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COMPARATIVE ANALYSIS OF METHODS FOR PREDICTING THE TRAJECTORY
OF OBJECT MOVEMENT IN A COLLABORATIVE ROBOT-MANIPULATOR
WORKING AREA

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Abstract: This article presents a comparative analysis of methods for predicting object movement trajectories in a collaborative robots-manipulator working area. The following approaches are evaluated: linear method, Kalman filter, extended Kalman filter (EKF), behavioral models and LSTM models. A mathematical description of each method is accompanied by an analysis of their advantages and disadvantages, including prediction accuracy, implementation complexity, and resource requirements. The results show that the choice of the method depends on the specifics of the task and the robot's operating conditions, which allows for an optimal combination of efficiency and computational costs.

Key words: Industry 5.0, Collaborative Robot, Work Area, Computer Vision, Trajectory Prediction.

INTRODUCTION

In the modern conditions of the Industry 5.0 development, where the emphasis is on the integration of advanced technologies to create more adaptive and efficient production systems, the importance of accurately predicting the trajectories of the movement of objects in a collaborative robots-manipulator working area cannot be overestimated [1]-[12]. Robotic manipulators working in close contact with people and performing complex tasks in dynamic environments require high accuracy in predicting the movements of objects to ensure the safety and efficiency of production processes [13]-[27]. Various methods and approaches can be used for analysis here [28]-[44]. Choosing the appropriate trajectory prediction method is critical to achieving optimal results, as different methods have different properties, advantages, and limitations. In this context, conducting a comparative analysis of forecasting methods, such as the linear method, the Kalman filter, the extended Kalman filter (EKF), behavioral models and LSTM models, is necessary to determine the most effective approaches to solving tasks within the concepts of Industry 5.0. Each of these methods has unique features that can affect the accuracy of forecasting and the efficiency of manipulator robots in various scenarios.

The analysis of these methods allows you to find out which approach best corresponds to specific working conditions, taking into account the dynamism of the environment, the complexity of the interaction of objects and the requirements for computing resources. This allows for the creation of more adaptive, accurate and safe systems that meet the modern requirements of industrial and research applications. Thus, this article is aimed at deepening the understanding and

selection of optimal forecasting methods for increasing efficiency and safety within the framework of Industry 5.0.

Related works

Collaborative robots are currently finding more and more application. Naturally, when a person and a robot work together, the task of detecting an object in the robot's work area and tracking this object becomes extremely relevant. This leads to the task of predicting the possible position of the object. Many works are devoted to solving this problem. Let's look at several recent scientific works.

Marchetti, F., and co-authors in [45] propose MANTRA, a model that exploits memory augmented networks to effectively predict multiple trajectories of other agents, observed from an egocentric perspective. Their model stores observations in memory and uses trained controllers to write meaningful pattern encodings and read trajectories that are most likely to occur in future.

A novel two-stage motion prediction framework, Trajectory Proposal Network (TPNet) is presented in [46]. TPNet first generates a candidate set of future trajectories as hypothesis proposals, and then makes the final predictions by classifying and refining the proposals which meets the physical constraints. By steering the proposal generation process, safe and multimodal predictions are realized.

Researchers in [47] present Goal-GAN, an interpretable and end-to-end trainable model for human trajectory prediction. They leverage information about the past trajectory and visual context of the scene to estimate a multi-modal probability distribution over the possible goal positions, which is used to sample a potential goal during the inference.

Quan, R., & et al. in [48] propose a novel Long Short-Term Memory (LSTM), namely, to incorporate multiple sources of information from pedestrians and vehicles adaptively. Different from LSTM, their one considers mutual interactions and explores intrinsic relations among multiple cues.

The paper [49] introduces a novel motion-based tracker, MotionTrack, centered around a learnable motion predictor that relies solely on object trajectory information. This predictor comprehensively integrates two levels of granularity in motion features to enhance the modeling of temporal dynamics and facilitate precise future motion prediction for individual objects.

Scientists in [50] propose their own method to predict objects moving. Their method predicts both current and past locations in the first stage, so that each object can be linked across frames and the comprehensive spatio-temporal information can be captured in the second stage.

So, we see that the task of predicting the movement of various objects occupies the minds of many scientists. Further in this article we will consider the most common ways of solving this problem and present their comparative characteristics.

Mathematical Representation of Methods for Predicting the Trajectory of Objects in a collaborative robots-manipulator workspace

Trajectory prediction is a key component in the development of a method for identifying and tracking objects in the workspace of a collaborative robot, especially in the context of cyber-physical manufacturing systems. Collaborative robots work in a dynamic environment where there are moving objects, including people, whose actions can be unpredictable. To ensure the safety and efficiency of interaction between a robot and a person, it is necessary not only to accurately determine its current position, but also to predict possible trajectories of its movement. This allows the robot to adapt its actions in advance, minimizing the risks of collisions or other dangerous

situations. Trajectory prediction also helps optimize workflows by allowing workers to effectively plan their actions in real time. The use of this method increases the level of robot autonomy, which is an important aspect for the integration of such systems into modern production processes within the framework of the concept of Industry 5.0.

There are several basic methods of trajectory prediction that are widely used in computer vision tasks:

- linear methods, based on the assumption that the movement of the object is linear. They are easy to implement and fast, but have low accuracy for complex or variable trajectories.
- Kalman filter for linear systems, which allows to predict the trajectory taking into account noise and uncertainty. It works well for smooth trajectories, but has limited ability to adapt in complex dynamic environments.
- the extended Kalman filter (EKF), is an extension of the standard Kalman filter for nonlinear systems. It provides better accuracy in cases with complex trajectories, but requires more computing power.
- behavioral models, use previous data about the movements of objects to build behavioral models. They provide high accuracy, but depend on the availability of a large amount of training data.
- recurrent neural networks (RNN) and Long Short-Term Memory (LSTM), these models can take into account long-term dependencies in the data and are well suited for predicting complex trajectories. However, they require significant computing resources.

Let us analyze each method of predicting the trajectories of moving objects in a collaborative robots-manipulator working area and identify their advantages and disadvantages.

Linear methods are based on the assumption that the change in the position of the object in the working area of the robot can be described by linear functions. These methods are easy to implement and understand, but they have limitations when modeling nonlinear processes.

The simplest linear method is to use linear regression equations to predict an object's position based on its previous positions.

$$y(t) = \beta_0 + \beta_1 x_1(t) + \beta_2 x_2(t) + \dots + \beta_n x_n(t) + e(t) \quad (1)$$

$y(t)$ - the predicted position of the object at the moment of time t ;

$x_1(t), x_2(t), \dots, x_n(t)$ - values of independent variables (previous positions of the object);

$\beta_0, \beta_1, \dots, \beta_n$ - coefficients of the model;

$e(t)$ - model error.

Linear forecasting methods for moving objects in a collaborative robot-manipulator working area are simple to implement and fast, which makes them attractive for tasks with low computational complexity. They are well suited for systems where object movements are linear or can be adequately approximated by linear models. However, their main disadvantage is limited accuracy in cases where object movements are non-linear, which is often observed in real production conditions. Linear methods may also not take into account complex dynamics or interactions between objects, which can lead to errors in prediction and reduce the efficiency of the robots-manipulator.

The Kalman filter is an optimal recursive filter that estimates the state of an object in noisy systems. It is able to predict the next state of the object based on previous observations, taking into account the existing noise in the measurements. From the point of view of mathematical

description, this method includes two main phases: prediction and correction, which are represented in the following expressions:

- forecasting phase:

$$\tilde{x}_{(k|k-1)} = A\tilde{x}_{(k|k-1)} + Bu_k \quad (2)$$

$$P_{(k|k-1)} = AP_{(k|k-1)}^T + Q \quad (3)$$

- correction phase:

$$K_k = P_{(k/k-1)}^T (HP_{(k/k-1)}^T + R)^{-1} \quad (4)$$

$$\tilde{x}_{(k|k)} = \tilde{x}_{(k|k-1)} + K_k(z_k - H\tilde{x}_{(k|k-1)}) \quad (5)$$

$$P_{(k|k)} = (1 - K_k H)P_{(k|k-1)} \quad (6)$$

$\tilde{x}_{(k|k-1)}$ - predicted state;

$P_{(k|k-1)}$ - predicted error covariance;

K_k - matrix of Kalman coefficients;

z_k - measured value;

A - state transition matrix;

B - control matrix;

u_k - vector of controlling influences;

H - observation matrix;

Q - process noise covariance;

R - measurement noise covariance.

The Kalman filter is an effective tool for predicting the movement of objects in a collaborative robot-manipulator working area, as it provides an optimal assessment of the system state in conditions of noise and uncertainties. It performs well in real time, adapting to dynamic changes in the environment, which is important for accurate trajectory prediction. However, the main disadvantages are its limitations in application to linear systems and dependence on the correctness of process and measurement models. In conditions of significant nonlinearities or inaccuracies in modeling, the effectiveness of the Kalman filter may decrease, which leads to less accurate prediction of movement trajectories.

The extended Kalman filter (EKF) is a variant of the standard Kalman filter, but applies to nonlinear systems. It linearizes nonlinear equations of state and measurements by computing their derivatives. The EKF also has two main phases: prediction and correction, which are presented below:

- forecasting phase:

$$\tilde{x}_{(k|k-1)} = f(\tilde{x}_{(k-1|k-1)} * u_k) \quad (7)$$

$$P_{(k|k-1)} = F_k P_{(k-1|k-1)F_k^T} + Q \quad (8)$$

- correction phase:

$$K_k = P_{(k/k-1)H_k^E}^T (HP_{(k/k-1)H_k^E}^T + R)^{-1} \quad (9)$$

$$\tilde{x}_{(k|k)} = \tilde{x}_{(k|k-1)} + K_k (z_k - h(\tilde{x}_{(k|k-1)})) \quad (10)$$

$$P_{(k|k)} = (1 - K_k H_k) P_{(k|k-1)} \quad (11)$$

$f()$ - nonlinear state transition function;

$h()$ - nonlinear observation function;

F_k - matrix of derivatives (Jacobian) of the state transition function;

H_k - matrix of derivatives (Jacobian) of the observation function.

The Extended Kalman Filter (EKF) is effective for predicting the movement of objects in a collaborative robots-manipulator working area, as it allows for the processing of nonlinear systems, which is common in such tasks. The EKF provides more accurate state estimation compared to the standard Kalman filter due to linearization around the current state, which allows it to adapt to complex dynamic changes. However, this approach has drawbacks: it requires large computational resources and can be sensitive to initial conditions and errors in the model, which can lead to accumulation of errors and inaccuracies in predictions under significant nonlinearities or strong perturbations.

Behavioral forecasting models are based on the analysis of behavioral patterns of the object. They can be based on rules, expert systems or machine learning. These models are often used to predict the movement of objects interacting with the environment or other objects. Behavioral models can use different mathematical approaches, including decision rules, finite state machines, or neural networks. For example, a neural network can be used to train a behavior model based on previous data:

$$y(t) = \sigma(W * x(t) + b) \quad (12)$$

$y(t)$ - predicted position;

$x(t)$ - input data (previous position, speed, direction);

W - weighting coefficients;

b - shift;

$\sigma()$ - activation function.

Behavioral prediction models have the advantage of being able to take into account the complex interaction of objects and context, which allows the operation of the manipulator to adapt to various scenarios in the work area. They work effectively in environments with unpredictable or dynamic changes, which is important for tasks where the behavior of objects may differ significantly from standard trajectories. However, the main drawback is the dependence on high-quality training data and the high complexity of creating an adequate model, which can require

significant resources for training. In addition, behavioral models may be less accurate when predicting new or rare scenarios that were not considered during training.

Long Short-Term Memory (LSTM) is a type of recurrent neural networks (RNN) specially designed to work with sequential data and solve the problem of "forgetting" long-term dependencies. LSTMs are used to predict the movement of objects when it is important to consider long-term dynamics. LSTM has special blocks consisting of three main gates: input, forget and output, which regulate the flow of information. The mathematical representation of the blocks is given below:

- input gate:

$$i_t = \sigma(W_i * [h_{t-1}, x_t] + b_i) \quad (13)$$

- forgetting gate:

$$f_t = \sigma(W_f * [h_{t-1}, x_t] + b_f) \quad (14)$$

- candidate of new states:

$$C_t = \text{HTan}(W_c * [h_{t-1}, x_t] + b_c) \quad (15)$$

- state update:

$$C_t = f_t * C_{t-1} + i_t * \tilde{C}_t \quad (16)$$

- output gate:

$$o_t = \sigma(W_o * [h_{t-1}, x_t] + b_o) \quad (17)$$

- hidden state update:

$$h_t = o_t * \text{HTan}(C_t) \quad (18)$$

x_t - input vector at a time t ;

h_t - hidden state at a time t ;

C_t - memory state at a time t ;

W_i, W_f, W_c, W_o - weight matrices for the corresponding gates;

b_i, b_f, b_c, b_o - shift for the corresponding gate;

$\sigma()$ - sigmoid function;

HTan - hyperbolic tangent.

LSTM prediction models have the advantage of being able to efficiently process sequential data and take into account long-term dependencies, which makes them ideal for predicting complex and non-linear object trajectories in a collaborative robots-manipulator working area. They work well in situations with changing conditions where historical data must be taken into account for accurate forecasting. However, LSTM models require large computing resources and

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a large amount of training data to achieve high accuracy, which can be a challenge in real-world settings. In addition, their complexity can lead to long training and tuning times, as well as the risk of overtraining with limited data.

Based on the analysis, we will build a table comparing the advantages and disadvantages of each method: linear method, Kalman filter, EKF, behavioral models and LSTM models, the comparison results are given in Table 1.

Table 1. Comparison of the advantages and disadvantages of the methods of predicting the trajectories of the objects movement in a collaborative robots-manipulator working area

Method	Advantages	Disadvantages
Linear methods	Simple to implement, fast to implement, suitable for linear or almost linear systems.	Limited accuracy in non-linear movements, do not take into account complex dynamics, may cause errors.
Kalman filter	Effective in real time, works well with noise and uncertainties, adapts to changes.	Only suitable for linear systems, depends on the accuracy of the process model and measurements.
Extended Kalman filter (EKF)	Works with nonlinear systems, more accurate than the usual Kalman filter.	Requires large computing resources, sensitive to initial conditions, possible accumulation of errors.
Behavioral models	They take into account the complex interaction of objects, adapt to various scenarios, and are effective in dynamic environments.	Dependence on qualitative data, complexity of modeling, less accurate in new or rare situations.
LSTM models	Take into account long-term dependencies, are effective for non-linear and complex trajectories, work well with sequential data.	Requires large resources and data for training, difficult to configure, risk of overtraining.

CONCLUSION

In this article, a comparative analysis of methods for predicting object movement trajectories in a collaborative robots-manipulator working area was conducted, including linear methods, Kalman filter, extended Kalman filter (EKF), behavioral models, and LSTM models. Each of these methods has its own advantages and disadvantages, which determine their effectiveness in specific conditions. Linear methods are simple to implement and fast, but are limited in accuracy when dealing with nonlinear systems. The Kalman filter shows high efficiency in linear systems and in noisy conditions, but requires modeling accuracy, which can be problematic in cases with complex systems. The EKF is a powerful tool for dealing with nonlinear systems, but it depends on the initial conditions and can be resource intensive. Behavioral models provide flexibility and the ability to adapt to a variety of scenarios, but they require high-quality data for training and are complex to develop. LSTM models, on the other hand, can efficiently handle sequential data and account for long-term dependencies, making them a powerful tool for predicting complex trajectories, although they require significant computing resources and training time. In conclusion, the choice of a specific method for predicting trajectories in a collaborative

robot working area depends on the specifics of the task, the complexity of object dynamics, and available resources. Careful analysis of these factors is key to achieving the optimal balance between accuracy and efficiency in forecasting.

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EXPLORING MOTION CAPTURE ALGORITHMS IN COMPUTER VISION USING
INTEL DEPTH CAMERA

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The analysis of existing approaches to tracking the human body revealed the presence of problems when capturing movements in a three-dimensional coordinate system. The promise of motion capture systems based on computer vision is noted. Existing research on markerless motion capture systems only considers positioning in 2D space. Therefore, the goal of the study was to improve the accuracy of determining the coordinates of the human body in three-dimensional coordinates by developing a motion capture method based on computer vision and triangulation algorithms.

