, and the microclimate of the irrigated area. Irrigation changes the forces that hold soil particles together. Irrigation - has a great influence on the microclimate of the regions - the temperature and humidity of the surface part of the atmosphere and the upper layers of the soil change, water is stored in the body and leaves of plants, lowers their temperature, they develop better, the shade expands, and the thermal regime of the soil improves.

Irrigation affects the process of soil formation, its salt and air regime, chemical and microbiological processes, the accumulation and decay of organic matter. As a result, a fertile layer is formed. Water dissolves nutrients in the soil and improves plant nutrition. As a result of irrigation, microbiological processes in the soil are activated: as a result of ammonification and nitrification (activity of nitrogen-producing bacteria), nitrogen nutrition of plants improves.

Due to the strong development of the root part of the plant as a result of irrigation, the soil is enriched with its residues - organic substances. Irrigation provides plants with a large leaf surface, a strong root system, and a large vegetative mass, leading to an increase in its yield and quality of the crop.

Irrigation with short hoses

When watering with short cans:

-the amount of waste water is reduced by 16-20%,

- cans are evenly moistened along their entire length.



Figure 4. Watering with a short cans

Based on the above, if only 1% of the irrigated area of our country is specialized for drip irrigation, then according to the tasks of the head of state, it is tasked to increase this indicator to 50% by 2030.

In conclusion, switching to modern water-saving irrigation is the most optimal solution in the current shortage of water resources. As a result of this, a lot of labor force, water resources, fuel and lubricant products are saved, and it also leads to high economic efficiency. In addition, it has been scientifically proven that an increase in productivity has been achieved during irrigation with the help of these methods.

№	ADABIYOTLAR	REFERENCE
1.	O'zbekiston Respublikasi Prezidentining 2018-yil 2-iyuldagi 3823-sonli qarori	Resolution No. 3823 of the President of the Republic of Uzbekistan dated July 2, 2018
2.	O'zbekiston Respublikasi Prezidentining 2019-yil 9-oktabrdagi 4486-sonli qarori.	Resolution No. 4486 of the President of the Republic of Uzbekistan dated October 9, 2019.
3	M.X. Xamidov "Qishloq xo'jaligi gidrotexnika melioratsiyasi".	M.Kh. Khamidov "Agricultural hydrotechnical melioration".
4	Irrigatsiya va suv muammolari ilmiy tadqiqot instituti ma'lumotlari-2018 yil.	Data of the Scientific Research Institute of Irrigation and Water Problems-2018

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

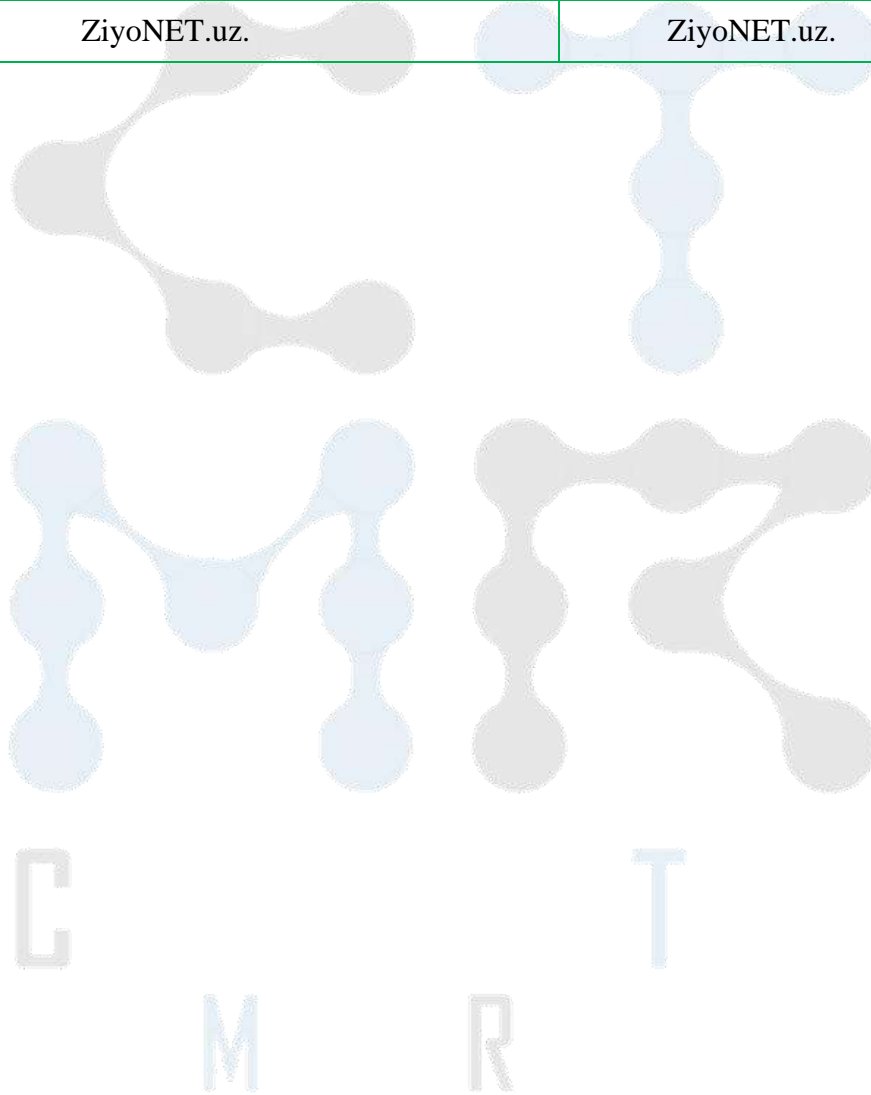
VOLUME-3, ISSUE-5

5	Xamidov M.X., Begmatov I.A., Isaev S.X., Mamatov S.A. "Suv tejamkor sug'orish texnologiyalari" O'quv qo'llanma. T., TIMI bosmaxonasi, 2015. 243 bet.	Khamidov M.Kh., Begmatov I.A., Isaev S.Kh., Mamatov S.A. "Water-saving irrigation technologies" Instructional manual. T., TIMI printing house, 2015. 243 pages.
6	Аверьянов С.Ф. Борьба с засолением орошаемых земель. М., Колос, 1978. -288 с.	Averyanov S.F. Fight against salinization of irrigated lands. M., Kolos, 1978. -288 p.
7	Рахимбоев Ф.М., Хамидов М.Х. Қишлоқ хўжалик мелиорацияси. Тошкент: Ўзбекистон, 1996.-366 б.	Rakhimboev F.M., Khamidov M.Kh. Tashkent: Uzbekiston, 1996.-366 b.
8	www.greenworld.org.ru	www.greenworld.org.ru
9	I.M. Makhmudova, A.T. Salahoddinov. Qishloq va yaylovlar suv ta'minoti. 2012. 177 b.	I.M. Makhmudova, A.T. Salahoddinov. Rural and pasture water supply. 2012. 177 p.
10	Abramov.N.N <<Vodosnabjenie>>M.:<<Stroyizdat>>, 1982.- 480 s.	Abramov.N.N <<Vodosnabjenie>>M.:<<Stroyizdat>>, 1982.- 480 p.
11	Abramov N.N., Pospelova M.M I dr. Raschet vodoprovodix setey. -M.: Stroyizdat, 1938-278 s.	Abramov N.N., Pospelova M.M I dr. Raschet vodoprovodix setey. - M.: Stroyizdat, 1938-278 p.
12	Abramov N.N., Teoriya i metodika rascheta sistem podachi I raspredeleniya void . -M.: Stroyizdat, 1972.-288s	Abramov N.N., Theory and method of rascheta system podachi I raspredeleniya void. -M.: Stroyizdat, 1972.-288p
13	VNII VODGEO (F. A SHevelev). Tablitsi dlya gidravlikcheskogo rascheta stalnix chugunnix asbestotsementnix I plastmassovix trub.-M.:Stroyizdat,1970.	VNII VODGEO (F. A SHevelev). Tablitsi dlya hidravlikcheskogo rascheta stalnix chugunnix asbestotsementnix I plastmassovix trub.-M.: Stroyizdat, 1970.
14	VSN 33-2.2 Vedomstvennix stroitenie normi . M.: Soyuzvodproekt 1984. -83s.	VSN 33-2.2 Vedomstvennix stroitenie normi. M.: Soyuzvodproekt 1984. -83p.
15	Egamurodov Sh.Sh. Scientific basis of the effect of groundwater sources on annual plant growth in current natural conditions 2023	Egamurodov Sh.Sh. Scientific basis of the effect of groundwater sources on annual plant growth in current natural conditions 2023
16	Egamurodov Shaxboz Shavkat o'g'li "Yaylovlarda lokal sug'rish tarmoqlari hisobi"	Egamurodov Shakhboz Shavkat Oguli "Calculation of local irrigation networks in pastures"

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-3, ISSUE-5

17	Egamurodov Shaxboz Shavkat o'g'li zamonaviy suv tejankor sug'orish texnologiyalariga o'tish- zamon talabi	Egamurodov Shaxboz Shavkat o'g'li transition to modern water-saving irrigation technologies - the need of the
18	www.nature.uz;	www.nature.uz;
19	www.atrofmuhit.com;	www.atrofmuhit.com;
20	ZiyoNET.uz.	ZiyoNET.uz.



**KARBAMID-FORMALDEGID VA 1-NAFTILAMIN ASOSIDA OLINGAN IONIT
SINTEZI VA TADQIQOTI**

Yulchiyeva Marg'uba G'afurjonovna,

Termiz muhandislik-texnologiya instituti, kat. o'qituvchisi,

E-mail: margubayulchieva86@gmail.com

Annotatsiya

Ushbu maqolada d-metallar kationlari bilan kompleks hosil qilish xususiyatlarga ega bo'lgan karbamid, formaldegid va 1-naftilamin (KF-NA) asosida olingan ionitning fizik-kimyoviy xossalari dastlabki moddalar mol nisbatlarining ta'siri o'rganilgan. Karbamid, formaldegid va 1-naftilamin 2:5:0,2 mol nisbatda bo'lganda sorbsion sig'im yuqori ekanligi kuzatildi. Ion almashinuvchilarning haroratga barqarorligi termik analizda aniqlangan.

Kalit so'zlar: ionit, karbamid, formaldegid, 1-naftilamin, termik tadqiqotlar.

**СИНТЕЗ И ИССЛЕДОВАНИЕ ИОНИТОВ, ПОЛУЧЕННЫХ НА ОСНОВЕ
КАРБАМИД-ФОРМАЛЬДЕГИДА И 1-НАФТИЛАМИНА**

Йулчиева Маргуба Гафуржоновна

ст. преподаватель, Термезского инженерно-технологического

института,

E-mail: margubayulchieva86@gmail.com

Аннотация

В данной статье изучено влияние мольного соотношения исходных веществ на физико-химические свойства сорбента на основе карбамида, формальдегида и 1-нафтиламина (КФ-НА), обладающего комплексообразующими свойствами с катионами d-металлов. Было замечено, что сорбционная емкость высока, когда карбамид, формальдегид и 1-нафтиламин находятся в мольном соотношении 2:5:0.2. Температурную стабильность ионообменников определяли термическим анализом.

Ключевые слова: ионит, карбамид, формальдегид, 1-нафтиламин, термические исследования.

**SYNTHESIS AND INVESTIGATION OF IONITES OBTAINED ON THE BASED
ON FORMALDEHYDE, UREA, 1-NAPHTHYLAMINE**

Yulchiyeva Marguba

teacher, Termez Engineering and Technology Institute,

E-mail: margubayulchieva86@gmail.com

Annotation

In this article, the influence of the molar ratio of the initial substances on the physicochemical properties of the sorbent based on carbamide, formaldehyde and 1-naphthylamine (UF-NA), which has complexing properties with d-metal cations, has been studied. It has been observed that the sorption capacity is high when urea, formaldehyde and 1-naphthylamine are in a molar ratio of 2:5:0.2. The temperature stability of ion exchangers was determined by thermal analysis.

Keywords: Ionit, urea, formaldehyde, 1-naphthylamine, thermal studies.

KIRISH. Kompleks hosil qiluvchi ionitlar eritma tarkibidagi d-metallarni konsentratsiyalash va ajratish uchun keng qo'llaniladi. Oraliq metall ionlariga nisbatan yuqori selektivlikka ega ionitlardan foydalanish, oqava suvlarni tozalash amaliyotida istiqbolli yo'nalishlardan biridir. Hozirda yangi kompleks hosil qiluvchi ionitlarni sintez qilish, ular yordamida eritmalardan rangli metallarini sorbsiyalash usullari bilan ajratish, sorbsiya jarayonida hosil bo'ladigan koordinatsion birikmalarning tarkibi, tuzilishi va fizik-kimyoviy xossalarni o'rganish kimyo sanoatining asosiy vazifasidir.

ADABIYOTLAR TAHLILI. So'nggi yillarda ion almashinadigan materiallarni olish sohasida sezilarli yutuqlarga erishildi, ammo ularning ko'plari, ayniqsa polikondensatsiya turi samaradorlik, sorbsiya va selektivlik ehtiyojlarini qondirmaydi, bu esa yangi ion almashinadigan polimerlar sintezi zarurligini ko'rsatadi [1].

Ushbu tadqiqot ishida karbamid formaldegid, fosfor kislotasining polikondensatsiya reaksiyasi asosida kompleks hosil qiluvchi ko'p funksiyali polimer ionitlar [2, 3], sirt qavatida yangi mezog'ovakli ionitlar azot, fosfor, kislorod va oltingugurt saqlovchi ligandlar sintez qilingan [4].

Maqolada karbamid formaldegid va 2,4-dinitrofenilgidrazin [5, 6] hamda karbamid formaldegid va anilinni [12] polikondensatsiya reaksiyasi natijasida olingan ionitning sintez sharoitlari, termik tadqiqotlari va ion almashinuvchining ba'zi d-metall kationlari bilan hosil qilingan kompleks birikmalari tahlil qilingan.

Karbamid formaldegid fenolsulfoftalein kislotasi asosida olingan helat hosil qiluvchi ionitga, dastlabki moddalar mol nisbatlari ta'siri, IQ-spektrlari kuzatilib, taxminiy formulalari keltirilgan [7]. Sintez qilingan kompleks hosil qiluvchi ionitning fizik-kimyoviy va sorbsiyon xossalari tahlil qilingan [8] va sintezlangan xelatlovchi ionit bilan Cu (II), Zn (II), Cd (II) ionlarining kompleks hosil bo'lish jarayoni o'rganilgan [9]. Shuningdek ditiofosfor kislotasi bilan dietil-, diizopropil-, diizobutil- asosida olingan ionitlar 0,05 M Ag (I), Cu (II), Ni (II), Fe (III) ionlari eritmalarida sorbsiyalangandan so'ng hosil bo'lgan koordinatsion birikmalarning IQ-spektrlari tahlil qilingan [10, 11].

Shunday qilib, tadqiqotning maqsadi: sanoat chiqindi suvlari tarbihidagi d-metall ionlarini sorbsiyalovchi karbamid, formaldegid va 1-naftilamin asosida olingan ionit sintezi, tadqiqotini o'rganishdir.

TADQIQOT METODOLOGIYASI. Karbamid formaldegid smolasini 1-naftilamin bilan modifikatsiyalash yo'li bilan kompleks hosil qiluvchi ionit sintezi o'rganilib, reaksiyon aralashma 90-100 °C haroratda 1,5-2 soat qizdirib, **qizil sarg'ish rangli qattiq g'ovaksimon ionit sintez qilindi. Reaksiya unumi 85%.** [13].

Termoanalitik tadqiqotlar DTG -60 SHIMADZU (Yaponiya) qurilmasida, K tipidagi termokuplli va platina tigellarda, barcha o'lchovlar argon oqim tezligi 100 ml/min bo'lgan inert argon atmosferada olib borildi. O'lchovlarning harorat diapazoni 10-600 °C, isitish tezligi 20 K/min. Termoanalitik tadqiqotlar Termiz davlat universiteti ilmiy laboratoriyasida tadqiq etildi.

NATIJALAR TAHLILI. Sintez qilingan kompleks hosil qiluvchi ionitning asosiy sorbsion va fizik-kimyoviy xususiyatlari uning konsentratsiyasiga bog'liq bo'ladi. Turli xil miqdordagi o'zaro bog'langan kompleks ionitni olish uchun 1-naftilaminning turli namunalari sintez qilindi va Cu²⁺, Zn²⁺, Co²⁺, Ni²⁺ Cd²⁺ ionlari bilan sorbsion xossalari kuzatildi. Polikondensatsiya reaksiyasi, reaksiyaga kirishuvchi moddalar: karbamid, formaldegid va 1-naftilamin mos ravishda 2:5:0.1 dan 2:5:0.3 gacha bo'lgan mol nisbatlarida amalga oshirildi. 1-

naftilamin miqdorining o'zgarishi ayrim d-metallarning sorbsiyalanish darajasi bilan aniqlab olindi (1-jadval).