Keywords: motion capture, virtual reality, triangulation, computer vision, machine learning

Introduction. Significant progress has now been made in the field of computer vision. Technologies have been developed that allow solving the problems of detecting objects, determining their state, geometric assessment of the space depicted in the frame, and many others. Thanks to this, computer vision has become widespread in various fields of human activity, from healthcare and education to the entertainment sector. A fairly promising direction is the use of computer vision technologies for three-dimensional reconstruction and positioning of various objects, including people. There are quite a large number of systems for determining the absolute position of a person in space, which can be divided into the following categories:

- systems that use inertial sensors and make it possible to determine the magnitude of their movement, as well as changes in angles between them, which involves the use of gyroscopes and accelerometers [1]. A well-known representative of this category is Intel Depth [2], which includes up to 32 inertial sensors;

- laser positional tracking systems, based on the use of base stations installed on opposite sides of the room and emitting infrared rays, which make it possible to accurately determine the position and orientation of sensors in space. An example of such systems are Intel Depth virtual reality kits from HTC [3], which have an error of up to 0.1 mm;

- systems using magnetic sensors [4], based on the use of a magnetic field to capture human movement, which involve the presence of wearable sensors on the user's body. Intel Depth falls into this category.

- portable electromagnetic motion tracking system, considered one of the fastest (sampling frequency 240 Hz);

- optical systems based on markers - determine the position of objects using markers using a set of cameras. An example is Intel Depth, which has a fairly low error: the average absolute marker tracking errors are 0.15 mm in static tests and 0.2 mm (with corresponding angular errors of 0.3°) in dynamic tests [5];

- markerless optical systems based on the use of computer vision and machine learning. Examples of such technologies are OpenPose, MediaPipe, Intel Depth. With their help, human movements can be tracked with an accuracy of up to 30 mm [6].

Analyzing the listed categories of motion capture systems, we can conclude that most solutions used to recognize human actions and movements involve the presence

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of various wearable devices, such as sensors or gloves. The bulk of these devices are cumbersome due to the large number of sensors and the need for a wired connection. Some such systems have high accuracy, but cannot be used due to their size or the presence of electromagnetic interference [7]. Inertial systems have a number of problems associated with error accumulation, which limits their use to relative positioning in space only.

Therefore, optical systems for recognizing and tracking user actions are very popular. To obtain information about the user's actions and position, frames obtained from the camera are used. Among optical systems, it is worth noting those that use markers (the user may be dressed in special clothing or certain marks are attached to him), which makes their use in real conditions difficult and is more applicable to specially prepared premises (for example, film studios).

Systems that do not use any markers allow users to interact more freely with the environment and are more suitable for real-world applications. Significant disadvantages of systems in this area include relatively low accuracy, unreliability and low performance. This may be largely due to the shortcomings of computer vision algorithms used to recognize a person in a frame, as well as the following reasons: variability in a person's appearance and lighting conditions, partial occlusions due to layering of objects in the scene, and the complexity of the human skeletal structure.

The operation of markerless motion capture systems is usually based on an algorithm for estimating human pose. Approaches to solving the problem of human pose estimation can be divided into top-down and bottom-up. In top-down approaches, people are first detected in the frame, then the pose of each detected person is estimated. Algorithms that belong to bottom-up approaches, at the first stage, search for body parts in the frame, then group them into poses. As a rule, convolutional neural networks are used for this task, such as YOLO (You Look Only Once) [8], SSD (Single Shot Detection) [9], R-CNN (Region CNN) [10] and others. They allow you to recognize many different objects, including a person or individual parts of the body, with high accuracy. However, one of the disadvantages of the solutions listed above is their low performance and slow operation. To solve this problem, there are special frameworks Intel Depth [11], MediaPipe [12], OpenPose [13]), which also use neural networks optimized for real-time operation.

It should be noted that the above algorithms, technologies and approaches of markerless motion capture systems allow positioning in two-dimensional space, which makes it difficult both to determine the distance to objects and their sizes, and to track complex movements when, for example, the user's hands are hidden by his body. Existing stereo camera solutions can be effective, but are not very accurate when the subject is far away from the camera, which is what happens when tracking a person's entire body. In addition, they do not solve the problem of occlusions. Thus, a current research direction is the development of a motion capture method using multiple cameras and computer vision technologies. When implementing multi-camera motion capture systems, the problem of combining objects from several images inevitably arises, i.e. the need to perform triangulation. Among the triangulation methods, linear and iterative linear algorithms can be distinguished.

Linear triangulation is the most common approach to performing the reconstruction of objects in three-dimensional space, including methods such as linear eigenmethod, linear least squares method, direct linear transformation, differing in varying degrees of noise resistance [14].

Iterative linear methods are a more robust version of linear triangulation. Conventional linear methods may be less accurate when solving problems of triangulation of a set of points, since when solving systems, the minimized error has no geometric meaning (it does not take into account the shape of the skeleton and the rules for connecting points). The basic idea of iterative linear methods is to adaptively change the weights of linear equations such that the weighted equations correspond to the errors. Iterative linear methods include L2 and L ∞ triangulation [15].

Thus, within the framework of this research, the following task is set: it is necessary to develop a method for capturing human movements that allows positioning the user's body in three-dimensional coordinates with minimal error and using computer vision technologies. The proposed method can be used either as a replacement for existing motion capture systems or as part of other algorithms, for example, for subsequent classification of the human condition. The goal of this work is to improve the accuracy of determining the poses and coordinates of the human body in three-dimensional coordinates by developing motion capture methods based on computer vision. To achieve this goal, it is necessary to formalize the main stages of the process of capturing points of the human body from several cameras, integrate triangulation algorithms, choosing among them the optimal one in terms of accuracy, and implement a software implementation of the proposed method.

Materials and methods. Solving the problem of three-dimensional positioning of a person in space includes the following main stages:

- preliminary calibration of a set of cameras;
- implementation of procedures for detecting a person in a frame and calculating skeletal points;
- calculation of three-dimensional reconstruction of a human body model.

Let's look at them in more detail.

The calibration process involves the camera system taking several pictures of a calibration template from which key points with their known relative positions in space can be easily identified. Afterwards, internal and external parameters are calculated for each camera. Internal parameters are constant for a specific camera, external parameters depend on the location of the cameras relative to each other [16]. Therefore, this step must be completed before using the camera system for the first time in a given location.

To calculate the coordinate values of a point in three-dimensional space, it is necessary to know the coordinates of its projections on images and the projective matrices of cameras [10]. The projective matrix P of some camera can be represented as a combination of matrices A (containing internal parameters of the camera) and R (rotation), as well as a displacement vector T, which describe the change in coordinates from the world coordinate system to the coordinate system relative to the camera:

$$P = A[R|T] = \begin{bmatrix} f_x & 0 & c_x \\ 0 & f_y & c_y \\ 0 & 0 & 1 \end{bmatrix} \begin{bmatrix} r_{11} & r_{12} & r_{13} & t_1 \\ r_{21} & r_{22} & r_{23} & t_2 \\ r_{31} & r_{32} & r_{33} & t_3 \end{bmatrix},$$

where (x, y) are the coordinates of the projection of a three-dimensional point on the image in pixels; (c_x, c_y) — coordinates of the camera's central point; f_x, f_y — focal length in pixels.

At the second stage, it is necessary to directly obtain key (skeletal) points of the human body on each of their cameras. To extract skeletal body points from a frame, it is possible to use

various machine learning technologies, for example, Intel Depth, MediaPipe, OpenPose and others [8]. As part of this study, it is proposed to use the highly efficient and productive Pose module from the MediaPipe library. MediaPipe Pose uses machine learning to provide highly accurate human body pose tracking, 3D landmark detection, and full-body background segmentation masks from RGB video frames. This approach allows you to track up to 33 points and provides real-time operation on most modern devices.

At the third stage, the positions of key skeletal points in three-dimensional space are calculated. To obtain data on the position of human skeletal points in space, triangulation is performed - finding the coordinates of a three-dimensional point from the coordinates of its projections. Triangulation is one of the most important tasks in computer vision; its solution is a decisive step in 3D reconstruction and affects the accuracy of the entire result [9].

The three-dimensional reconstruction of object points based on the position values of point projections on images from all cameras is based on epipolar geometry. Its main idea is that 3D points in the scene are projected onto lines in the image plane of each camera - epipolar lines. These lines correspond to the intersection of the image plane with the plane passing through the centers of the cameras and the 3D point. This idea provides a condition for finding pairs of corresponding points in two images: if it is known that a point x on the plane of the first image corresponds to a point x' on the plane of another image, then its projection must lie on the corresponding epipolar line.

Since X is a homogeneous representation of coordinates in three-dimensional space, to calculate them it is necessary to obtain $i x$ and P_i for at least two cameras. To solve the system of equations (7), 4 algorithms were considered [4]:

- direct linear transfer (DLT);
- linear least squares method;
- L2 triangulation; - optimal (polynomial) method.

DLT refers to linear triangulation algorithms, the main advantage of which is the simplicity of its implementation. For example, in the Intel Depth computer vision library there is a ready-made implementation of this algorithm in the triangulatePoints method.

The linear least squares method also refers to linear ones and consists in the fact that the system of homogeneous equations (7) is reduced to a system consisting of inhomogeneous equations, for solving which the least squares method is used.

When using a two-camera system, to minimize error (9), the following sequence of actions must be performed:

- parameterize the bundle of epipolar lines in the first image using the parameter t . Thus the epipolar line in the first image can be expressed as $0 \square ()t$;
- using the fundamental matrix F , calculate the corresponding epipolar line $1 \square ()t$ in the second image;
- express the distance function (9) as a function of t ;
- search for the value of t at which (9) tends to a minimum.

Using elementary calculus methods, we can reduce the solution of the minimization problem to finding the roots of a sixth-order polynomial. The estimated spatial point is calculated using the Direct Linear Transfer (DLT) method [7].

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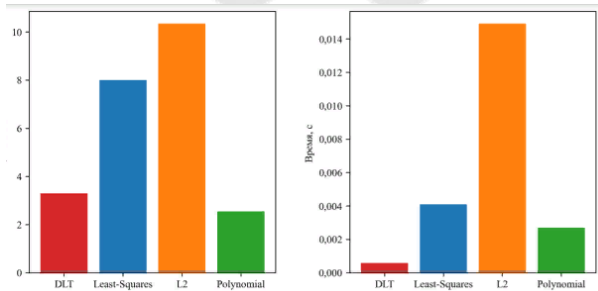
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Research results. The solution to the optimization problem (11) is carried out by triangulating two-dimensional object points obtained from images of several cameras, in the framework of this study - from two cameras using various algorithms listed in the previous section.

The listed triangulation methods were implemented using the Intel Depth and NumPy libraries. For comparison, the algorithms were integrated into software that implements a 3D motion capture method. An example of the method for reconstructing the entire human skeleton is shown in Fig. 1.



Then, these algorithms were compared by the value of the reprojection error function (11) for all skeletal points from two images. A comparison of the selected triangulation methods was carried out in terms of the magnitude of the error, as well as in terms of the time to obtain a solution (computational complexity) for the entire set of skeletal points. Summary comparison diagrams are presented in Fig. 2.



For the selected triangulation methods, a series of experimental tests were also carried out, during which, for each approach, the calculated lengths of the user's limbs and the absolute deviation of the obtained values from the real ones were measured. The comparison is presented in Table 1.

Table 1

Body segment	DLT	Least-Squares	L2	Polynomial	Реальное значение
Forearm	25,2 ± 1,6	30,8 ± 0,2	26,6 ± 0,5	24,3 ± 0,4	26
Shin	42,2 ± 2,0	65,3 ± 1,1	44,6 ± 0,7	38,7 ± 1,8	41
Hip	45,7 ± 2,7	59,5 ± 0,49	48,7 ± 1,3	44,1 ± 0,6	45
Average deviation	2,43	14,58	2,26	1,67	0

Presented are the average values (in centimeters) after a sample of 10 measurements ± standard deviation in the sample

The developed software includes the following modules:

- for working with input devices (cameras);
- to perform calibration and obtain basic camera parameters;
- for synchronizing several cameras;
- for object recognition (user's body and hands);
- to analyze the location of the found skeletal points;
 - to build visualization in real time

When implementing the software, the Python programming language, Intel Depth and Matplotlib libraries were used. The system operates in several threads: one is responsible for receiving data from cameras, the second is for visualization, and the third is for sending the received world coordinates of the human body to external systems or modules. The use of a unified protocol with a data package in JSON format allows you to integrate the software into third-party systems (for example, game development environments Unity, Unreal Engine, etc.) [2].

Discussion and conclusion. Let us analyze the results of comparing triangulation algorithms based on selected metrics, presented in Fig. 2 and in table 1.

During the comparison, it was found that the optimal algorithm for 3D reconstruction is the polynomial method. The error value is about 2.55 pixels. In real tests, when determining a person's height, the error was no more than 3%, taking into account the fact that MediaPipe Pose does not fix the top point of the head and it is calculated approximately based on the position of the eyes. When measuring the limbs, the error ranged from 0.9 cm to 2.3 cm, the average was 1.67 (Table 1). Thus, real tests confirm the correctness of the choice of the polynomial method.

Next, we compare the results obtained with existing studies, for example, those described in [2]. The authors also use trained networks (OpenPose) to implement a markerless human recognition system, a camera calibration procedure, and skeletal point extraction, but place the cameras next to each other to simulate stereo vision. This key difference allows this study to recognize human postures where some parts of the body overlap others. In addition, using MediaPipe Pose allows you to track 33 skeletal points, rather than 18 as in the Intel Depth-based method. The obtained error values generally correspond to existing studies (the best result in [2] is 2 cm), which allows us to conclude that the proposed approach can be used in practice. Other markerless systems, for example, based on Kinect [3], also show comparable results in terms of measurement error (2–5 cm). Thus, the resulting solution generally corresponds in accuracy to existing developments.

Comparison of point set calculation time shown in Fig. 2 on the right shows that the DLT algorithm provides the best performance, however, all algorithms show acceptable results (to ensure performance of 30 and even 60 frames per second). Therefore, this metric is not decisive.

The developed software can be used in various subject areas, primarily as a replacement for motion capture systems based on inertial sensors. The advantages of the proposed solution are low economic costs of implementation and availability (transition from highly specialized motion capture suits to common camera-based tools), the possibility of parallel capture of body models of several users [4].

The scientific novelty of the research lies in an integrated approach to formalizing the process of three-dimensional positioning of a person using computer vision technologies, including preliminary calibration of a set of several cameras, formalization of procedures for detecting a person in a frame using an arbitrary neural network to obtain skeletal points, as well as calculation of a three-dimensional reconstruction of a body model human using various

triangulation algorithms. The study includes all the necessary calculation formulas and detailed steps to achieve the goal - increasing the accuracy of determining the poses and coordinates of the human body in three-dimensional coordinates using computer vision technologies. The presented theoretical results are quite universal and can be used for the practical implementation of motion capture systems based on various neural network models, not just MediaPipe Pose.

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**BUGUNGI KUNDAGI OLIY TA'LIM MUASSASALARI RAHBAR SHAXSLARNING
KOMPETENLIGIGA QO'YILAYOTGAN TALABLAR VA ULARNING
FAOLIYATLARI**

Najmetdinov Ma'ruf G'ayratovich

Annotatsiya: Ushbu maqolada oliy ta'lim muassasalarining rahbarlari kompetentligiga qo'yilayotgan zamonaviy talablar tahlil qilinadi. Tadqiqotda rahbarlarning boshqaruv ko'nikmalari, innovatsion texnologiyalarni qo'llash qobiliyatlari va yetakchilik sifatleri o'rganilgan. So'rovnoma va statistik tahlillar natijasida rahbarlarning zamonaviy ta'lim tizimiga moslashish darajasi, ma'naviy qiyofasi va axloqiy fazilatleri baholandi. Natijalar rahbarlar faoliyatining oliy ta'lim muassasalari rivojlanishi va talaba yetakchilik ko'nikmalarini shakllantirishdagi muhim rolini tasdiqladi. Maqola zamonaviy ta'lim rahbarlarining faoliyatiga doir yondashuvlarni baholash uchun foydali.

Kalit so'zlar: Oliy ta'lim rahbarlari, kompetentlik, boshqaruv, innovatsiya, yetakchilik, texnologiyalar, ma'naviyat, axloqiy qadriyatlar, ta'lim sifati.

**TODAY'S HIGHER EDUCATION INSTITUTIONS REQUIREMENTS FOR THE
COMPETENCE OF LEADERS AND THEIR ACTIVITIES**

Abstract: This article analyzes the modern requirements for the competence of leaders of higher education institutions. In the research, management skills of leaders, ability to use innovative technologies and leadership qualities were studied. As a result of questionnaires and statistical analysis, the level of adaptation of the leaders to the modern education system, moral image and moral qualities were evaluated. The results confirmed the important role of leaders in the development of higher education institutions and the formation of student leadership skills. The article is useful for evaluating approaches to the activities of modern educational leaders.

Key words: Higher education leaders, competence, management, innovation, leadership, technologies, spirituality, moral values, quality of education.