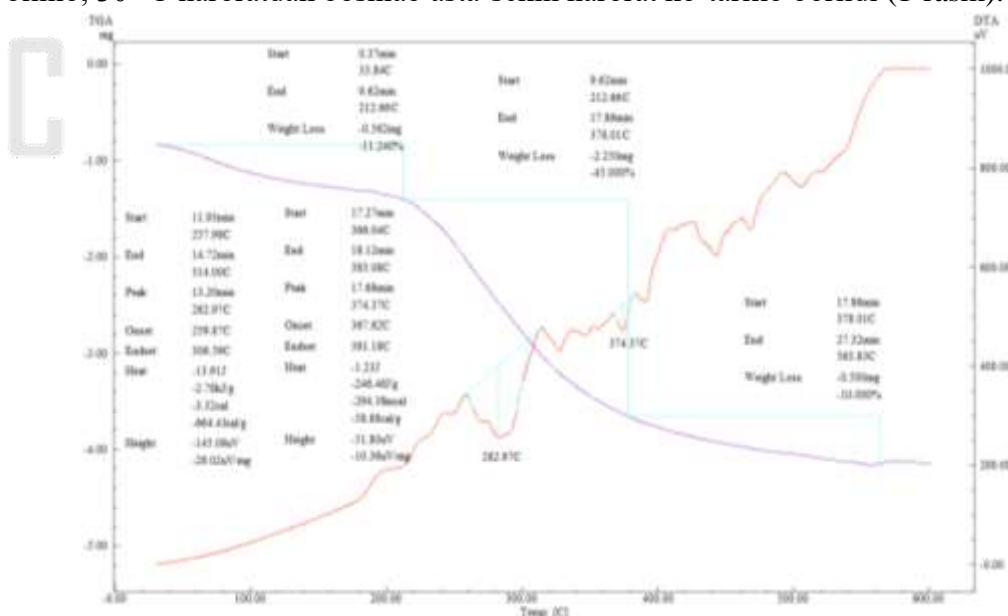
Jadval 1

KF-NAning sorbsion xossalari reaktivlar nisbatiga bog'liqligi

Ko'rsatkichlarni nomlanishi		Mollar nisbatida:		
		karbamid, formaldegid, 1-naftilamin		
		1:5:0,1	1:5:0,2	1:5:0,3
Sochma og'irligi, g/ml		0.72	0.58	0.5
0,1 n eritmalar uchun statik almashinuv sig'imi, mg-ekv/g:	Cu ²⁺	3.4	3.9	3.6
	Zn ²⁺	3.5	3.8	3.6
	Co ²⁺	2.6	2.8	2.5
	Ni ²⁺	3.3	3.7	3.5
	Cd ²⁺	1.7	2.6	1.6

Jadval ma'lumotlaridan ko'rinadiki, 1-naftilamin miqdori ortishi bilan ion almashinuv qobiliyati asta-sekin kamayadi. KF-NA 2:5:0.3 mol miqdorda ion almashinuvchi kompleks ionitning funksional guruhlari bir-biriga yaqinlashib, g'ovak radiusning pasayishi, ionlarning tarqalishiga geometrik to'siqlar hosil qiladi. Bo'kishning pasayishi natijasida metallarning sorbsiyalanishi pasayishi kuzatiladi. O'tkazilgan tadqiqotlarga ko'ra, **1-naftilamin miqdori ortib borishi bilan** eng yaxshi ko'rsatkichga ega bo'lgan kompleks ionit mos ravishda karbamid, formaldegid va **1-naftilaminning** 2: 5: 0.2 nisbatida olinganidir.

Kompleks hosil qiluvchi ionitning termik turg'unligini o'rganish bo'yicha tadqiqotlar olib borildi. Ionitni qizdirish jarayonida birikma tuzilishining destruksiyasi natijasida massa o'zgarishi bilan kuzatiladigan turli ekzotermik va endotermik issiqlik effektlari derivatografik analiz natijalari asosida tahlil qilindi. Termik tahlilning barcha namunalari dinamik rejimda 100 gradus/min tezlikda platinadan tayyorlangan hovonchada olib borildi. KF-NAning (TGA) va (DTA) analizi uchun maksimal 600°C harorat tanlab olinib, ushbu moddaning tahlil natijalari keltirildi. Ionit 600 °C haroratga chidamli platinadan tayyorlangan og'zi ochiq tigelda 5 mg miqdorda olinib, 30 °C haroratdan boshlab asta-sekin harorat ko'tarilib borildi (1-rasm).



1-rasm. KF-NA ning termogravimetrik va differensial termo analizi

KF-NA ning TGA-DTA grafiklarini o'rganish natijasida 30 - 564 °C harorat sohasida namuna massasining uch bosqichda kamayishi kuzatildi. Birinchi bosqichda 34-213 °C harorat oralig'ida kristallizasiya suvining chiqib ketishi natijasida massa kamayishi 11.24% ni tashkil qilgan. Ikkinchi bosqichda 212.6-378 °C harorat oralig'ida massa kamayishi 45% ni tashkil qilgan. Uchinchi bosqich 378-563 °C harorat oralig'idagi massa kamayishi 10 % ni tashkil qilgan.

Quyidagi 2-jadvalda harorat har 100 °C ga ko'tarilganda KFNA massasi tegishli ravishda o'zgarishi, yo'qotilgan massa ortib borishini va sarflangan energiya miqdori keltirilgan.

Jadval 2

KF-NAning TGA va DTA egri chizig'i natijalari tahlili

№	Harorat °C	Qoldiq massa, mg	Yo'qotilgan massa, mg	Yo'qotilgan massa, %	Sarflanadigan energiya miqdori ($\mu\text{V}^*\text{s}/\text{mg}$)
1	100	3.9	1.1	22	31.9
2	200	3.65	1.35	27	7.25
3	300	2.15	2.85	57	43.53
4	400	1.2	3.8	76	27.56
5	500	0.92	4.08	81.6	8.13
6	600	0.86	4.14	82.8	1.74

Karbamid farmaldegid va 1-naftilaminning termo analizida 283, 330, 374, 447, 470, 510 °C haroratlarda oltita endotermik va 199, 242, 260, 315, 425, 497 °C haroratlarda oltita ekzotermik effektlar kuzatildi. 283 °C haroratdagi birinchi endoeffekt ionit tarkibidagi gigroskopik suvning chiqib ketishi bilan bog'liq bo'lib, bunda massa kamayishi 11 % ni tashkil qilgan. 283 va 374 °C haroratlardagi endoeffektlar, shuningdek, 408 °C haroratdagi ekzoeffekt tabiatiga ko'ra ionit tarkibidagi aminoguruhlarini protonlashtirishda qatnashgan guruhlar tarkibidan suv, ammiakning ajralib chiqishi bilan bog'liq. Bu haroratlarda ionit massasining umumiy kamayishi 60,8 % ga teng. 30-600 °C harorat diapazonida KF-NAning umumiy massasining kamayishi 84 % ni tashkil qilgan. Parchalanishning umumiy entalpiyasi $\Delta Q = -2,78 \text{ kJ} / \text{g}$ ga teng.

Jadval 3

KF-NA termolizining derivatografik ma'lumotlari

Effektning harorat intervali, °C	Effekt cho'qqisi, °C	Massa o'zgarishi, %	Umumiy massa o'zgarishi, %	Effekt tabiati
197-203	199	1.2	11.4	Ekzotermik
235-255	242	1.07	23.6	Ekzotermik
230-265	260	2.6	25.8	Ekzotermik
257-314	283	10	44	Endotermik
310-320	315	2.6	46	Ekzotermik
320-335	330	3.8	49.8	Endotermik
366-383	374	2	56.4	Endotermik
408-435	425	1.8	62	Ekzotermik

438-455	447	1.2	66	Endotermik
464-477	470	1	68	Endotermik
478-505	497	0.4	69	Ekzotermik
504-520	510	0.6	72	Endotermik

3-jadvalda olingan KF-NAning derivatorgrafik tadqiqotlarda kuzatilgan ekzotermik effektlar ionit tuzilishining o'zgarishini, endotermik effektlar esa ionitning havo ishtirokisiz o'zgarishi bilan tushuntiriladi. Tahlil natijalaridan ko'rinadiki, olingan kompleks ionitning termik barqarorligi yuqori.

XULOSA. Karbamid formaldegid va 1-naftilamin asosida olingan kompleks hosil qiluvchi ionitning fizik-kimyoviy xossalriga dastlabki moddalar mol nisbatlari ta'sirini aniqlash natijalariga ko'ra, karbamid, formaldegid va **1-naftilamining** 2:5:0,2 nisbatida **sorbsion sig'imi yuqori** ekanligi kuzatildi. Termo tahili natijalariga ko'ra sintez qilingan kompleks hosil qiluvchi ionit 210 °C haroratgacha termik barqarorligi aniqlandi.