**ТРЕБОВАНИЯ СОВРЕМЕННЫХ ВУЗОВ К КОМПЕТЕНТНОСТИ ЛИДЕРОВ И ИХ
ДЕЯТЕЛЬНОСТИ**

Аннотация: В данной статье анализируются современные требования к компетентности руководителей высших учебных заведений. В исследовании изучались управленческие навыки лидеров, умение использовать инновационные технологии и лидерские качества. В результате анкетирования и статистического анализа оценивались уровень адаптации лидеров к современной системе образования, моральный имидж и моральные качества. Результаты подтвердили важную роль лидеров в развитии высших учебных заведений и формировании лидерских качеств студентов. Статья полезна для оценки подходов к деятельности современных лидеров образования.

Ключевые слова: Лидеры высшего образования, компетентность, менеджмент, инновации, лидерство, технологии, духовность, моральные ценности, качество образования.

Oliy ta'lim muassasalarining rahbar shaxslariga qo'yilayotgan talablar yillar davomida o'zgardi va zamonaviy jarayonlarga moslashdi. Hozirgi davrda oliy ta'lim muassasalari rahbarlarining kompetentligi, mahorati va yetakchilik qobiliyatlari muvaffaqiyatli va barqaror ta'lim tizimining asosiy omillaridan biriga aylangan. Ta'limda globalizatsiya, raqamlashtirish va innovatsiyalar kuchayishi ta'lim muassasalari rahbarlaridan nafaqat kuchli boshqaruv qobiliyatlarini, balki keng ko'lamdagi bilimlarni, zamonaviy texnologiyalarni qo'llay olishni va barqaror rivojlanishga hissa qo'shishni talab qilmoqda.

Bugungi kunda oliy ta'lim muassasalarining rahbarlari o'z tashkilotlarining muvaffaqiyatli rivojlanishini ta'minlash uchun xalqaro standartlarga mos ravishda rivojlanayotgan talablarga javob berishi kerak. Oliy ta'lim rahbarlarining asosiy vazifalari o'z ichiga yangi ilmiy-texnologik yutuqlarni ta'lim tizimiga kiritish, ta'lim mazmunini modernizatsiya qilish, ilm-fan va ta'lim jarayonlarini uzviy bog'lash kabi masalalarni kiritadi (Abdulhamidova, 2024). Bunda raqamli transformatsiya va raqobat kuchayishi ham ta'lim muassasalarining global maydondagi rolini mustahkamlashda hal qiluvchi ahamiyat kasb etmoqda.

Ta'lim muassasalari rahbarlarining kompetentligiga qo'yilayotgan talablar nafaqat boshqaruv malakalariga qaratilgan bo'lib, ular pedagogik bilimlar, ijtimoiy va etika me'yorlariga mos ravishda faoliyat yuritish qobiliyatlarini ham o'z ichiga oladi. Bu esa ta'lim muassasalarining barqaror rivojlanishi va ular tomonidan taklif qilinayotgan ta'lim sifatining yuqori darajasini ta'minlashda muhim omil hisoblanadi. Rahbar shaxslar o'z faoliyatida pedagogik yondashuvlardan foydalanishi, innovatsiyalarni joriy etish va ta'lim muhitini kengaytirishi lozim (Nabiyeva, 2024). Oliy ta'lim tizimidagi muhim vazifalardan biri - bu rahbarlarning ma'naviy qiyofasi va ularning jamoani boshqarishdagi yetakchilik qobiliyatlari. Yetakchilik qobiliyati bilan bir qatorda, rahbarlar o'zlarining kasbiy, ma'naviy va axloqiy fazilatlarini rivojlantirishi, jamoa orasida yuqori hurmatga ega bo'lishi talab etiladi.

Shu bilan birga, oliy ta'lim muassasalarida rahbarlarning innovatsiyalarni muvaffaqiyatli joriy etishi, yangi texnologiyalarni ta'lim jarayoniga tatbiq etishlari va talabalar bilan o'zaro faoliyatni sifatli olib borishlari muhim ahamiyat kasb etmoqda. Bunday yondashuv ta'lim muassasalari rahbarlarining zamon talablari bilan mos keladigan bilim va ko'nikmalarga ega bo'lishini talab qiladi. Masalan, oliy ta'lim tizimida yetakchilik ko'nikmalarini rivojlantirish va talabalarga motivatsion muhit yaratish rahbarlarning asosiy vazifalaridan biri hisoblanadi. Yetakchilikning zamonaviy usullarini qo'llash va jamoa bilan samarali hamkorlik qilish orqali ta'lim sifatini oshirish muhimdir (Mavlonova, 2024).

Adabiyotlar tahlili. Oliy ta'lim muassasalarining rahbar kadrlari uchun kompetentlikka qo'yilgan talablar zamonaviy boshqaruv va pedagogik ko'nikmalarni o'z ichiga oladi. Abdulhamidova (2024) o'z maqolasida rahbarlarning kompetentligiga bo'lgan talablar tobora ortib borayotganini va zamonaviy ta'lim jarayonida ilm-fan va texnologiya bilan integratsiyalangan boshqaruv muhimligini ta'kidlaydi. Rahbarlar faqatgina ta'lim jarayonini boshqarish bilan cheklanmasdan, innovatsiyalarni ham joriy etishlari kerak. Nabiyeva (2024) esa ta'lim muassasalari rahbarlarining ma'naviy qiyofasi va unga qo'yilgan talablar haqida to'xtalib, rahbar shaxslarning axloqiy qadriyatlarini hamda etika me'yorlariga mos ravishda faoliyat yuritishlari zarurligini qayd etadi. Ushbu omillar ta'lim jarayonining barqarorligini va sifatini ta'minlashda katta rol o'ynaydi. Ta'lim muassasalarining rahbarlari ijtimoiy va ma'naviy jihatdan kuchli bo'lishlari zarur, chunki ular jamoani boshqarish jarayonida yetakchi bo'lishlari kerak.

Mavlonova (2024) esa oliy ta'lim tizimida talabalar faolligi va yetakchilik ko'nikmalarining rivojlanishi haqida fikr yuritib, talabalarning muvaffaqiyatli ta'lim olishi uchun rahbarlarning ularni rag'batlantirish va qo'llab-quvvatlash ko'nikmalari muhimligini ta'kidlaydi. Rahbarlar yetakchilik qobiliyatlariga ega bo'lishi, o'zaro munosabatlarni samarali tashkil etishi va yangi yondashuvlarni qo'llay olishlari ta'lim tizimining muvaffaqiyatli ishlashiga yordam beradi. Adabiyotlardan ko'rinib turibdiki, oliy ta'lim muassasalari rahbarlarining kompetentligi ko'p qirrali va zamon talablari bilan bog'liq. Bu esa rahbarlarning nafaqat boshqaruv, balki ta'lim, texnologiya va ma'naviyat sohalarida ham yetakchi bo'lishini talab qiladi.

Metodlar

Ushbu tadqiqot oliy ta'lim muassasalarining rahbarlarining kompetentligiga qo'yilayotgan talablarni tahlil qilishga qaratilgan bo'lib, zamonaviy ta'lim jarayonlari va boshqaruv usullari bilan bog'liq yondashuvlarni o'rganish uchun empirik va nazariy metodlardan foydalanildi. Birlamchi ma'lumotlar sifatida Toshkent shahridagi 10 ta oliy ta'lim muassasasining rahbarlari va pedagogik xodimlari o'rtasida o'tkazilgan so'rovnoma asosida ma'lumotlar yig'ildi. So'rovnomada 50 nafar respondent qatnashib, ular oliy ta'lim muassasalari rahbarlarining boshqaruv uslubi, innovatsiyalarni joriy etish qobiliyatlari va yetakchilik ko'nikmalarini baholadilar. Ikkinchi bosqichda esa olingan natijalar statistik tahlil qilingan va ulardan keyingi xulosalar chiqarilgan. Tadqiqotda korrelyatsion tahlil usuli yordamida rahbarlarning kompetentligiga ta'sir qiluvchi omillar o'rganildi. Shuningdek, nazariy qismda ilmiy manbalar tahlili va ular asosida olinadigan natijalar o'rganildi. Ma'lumotlar yig'ish jarayonida anketalar, intervyular va mavjud ilmiy manbalardan foydalanildi.

Natijalar

Tadqiqot natijalari oliy ta'lim muassasalarida rahbar shaxslarning kompetentligiga qo'yilgan talablarning zamonaviy ta'lim jarayoniga mos ravishda rivojlanayotganini ko'rsatdi. So'rovnoma natijalariga ko'ra, ishtirokchilarning 85 foizi rahbarlarning boshqaruv ko'nikmalarini yuqori darajada deb baholadi. Shuningdek, respondentlarning 78 foizi oliy ta'lim rahbarlari zamonaviy texnologiyalardan faol foydalanayotganini ta'kidlaydi. Bu, ta'lim muassasalarida innovatsion texnologiyalarni joriy etish darajasining ortib borayotganini tasdiqlaydi. Rahbarlarning yetakchilik qobiliyatlari ham alohida tahlil qilindi. So'rov ishtirokchilarining 72 foizi rahbarlarning jamoani boshqarish va talabalar bilan samarali hamkorlik qilish qobiliyatlarini yuqori baholadi. Rahbarlar talabalarning liderlik ko'nikmalarini rivojlantirish uchun yetarlicha motivatsiya va qo'llab-quvvatlash ko'rsatishini ta'kidlashdi. Bu esa oliy ta'lim muassasalarida talabalar faolligi va yetakchilik ko'nikmalarining shakllanishi jarayoniga ijobiy ta'sir ko'rsatayotganini ko'rsatadi.

Natijalar shuni ko'rsatdiki, oliy ta'lim muassasalaridagi rahbarlar faqatgina boshqaruv mahoratiga ega bo'lishlari kerak emas, balki ma'naviy qiyofasi ham muhim ahamiyatga ega. So'rovda qatnashganlarning 65 foizi rahbarlarning ma'naviy qadriyatlarini va axloqiy fazilatlarini jamoaning umumiy kayfiyatiga ijobiy ta'sir ko'rsatishini bildirdi. Bu rahbarlarning ta'lim jarayonida axloqiy etakchi bo'lishlari va yuqori ijtimoiy mas'uliyatni namoyon qilishlari kerakligini ko'rsatadi. Statistik tahlil natijalariga ko'ra, oliy ta'lim muassasalari rahbarlarining boshqaruv qobiliyatlari va ta'lim sifatiga ijobiy ta'sir ko'rsatuvchi o'zaro bog'liqlik kuzatildi. Korrelyatsion koeffitsiyenti $r=0.72$ bo'lib, bu rahbarlarning kompetentligi va ta'lim sifati o'rtasida kuchli bog'liqlik mavjudligini ko'rsatdi. Shuningdek, innovatsion texnologiyalarning joriy etilishi va talabalar faolligi o'rtasida ham ijobiy o'zaro bog'liqlik kuzatildi.

($r=0.68$ $r = 0.68$ $r=0.68$). Umumiy natijalarga ko'ra, rahbarlarning zamonaviy texnologiyalardan foydalanish qobiliyati, boshqaruvdagi samaradorligi va ma'naviy qiyofasi oliy ta'lim muassasalarining rivojlanishida muhim ahamiyat kasb etmoqda. Shu bilan birga, rahbarlarning pedagogik yondashuvlarni qo'llay olishi ta'lim sifatini oshirishda va innovatsiyalarni joriy etishda asosiy omil hisoblanadi.

Muhokama

Ushbu tadqiqot natijalari oliy ta'lim muassasalarining rahbarlari faoliyatiga qo'yilayotgan talablarning muhimligini yana bir bor tasdiqlaydi. Rahbarlarning zamonaviy texnologiyalar va innovatsiyalarni ta'lim jarayoniga joriy etishlari ta'lim muassasalari muvaffaqiyatini ta'minlashda muhim ahamiyatga ega ekanini ko'rsatdi. So'rov natijalari ham bu jihatni tasdiqlaydi, chunki ishtirokchilarning aksariyati rahbarlarning innovatsion texnologiyalardan foydalanishini yuqori baholashgan. Bunday yondashuvlar ta'lim muassasalarining raqobatbardoshligini oshiradi va talabalarning motivatsiyasini kuchaytiradi. Rahbarlarning yetakchilik ko'nikmalari va pedagogik yondashuvlari ham tadqiqotning muhim topilmalari qatoriga kiradi. Natijalar rahbarlar nafaqat boshqaruv faoliyatida, balki talabalarning bilim olish jarayonida ham muhim rol o'ynayotganini ko'rsatadi. Talabalarning faolligi va ularning yetakchilik ko'nikmalarini rivojlantirish borasida rahbarlarning roli ortib bormoqda. Ushbu jihat, ta'lim jarayonida o'qituvchilar va rahbarlar o'rtasidagi hamkorlikning kuchayishi, ta'lim sifati oshishi va umumiy ta'lim muhiti yaxshilanishiga xizmat qilishi mumkin. Shuningdek, rahbarlarning ma'naviy qiyofasi va etika me'yorlariga amal qilishining ahamiyati ham bu tadqiqotda aniqlandi. Rahbarlar axloqiy qadriyatlar bilan ta'lim muhitiga ijobiy ta'sir ko'rsatishi va jamoani boshqarishda nafaqat texnik ko'nikmalarga, balki insoniy sifatlarga ham katta ahamiyat berishlari lozimligi ko'rinadi. Bu esa ta'lim muassasalarining uzoq muddatli barqaror rivojlanishini ta'minlashda muhim ahamiyat kasb etadi.

Xulosa

Ushbu tadqiqot oliy ta'lim muassasalarining rahbarlari kompetentligiga qo'yilayotgan talablarni o'rganish va baholashga qaratilgan. Tadqiqot natijalari shuni ko'rsatdiki, rahbarlarning zamonaviy boshqaruv usullari, texnologik innovatsiyalarni qo'llash qobiliyatlari va yetakchilik ko'nikmalari ta'lim muassasalarining rivojlanishi va barqarorligi uchun juda muhimdir. Xususan, tadqiqotda ishtirok etgan respondentlarning aksariyati rahbarlarning boshqaruv faoliyatini yuqori baholab, ularning zamonaviy texnologiyalarni joriy etish borasidagi ko'nikmalarini alohida ta'kidlagan. Shuningdek, rahbarlarning ma'naviy qiyofasi va axloqiy fazilatlarini ta'lim muassasalarining ijtimoiy muhitiga katta ta'sir ko'rsatishi aniqlandi. Oliy ta'lim rahbarlarining axloqiy qadriyatlarini va pedagogik yondashuvlarini ularning jamoa orasidagi obro'sini oshirishi va ta'lim jarayonining samaradorligini kuchaytirishi muhim ekanligi qayd etildi. Shuningdek, talabalar faolligini oshirish va ularning yetakchilik ko'nikmalarini rivojlantirishda rahbarlarning roli alohida ahamiyat kasb etadi. Umuman olganda, ushbu tadqiqot oliy ta'lim muassasalarining rahbarlariga qo'yilgan talablarning keng qamrovli ekanligini va rahbarlarning nafaqat boshqaruv, balki pedagogik, texnologik va axloqiy jihatdan ham yuqori malakaga ega bo'lishlari kerakligini ko'rsatdi. Bunday talablar zamonaviy ta'lim tizimining rivojlanishi va raqobatbardoshligini ta'minlashda asosiy omil sifatida namoyon bo'lmoqda.

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Annotatsion: In diesem Artikel werden die wesentlichen Merkmale der Lexikographie sowie ihre Entwicklung im Kontext moderner Methoden analysiert. Es wird auf die Herausforderungen bei der Erstellung von Wörterbüchern eingegangen und Lösungsansätze besprochen. Zudem wird die Rolle der Korpuslinguistik und der Einsatz moderner Technologien in der Lexikographie diskutiert.

Schlüsselwörter: Lexikographie, Korpuslinguistik, moderne Technologien, Wörterbucharstellung, Sprachwissenschaft

EINLEITUNG

Die Lexikografie oder Lexikographie (**altgriechisch** λεξικὸνβιβλίον *lexikòn biblion* „Wörterbuch“ und γράφω „schreibe“, vgl. **-graphie**) beschäftigt sich mit dem Erstellen von **Wörterbüchern**. Das Erstellen eines Wörterbuches ist ein komplexer und meist langwieriger Prozess. Bei allen größeren Projekten wird die Arbeit von mehreren Personen ausgeführt. Sie führt zu einem gedruckten Wörterbuch, einem elektronischen Wörterbuch oder zu einer lexikalischen Datenbank, die Grundlage für beides sein kann. Die Lexikographie ist ein bedeutendes Teilgebiet der Sprachwissenschaft, das sich mit der Erstellung von Wörterbüchern und der systematischen Analyse des Wortschatzes beschäftigt. Ihre Hauptaufgabe besteht darin, den lexikalischen Reichtum einer Sprache zu dokumentieren und zugänglich zu machen. Lexikographen müssen sich mit zahlreichen sprachlichen, kulturellen und gesellschaftlichen Herausforderungen auseinandersetzen, die diesen Prozess begleiten.