Adabiyotlar ro'yxati

1. Сайкова С.В., Пашков Г.Л., Пантелеева М.В. Реакционно-ионообменные методы извлечения ценных компонентов из минерального и техногенного сырья и получения дисперсных продуктов // Журнал СФУ. Техника и технологии. 2015. №4.
2. Касимов Ш. А., Тураев Х. Х., Джалилов А. Т. Исследование процесса комплексообразования ионов некоторых двухвалентных 3d-металлов синтезированным хелатообразующим сорбентом //Universum: химия и биология. – 2018. – №. 3 (45). – С. 17-19.
3. Касимов Ш. А. и др. ИК спектроскопические исследование и квантово-химические характеристики азот и фосфорсодержащего полимерного лиганда //Universum: химия и биология. – 2019. – №. 6 (60). – С. 50-53.
4. Зуб Ю.Л. Новые мезопористые сорбенты с комплексообразующим поверхностным слоем // Материалы III международного симпозиума по сорбции и экстракции, Владивосток, 20-24 сентября 2010 г., с. 67-84.
5. Йулчиева М. Г. и др. Синтез и исследование хелатообразующего сорбента на основе карбамида, формальдегида и 2, 4-динитрофенилгидразина //Universum: химия и биология. – 2021. – №. 11-2 (89). – С. 33-36.
6. Эрмуратова Н.А., Касимов Ш.А., Тураев Х.Х. Синтез и исследование хелатообразующего сорбента на основе карбамида, формальдегида и 2-аминопентандиовой кислоты // Universum: технические науки. 2021. №4-4 (85).
7. Абдувалиева М.Дж., Касимов Ш.А., Тураев Х.Х., Абдуназаров Э.М. (2021). Синтез и свойства комплексообразующего сорбента на основе карбамидоформальдегида и фенолсульфалеиновой кислоты //ISJ Theoretical & Applied Science, 11 (103). – С. 175-180.
8. Йулчиева М.Г. и соавт. Синтез и исследование сорбента модифицированием карбамидоформальдегидной смолы 2,4-дифенилгидразином //ISJ Theoretical & Applied Science, 11 (103). – 2021. – С. 323-327.
9. Касимов Ш.А., Тураев Х.Х., Джалилов А.Т. Исследование процесса комплексообразования ионов некоторых двухвалентных 3d-металлов, синтезированных

хелатообразующим сорбентом // Универсум: химия и биология: электрон. научн. журнал. 2018. № 3 (45).

10. Даминова Ш.Ш., Кадьрова З.Ч., Сафаров Е.Т., Пардаев О.Т., Шарипов Х.Т. ИК-спектроскопическое исследование хелатообразующих сорбентов на основе сополимера стирола и дивинилбензола и их комплексов с Ag(I), Cu(II), Ni(II), Fe(III) // Узб. хим. ж. 2013, №6, с. 6-9.

11. Касимов Ш.А., Тураев Х.Х., Джалилов А.Т. Исследование процесса комплексообразования ионов некоторых двухвалентных 3d-металлов синтезированным хелатообразующим сорбентом // *Universum: химия и биология*. 2018. №3 (45).

12. G'afurjonovna Y. M. et al. KARBAMID FORMALDEGID ANILIN ASOSIDAGI POLIMER LIGAND SINTEZI VA TADQIQI // *Scientific journal of the Fergana State University*. – 2022. – №. 5. – С. 49-49.

13. Yulchieva M. G, Turaev Kh. Kh, Kasimov Sh.A, Nabiev D. A, Chorieva N. B, "Research on the Synthesis of Nitrogen-Containing Sorbents" *International Journal of Engineering Trends and Technology*, vol. 71, no. 8, pp. 161-167, 2023. Crossref, DOI,[10.14445/22315381/IJETT-V71I8P214](https://doi.org/10.14445/22315381/IJETT-V71I8P214)

Increasing the efficiency of fiber cleaning by improving the process of removing cotton fiber from the teeth of the saw

Yuldashev Khasanboy Sulaymon ugli ^{1, a}

Sarimsakov Olimjon Sharifjanovich ^{2, b}

Kayumov Abdul-Malik Khamidovich ^{4, c}

Namangan Institute of Textile Industry^{a, b}

Namangan Institute of Engineering and Technology ^c

Abstract. It is known that the saw cylinder is the main working organ in the cotton ginning process. The process of ginning occurs as a result of the cotton raw materials entering the gin roll box and meeting the rotating saw teeth. In the roll box, the cotton raw material rotates like a gin saw, forming a mass roller consisting of fully depilated and partially depilated seeds. The density of this mass shaft increases towards the center of the roll box. As a result, due to the formation of a crack between the roll box and the ribs, the depilated seeds move downward under the influence of their weight and are separated from the gin machine.

Keywords: fiber, seed, rib, roll box, air nozzle, air speed,

Sign in. The nodes and working surfaces of the technological equipment used in the initial processing of cotton should be of high quality, that is, their surface smoothness should be 7-class accuracy.

The results of scientific research and experiments conducted by our scientists show that during the initial processing of cotton, damage to fibers or knots of equipment occurs not on the main surfaces, but on the surfaces that transition from one form to another (Sarimsakov O. SH., 2018).

Methods. When using saws polished with various abrasive materials, it was observed that fiber damage increases as a result of the reduction of the edge radii of the passing surfaces ($r=0.1$ mm) (Sulaymonov, Inamove, & Yuldashev, 2022).

Interconnection of fibers with working surfaces academician R.G. The following scheme was studied by Makhkamov et al. and the following scheme was proposed. The theoretical results of this model were confirmed in the experiment and the following equation was given to determine the contact pressure force acting on the fiber for the proposed scheme:

$$N_n = \frac{3,24 \cdot k \cdot P \cdot (t \cdot Q \cdot N)^{0.8} \cdot (n \cdot D)^{0.8}}{e^{0.8} \cdot 10^5},$$

$$\Pi p = \frac{1}{\Pi a \cdot \Pi e},$$

In this,

$$\delta = \Pi_\delta \cdot \frac{1}{2} \cdot \sqrt[3]{\frac{9}{4} \cdot \eta^2 \cdot E \cdot \kappa \cdot P^2}$$

R is the tension between two compressive bodies.

If we look at the results of the research, in the connection of medium-fiber cotton varieties with the passing surfaces, damage to the fibers is observed in the contact zone between the fiber and the passing edge, at the edge with a radius of $r_m = 0.1$ mm, under contact pressure conditions of $R_0 = 40-50$ N/m².

that the permissible contact pressure for thin fiber cotton is in the range of 70-90 N/m

(Tursunov, Yuldashev, & Madiyarov, 2022)².

When evaluating the above dimensions and surface smoothness, it is necessary to take into account the friction of two components, taking into account the important aspects of the interconnection of fibers and working bodies.

The low mechanical properties of fibers compared to solid bodies (working bodies) lead to their damage (Madumarov, Jurayev, & Yuldashev, 2022).

Results. The process of separating the fibers from the seed is a complex mechanical process, which takes place in the position that ensures the proportionality of the saws, the raw material roller the colossal grid, and the seed combs. For the fibers to be separated from the seed, the raw material must have a certain density, which in turn causes rapid wear of the working organs, so the saws are repaired or completely replaced every 48-50 hours, and the ribs every 3-4 months. (Madumarov, Xoshimov, Qurbanov, & Yo'ldashev, 2022).

Ginning is the process of separating the fiber from the seed. According to the principle of influence on seed cotton, ginning is divided into sawing and rolling (Yo'ldashev X. S, 2022).

To prove the necessity of non-stop and objective adjustment of the working modes of the gins, basic and technological characteristics were determined and initial researches of their control methods were carried out (Yo'ldashev, Inamova, & Sarimsakov, 2023).

The productivity of the roll box of the saw gin is theoretically determined by the following formula:

$$H = \frac{Q}{\tau_{yp}} A, \quad (2.10)$$

in this H - fiber performance of the roll box;

Q - weight of the raw material;

τ_{yp} - the time of average division of fiber and seed in the roll box;

A - an invariable characteristic of the demonization process.

Formula (2.10) shows that the productivity of the roll box can be increased by increasing the weight of raw materials or by reducing the average time of fiber and seed in the roll box. However increasing the weight of the raw material leads to an increase in the cross-sectional area of the camera. As a result, additional frictional forces of the raw material and the walls of the roll box are formed, which slows down its movement (Yo'ldashev, Xoshimov, & O 'rinboyev, 2021).