Forschungsstand

Die moderne Lexikographie vereint sowohl theoretische als auch praktische Aspekte. Während die theoretische Lexikographie die grundlegenden Prinzipien der Wörterbucharstellung untersucht, befasst sich die praktische Lexikographie mit der eigentlichen Erstellung von Wörterbüchern. Besonders in den letzten Jahrzehnten hat sich der Bereich durch den Einsatz computergestützter Methoden stark verändert. Ein wichtiger Teilbereich ist die Korpuslinguistik, die große Mengen an Textdaten analysiert, um lexikalische Muster zu erkennen.

Methodik

Bei der Erstellung eines Wörterbuchs sind verschiedene methodische Schritte notwendig. Zunächst wird ein Korpus erstellt, das eine repräsentative Sammlung von Texten der betreffenden Sprache umfasst. Dieses Korpus wird mithilfe von Textverarbeitungsprogrammen analysiert, um die Häufigkeit und Bedeutung von Wörtern zu bestimmen. Anschließend werden die Wörter in Kategorien eingeteilt, die ihre Bedeutung, Grammatik und Verwendung widerspiegeln. Lexikographen müssen dabei die kulturellen und historischen Kontexte berücksichtigen, um eine genaue Darstellung der Wörter zu gewährleisten.

Diskussion

Eine der größten Herausforderungen der Lexikographie besteht in der Entscheidung, welche Wörter in ein Wörterbuch aufgenommen werden sollen. Dies hängt von verschiedenen

Faktoren ab, wie z. B. der Häufigkeit eines Wortes, seiner Relevanz für die Zielgruppe des Wörterbuchs und seiner historischen Bedeutung. Ein weiteres Problem ist die Darstellung der Mehrdeutigkeit von Wörtern. Viele Wörter haben mehrere Bedeutungen, die je nach Kontext variieren können. Die genaue Erfassung dieser Nuancen ist eine der schwierigsten Aufgaben der Lexikographen.

Ergebnisse

Die Lexikographie hat in den letzten Jahren erhebliche Fortschritte gemacht, insbesondere durch die Nutzung digitaler Technologien. Online-Wörterbücher und mobile Apps haben die Art und Weise, wie Menschen Wörter nachschlagen und lernen, revolutioniert. Darüber hinaus haben die Fortschritte in der Korpuslinguistik zu präziseren und umfassenderen Wörterbüchern geführt, die eine bessere Abdeckung des Sprachgebrauchs bieten.

Die Lexikografie ist eng verwandt, aber nicht identisch mit der **sprachwissenschaftlichen** Disziplin der **Lexikologie**. Die Lexikologie untersucht systematisch Teile des **Wortschatzes** einer **Sprache**, ohne diesen aber vollständig kodieren zu wollen. Die **Enzyklopädik** bzw. Enzyklopädistik beschäftigt sich mit dem Erstellen von **enzyklopädischen** Nachschlagewerken.

Fazit: Die Lexikographie bleibt ein dynamisches und sich ständig weiterentwickelndes Feld, das sowohl Sprachwissenschaftler als auch Technikexperten anzieht. Trotz der Fortschritte bleibt die Erstellung eines Wörterbuchs eine komplexe und anspruchsvolle Aufgabe, die fundiertes Wissen über Sprache, Kultur und Gesellschaft erfordert. Die zukünftige Entwicklung der Lexikographie wird zweifellos weiterhin von technologischen Innovationen geprägt sein, die die Möglichkeiten der Sprachforschung erweitern.

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THE OCCURRENCE OF STROKE DISEASE IN HUMANS AND IT'S
PHYSIOLOGICAL PROCESSES.

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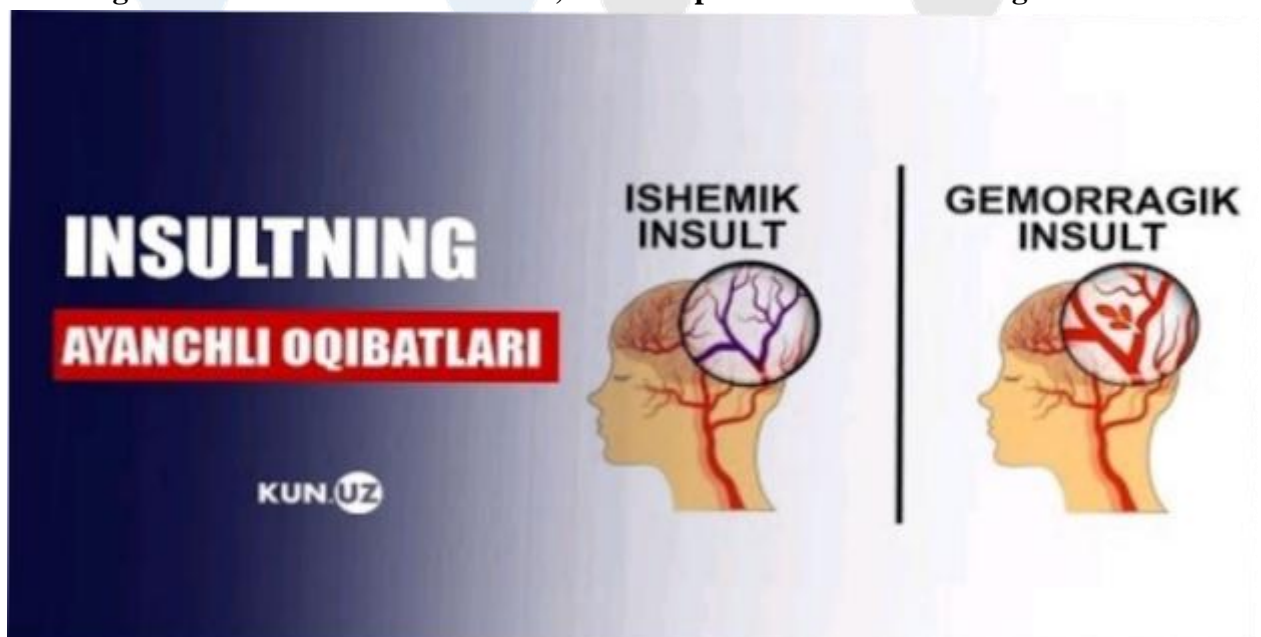
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Annotation: We know that by the present time, innovative technologies are developing and yet various new diseases are also developing. Various small factors are causing severe diseases. In this cited article, however, the occurrence of stroke disease in humans and the physiological processes observed in patients with this disease and changes in their psyche are cited.

Keywords: stroke, types, hemorrhagic stroke, ischemic stroke, cause, atherosclerosis, symptoms, treatment.

One of the most common diseases of the brain is stroke, which is a sudden neurological disease. In this disease, blood circulation in the cranial brain is caused by a strong disorder. In a stroke, blood flow to the brain occurs with a rupture of blood vessels in the brain. Two types of this disease occur mainly:

1. Hemorrhagic stroke is a disease that goes to the brain with a blood transfusion. Although this type of stroke appears suddenly in humans, however, the target of the disease is noticeable in advance. For examples, hypertension, and atherosclerosis, the brain suddenly gets a blood clot, often when a person is embarrassed. The signs that occur in this are nodding, headaches, dizziness, and an isthmus rises. In the case, the patient faints and vomiting redness is observed on the face, often deep often inhales wheezing.



2. Ischemic stroke is a disorder in which blood from the brain reaches brain tissue as a result of vascular thrombosis. In this case, softening of the brain tissue causes a cerebral

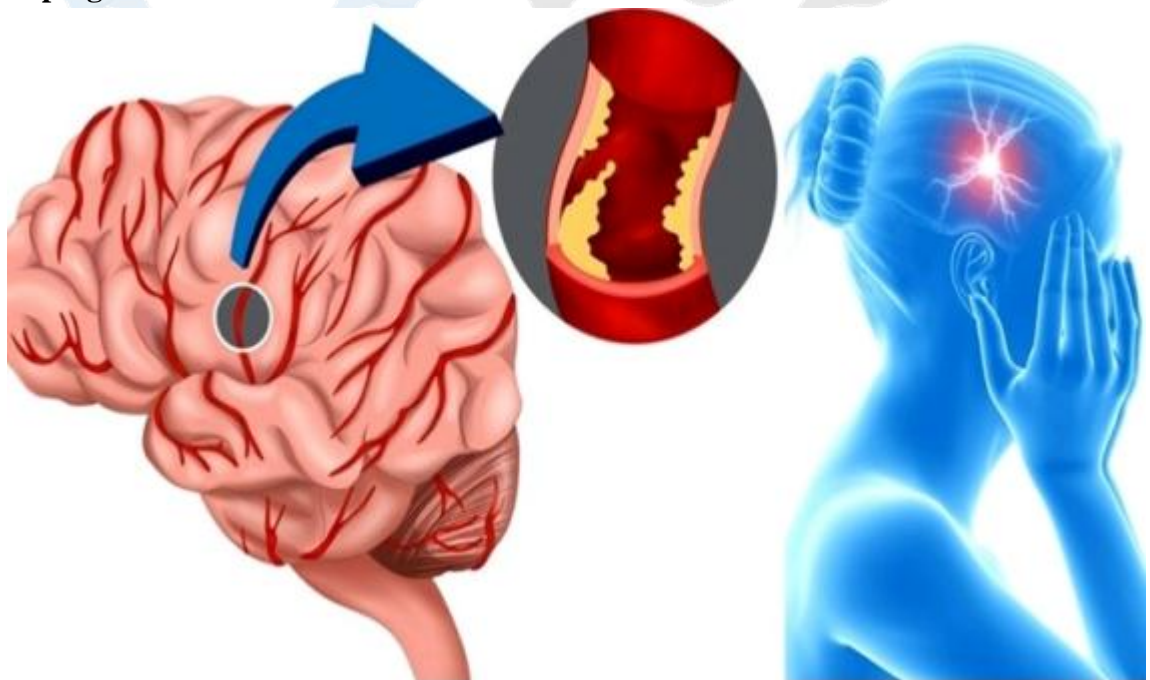
infarction. The signs in this are also vital such as headaches and dizziness that bring the symptoms to the surface. But the patient will be awake, the hands or feet will be numb and there will be paresis or paralysis. The ability to perceive disappears or decreases speech impaired. The patient is pale in color with the eyelids narrow, the pulse weak is felt very slowly. Body temperature will be normal. You can understand these cases very easily in pictures.

FACTORS THAT CONTRIBUTE TO THE DEVELOPMENT OF STROKE DISEASE.

The effect of smoking and alcohol on the development of the disease. These harmful habits double the development of stroke compared to healthy people. Smoking and alcohol increase blood coagulation, accelerate the formation of thrombi (hardened blood clots) and damage the inner wall of the vessels. The vessel narrows. After that, blood supply to the brain tissue is disrupted. Quitting smoking sharply reduces the risk of developing a stroke and heart attack after 2-4 years. This is a phenomenon that has been proven.

ATHEROSCLEROSIS DISEASE ALSO DEVELOPS STROKE DISEASE.

That being said, with increasing age, atherosclerosis begins to occur a lot. Therefore, as age increases, the number of stroke cases increases. Cholesterol levels in the blood increase, the vessel walls become brittle, scars appear on the vessels, and the cholesterol substance gets stuck in the vessels, causing a stroke. low mobility increases the accumulation of cholesterol in the vessels which also leads to atherosclerosis, develops stroke and cardiovascular diseases. In people in constant motion, the heart promotes blood circulation by developing blood vessels well and reduces stroke.



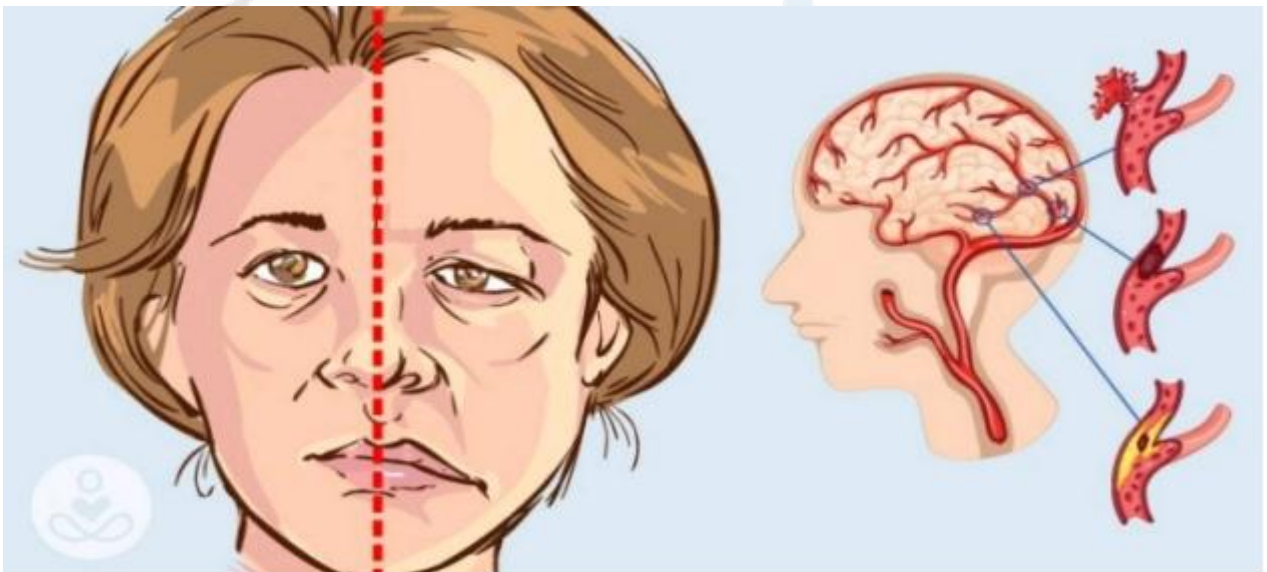
The effect of stress on the disease. Scientists call the 20th century the age of stress. Because nowadays there are more and more diseases that arise due to nervous tension, namely stroke and heart attack. It is known that the stroke that we ask for people who have missed the disease turns out to be a severe depression before the development of this disease. Therefore, stress increases the development of the disease. Also, in a person with constant compression, the development of hypertonia disease, diabetes mellitus, ischemic heart diseases are observed a lot. All these are considered diseases that increase the state of being

a stroke. It is worth saying that physical labor and sports on a constant level are less exposed to mental - emotional tension. It is considered extremely important to prevent stroke.

OBSERVED CASES IN STROKE PATIENTS.

Since stroke is a cranial disease, the patient experiences a lot of neurological changes. As an example, this disease is observed on the right side of the brain such people experience paralysis and sensory disturbances on the left sides of the body. Damage to the right hemisphere will make the body structures unable to control the lateral left side of the other, which will remain the same. In some cases, cases of self-suffocation are observed, with a semi-paralyzed arm not attached to itself. Some patients will have a different left-hand hoodie that looks like his cat or beautiful toys, while patient cases of pampering him have been observed. But such cases are not recognized by the patient.

CHANGES IN THE PATIENT'S FACIAL STRUCTURE IN LEFT BRAIN STROKE.



The condition of patients when stroke is observed in the left hemisphere of the brain. The state of speech disorders and semi-paralysis of such patients is observed. Usually, the behavior of a person with speech disorders is also rapidly changeable. A sudden speech disorder changes the psychology of the patient so that he does not make sense by accepting the speech of those around him only without a touch. He cannot give his opinion. It becomes difficult to communicate with such patients, they do not fulfill what the doctor and loved ones say, fight quickly or cry, refuse to eat, pee at the bottom and make it too easy to take care of. For this, it will be very difficult for the doctor to work with such patients.

WHAT CHANGES OCCUR IN THE EMOTION OF PATIENTS.

The patient becomes self-numb, sometimes laughing at something not worth it. Naturally, they will be very capricious because the disorders of movement or speech separate it from nature. Their body is manifested in combination with a violation of the perception of the environment without pretending to be. For example, once patient leaves home a familiar person first cannot remember anything else. They become afraid of everything that means that whoever says something to the young child becomes gullible or ahsi. In stroke diseases, this condition is mild.

In order to avoid such unpleasant situations, everyone must first of all be attentive to the health of himself.

Nowadays, irritability situations are observed in any person these irritations develop not only stroke, but also the origin of other diseases.

In developed countries, such diseases are very rare because everyone pays great attention to their health. Because in developed countries, since each person gives a very high value to his health. In our country, we need to keep our elderly parents from getting nervous and suffering from depressions. Elderly people should be provided with peace of mind.

In order not to suffer from this disease, everyone needs to avenge himself. Young people should also be able to show affection to older people, keeping them away from all hard physical activities, keeping them away from the treats that offend them and taking them to different places to a new beautiful nature. In other words we must always keep the psyche homogeneous to keep them away from family treats. But it is never possible to limit yourself from the activities that will happen in society and in the family. A person who is completely separated from the family is also stressed, thinking that he is an unnecessary person.