The density of the raw material is the most important factor determining the quality of fiber and seed extracted from seed cotton during the ginning process. Levkovich B.A., Baydyuk P.V., Roganov B.I., Gulidov N.G., Tillaev M.T., Fazildinov S., Khudaykulov N.Kh., Usmanov H.S., Safarov N.M. . researches in the field of sawmilling conducted by

During the ginning process, the mass and density of the raw material are determined by the dynamic balance between the seed cotton being processed and the amount of seed and fiber in the ginning products. This dynamic balance is set by the operator during the approximately 15-minute running time at the beginning of the ginning process (Yuldashev, Inamova, Qobilov, & Abduxaliqov, 2021). During the technological process, random changes in the provision of dynamic balance, a decrease in the ability of the gin due to factors such as tooth jamming, changes

in the content, physical and technological parameters of seed cotton, i.e. changes in elasticity and friction force as a result of changes in the amount and composition of moisture, foreign additives, constantly affect and disrupt the balance. (Yuldashev, Abduraximov, Inamova, & Mirgulshanov, 2021). When the disturbance of this balance is within the possibility of self-balancing of the density of raw materials, the fiber separation process is stabilized by switching to a new mode, otherwise, the technological process will be disturbed and raw materials may get stuck in the chamber if operative measures are not taken. Depending on the nature of the situation and the speed of development, the measures taken to prevent this may be to reduce the supply, to stop it, and, as a last resort, to stop the demon from turning over the raw material, and start the technological process again.

Summary. There are no technically, economically, and technologically acceptable ways to operationally control all of the above-mentioned factors that change the dynamic balance between supply and output in gin. Therefore, it is necessary to deal with the mass and density of the raw material itself. However, none of the mechanical, electromechanical and electronic sensing devices created for operational control of the density of raw materials fully meet the most necessary technological requirements, such as sensitivity, accuracy, and reliability, and therefore were not used in practice. By the production experience confirmed in some scientific studies, the density of the raw material is evaluated according to the consumption power of the saw cylinder electric motor or its stator load current in the operational state. However, the quantitative and qualitative indicators of the relationship between the density of raw materials and the load current of the electric motor stator have not been expressed in scientific research.

I used it for books

Madumarov, ID, Hoshimov, OX, Kurbanov, AT, & Yoldashev, XS (2022). STUDY OF CLEANING PROCESSING OF SEED COTTON IN FOREIGN. "Economic, innovative, technological problems and international experience of increasing the efficiency of product production based on deep processing of raw materials in cotton textile clusters" International Scientific Conference, 2, pp. 45-50. Namangan.

Madumarov, SR, Jurayev, YY, & Yuldashev, KS (2022, October 20). GENERAL INFORMATION ON THE IMPORTANCE OF FEEDSTOCK DENSITY AND SPEED IN THE FIBER SEPARATION PROCESS. ACADEMIC RESEARCH IN MODERN SCIENCE, International scientific-online conference, 8 (15), 55-59. doi:https://doi.org/10.5281/zenodo.7229260

Sarimsakov O. SH. (2018). Improving the process of transferring cotton to pneumatic transport and air transportation. Namangan: "Namangan" publishing house.

Sulaymanov, A., Inamove, M., & Yuldashev, K. (2022, May 15). THEORETICAL STUDIES OF THE NATURE OF THE INTERACTION OF COTTON SEEDS IN THE GAP BETWEEN THE AGITATOR BLADE AND THE SAW CYLINDER. EURASIAN JOURNAL OF ACADEMIC RESEARCH, 2 (11), 666-672. doi:https://doi.org/10.5281/zenodo.7218857

Tursunov, I., Yuldashev, XS, & Madiyarov, OG (2022). ANALYSIS OF CHANGES IN AIR PARAMETERS IN A COTTON SEPARATOR. International scientific conference "Economic, innovative, technological problems and international experience of increasing product production efficiency based on deep processing of raw materials in cotton textile clusters" (pp. 98-103). Namangan, Uzbekistan: NamMTI.

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-3, ISSUE-5

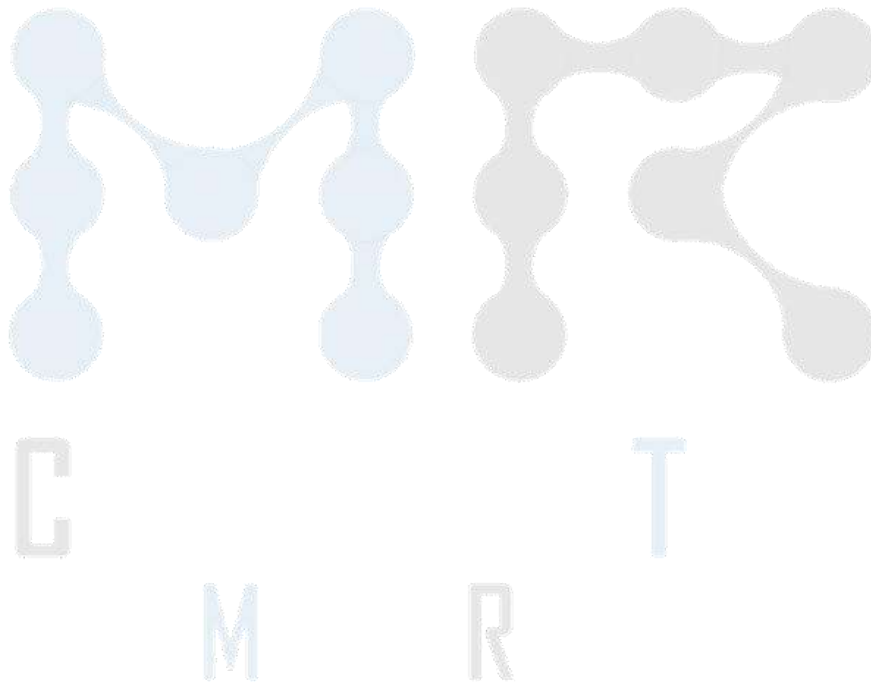
Yoldashev, XS, Hoshimov, OX, & O'rinboyev, BB (2021, 10 13). STUDY OF CLEANING PROCESSING OF SEED COTTON. Creative Teacher, 5 (12), 209-213.

Yoldashev XS (2022). INVESTIGATING MOISTURE CONTENT IN STORING, DRYING, AND CLEANING THE SEED COTTON. International scientific conference "Economic, innovative, technological problems and international experience of increasing product production efficiency based on deep processing of raw materials in cotton textile clusters" (pp. 77-82). Namangan, Uzbekistan: NamMTI.

Yoldashev, XS, Inamova, MD, & Sarimsakov, OS (2023, DECEMBER 22). A RR A TISHL A RID A N P A XT A TOL A SINI OPEN Fetch THE PROCESS PARAMETERS SCIENTIFIC JUSTIFICATION. (HR Saloyeva, Ed.) DEVELOPMENT OF SCIENCE AND INNOVATION, 6 (6), 12. doi:<https://dx.doi.org/10.36522/2181-9637-2023-6-9>

Yuldashev, KS, Abdurakhimov, KA, Inamova, MD, & Mirgulshanov, KA (2021). DEVELOPMENT OF THE DESIGN OF A FEEDER OF VIBRATION ACTION FOR SUPPLYING COTTON SEEDS TO LINTER MACHINES. SCIENCE, EDUCATION, INNOVATION IN THE MODERN WORLD, IV, pp. 44-50. The USA. doi:<https://doi.org/10.37547/iscrc-intconf14>

Yuldashev, KS, Inamova, MD, Qabilov, MA, & Abdukhalikov, AA (2021). Effect Of Moisture Content In The Process Of Storing, Drying, And Cleaning Seed Cotton. SCIENCE, EDUCATION, INNOVATION IN THE MODERN WORLD, (pp. 34-39). The USA.



The article is devoted to the problems of lingvocriminalistics as the section of science of the language. Meanwhile the main components and the practical use of the linguistic data in judicial expertise are considered. The idea of the importance of the linguistic knowledge for the workers of law enforcement agencies is emphasized. The article underlines the significance of phonoscopic expertise for law enforcement agencies.

Lingvocriminalistics, expertise, language, subculture, identification, insult, negative information, phonoscope.

Introduction.

In connection with Uzbekistan's desire for democracy and the rule of law, the role of new linguistic disciplines related to legal fundamentals is increasing. New disciplines have appeared (see, for example, "Introduction to linguistic forensics", "Linguistic aspects of criminal subculture", etc.), united by the general concept of linguistic forensics.

The term linguistic forensics has three meanings:

- 1) a branch of the science of language that studies text for legal purposes;
- 2) a section of linguistic science that teaches the preparation of forensic linguistic examinations;
- 3) a branch of the science of language that studies the sociolinguistic aspects of the criminal subculture.

Some scientists (for example, E. I. Galyashina, N. D. Golev) use the term jurislinguistics, understanding by it the first two meanings of the term linguistic forensics. However, in our opinion, the concept of linguistic forensics also includes an analysis of the elements of the subculture of the criminal world: slang, gibberish and conventional language, nicknames, tattoos, secret gestures and facial expressions, proverbs and sayings. There is an opinion that the main task of linguistic forensics is exclusively forensic linguistic examinations or identification of a person by his linguistic characteristics. But it would be a mistake to believe that the range of these examinations is limited to this. Almost all controversial issues related to language can be the subject of an expert linguist. Linguistic forensics as a branch of the science of language in a broad sense pursues the goal of studying text, in a narrow sense - compiling linguistic examinations, "... law also seeks answers to many questions in language" [4, p. 259].