USEFUL TIPS FOR STROKE PATIENTS AND THEIR RELATIVES.

First, a healthy psychological environment should be created around the womb, the patient. In recovery, the patient's mood comes first, while the patient, who is in a positive optimistic spirit, has recovered much faster than pessimistic patients. Therefore, if the doctor and the patient's ventricles must, in agreement, raise the patient's mood as much as possible, the patient's woman and children must always be able to convince the patient himself of his recovery by being a pole next to him so that the patient begins to convince himself to recover knowing that he has a place in society. Our brain is structured in such a way that when we command the brain to heal, our brain takes all the opportunity in our organ.

Semi-paralysis of the patient who has undergone a stroke and the absence of speech ability.

Since speech is the greatest blessing given to mankind, it is necessary to appeal to the authorities of this work on the restoration of this ability. With this work, a neuropsychologist or clinical speech therapist is engaged in this area. When the patient people in the strophe and begins to speak himself, his mood is increased, blood pressure is normalized, and half-paralysis in the limbs also recedes. We see that barge diseases or everything that a person does not like is turning out to be a complication of excessive compressibility or mental depressions and therefore create a healthy lifestyle, both in the family and in society. It is necessary to be able to follow the same created healthy lifestyle. Therefore, it is possible that every person will be able to restore his health. doctors can only warn. Everyone should pay serious attention to their own health itself!

Conclusion: **Our conclusion is that stroke it is a serious condition that requires urgent medical attention and is important for treatment. Treatment can often include dissolving blood clots, controlling blood pressure, and providing adequate oxygen to the brain, depending on the patient's condition. The rehabilitation process is also important to help restore the patient's functions.**

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Development of intellektual potential students in the development of higher education

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Annotation: In the article in higher education In higher education, the Annotal Teacher's importance is important in the course of today's education, modernization processes, globalization processes for innovative society, training specialists, training, training systems, pedagogical activity, to modernize the efficiency of pedagogical activities.

Keywords: education, intellecting, intellectual, competent, creative, kerativics, creativity, teacher, talent, science, pies, pirls.

Today, as a result of the rapid development of Science and technology, the volume of scientific knowledge, understanding and imagination is sharply increasing. In the process of modern education, the importance of higher education is considered important. Focusing on the strategies of any developed countries, we can see that the beginning of the achievements, undeniable intellektual opportunities are realized through the reform of the education system.

The fact is that creativeness is an autonomy in the sphere of xar, the upbringing of a creative person is considered important for the development of society, for a person of society who seeks to achieve unexpected achievements in the socio-economic sphere and achieve his status in the world.

Our compatriot SH. Mirziyoyev noted, the great thinker poet Mir Alisher Navoi appealed to the youth in his time and wrote "If you want to sunbathe, make a profession". Indeed, a person who wants to instill in people such a ridiculous light as the sun, to do good, should strive for perfection and master various sciences and professions.²

Within the framework of these studies, literacy levels of students and young people of the Republic of Uzbekistan are tested for the first time, and this is required to be prepared with extreme responsibility. To do this, it is important to develop special skills in students by conducting experimental tests on the basis of assignments developed in accordance with the requirements of international studies, gradually integrating them into educational processes.

Conclusion: in today's fast-paced era, the formation of creative professionals with a rich imagination, creative ideas, a broad sense of creative qualities is one of the main tasks of the educational system of modern society. Therefore, creative training in today's educational process, finding an unusual solution to any situation is a period requirement.

Developing students' intellectual potential is a multifaceted and crucial goal in education. The priority of this development can be understood through several key dimensions:

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1. **Cognitive Skills:** Prioritize the enhancement of cognitive skills such as critical thinking, problem-solving, creativity, and analytical reasoning. These skills form the foundation for intellectual growth and prepare students for lifelong learning.

2. **Individualized Learning:** Recognize and cater to the diverse learning styles, strengths, and weaknesses of each student. Providing individualized learning experiences helps to unlock and maximize each student's intellectual potential.

3. **Curriculum Design:** Develop a curriculum that is challenging, engaging, and relevant. A well-designed curriculum should stimulate curiosity, encourage exploration, and foster a love for learning. It should go beyond rote memorization and promote deep understanding of concepts.

4. **Integration of Technology:** Integrate technology into the learning process to enhance access to information, facilitate collaborative learning, and promote the development of digital literacy skills. Technology can be a powerful tool for expanding intellectual horizons. 5. **Critical Thinking and Inquiry-Based Learning:** Emphasize critical thinking skills and encourage inquiry-based learning. This involves posing questions, conducting investigations, and fostering a mindset of curiosity and exploration.

6. **Cultivation of Interdisciplinary Knowledge:** Encourage the integration of knowledge from various disciplines. This interdisciplinary approach helps students see the interconnectedness of subjects and promotes a holistic understanding of the world.

7. **Social and Emotional Learning (SEL):** Recognize the importance of social and emotional development in conjunction with intellectual growth. Skills such as self-awareness, self-regulation, empathy, and interpersonal communication contribute to a well-rounded individual who can navigate complex situations.

8. **Encouraging a Growth Mindset:** Foster a growth mindset that emphasizes the belief that intelligence and abilities can be developed through dedication and hard work. This mindset cultivates resilience, perseverance, and a willingness to take on challenges.

9. **Inclusive Education:** Ensure that education is inclusive and accessible to all students, regardless of their background, abilities, or learning styles. Inclusivity supports the development of a diverse range of intellectual talents.

Information technologies not only change the very essence of the activities associated with them, but also have an impact on a person's personality. The consequences of this can be manifested in those activities that are not directly related to their application. Indeed, in the educational process that uses the capabilities of IT, all subjects (both students and teachers), with the help of new means, master new categories, methods and forms of activity that give new ideas about the picture of the world. The development of multimedia technologies, virtual reality, the constantly growing power of the computers used make it possible to "define" previously abstract teaching programs. The process of informatization of modern society is initiated by:

- improving the management mechanisms of the education system based on the use of automated data banks of scientific and pedagogical information, information and methodological materials, as well as communication networks;
- improvement of the methodology and strategy for the selection of content, methods and organizational forms of training, education, corresponding to the tasks of the development of the student's personality in modern conditions of informatization of society;
- creation of methodological learning systems focused on the development of the student's intellectual potential, on the formation of skills to independently acquire knowledge, carry

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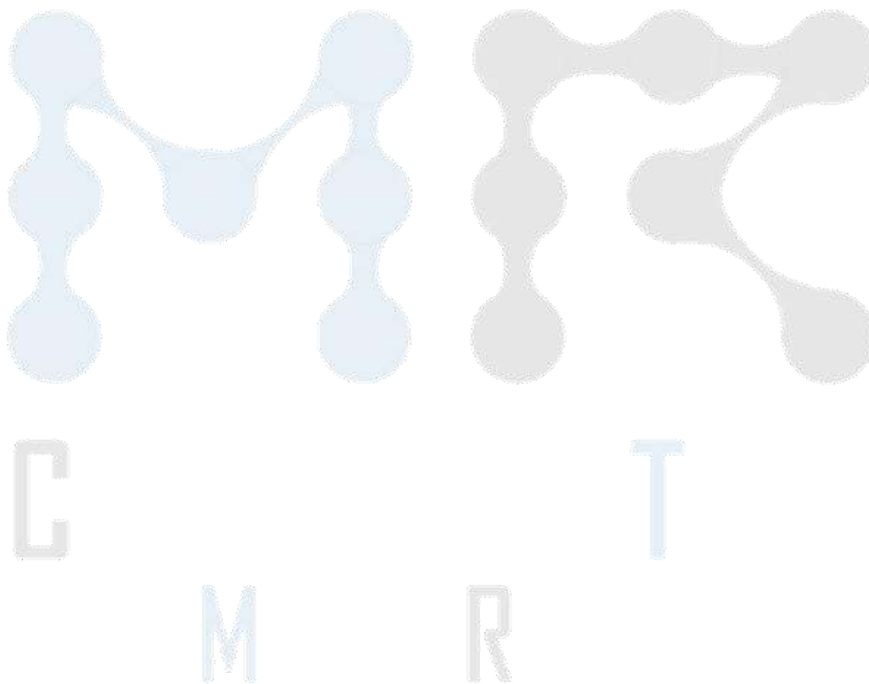
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out information and educational, experimental research activities, various types of independent information processing;

- creation and use of computer testing, diagnosing methods for monitoring and assessing the level of knowledge of students.
- Informatization of education as a process of intellectualization of the activities of the teacher and the student, which develops on the basis of the implementation of the

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**Comparative Analysis of methods for Predicting the Trajectory of Object Movement
in a Collaborative Robot-Manipulator Working Area**

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Abstract: This article presents a comparative analysis of methods for predicting object movement trajectories in a collaborative robots-manipulator working area. The following approaches are evaluated: linear method, Kalman filter, extended Kalman filter (EKF), behavioral models and LSTM models. A mathematical description of each method is accompanied by an analysis of their advantages and disadvantages, including prediction accuracy, implementation complexity, and resource requirements. The results show that the choice of the method depends on the specifics of the task and the robot's operating conditions, which allows for an optimal combination of efficiency and computational costs.

Key words: Industry 5.0, Collaborative Robot, Work Area, Computer Vision, Trajectory Prediction.

Introduction

In the modern conditions of the Industry 5.0 development, where the emphasis is on the integration of advanced technologies to create more adaptive and efficient production systems, the importance of accurately predicting the trajectories of the movement of objects in a collaborative robots-manipulator working area cannot be overestimated [1]-[12]. Robotic manipulators working in close contact with people and performing complex tasks in dynamic environments require high accuracy in predicting the movements of objects to ensure the safety and efficiency of production processes [13]-[27]. Various methods and approaches can be used for analysis here [28]-[44]. Choosing the appropriate trajectory prediction method is critical to achieving optimal results, as different methods have different properties, advantages, and limitations. In this context, conducting a comparative analysis of forecasting methods, such as the linear method, the Kalman filter, the extended Kalman filter (EKF), behavioral models and LSTM models, is necessary to determine the most effective approaches to solving tasks within the concepts of Industry 5.0. Each of these methods has unique features that can affect the accuracy of forecasting and the efficiency of manipulator robots in various scenarios.

The analysis of these methods allows you to find out which approach best corresponds to specific working conditions, taking into account the dynamism of the environment, the complexity of the interaction of objects and the requirements for computing resources. This allows for the creation of more adaptive, accurate and safe systems that meet the modern requirements of industrial and research applications. Thus, this article is aimed at deepening the understanding and selection of optimal forecasting methods for increasing efficiency and safety within the framework of Industry 5.0.

Collaborative robots are currently finding more and more application. Naturally, when a person and a robot work together, the task of detecting an object in the robot's work area and tracking this object becomes extremely relevant. This leads to the task of predicting the possible position of the object. Many works are devoted to solving this problem. Let's look at several recent scientific works.

Marchetti, F., and co-authors in [45] propose MANTRA, a model that exploits memory augmented networks to effectively predict multiple trajectories of other agents, observed from an egocentric perspective. Their model stores observations in memory and uses trained controllers to write meaningful pattern encodings and read trajectories that are most likely to occur in future.

A novel two-stage motion prediction framework, Trajectory Proposal Network (TPNet) is presented in [46]. TPNet first generates a candidate set of future trajectories as hypothesis proposals, and then makes the final predictions by classifying and refining the proposals which meets the physical constraints. By steering the proposal generation process, safe and multimodal predictions are realized.

Researchers in [47] present Goal-GAN, an interpretable and end-to-end trainable model for human trajectory prediction. They leverage information about the past trajectory and visual context of the scene to estimate a multi-modal probability distribution over the possible goal positions, which is used to sample a potential goal during the inference.

Quan, R., & et al. in [48] propose a novel Long Short-Term Memory (LSTM), namely, to incorporate multiple sources of information from pedestrians and vehicles adaptively. Different from LSTM, their one considers mutual interactions and explores intrinsic relations among multiple cues.

The paper [49] introduces a novel motion-based tracker, MotionTrack, centered around a learnable motion predictor that relies solely on object trajectory information. This predictor comprehensively integrates two levels of granularity in motion features to enhance the modeling of temporal dynamics and facilitate precise future motion prediction for individual objects.

Scientists in [50] propose their own method to predict objects moving. Their method predicts both current and past locations in the first stage, so that each object can be linked across frames and the comprehensive spatio-temporal information can be captured in the second stage.

So, we see that the task of predicting the movement of various objects occupies the minds of many scientists. Further in this article we will consider the most common ways of solving this problem and present their comparative characteristics.

Mathematical Representation of Methods for Predicting the Trajectory of Objects in a collaborative robots-manipulator workspace

Trajectory prediction is a key component in the development of a method for identifying and tracking objects in the workspace of a collaborative robot, especially in the context of cyber-physical manufacturing systems. Collaborative robots work in a dynamic environment where there are moving objects, including people, whose actions can be unpredictable. To ensure the safety and efficiency of interaction between a robot and a person, it is necessary not only to accurately determine its current position, but also to predict possible trajectories of its movement. This allows the robot to adapt its actions in advance, minimizing the risks of collisions or other dangerous situations. Trajectory prediction also helps optimize workflows by allowing workers to effectively

plan their actions in real time. The use of this method increases the level of robot autonomy, which is an important aspect for the integration of such systems into modern production processes within the framework of the concept of Industry 5.0.

There are several basic methods of trajectory prediction that are widely used in computer vision tasks:

- linear methods, based on the assumption that the movement of the object is linear. They are easy to implement and fast, but have low accuracy for complex or variable trajectories.

- Kalman filter for linear systems, which allows to predict the trajectory taking into account noise and uncertainty. It works well for smooth trajectories, but has limited ability to adapt in complex dynamic environments.

- the extended Kalman filter (EKF), is an extension of the standard Kalman filter for nonlinear systems. It provides better accuracy in cases with complex trajectories, but requires more computing power.

- behavioral models, use previous data about the movements of objects to build behavioral models. They provide high accuracy, but depend on the availability of a large amount of training data.

- recurrent neural networks (RNN) and Long Short-Term Memory (LSTM), these models can take into account long-term dependencies in the data and are well suited for predicting complex trajectories. However, they require significant computing resources.

Let us analyze each method of predicting the trajectories of moving objects in a collaborative robots-manipulator working area and identify their advantages and disadvantages.

Linear methods are based on the assumption that the change in the position of the object in the working area of the robot can be described by linear functions. These methods are easy to implement and understand, but they have limitations when modeling nonlinear processes.

The simplest linear method is to use linear regression equations to predict an object's position based on its previous positions.

$$y(t) = \beta_0 + \beta_1 x_1(t) + \beta_2 x_2(t) + \dots + \beta_n x_n(t) + e(t) \quad (1)$$

$y(t)$ - the predicted position of the object at the moment of time t ;

$x_1(t), x_2(t), \dots, x_n(t)$ - values of independent variables (previous positions of the object);

$\beta_0, \beta_1, \dots, \beta_n$ - coefficients of the model;

$e(t)$ - model error.

Linear forecasting methods for moving objects in a collaborative robot-manipulator working area are simple to implement and fast, which makes them attractive for tasks with low computational complexity. They are well suited for systems where object movements are linear or can be adequately approximated by linear models. However, their main disadvantage is limited accuracy in cases where object movements are non-linear, which is often observed in real production conditions. Linear methods may also not take into account complex dynamics or interactions between objects, which can lead to errors in prediction and reduce the efficiency of the robots-manipulator.

The Kalman filter is an optimal recursive filter that estimates the state of an object in noisy systems. It is able to predict the next state of the object based on previous observations, taking into account the existing noise in the measurements. From the point of view of mathematical

description, this method includes two main phases: prediction and correction, which are represented in the following expressions:

- forecasting phase:

$$\tilde{x}_{(k|k-1)} = A\tilde{x}_{(k|k-1)} + Bu_k \quad (2)$$

$$P_{(k|k-1)} = AP_{(k|k-1)}^T + Q \quad (3)$$

- correction phase:

$$K_k = P_{(k|k-1)}^T (HP_{(k|k-1)}^T + R)^{-1} \quad (4)$$

$$\tilde{x}_{(k|k)} = \tilde{x}_{(k|k-1)} + K_k (z_k - H\tilde{x}_{(k|k-1)}) \quad (5)$$

$$P_{(k|k)} = (1 - K_k H)P_{(k|k-1)} \quad (6)$$

$\tilde{x}_{(k|k-1)}$ - predicted state;

$P_{(k|k-1)}$ - predicted error covariance;

K_k - matrix of Kalman coefficients;

z_k - measured value;

A - state transition matrix;

B - control matrix;

u_k - vector of controlling influences;

H - observation matrix;

Q - process noise covariance;

R - measurement noise covariance.

The Kalman filter is an effective tool for predicting the movement of objects in a collaborative robot-manipulator working area, as it provides an optimal assessment of the system state in conditions of noise and uncertainties. It performs well in real time, adapting to dynamic changes in the environment, which is important for accurate trajectory prediction. However, the main disadvantages are its limitations in application to linear systems and dependence on the correctness of process and measurement models. In conditions of significant nonlinearities or inaccuracies in modeling, the effectiveness of the Kalman filter may decrease, which leads to less accurate prediction of movement trajectories.

The extended Kalman filter (EKF) is a variant of the standard Kalman filter, but applies to nonlinear systems. It linearizes nonlinear equations of state and measurements by computing their derivatives. The EKF also has two main phases: prediction and correction, which are presented below:

- forecasting phase:

$$\tilde{x}_{(k|k-1)} = f(\tilde{x}_{(k-1|k-1)} * u_k) \quad (7)$$

$$P_{(k|k-1)} = F_k P_{(k-1|k-1)} F_k^T + Q \quad (8)$$

- correction phase:

$$K_k = P_{(k|k-1)}^T H_k^E (H_k P_{(k|k-1)} H_k^E + R)^{-1} \quad (9)$$

$$\tilde{x}_{(k|k)} = \tilde{x}_{(k|k-1)} + K_k (z_k - h(\tilde{x}_{(k|k-1)})) \quad (10)$$

$$P_{(k|k)} = (1 - K_k H_k) P_{(k|k-1)} \quad (11)$$

$f()$ - nonlinear state transition function;

$h()$ - nonlinear observation function;

F_k - matrix of derivatives (Jacobian) of the state transition function;

H_k - matrix of derivatives (Jacobian) of the observation function.

The Extended Kalman Filter (EKF) is effective for predicting the movement of objects in a collaborative robots-manipulator working area, as it allows for the processing of nonlinear systems, which is common in such tasks. The EKF provides more accurate state estimation compared to the standard Kalman filter due to linearization around the current state, which allows it to adapt to complex dynamic changes. However, this approach has drawbacks: it requires large computational resources and can be sensitive to initial conditions and errors in the model, which can lead to accumulation of errors and inaccuracies in predictions under significant nonlinearities or strong perturbations.

Behavioral forecasting models are based on the analysis of behavioral patterns of the object. They can be based on rules, expert systems or machine learning. These models are often used to predict the movement of objects interacting with the environment or other objects. Behavioral models can use different mathematical approaches, including decision rules, finite state machines, or neural networks. For example, a neural network can be used to train a behavior model based on previous data:

$$y(t) = \sigma(W * x(t) + b) \quad (12)$$

$y(t)$ - predicted position;

$x(t)$ - input data (previous position, speed, direction);

W - weighting coefficients;

b - shift;

$\sigma()$ - activation function.

Behavioral prediction models have the advantage of being able to take into account the complex interaction of objects and context, which allows the operation of the manipulator to adapt to various scenarios in the work area. They work effectively in environments with unpredictable or dynamic changes, which is important for tasks where the behavior of objects may differ significantly from standard trajectories. However, the main drawback is the dependence on high-quality training data and the high complexity of creating an adequate model, which can require

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significant resources for training. In addition, behavioral models may be less accurate when predicting new or rare scenarios that were not considered during training.

Long Short-Term Memory (LSTM) is a type of recurrent neural networks (RNN) specially designed to work with sequential data and solve the problem of "forgetting" long-term dependencies. LSTMs are used to predict the movement of objects when it is important to consider long-term dynamics. LSTM has special blocks consisting of three main gates: input, forget and output, which regulate the flow of information. The mathematical representation of the blocks is given below:

- input gate:

$$i_t = \sigma(W_i * [h_{t-1}, x_t] + b_i) \quad (13)$$

- forgetting gate:

$$f_t = \sigma(W_f * [h_{t-1}, x_t] + b_f) \quad (14)$$

- candidate of new states:

$$C_t = \text{HTan}(W_c * [h_{t-1}, x_t] + b_c) \quad (15)$$

- state update:

$$C_t = f_t * C_{t-1} + i_t * \tilde{C}_t \quad (16)$$

- output gate:

$$o_t = \sigma(W_o * [h_{t-1}, x_t] + b_o) \quad (17)$$

- hidden state update:

$$h_t = o_t * \text{HTan}(C_t) \quad (18)$$

x_t - input vector at a time t ;

h_t - hidden state at a time t ;

C_t - memory state at a time t ;

W_i, W_f, W_c, W_o - weight matrices for the corresponding gates;

b_i, b_f, b_c, b_o - shift for the corresponding gate;

$\sigma()$ - sigmoid function;

HTan - hyperbolic tangent.

LSTM prediction models have the advantage of being able to efficiently process sequential data and take into account long-term dependencies, which makes them ideal for predicting complex and non-linear object trajectories in a collaborative robots-manipulator working area. They work well in situations with changing conditions where historical data must be taken into

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account for accurate forecasting. However, LSTM models require large computing resources and a large amount of training data to achieve high accuracy, which can be a challenge in real-world settings. In addition, their complexity can lead to long training and tuning times, as well as the risk of overtraining with limited data.

Based on the analysis, we will build a table comparing the advantages and disadvantages of each method: linear method, Kalman filter, EKF, behavioral models and LSTM models, the comparison results are given in Table 1.

Table 1. Comparison of the advantages and disadvantages of the methods of predicting the trajectories of the objects movement in a collaborative robots-manipulator working area

Method	Advantages	Disadvantages
Linear methods	Simple to implement, fast to implement, suitable for linear or almost linear systems.	Limited accuracy in non-linear movements, do not take into account complex dynamics, may cause errors.
Kalman filter	Effective in real time, works well with noise and uncertainties, adapts to changes.	Only suitable for linear systems, depends on the accuracy of the process model and measurements.
Extended Kalman filter (EKF)	Works with nonlinear systems, more accurate than the usual Kalman filter.	Requires large computing resources, sensitive to initial conditions, possible accumulation of errors.
Behavioral models	They take into account the complex interaction of objects, adapt to various scenarios, and are effective in dynamic environments.	Dependence on qualitative data, complexity of modeling, less accurate in new or rare situations.
LSTM models	Take into account long-term dependencies, are effective for non-linear and complex trajectories, work well with sequential data.	Requires large resources and data for training, difficult to configure, risk of overtraining.

Conclusion

In this article, a comparative analysis of methods for predicting object movement trajectories in a collaborative robots-manipulator working area was conducted, including linear methods, Kalman filter, extended Kalman filter (EKF), behavioral models, and LSTM models. Each of these methods has its own advantages and disadvantages, which determine their effectiveness in specific conditions. Linear methods are simple to implement and fast, but are limited in accuracy when dealing with nonlinear systems. The Kalman filter shows high efficiency in linear systems and in noisy conditions, but requires modeling accuracy, which can be problematic in cases with complex systems. The EKF is a powerful tool for dealing with nonlinear systems, but it depends on the initial conditions and can be resource intensive. Behavioral models provide flexibility and the ability to adapt to a variety of scenarios, but they require high-quality data for training and are complex to develop. LSTM models, on the other hand, can efficiently handle sequential data and account for long-term dependencies, making them a powerful tool for predicting complex

trajectories, although they require significant computing resources and training time. In conclusion, the choice of a specific method for predicting trajectories in a collaborative robot working area depends on the specifics of the task, the complexity of object dynamics, and available resources. Careful analysis of these factors is key to achieving the optimal balance between accuracy and efficiency in forecasting.

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Exploring motion capture algorithms in computer vision using intel depth camera

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The analysis of existing approaches to tracking the human body revealed the presence of problems when capturing movements in a three-dimensional coordinate system. The promise of motion capture systems based on computer vision is noted. Existing research on markerless motion capture systems only considers positioning in 2D space. Therefore, the goal of the study was to improve the accuracy of determining the coordinates of the human body in three-dimensional coordinates by developing a motion capture method based on computer vision and triangulation algorithms.

Keywords: motion capture, virtual reality, triangulation, computer vision, machine learning

Introduction. Significant progress has now been made in the field of computer vision. Technologies have been developed that allow solving the problems of detecting objects, determining their state, geometric assessment of the space depicted in the frame, and many others. Thanks to this, computer vision has become widespread in various fields of human activity, from healthcare and education to the entertainment sector. A fairly promising direction is the use of computer vision technologies for three-dimensional reconstruction and positioning of various objects, including people. There are quite a large number of systems for determining the absolute position of a person in space, which can be divided into the following categories:

□ systems that use inertial sensors and make it possible to determine the magnitude of their movement, as well as changes in angles between them, which involves the use of gyroscopes and accelerometers [1]. A well-known representative of this category is Intel Depth [2], which includes up to 32 inertial sensors;

□ laser positional tracking systems, based on the use of base stations installed on opposite sides of the room and emitting infrared rays, which make it possible to accurately determine the position and orientation of sensors in space. An example of such systems are Intel Depth virtual reality kits from HTC [3], which have an error of up to 0.1 mm;

□ systems using magnetic sensors [4], based on the use of a magnetic field to capture human movement, which involve the presence of wearable sensors on the user's body. Intel Depth falls into this category.

- portable electromagnetic motion tracking system, considered one of the fastest (sampling frequency 240 Hz);

□ optical systems based on markers - determine the position of objects using markers using a set of cameras. An example is Intel Depth, which has a fairly low error: the average absolute marker tracking errors are 0.15 mm in static tests and 0.2 mm (with corresponding angular errors of 0.3°) in dynamic tests [5];

□ markerless optical systems based on the use of computer vision and machine learning. Examples of such technologies are OpenPose, MediaPipe, Intel Depth. With their help, human movements can be tracked with an accuracy of up to 30 mm [6].

Analyzing the listed categories of motion capture systems, we can conclude that most solutions used to recognize human actions and movements involve the presence

of various wearable devices, such as sensors or gloves. The bulk of these devices are cumbersome due to the large number of sensors and the need for a wired connection. Some such systems have high accuracy, but cannot be used due to their size or the presence of electromagnetic interference [7]. Inertial systems have a number of problems associated with error accumulation, which limits their use to relative positioning in space only.

Therefore, optical systems for recognizing and tracking user actions are very popular. To obtain information about the user's actions and position, frames obtained from the camera are used. Among optical systems, it is worth noting those that use markers (the user may be dressed in special clothing or certain marks are attached to him), which makes their use in real conditions difficult and is more applicable to specially prepared premises (for example, film studios).

Systems that do not use any markers allow users to interact more freely with the environment and are more suitable for real-world applications. Significant disadvantages of systems in this area include relatively low accuracy, unreliability and low performance. This may be largely due to the shortcomings of computer vision algorithms used to recognize a person in a frame, as well as the following reasons: variability in a person's appearance and lighting conditions, partial occlusions due to layering of objects in the scene, and the complexity of the human skeletal structure.

The operation of markerless motion capture systems is usually based on an algorithm for estimating human pose. Approaches to solving the problem of human pose estimation can be divided into top-down and bottom-up. In top-down approaches, people are first detected in the frame, then the pose of each detected person is estimated. Algorithms that belong to bottom-up approaches, at the first stage, search for body parts in the frame, then group them into poses. As a rule, convolutional neural networks are used for this task, such as YOLO (You Look Only Once) [8], SSD (Single Shot Detection) [9], R-CNN (Region CNN) [10] and others. They allow you to recognize many different objects, including a person or individual parts of the body, with high accuracy. However, one of the disadvantages of the solutions listed above is their low performance and slow operation. To solve this problem, there are special frameworks Intel Depth [11], MediaPipe [12], OpenPose [13]), which also use neural networks optimized for real-time operation.

It should be noted that the above algorithms, technologies and approaches of markerless motion capture systems allow positioning in two-dimensional space, which makes it difficult both to determine the distance to objects and their sizes, and to track complex movements when, for example, the user's hands are hidden by his body. Existing stereo camera solutions can be effective, but are not very accurate when the subject is far away from the camera, which is what happens when tracking a person's entire body. In addition, they do not solve the problem of occlusions. Thus, a current research direction is the development of a motion capture method using multiple cameras and computer vision technologies. When implementing multi-camera motion capture systems, the problem of combining objects from several images inevitably arises, i.e. the need to perform triangulation. Among the triangulation methods, linear and iterative linear algorithms can be distinguished.

Linear triangulation is the most common approach to performing the reconstruction of objects in three-dimensional space, including methods such as linear eigenmethod, linear least squares method, direct linear transformation, differing in varying degrees of noise resistance [14].

Iterative linear methods are a more robust version of linear triangulation. Conventional linear methods may be less accurate when solving problems of triangulation of a set of points, since when solving systems, the minimized error has no geometric meaning (it does not take into account the shape of the skeleton and the rules for connecting points). The basic idea of iterative

linear methods is to adaptively change the weights of linear equations such that the weighted equations correspond to the errors. Iterative linear methods include L₂ and L_∞ triangulation [15].

Thus, within the framework of this research, the following task is set: it is necessary to develop a method for capturing human movements that allows positioning the user's body in three-dimensional coordinates with minimal error and using computer vision technologies. The proposed method can be used either as a replacement for existing motion capture systems or as part of other algorithms, for example, for subsequent classification of the human condition. The goal of this work is to improve the accuracy of determining the poses and coordinates of the human body in three-dimensional coordinates by developing motion capture methods based on computer vision. To achieve this goal, it is necessary to formalize the main stages of the process of capturing points of the human body from several cameras, integrate triangulation algorithms, choosing among them the optimal one in terms of accuracy, and implement a software implementation of the proposed method.

Materials and methods. Solving the problem of three-dimensional positioning of a person in space includes the following main stages:

- preliminary calibration of a set of cameras;
- implementation of procedures for detecting a person in a frame and calculating skeletal points;
- calculation of three-dimensional reconstruction of a human body model.

Let's look at them in more detail.

The calibration process involves the camera system taking several pictures of a calibration template from which key points with their known relative positions in space can be easily identified. Afterwards, internal and external parameters are calculated for each camera. Internal parameters are constant for a specific camera, external parameters depend on the location of the cameras relative to each other [16]. Therefore, this step must be completed before using the camera system for the first time in a given location.

To calculate the coordinate values of a point in three-dimensional space, it is necessary to know the coordinates of its projections on images and the projective matrices of cameras [10]. The projective matrix P of some camera can be represented as a combination of matrices A (containing internal parameters of the camera) and R (rotation), as well as a displacement vector T, which describe the change in coordinates from the world coordinate system to the coordinate system relative to the camera:

$$P = A[R | T] = \begin{bmatrix} f_x & 0 & c_x \\ 0 & f_y & c_y \\ 0 & 0 & 1 \end{bmatrix} \begin{bmatrix} r_{11} & r_{12} & r_{13} & t_1 \\ r_{21} & r_{22} & r_{23} & t_2 \\ r_{31} & r_{32} & r_{33} & t_3 \end{bmatrix},$$

where (,) x y are the coordinates of the projection of a three-dimensional point on the image in pixels; (,) x y c c — coordinates of the camera's central point; (,) x y f f — focal length in pixels.

At the second stage, it is necessary to directly obtain key (skeletal) points of the human body on each of their cameras. To extract skeletal body points from a frame, it is possible to use various machine learning technologies, for example, Intel Depth, MediaPipe, OpenPose and others [8]. As part of this study, it is proposed to use the highly efficient and productive Pose module

from the MediaPipe library. MediaPipe Pose uses machine learning to provide highly accurate human body pose tracking, 3D landmark detection, and full-body background segmentation masks from RGB video frames. This approach allows you to track up to 33 points and provides real-time operation on most modern devices.

At the third stage, the positions of key skeletal points in three-dimensional space are calculated. To obtain data on the position of human skeletal points in space, triangulation is performed - finding the coordinates of a three-dimensional point from the coordinates of its projections. Triangulation is one of the most important tasks in computer vision; its solution is a decisive step in 3D reconstruction and affects the accuracy of the entire result [9].

The three-dimensional reconstruction of object points based on the position values of point projections on images from all cameras is based on epipolar geometry. Its main idea is that 3D points in the scene are projected onto lines in the image plane of each camera - epipolar lines. These lines correspond to the intersection of the image plane with the plane passing through the centers of the cameras and the 3D point. This idea provides a condition for finding pairs of corresponding points in two images: if it is known that a point x on the plane of the first image corresponds to a point x' on the plane of another image, then its projection must lie on the corresponding epipolar line.

Since X is a homogeneous representation of coordinates in three-dimensional space, to calculate them it is necessary to obtain $i x$ and P_i for at least two cameras. To solve the system of equations (7), 4 algorithms were considered [4]:

- direct linear transfer (DLT);
- linear least squares method;
- L2 triangulation; - optimal (polynomial) method.