Undoubtedly, training in conducting forensic linguistic examinations occupies a major part in the preparation of a forensic linguistic specialist. But, I think, practical law enforcement officials should also have a basic knowledge of linguistic forensics. Thus, researcher O. N. Kravchuk rightly believes that "a significant part of the materials sent for phonoscopic examinations to the ECU of the Central Internal Affairs Directorate of the Nizhny Novgorod Region are not suitable for identifying a person by voice and oral speech due to the low quality of the recording." She believes that this is to blame not only for the poor technical equipment of the police department, but also for the lack of preparedness of law enforcement officers [7, p. 16].

Main part. The most common forensic linguistic examinations are related to insult and negative information (protection of honor and dignity), establishing authorship, and the content of the concept of a trademark.

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-3, ISSUE-5

Researcher E. I. Galyashina points to the practical use of linguistic data from law enforcement officers. "Special knowledge in linguistic disciplines," she emphasizes, "contributes to the extraction of various factual and personal data of negotiators and other forensically significant information from speech messages" [3, p. 17].

The expert linguist faces many unresolved questions. It will not be a revelation that the most important thing in court cases of insult is the list and nature of the offensive words. What lexemes are included in their composition, in which cases they can be offensive and in which they cannot, how slang-argotic words invective are treated from the point of view of certain social groups - these are the questions that a linguo-criminologist must answer. The books "The Price of the Word" and "Theory and Practice of Linguistic Analysis of Media Texts in Forensic Examinations and Information Disputes" have already made an attempt to classify offensive words, but it needs to be expanded and clarified. As the practice of working with law enforcement agencies shows, the latter are in dire need of methodological recommendations on the definition of verbal insult and the protection of honor and dignity. They need concrete examples. Some linguistic researchers propose compiling a dictionary, where "a new system of lexicographical marks should be developed (for example, offensive, indecent, negatively evaluative, etc.), reflecting the gradation of invectiveness" [9, p. 54]. Undoubtedly, such a dictionary can be compiled. But the question immediately arises about the implementation of these lexemes in the context and speech situation. The reasoning above does not mean that the authors of the article are against the creation of a dictionary of invective. On the contrary, this dictionary is necessary for both linguists and lawyers. The difficulty lies in giving a large number of examples for each invective, i.e., specific illustrations are needed, where in one case the word can be an insult, and where it can act in another function. However, this obstacle can be overcome: you need to use the most common speech situations.

Researcher V.I. Zhelvis focuses on the problem of "abusive weight of words," "since the concept of offensiveness is focused on the listener," that is, in social groups the same words can be perceived differently [5, p. 293]. Undoubtedly, in this case it is necessary to take into account both the subculture and the morality of certain societies. At the same time, we must be guided by the norms of literary language. For example, if a criminal called another criminal a trash heap or a mop, this would be an insult even in a law-abiding society. But in the criminal world, these words are very strong invective, that is, the speaker who utters them puts the opponent on the lowest rung of the criminal ladder, causing him a terrible insult.

Difficulty may arise in determining the nature of verbal abuse, which is associated with the perception and unintentional use of argotisms. For example, a law-abiding citizen called a professional criminal a dove (from blue - homosexual), an acrobat - a passive homosexual, paraffin - a person standing on the lowest rung of the criminal ladder, paraffin. In a criminal environment, these lexemes are considered obvious insults, but in a law-abiding environment, they will either be incomprehensible in a certain context or perceived as universal.

It seems that when writing a number of linguistic examinations, the historical aspect should be used. For example, expert researchers often ignore diachrony when analyzing offensive words, but it is known that even before the revolution, lawyers had the concept of offensive words, for example, professional invective, intellectual invective, sociomoral invective, pun invective, political invective, sacred. ineffectives.

During forensic linguistic examinations, questions arise related to clarifying the linguistic nature of a trademark. Sometimes it is necessary to resolve issues related to incorrect wording in legislation.

The main object of study of a linguo-criminologist is the text. It is usually understood as “a sequence of symbolic units united by a semantic connection, the main properties of which are coherence and integrity” [8, p. 507]. As can be seen from the definition, illustrations, various kinds of road signs, sailors’ symbols, etc. can be considered text. That is, any information that has a system. Any text (and therefore any information) appears and exists in a certain socio-cultural space. It is this that generates information and determines the mechanisms for its interpretation. Note that the time parameter is key for them.

Forensic phonoscopic examination is very important. This is a type of forensic speech examination aimed at establishing the identity of the speaker based on the characteristics of the voice and speech recorded on the phonogram, identifying signs of erasure, copying, editing and other changes introduced into the phonogram during or after the end of the sound recording, determining conditions, circumstances, means and materials sound recordings, as well as other facts relevant to forensic evidence [see: 3].

The specificity of forensic phonoscopic examination is that in order to solve many issues, the expert must have a wide range of knowledge from different fields of science and technology (linguistics and acoustics, mathematics, radio engineering, etc.). The objects of phonoscopic examination are sound, especially speech, information recorded on various media, sound recording media (tape recorders, video recorders, voice recorders, magnetic, optical and other media, etc.).

Recently, various technical systems for determining the speaker’s individuality based on speech characteristics have been actively developing. Interest in solving applied problems in this direction is determined by the presence of a wide range of practical applications, which can be divided into two broad classes: checking access rights to various systems (information and physical): communication channels, computer systems, databases, bank accounts, official and individual premises for limited use (secrecy, material assets, etc.), various devices and mechanisms (vehicles, weapons, etc.), etc.

Currently, when performing phonoscopic examination based on methods of linguistic analysis, the expert establishes the literal content of the statement, determines the number of speakers, identifies them based on the presented comparative samples of voice and speech, and resolves other issues.

solves other questions. In order to obtain high-quality experimental samples, the individual linguistic and phonetic characteristics of the speaker are identified on the phonogram of the person being identified. At the same time, materials submitted for comparative research should contain, first of all, words and phrases in which the peculiarities of pronunciation, speech pathology or other deviations from generally accepted norms of the literary language are most clearly manifested.

When studying a phonogram for editing, along with visual analysis of a magnetic medium using the magneto-optical method and instrumental study, today it is mandatory to involve a highly professional expert with a basic linguistic education to analyze the integrity, coherence, continuity and naturalness of recorded speech.

A typical task of linguistic research when identifying a speaker from speech recorded on a phonogram is to identify an intellectual functional-dynamic speech complex, i.e., an individual’s

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

VOLUME-3, ISSUE-5

stable skills and abilities when generating statements in oral form. On this basis, not only identification, but also diagnostic problems related to establishing data about the speaker's identity from his voice and speech are solved [3, p. 124].

In some cases, it is necessary to determine from speech not the individuality of the speaker, but some group characteristic: age, the presence of a particular accent or regional type of pronunciation, the presence of voice pathology, etc. This type of task arises mainly in forensic examination or monitoring of communication channels. Most often, the solution to such problems is based on an auditory expert assessment of the analyzed speech message and uses automatic analysis methods only at the preliminary stage or as auxiliary ones.

One of the tasks of linguistic forensics is: familiarizing employees of the judicial and legal system with methods and techniques for interpreting texts, their interpretation, explaining the use of a linguistic sign, establishing the authorship of a text, identifying plagiarism, etc. A lawyer must have an understanding of the basic linguistic processes that can be discussed in forensic examinations: tautology, pleonasm, metaphor, metonymy, lexical meaning, euphemism, types of speech errors, etc. He must have a good knowledge of those linguistic terms that directly relate to forensic linguistic examination and the court: indecent form, negative information, obscene vocabulary, invective vocabulary, etc.

Conclusions.

Currently, comprehensive examinations are becoming effective, in which specialists from different fields of knowledge take part. A special role in them should be given to the expert linguist. Thus, when commissioning a complex forensic economic examination, you cannot do without special language knowledge that will help establish the identity of the person who wrote the documents, identify the text, etc. Meanwhile, linguistic issues are almost not considered in forensic economic examinations [see, for example: 2, p. 46] and the possible help of linguists still remains unclaimed. Sometimes complex examinations, in which a linguo-criminalist must participate, are called "non-traditional forensic psychological" [1, p. 51].

Criminologists usually divide all forensic examinations into twelve classes:

- 1) forensic;
- 2) medical and psychophysiological;
- 3) engineering and technical;
- 4) engineering and transport;
- 5) engineering and technology;
- 6) economic;
- 7) biological;
- 8) soil science;
- 9) agricultural;
- 10) food products;
- 11) environmental;
- 12) art history.

As you can see, linguistic expertise in forensic science is not identified as a special branch. It is included in the first class of examinations - forensic, which includes three types: A - traditional forensics, the formation of which relates mainly to the period of the emergence and development of forensic examinations; B – examinations that were formed in the last decades of the twentieth century; B – various types of research on materials, substances, products, classified as a separate

class, also called materials science. Expertise group A includes: auto-editing; ballistic; handwriting, portrait, technical forensic examination of documents; traceological; edged weapons [see. 6, p. 54–59]. As you can see, there is not even a mention of linguistic expertise in the description. Lawyers consider author's examination only as one of the categories of forensic examination. This “inequality” must change, since at present linguistic issues requiring resolution in jurisprudence are becoming more and more relevant. It is possible that linguistic expertise will be able to become an independent branch, since its concept includes all expertise related to the text. At the same time, it should combine all examinations related to language in one way or another: authorship, handwriting, documentation, examinations related to the concept of honor and dignity, insult, etc.

Literature

1. Avramtsev, V.V. Forensic psychological examination in criminal proceedings: traditional approaches and non-traditional aspects: Textbook / V.V. Avramtsev. – N. Novgorod, 2004.
2. Vanaev, S. Yu. Documentary checks and forensic economic examinations in cases of tax crimes: A practical guide / [S. Yu. Vanaev and others]. – N. Novgorod, 1999.
3. Galyashina, E. I. Linguistic examination of oral and written speech as a source of judicial evidence / E. I. Galyashina // Law and linguistics: Materials of the International Scientific and Practical Conference: in 2 hours - Simferopol, 2003. - Part 2 . – pp. 15–22.
4. Golev, N. D. The importance of linguistic examination for jurisprudence and linguistics / N. D. Golev, O. N. Matveeva // The price of words: From the practice of linguistic examinations of media texts in litigation to protect honor, dignity and business reputation / edited by prof. M. V. Gorbanevsky. – M., 2002. – P. 257–267.
5. Zhelvis, V. I. Word and deed: legal aspect of foul language. Concepts of honor, dignity and business reputation: Controversial media texts and problems of their analysis and evaluation by lawyers and linguists / V. I. Zhelvis. – M., 2004. – P. 289–298.
6. Zinin, A. M. Forensic examination: Textbook / A. M. Zinin, N. P. Mailis. – M., 2002.
7. Kravchuk, O. N. Scientific principles of working with sound traces of criminal activity: abstract. dis. ...cand. legal Sciences / O. N. Kravchuk. – N. Novgorod, 2002.
8. Linguistic encyclopedic dictionary / ed. V. N. Yartseva. – M., 1990. – P. 507.
9. Matveeva, O. N. Jurislinguistic expert research: prospects and ways of improvement / O. N. Matveeva // Theory and practice of linguistic analysis of media texts in forensic examinations and information disputes: Materials of an interregional scientific and practical seminar. Moscow, December 7–8, 2002. Part 1 / ed. prof. M. V. Gorbanevsky. – M., 2002. – P. 51–55.

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

OUTLINE

VOLUME-3, ISSUE-5, DECEMBER

1	Obstacle Avoidance Sensors: A Brief Overview. Amer Abu-Jassar, Svitlana Maksymova	4-10
2	Emergence and modernization of metrology. Qalandarova Madina Jo'rabek qizi, Ruzibayeva Maftuna Normurodovna, Vaxobva Baxtigul Valijon qizi, Raxmonova Madina Raxmatullayevna	11-13
3	ON THE CONCEPTS OF "FORGIVENESS" IN UZBEKI AND ENGLISH LANGUAGES PHRASEOLOGICAL UNITS. Khazratqulova Ozoda Abdug'aniyevna	14-19
4	THE ROLE OF III GENERATION CEPHALOSPORINS IN THE TREATMENT OF URINARY TRACT INFECTIONS. Toshpulatov To'lqin Aliyarovich, Boyqulov To'rabek Temirovich	20-26
5	PROBLEMS OF TEACHING GRAPHIC CAPABILITIES OF PYTHON PROGRAMMING LANGUAGE IN GENERAL SECONDARY SCHOOLS. Annakulov Makhmudjon Sadikovich	27-29
6	IMPORTANCE OF BORROWED WORDS IN THE FIELD OF CULTURE AND ART. Davronova Asila, Ibragimova Gulshana	30-31
7	Spectrophotometric determination of Lead ions in solutions samples using Chromazurol S in the Surkhandarya region. Xolbyeveva M, Smanova Z.	32-36
8	SCIENTIFIC BASIS OF DEVELOPMENT OF CREATIVE SKILLS OF PRIMARY SCHOOL STUDENTS. Azimova Mukhaye Barotovna	37-39
9	PEDAGOGICAL STRUCTURES OF EMOTIONALITY THE ORIGINS OF MUSIC. Kayumov Ibrahim Fayzullayevich	40-44
10	Взгляды восточных мыслителей на узбекскую народную музыку. Рамазонова Угиллой Холмуродовна.	45-46
11	РОЛЬ МАХАЛЛЫ В ВОСПИТАНИИ ПОДРАСТАЮЩЕГО ПОКОЛЕНИЯ. Каримов Олимхужа Исломович	47-51
12	THE MAIN CRITERIA OF CULTURAL CENTERS IN THE FORMATION OF CREATIVE ABILITY. Sh.K.Urinov	52-59
13	FOLK DECORATIVE AND APPLIED ARTS OF UZBEKISTAN. Bakaev Sh.Sh	60-64
14	IMPROVEMENT OF COGNITIVE COMPETENCIES OF STUDENTS IN THE TEACHING OF DRAWING SCIENCE. Mamatov Dilshod	65-70
15	Art has a mental health problem. Hojiyev Mirshod Jalilovich	71-72
16	Methodology of developing creative ability of students in painting classes. Ibragimova Aisha	73-76
17	Ideological and artistic features of folk singing. Marifat Yoshiyevna Umurova	77-80
18	THE RELEVANCE OF THE METHODS AND TECHNICAL METHODS OF TEACHING NATIVE LANGUAGE SCIENCE TO STUDENTS IN THE SCHOOLS OF OUR REPUBLIC TODAY. Ubaydullayeva Ramiza Abdullayevna	81-83
19	COMPARATIVE ANALYSIS OF MORPHOLOGICAL CHANGES IN THE LIVER IN COVID -19. Fayzillayeva Gulnara Ibragimovna, Nurilloveva Shakhodat Nurillo kizi.	84-90
20	BIOCHEMICAL COMPOSITION OF BROCCOLIES IN IQF PROCESS. Q.O.Dodayev, Kh.N.Niyazov, M.Miralimov	91-93
21	IMPROVING THE SPEECH OF ELEMENTARY SCHOOL STUDENTS IN LEARNING FOREIGN LANGUAGES OUTSIDE THE CLASSROOM.. Jumaqulova Surayyo	94-96