DLT refers to linear triangulation algorithms, the main advantage of which is the simplicity of its implementation. For example, in the Intel Depth computer vision library there is a ready-made implementation of this algorithm in the triangulatePoints method.

The linear least squares method also refers to linear ones and consists in the fact that the system of homogeneous equations (7) is reduced to a system consisting of inhomogeneous equations, for solving which the least squares method is used.

When using a two-camera system, to minimize error (9), the following sequence of actions must be performed:

- parameterize the bundle of epipolar lines in the first image using the parameter t .

Thus the epipolar line in the first image can be expressed as $0 \square () t$;

using the fundamental matrix F , calculate the corresponding epipolar line $1 \square () t$ in the second image;

- express the distance function (9) as a function of t ;
- search for the value of t at which (9) tends to a minimum.

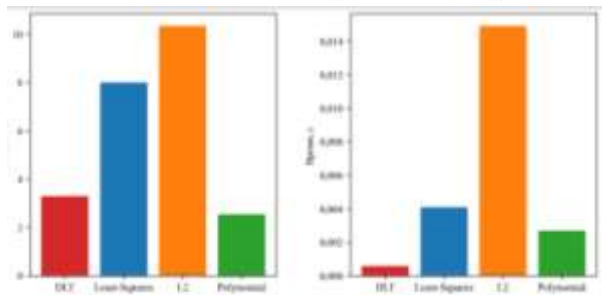
Using elementary calculus methods, we can reduce the solution of the minimization problem to finding the roots of a sixth-order polynomial. The estimated spatial point is calculated using the Direct Linear Transfer (DLT) method [7].

Research results. The solution to the optimization problem (11) is carried out by triangulating two-dimensional object points obtained from images of several cameras, in the framework of this study - from two cameras using various algorithms listed in the previous section.

The listed triangulation methods were implemented using the Intel Depth and NumPy libraries. For comparison, the algorithms were integrated into software that implements a 3D motion capture method. An example of the method for reconstructing the entire human skeleton is shown in Fig. 1.



Then, these algorithms were compared by the value of the reprojection error function (11) for all skeletal points from two images. A comparison of the selected triangulation methods was carried out in terms of the magnitude of the error, as well as in terms of the time to obtain a solution (computational complexity) for the entire set of skeletal points. Summary comparison diagrams are presented in Fig. 2.



For the selected triangulation methods, a series of experimental tests were also carried out, during which, for each approach, the calculated lengths of the user's limbs and the absolute deviation of the obtained values from the real ones were measured. The comparison is presented in Table 1.

Table 1

Body segment	DLT	Least-Squares	L2	Polynomial	Реальное значение
Forearm	25,2 ± 1,6	30,8 ± 0,2	26,6 ± 0,5	24,3 ± 0,4	26
Shin	42,2 ± 2,0	65,3 ± 1,1	44,6 ± 0,7	38,7 ± 1,8	41
Hip	45,7 ± 2,7	59,5 ± 0,49	48,7 ± 1,3	44,1 ± 0,6	45
Average deviation	2,43	14,58	2,26	1,67	0

Presented are the average values (in centimeters) after a sample of 10 measurements ± standard deviation in the sample

The developed software includes the following modules:

- for working with input devices (cameras);
- to perform calibration and obtain basic camera parameters;
- for synchronizing several cameras;

- for object recognition (user's body and hands);
- to analyze the location of the found skeletal points;
- to build visualization in real time

When implementing the software, the Python programming language, Intel Depth and Matplotlib libraries were used. The system operates in several threads: one is responsible for receiving data from cameras, the second is for visualization, and the third is for sending the received world coordinates of the human body to external systems or modules. The use of a unified protocol with a data package in JSON format allows you to integrate the software into third-party systems (for example, game development environments Unity, Unreal Engine, etc.) [2].

Discussion and conclusion. Let us analyze the results of comparing triangulation algorithms based on selected metrics, presented in Fig. 2 and in table 1.

During the comparison, it was found that the optimal algorithm for 3D reconstruction is the polynomial method. The error value is about 2.55 pixels. In real tests, when determining a person's height, the error was no more than 3%, taking into account the fact that MediaPipe Pose does not fix the top point of the head and it is calculated approximately based on the position of the eyes. When measuring the limbs, the error ranged from 0.9 cm to 2.3 cm, the average was 1.67 (Table 1). Thus, real tests confirm the correctness of the choice of the polynomial method.

Next, we compare the results obtained with existing studies, for example, those described in [2]. The authors also use trained networks (OpenPose) to implement a markerless human recognition system, a camera calibration procedure, and skeletal point extraction, but place the cameras next to each other to simulate stereo vision. This key difference allows this study to recognize human postures where some parts of the body overlap others. In addition, using MediaPipe Pose allows you to track 33 skeletal points, rather than 18 as in the Intel Depth-based method. The obtained error values generally correspond to existing studies (the best result in [2] is 2 cm), which allows us to conclude that the proposed approach can be used in practice. Other markerless systems, for example, based on Kinect [3], also show comparable results in terms of measurement error (2–5 cm). Thus, the resulting solution generally corresponds in accuracy to existing developments.

Comparison of point set calculation time shown in Fig. 2 on the right shows that the DLT algorithm provides the best performance, however, all algorithms show acceptable results (to ensure performance of 30 and even 60 frames per second). Therefore, this metric is not decisive.

The developed software can be used in various subject areas, primarily as a replacement for motion capture systems based on inertial sensors. The advantages of the proposed solution are low economic costs of implementation and availability (transition from highly specialized motion capture suits to common camera-based tools), the possibility of parallel capture of body models of several users [4].

The scientific novelty of the research lies in an integrated approach to formalizing the process of three-dimensional positioning of a person using computer vision technologies, including preliminary calibration of a set of several cameras, formalization of procedures for detecting a person in a frame using an arbitrary neural network to obtain skeletal points, as well as calculation of a three-dimensional reconstruction of a body model human using various triangulation algorithms. The study includes all the necessary calculation formulas and detailed steps to achieve the goal - increasing the accuracy of determining the poses and coordinates of the human body in three-dimensional coordinates using computer vision technologies. The presented

theoretical results are quite universal and can be used for the practical implementation of motion capture systems based on various neural network models, not just MediaPipe Pose.

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**BUGUNGI KUNDAGI OLIY TA'LIM MUASSASALARI RAHBAR SHAXSLARNING
KOMPETENLIGIGA QO'YILAYOTGAN TALABLAR VA ULARNING
FAOLIYATLARI**

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Annotatsiya: Ushbu maqolada oliy ta'lim muassasalarining rahbarlari kompetentligiga qo'yilayotgan zamonaviy talablar tahlil qilinadi. Tadqiqotda rahbarlarning boshqaruv ko'nikmalari, innovatsion texnologiyalarni qo'llash qobiliyatlari va yetakchilik sifatleri o'rganilgan. So'rovnoma va statistik tahlillar natijasida rahbarlarning zamonaviy ta'lim tizimiga moslashish darajasi, ma'naviy qiyofasi va axloqiy fazilatleri baholandi. Natijalar rahbarlar faoliyatining oliy ta'lim muassasalari rivojlanishi va talaba yetakchilik ko'nikmalarini shakllantirishdagi muhim rolini tasdiqladi. Maqola zamonaviy ta'lim rahbarlarining faoliyatiga doir yondashuvlarni baholash uchun foydali.

Kalit so'zlar: Oliy ta'lim rahbarlari, kompetentlik, boshqaruv, innovatsiya, yetakchilik, texnologiyalar, ma'naviyat, axloqiy qadriyatlar, ta'lim sifati.

Kirish

Oliy ta'lim muassasalarining rahbar shaxslariga qo'yilayotgan talablar yillar davomida o'zgardi va zamonaviy jarayonlarga moslashdi. Hozirgi davrda oliy ta'lim muassasalari rahbarlarining kompetentligi, mahorati va yetakchilik qobiliyatlari muvaffaqiyatli va barqaror ta'lim tizimining asosiy omillaridan biriga aylangan. Ta'limda globalizatsiya, raqamlashtirish va innovatsiyalar kuchayishi ta'lim muassasalari rahbarlaridan nafaqat kuchli boshqaruv qobiliyatlarini, balki keng ko'lamdagi bilimlarni, zamonaviy texnologiyalarni qo'llay olishni va barqaror rivojlanishga hissa qo'shishni talab qilmoqda.

Bugungi kunda oliy ta'lim muassasalarining rahbarlari o'z tashkilotlarining muvaffaqiyatli rivojlanishini ta'minlash uchun xalqaro standartlarga mos ravishda rivojlanayotgan talablarga javob berishi kerak. Oliy ta'lim rahbarlarining asosiy vazifalari o'z ichiga yangi ilmiy-texnologik yutuqlarni ta'lim tizimiga kiritish, ta'lim mazmunini modernizatsiya qilish, ilm-fan va ta'lim jarayonlarini uzviy bog'lash kabi masalalarni kiritadi (Abdulhamidova, 2024). Bunda raqamli transformatsiya va raqobat kuchayishi ham ta'lim muassasalarining global maydondagi rolini mustahkamlashda hal qiluvchi ahamiyat kasb etmoqda.

Ta'lim muassasalari rahbarlarining kompetentligiga qo'yilayotgan talablar nafaqat boshqaruv malakalariga qaratilgan bo'lib, ular pedagogik bilimlar, ijtimoiy va etika me'yorlariga mos ravishda faoliyat yuritish qobiliyatlarini ham o'z ichiga oladi. Bu esa ta'lim muassasalarining barqaror rivojlanishi va ular tomonidan taklif qilinayotgan ta'lim sifatining yuqori darajasini ta'minlashda muhim omil hisoblanadi. Rahbar shaxslar o'z faoliyatida pedagogik yondashuvlardan foydalanishi, innovatsiyalarni joriy etish va ta'lim muhitini kengaytirishi lozim (Nabiyeva, 2024). Oliy ta'lim tizimidagi muhim vazifalardan biri - bu rahbarlarning ma'naviy qiyofasi va ularning jamoani boshqarishdagi yetakchilik qobiliyatlari. Yetakchilik qobiliyati bilan bir qatorda, rahbarlar o'zlarining kasbiy, ma'naviy va axloqiy fazilatlarini rivojlantirishi, jamoa orasida yuqori hurmatga ega bo'lishi talab etiladi.

Shu bilan birga, oliy ta'lim muassasalarida rahbarlarning innovatsiyalarni muvaffaqiyatli joriy etishi, yangi texnologiyalarni ta'lim jarayoniga tatbiq etishlari va talabalar bilan o'zaro faoliyatni sifatli olib borishlari muhim ahamiyat kasb etmoqda. Bunday yondashuv ta'lim

muassasalari rahbarlarining zamon talablari bilan mos keladigan bilim va ko'nikmalarga ega bo'lishini talab qiladi. Masalan, oliy ta'lim tizimida yetakchilik ko'nikmalarini rivojlantirish va talabalarga motivatsion muhit yaratish rahbarlarning asosiy vazifalaridan biri hisoblanadi. Yetakchilikning zamonaviy usullarini qo'llash va jamoa bilan samarali hamkorlik qilish orqali ta'lim sifatini oshirish muhimdir (Mavlonova, 2024).

Adabiyotlar tahlili. Oliy ta'lim muassasalarining rahbar kadrlari uchun kompetentlikka qo'yilgan talablar zamonaviy boshqaruv va pedagogik ko'nikmalarni o'z ichiga oladi. Abdulhamidova (2024) o'z maqolasida rahbarlarning kompetentligiga bo'lgan talablar tobora ortib borayotganini va zamonaviy ta'lim jarayonida ilm-fan va texnologiya bilan integratsiyalangan boshqaruv muhimligini ta'kidlaydi. Rahbarlar faqatgina ta'lim jarayonini boshqarish bilan cheklanmasdan, innovatsiyalarni ham joriy etishlari kerak. Nabiyeva (2024) esa ta'lim muassasalari rahbarlarining ma'naviy qiyofasi va unga qo'yilgan talablar haqida to'xtalib, rahbar shaxslarning axloqiy qadriyatlari hamda etika me'yorlariga mos ravishda faoliyat yuritishlari zarurligini qayd etadi. Ushbu omillar ta'lim jarayonining barqarorligini va sifatini ta'minlashda katta rol o'ynaydi. Ta'lim muassasalarining rahbarlari ijtimoiy va ma'naviy jihatdan kuchli bo'lishlari zarur, chunki ular jamoani boshqarish jarayonida yetakchi bo'lishlari kerak.

Mavlonova (2024) esa oliy ta'lim tizimida talabalar faolligi va yetakchilik ko'nikmalarining rivojlanishi haqida fikr yuritib, talabalarning muvaffaqiyatli ta'lim olishi uchun rahbarlarning ularni rag'batlantirish va qo'llab-quvvatlash ko'nikmalari muhimligini ta'kidlaydi. Rahbarlar yetakchilik qobiliyatlariga ega bo'lishi, o'zaro munosabatlarni samarali tashkil etishi va yangi yondashuvlarni qo'llay olishlari ta'lim tizimining muvaffaqiyatli ishlashiga yordam beradi. Adabiyotlardan ko'rinib turibdiki, oliy ta'lim muassasalari rahbarlarining kompetentligi ko'p qirrali va zamon talablari bilan bog'liq. Bu esa rahbarlarning nafaqat boshqaruv, balki ta'lim, texnologiya va ma'naviyat sohalarida ham yetakchi bo'lishini talab qiladi.

Metodlar

Ushbu tadqiqot oliy ta'lim muassasalarining rahbarlarining kompetentligiga qo'yilayotgan talablarni tahlil qilishga qaratilgan bo'lib, zamonaviy ta'lim jarayonlari va boshqaruv usullari bilan bog'liq yondashuvlarni o'rganish uchun empirik va nazariy metodlardan foydalanildi. Birlamchi ma'lumotlar sifatida Toshkent shahridagi 10 ta oliy ta'lim muassasasining rahbarlari va pedagogik xodimlari o'rtasida o'tkazilgan so'rovnoma asosida ma'lumotlar yig'ildi. So'rovnomada 50 nafar respondent qatnashib, ular oliy ta'lim muassasalari rahbarlarining boshqaruv uslubi, innovatsiyalarni joriy etish qobiliyatlari va yetakchilik ko'nikmalarini baholadilar. Ikkinchi bosqichda esa olingan natijalar statistik tahlil qilingan va ulardan keyingi xulosalar chiqarilgan. Tadqiqotda korrelyatsion tahlil usuli yordamida rahbarlarning kompetentligiga ta'sir qiluvchi omillar o'rganildi. Shuningdek, nazariy qismda ilmiy manbalar tahlili va ular asosida olinadigan natijalar o'rganildi. Ma'lumotlar yig'ish jarayonida anketalar, intervyular va mavjud ilmiy manbalardan foydalanildi.

Natijalar

Tadqiqot natijalari oliy ta'lim muassasalarida rahbar shaxslarning kompetentligiga qo'yilgan talablarning zamonaviy ta'lim jarayoniga mos ravishda rivojlanayotganini ko'rsatdi. So'rovnoma natijalariga ko'ra, ishtirokchilarning 85 foizi rahbarlarning boshqaruv ko'nikmalarini yuqori darajada deb baholadi. Shuningdek, respondentlarning 78 foizi oliy ta'lim rahbarlari zamonaviy texnologiyalardan faol foydalanayotganini ta'kidlaydi. Bu, ta'lim muassasalarida innovatsion texnologiyalarni joriy etish darajasining ortib borayotganini tasdiqlaydi.

Rahbarlarning yetakchilik qobiliyatlari ham alohida tahlil qilindi. So'rov ishtirokchilarining 72 foizi rahbarlarning jamoani boshqarish va talabalar bilan samarali hamkorlik qilish qobiliyatlarini yuqori baholadi. Rahbarlar talabalarning liderlik ko'nikmalarini rivojlantirish uchun yetarlicha motivatsiya va qo'llab-quvvatlash ko'rsatishini ta'kidlashdi. Bu esa oliy ta'lim muassasalarida talabalar faolligi va yetakchilik ko'nikmalarining shakllanishi jarayoniga ijobiy ta'sir ko'rsatayotganini ko'rsatadi.