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

22	ПСИХОЛОГИЧЕСКИЙ ФАКТОР МУЗЫКИ ДЛЯ ДОШКОЛЬНОГО ВОЗРАСТА. Камолов Шавкат Хаджиевич	97-100
23	USE OF CEREAL PRODUCTION TECHNOLOGY IN THE FOOD INDUSTRY. N.F.Xujakulova, K.A.Shokirov, H.B.Ergasheva, Sh.J.Yuldasheva	101-107
24	Impact of customer support and customer technology adoption on Customers Loyalty in the Nigerian Banking Industry. Lawan Garba	108-117
25	DEVELOPMENT OF SYSTEMS TO PROVIDE SOCIAL SERVICES TO THE POOR. Khalida T. Sultanova	118-120
26	THE MECHANISM OF IMPROVEMENT OF PROFESSIONAL READERS, HELPING THEM TO PROVIDE SCHOOL AND ADULT EDUCATION INTEGRATION. Inamov Nurmira Dedamirzayevich, Turg'unov Sobitxon Toshpo'latovich	121-123
27	A Culinary Journey Trough Languages. Comparative linguistic Analysis of Food Related Idioms in English and Uzbek Languages. Tagayeva Umida Ernazarovna	124-131
28	NEW TECHNOLOGY IN DENTISTRY. Murtazayeva Xadicha Nuriddinovna, Nabiyeov Shahboz Shohruh o'g'li, Yoqubov Nuriddinxon Mexmonxon o'g'li, Raxmatov Shohrux Shokir o'g'li	132-133
29	Linguistic-psychological factors of teaching Russian-speaking students to Uzbek monologue speech. Salisheva Zilola Ismailovna	134-137
30	ТКАНИ ПАРОДОНТА И ЕЕ ЗАБОЛЕВАНИЯ. ХОЛБЕКОВ БАХТИЁР, АХМЕДОВА САОДАТ, ЭШОНКУЛОВА ДИЛФУЗА, ТУРАЕВА НИЛУФАР	138-142
31	CAUSES OF SOIL DEGRADATION AND MEASURES TO PREVENT IT. J. Jumayev	143-146
32	PROSTHETIC HAND 3D MODEL DEVELOPMENT. Svitlana Maksymova, Vladyslav Yevsieiev, Amer Abu-Jassar, Mohammad Al-Abdallat	147-156
33	ФАРМАКОПЕЯ КАК ОСНОВА ДЛЯ ДАЛЬНЕЙШЕГО ПОВЫШЕНИЯ КАЧЕСТВА ЛЕКАРСТВЕННЫХ СРЕДСТВ В УЗБЕКИСТАНЕ. Амракулов Султон Туйчимуратович	157-160
34	«SELECTION OF WINTER WHEAT AND RICE VARIETIES ADAPTED TO THE SOIL AND CLIMATIC CONDITIONS OF THE REPUBLIC OF KARAKALPAKSTAN». Xojambergenov Ganibay Ametovich	161-167
35	METHOD OF TRANSFERRING WORD MEANING. Shahzodbek Baxtiyarovich Matnazarov	168-170
36	FUNDRAISING METHOD IN FINANCING NON-GOVERNMENTAL EDUCATIONAL ORGANIZATIONS: PROS AND CONS. Turakulov O.A, Berdinazarov Z.U.	171-175
37	ANALYSIS OF CRYPTOSYSTEMS BASED ON ELLIPTIC CURVES. Umarov Shohzod Zafar o'g'li	176-179
38	GROWTH AND DEVELOPMENT OF SUMMER WHEAT UNDER ORGANIC FARMING CONDITIONS. Ismailov Makhsetbay Embergenovich	180-182
39	DIPLOMATIC AND TRADE-ECONOMIC RELATIONS BETWEEN THE KOKON KHAN AND RUSSIA. Yusupov Akhrorjon Kurbanovich, Hasanov Mukhtarjon Kakharamonjon o'g'li	183-187
40	MODERN METHODS OF FORMING THE COMPETENCE OF WRITTEN EXPRESSION OF OWN OPINIONS IN LITERATURE LESSONS. Fozilova Mohigul Farkhodovna	188-195
41	TYPES OF PSYCHOLOGICAL TESTING. Indira Igorevna Rakhimova, Sayfullayeva Sojida Saidzhanovna	196-197

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

42	UMUMIY O'RTA TA'LIM MAKTABLARIDA "INFORMATIKA VA AXBOROT TEXNOLOGIYALARI" FANINI TAKOMILLASHTIRILGAN METODIKA ASOSIDA O'QITISHNI TAKOMILLASHTIRISH. Fayziyev Nozim Asfandiyorovich	198-200
43	MEDICINAL PROPERTIES OF PLANTAGO MAJOR L. Aslanova Xolida Gafurovna	201-202
44	CASES OF HYPOFUNCTION OF THE PANCREAS IN HEPATITIS DISEASES. Togayev Azizbek Aliyor o'g'li, Kushakova Gulhayo Bahadir qizi, Tashpolatov Jorabek Alisher o'g'li, Ashurova Lobar Olimjon qizi	203-204
45	THE EFFECTIVENESS OF ONLINE TOOLS IN THE PROCESS OF TEACHING AND LEARNING LANGUAGES Mokhidil Dilmuradovna Berdimuradova	205-207
46	EFFECTIVE METHODS OF TEACHING GEOMETRIC DESIGNS OF ABU NASR FARABI IN ENGINEERING GRAPHICS Omonov Qavmiddin Karimovich	208-211
47	IMPORTANCE OF FIBER OPTIC DEVICES IN MEDICINE. Mukhtaram Khamroyevna Bobokulova	212-216
48	PHYSICO-CHEMICAL PROPERTIES OF BIOLOGICAL MEMBRANES, BIOPHYSICAL MECHANISMS OF MOVEMENT OF SUBSTANCES IN THE MEMBRANE. Mukhtaram Bobokulova Khamroyevna	217-221
49	INTRODUCING "PROGRAM CONTROL OPERATORS" IN THE JAVA PROGRAMMING LANGUAGE. Muxayyo Muxtor qizi Sharopova	222-231
50	Working with folders in the JAVA programming language. Muxayyo Muxtor qizi Sharopova	232-236
51	Teachers by before school education organization in pupils passable training in the process to the children applied pedagogical communication styles classification. Xalilova Shakhlo Ravshanovna	237-243
52	ОБРАЗ ПРАВИТЕЛЯ В «БАБУРНАМЕ». Сайипова Д.Р.	244-251
53	"Boburnoma" depicts the mental state of a historical person. Sayipova Dilafuz	252-255
54	"Baburnoma" historical figures mental image. Sayipova D.R	256-258
55	The pedagogical category of physical exercise. Spatial exercises. Saidova Mahbuba Ayubovna	259-268
56	USE OF ARTIFICIAL NERVOUS SYSTEMS IN MODELING. Quvvatov Behruz Ulug'bek o'g'li	269-273
57	SQL (STRUCTURED QUERY LANGUAGE) CAPABILITIES OF THE STATISTICAL DATABASE LANGUAGE. Akhmedova Zulhumor Ikromovna	274-280
58	KNEE DISEASE ARTHRITIS AS A COMPLICATION OF COVID-19. Abduraimov Musurmonbek Mustafoyevich	281-283
59	STROKE AND HYPERTENSION. Rasulova Raykhon Pardaevna, Khudoiberdiev Alisher Normukhamedovich, Urolov Uktam Abdullaevich	284-289
60	FLOWERS IN THE INTERIOR. bdullayeva Ozoda Islomovna, Abduqodirova Madina Nuriddin qizi, Xusanova Sabina Farxodovna	290-291
61	COGNITIVE IMPAIRMENTS IN CEREBROVASCULAR DISEASE. Rasulova Raykhon Pardaevna, Safarova Rokhatoy Shafaatovna, Juraev Ilkhomjon Khujakulovich	292-296
62	CLINICAL AND IMMUNOLOGICAL CHARACTERISTICS OF COMMUNITY-ACQUIRED PNEUMONIA IN PATIENTS WITH HEART FAILURE. Ismatullaev Sohijon Kudratovich	297-300

THE MULTIDISCIPLINARY JOURNAL OF SCIENCE AND TECHNOLOGY

63	EDAGOGICAL ACTIVITY IN THE FIELD OF ARTISTIC GRAPHICS, PROCESSING OF STILL LIFE IN COLOR IMAGE. Turaeva Mohinur Sattorovna	301-305
64	METHODS OF USING MOBILE APPLICATIONS IN THE EDUCATIONAL PROCESS. Mengatova Khurshida Tashmukhamatovna, Jakhongir Salokhidinov Alisher o'g'li	306-308
65	ПОНЯТИЕ ГРАДУОНИМИЯ В СОВРЕМЕННОМ ЛИНГВИСТИЧЕСКОМ ИССЛЕДОВАНИИ ПОНЯТИЕ ГРАДУОНИМИЯ В СОВРЕМЕННОМ ЛИНГВИСТИЧЕСКОМ ИССЛЕДОВАНИИ. Уракова Шоира Турсунпулатовна	309-312
66	ЭКОНОМИТЬ ВОДУ НЕОБХОДИМО, НО НАСКОЛЬКО МЫ ЭТО ДЕЛАЕМ?. Эшкараев Улугбек Чориевич	313-315
67	STUDY OF LAYER COMPOSITION DURING NITRIDING AND STEAM OXIDATION OF COMPOSITE STEELS. Sh.A. Berdiev	316-320
68	"MOLECULAR GENETIC STUDIES OF THE BUSHUEV BREED OF CATTLE IN UZBEKISTAN". Giyasov Khusanjon Abdullayevich	321-324
69	Peculiarities of providing medical care in mountain areas Ortikov Khairulla Toshnazarovich	325-331
70	TRANSITION TO MODERN WATER-SAVING IRRIGATION TECHNOLOGIES - THE NEED OF THE TIME Egamurodov Shaxboz Shavkat o'g'li, Soliyev Jaloliddin Sirojiddin o'g'li	332-339
71	SYNTHESIS AND INVESTIGATION OF IONITES OBTAINED ON THE BASED ON FORMALDEHYDE, UREA, 1-NAPHTHYLAMINE Yulchiyeva Marguba	340-345
72	Increasing the efficiency of fiber cleaning by improving the process of removing cotton fiber from the teeth of the saw Yuldashev Khasanboy Sulaymon ugli, Sarimsakov Olimjon Sharifjanovich, Kayumov Abdul-Malik Khamidovich	346-349
73	MODERN PROBLEMS OF LINGUOCRIMINALISM AS A SCIENCE Rukhshona Abduljalilova	350-354
	OUTLINE	355-358