Natijalar shuni ko'rsatdiki, oliy ta'lim muassasalaridagi rahbarlar faqatgina boshqaruv mahoratiga ega bo'lishlari kerak emas, balki ma'naviy qiyofasi ham muhim ahamiyatga ega. So'rovda qatnashganlarning 65 foizi rahbarlarning ma'naviy qadriyatlarini va axloqiy fazilatlarini jamoaning umumiy kayfiyatiga ijobiy ta'sir ko'rsatishini bildirdi. Bu rahbarlarning ta'lim jarayonida axloqiy etakchi bo'lishlari va yuqori ijtimoiy mas'uliyatni namoyon qilishlari kerakligini ko'rsatadi. Statistik tahlil natijalariga ko'ra, oliy ta'lim muassasalaridagi rahbarlarning boshqaruv qobiliyatlari va ta'lim sifatiga ijobiy ta'sir ko'rsatuvchi o'zaro bog'liqlik kuzatildi. Korrelyatsion koeffitsiyenti $r=0.72$ bo'lib, bu rahbarlarning kompetentligi va ta'lim sifati o'rtasida kuchli bog'liqlik mavjudligini ko'rsatdi. Shuningdek, innovatsion texnologiyalarning joriy etilishi va talabalar faolligi o'rtasida ham ijobiy o'zaro bog'liqlik kuzatildi ($r=0.68$). Umumiy natijalarga ko'ra, rahbarlarning zamonaviy texnologiyalardan foydalanish qobiliyati, boshqaruvdagi samaradorligi va ma'naviy qiyofasi oliy ta'lim muassasalarining rivojlanishida muhim ahamiyat kasb etmoqda. Shu bilan birga, rahbarlarning pedagogik yondashuvlarni qo'llay olishi ta'lim sifatini oshirishda va innovatsiyalarni joriy etishda asosiy omil hisoblanadi.

Muhokama

Ushbu tadqiqot natijalari oliy ta'lim muassasalarining rahbarlari faoliyatiga qo'yilayotgan talablarning muhimligini yana bir bor tasdiqlaydi. Rahbarlarning zamonaviy texnologiyalar va innovatsiyalarni ta'lim jarayoniga joriy etishlari ta'lim muassasalarini muvaffaqiyatini ta'minlashda muhim ahamiyatga ega ekanini ko'rsatdi. So'rov natijalari ham bu jihatni tasdiqlaydi, chunki ishtirokchilarning aksariyati rahbarlarning innovatsion texnologiyalardan foydalanishini yuqori baholashgan. Bunday yondashuvlar ta'lim muassasalarining raqobatbardoshligini oshiradi va talabalarning motivatsiyasini kuchaytiradi. Rahbarlarning yetakchilik ko'nikmalari va pedagogik yondashuvlari ham tadqiqotning muhim topilmalari qatoriga kiradi. Natijalar rahbarlar nafaqat boshqaruv faoliyatida, balki talabalarning bilim olish jarayonida ham muhim rol o'ynayotganini ko'rsatadi. Talabalarning faolligi va ularning yetakchilik ko'nikmalarini rivojlantirish borasida rahbarlarning roli ortib bormoqda. Ushbu jihat, ta'lim jarayonida o'qituvchilar va rahbarlar o'rtasidagi hamkorlikning kuchayishi, ta'lim sifati oshishi va umumiy ta'lim muhiti yaxshilanishiga xizmat qilishi mumkin. Shuningdek, rahbarlarning ma'naviy qiyofasi va etika me'yorlariga amal qilishining ahamiyati ham bu tadqiqotda aniqlandi. Rahbarlar axloqiy qadriyatlarini bilan ta'lim muhitiga ijobiy ta'sir ko'rsatishi va jamoani boshqarishda nafaqat texnik ko'nikmalarga, balki insoniy sifatlarga ham katta ahamiyat berishlari lozimligi ko'rinadi. Bu esa ta'lim muassasalarining uzoq muddatli barqaror rivojlanishini ta'minlashda muhim ahamiyat kasb etadi.

Xulosa

Ushbu tadqiqot oliy ta'lim muassasalarining rahbarlari kompetentligiga qo'yilayotgan talablarni o'rganish va baholashga qaratilgan. Tadqiqot natijalari shuni ko'rsatdiki, rahbarlarning zamonaviy boshqaruv usullari, texnologik innovatsiyalarni qo'llash qobiliyatlari va yetakchilik ko'nikmalari ta'lim muassasalarining rivojlanishi va barqarorligi uchun juda muhimdir. Xususan,

tadqiqotda ishtirok etgan respondentlarning aksariyati rahbarlarning boshqaruv faoliyatini yuqori baholab, ularning zamonaviy texnologiyalarni joriy etish borasidagi ko'nikmalarini alohida ta'kidlagan. Shuningdek, rahbarlarning ma'naviy qiyofasi va axloqiy fazilatlarini ta'lim muassasalarining ijtimoiy muhitiga katta ta'sir ko'rsatishi aniqlandi. Oliy ta'lim rahbarlarining axloqiy qadriyatlarini va pedagogik yondashuvlarini ularning jamoa orasidagi obro'sini oshirishi va ta'lim jarayonining samaradorligini kuchaytirishi muhim ekanligi qayd etildi. Shuningdek, talabalar faolligini oshirish va ularning yetakchilik ko'nikmalarini rivojlantirishda rahbarlarning roli alohida ahamiyat kasb etadi. Umuman olganda, ushbu tadqiqot oliy ta'lim muassasalarining rahbarlariga qo'yilgan talablarning keng qamrovli ekanligini va rahbarlarning nafaqat boshqaruv, balki pedagogik, texnologik va axloqiy jihatdan ham yuqori malakaga ega bo'lishlari kerakligini ko'rsatdi. Bunday talablar zamonaviy ta'lim tizimining rivojlanishi va raqobatbardoshligini ta'minlashda asosiy omil sifatida namoyon bo'lmoqda.

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DIE BESONDERHEITEN DER LEXIKOGRAPHIE

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Annotation: In diesem Artikel werden die wesentlichen Merkmale der Lexikographie sowie ihre Entwicklung im Kontext moderner Methoden analysiert. Es wird auf die Herausforderungen bei der Erstellung von Wörterbüchern eingegangen und Lösungsansätze besprochen. Zudem wird die Rolle der Korpuslinguistik und der Einsatz moderner Technologien in der Lexikographie diskutiert.

Schlüsselwörter: Lexikographie, Korpuslinguistik, moderne Technologien, Wörterbucharstellung, Sprachwissenschaft

Einleitung

Die Lexikografie oder Lexikographie (altgriechisch λεξικὸν βιβλίον *lexikòn bi blíon* „Wörterbuch“ und γράφω „schreibe“, vgl. -graphie) beschäftigt sich mit dem Erstellen von Wörterbüchern. Das Erstellen eines Wörterbuches ist ein komplexer und meist langwieriger Prozess. Bei allen größeren Projekten wird die Arbeit von mehreren Personen ausgeführt. Sie führt zu einem gedruckten Wörterbuch, einem elektronischen Wörterbuch oder zu einer lexikalischen Datenbank, die Grundlage für beides sein kann. Die Lexikographie ist ein bedeutendes Teilgebiet der Sprachwissenschaft, das sich mit der Erstellung von Wörterbüchern und der systematischen Analyse des Wortschatzes beschäftigt. Ihre Hauptaufgabe besteht darin, den lexikalischen Reichtum einer Sprache zu dokumentieren und zugänglich zu machen. Lexikographen müssen sich mit zahlreichen sprachlichen, kulturellen und gesellschaftlichen Herausforderungen auseinandersetzen, die diesen Prozess begleiten.

Forschungsstand

Die moderne Lexikographie vereint sowohl theoretische als auch praktische Aspekte. Während die theoretische Lexikographie die grundlegenden Prinzipien der Wörterbucharstellung untersucht, befasst sich die praktische Lexikographie mit der eigentlichen Erstellung von Wörterbüchern. Besonders in den letzten Jahrzehnten hat sich der Bereich durch den Einsatz computergestützter Methoden stark verändert. Ein wichtiger Teilbereich ist die Korpuslinguistik, die große Mengen an Textdaten analysiert, um lexikalische Muster zu erkennen.

Methodik

Bei der Erstellung eines Wörterbuchs sind verschiedene methodische Schritte notwendig. Zunächst wird ein Korpus erstellt, das eine repräsentative Sammlung von Texten der betreffenden Sprache umfasst. Dieses Korpus wird mithilfe von Textverarbeitungsprogrammen analysiert, um die Häufigkeit und Bedeutung von Wörtern zu bestimmen. Anschließend werden die Wörter in Kategorien eingeteilt, die ihre Bedeutung, Grammatik und Verwendung widerspiegeln. Lexikographen müssen dabei die kulturellen und historischen Kontexte berücksichtigen, um eine genaue Darstellung der Wörter zu gewährleisten.

Diskussion

Eine der größten Herausforderungen der Lexikographie besteht in der Entscheidung, welche Wörter in ein Wörterbuch aufgenommen werden sollen. Dies hängt von verschiedenen Faktoren ab, wie z. B. der Häufigkeit eines Wortes, seiner Relevanz für die Zielgruppe des Wörterbuchs und seiner historischen Bedeutung. Ein weiteres Problem ist die Darstellung der Mehrdeutigkeit von Wörtern. Viele Wörter haben mehrere Bedeutungen, die je nach Kontext variieren können. Die genaue Erfassung dieser Nuancen ist eine der schwierigsten Aufgaben der Lexikographen.

Ergebnisse

Die Lexikographie hat in den letzten Jahren erhebliche Fortschritte gemacht, insbesondere durch die Nutzung digitaler Technologien. Online-Wörterbücher und mobile Apps haben die Art und Weise, wie Menschen Wörter nachschlagen und lernen, revolutioniert. Darüber hinaus haben die Fortschritte in der Korpuslinguistik zu präziseren und umfassenderen Wörterbüchern geführt, die eine bessere Abdeckung des Sprachgebrauchs bieten.

Die Lexikografie ist eng verwandt, aber nicht identisch mit der sprachwissenschaftlichen Disziplin der Lexikologie. Die Lexikologie untersucht systematisch Teile des Wortschatzes einer Sprache, ohne diesen aber vollständig kodieren zu wollen. Die Enzyklopädie bzw. Enzyklopädistik beschäftigt sich mit dem Erstellen von enzyklopädischen Nachschlagewerken.

Fazit: Die Lexikographie bleibt ein dynamisches und sich ständig weiterentwickelndes Feld, das sowohl Sprachwissenschaftler als auch Technikexperten anzieht. Trotz der Fortschritte bleibt die Erstellung eines Wörterbuchs eine komplexe und anspruchsvolle Aufgabe, die fundiertes Wissen über Sprache, Kultur und Gesellschaft erfordert. Die zukünftige Entwicklung der Lexikographie wird zweifellos weiterhin von technologischen Innovationen geprägt sein, die die Möglichkeiten der Sprachforschung erweitern.

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THE OCCURRENCE OF STROKE DISEASE IN HUMANS
AND IT'S PHYSIOLOGICAL PROCESSES

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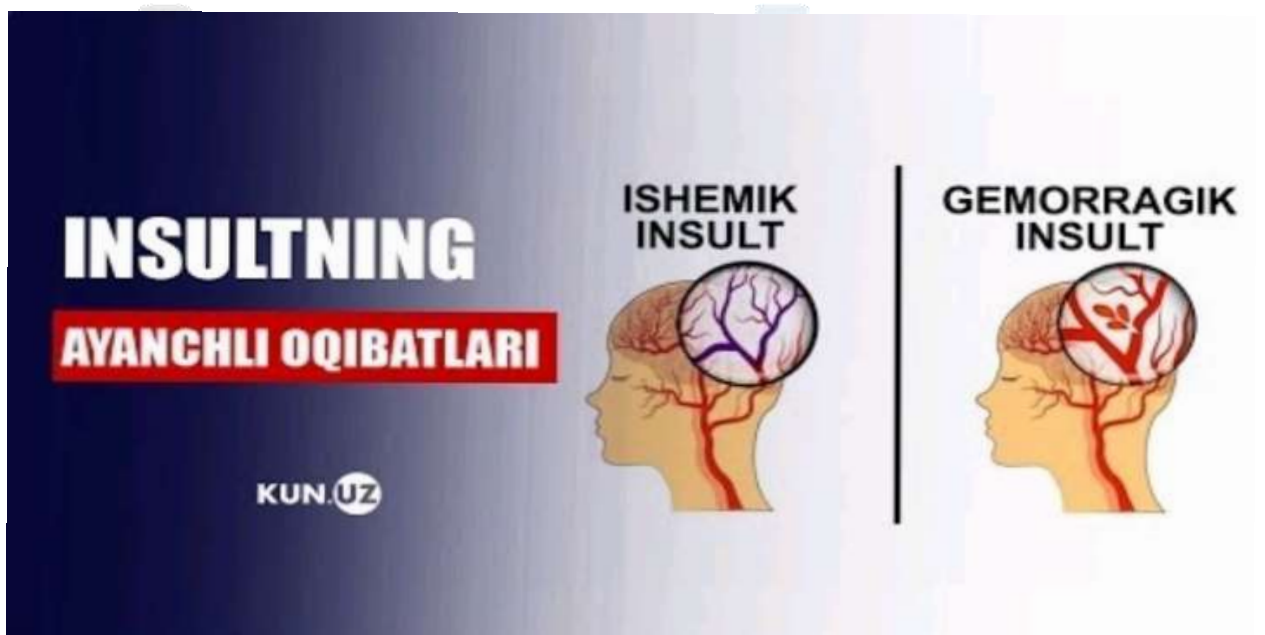
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Annotation: We know that by the present time, innovative technologies are developing and yet various new diseases are also developing. Various small factors are causing severe diseases. In this cited article, however, the occurrence of stroke disease in humans and the physiological processes observed in patients with this disease and changes in their psyche are cited.

Keywords: stroke, types, hemorrhagic stroke, ischemic stroke, cause, atherosclerosis, symptoms, treatment.

One of the most common diseases of the brain is stroke, which is a sudden neurological disease. In this disease, blood circulation in the cranial brain is caused by a strong disorder. In a stroke, blood flow to the brain occurs with a rupture of blood vessels in the brain. Two types of this disease occur mainly:

1. Hemorrhagic stroke is a disease that goes to the brain with a blood transfusion. Although this type of stroke appears suddenly in humans, however, the target of the disease is noticeable in advance. For examples, hypertension, and atherosclerosis, the brain suddenly gets a blood clot, often when a person is embarrassed. The signs that occur in this are nodding, headaches, dizziness, and an isthmus rises. In the case, the patient faints and vomiting redness is observed on the face, often deep often inhales wheezing.



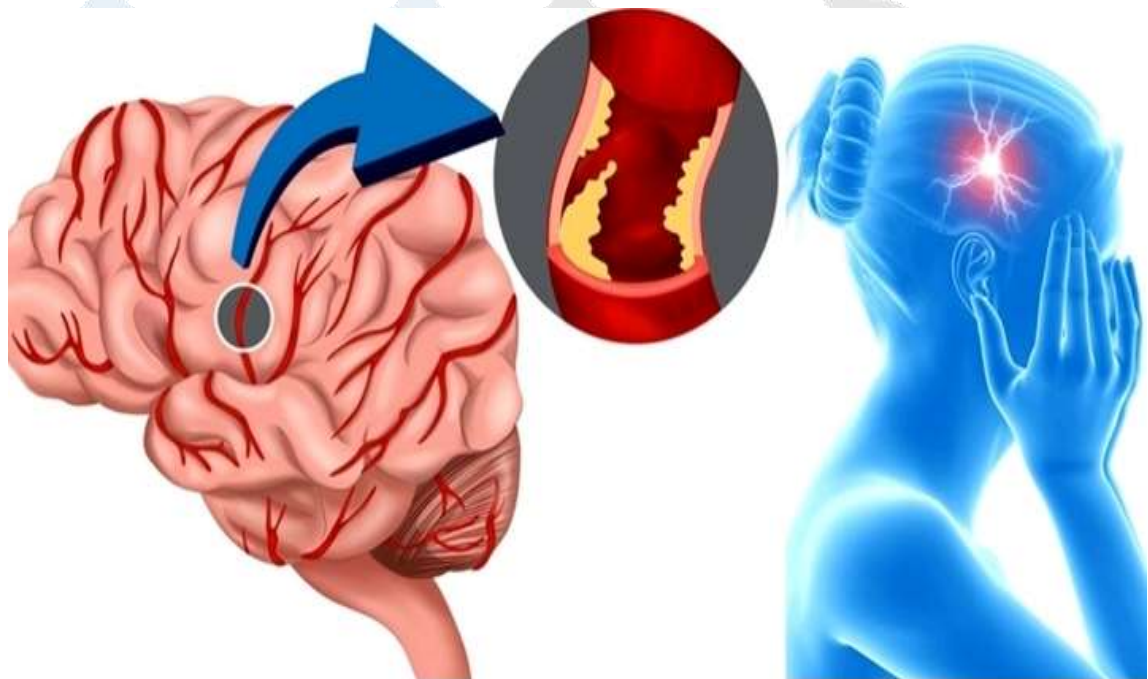
2. Ischemic stroke is a disorder in which blood from the brain reaches brain tissue as a result of vascular thrombosis. In this case, softening of the brain tissue causes a cerebral infarction. The signs in this are also vital such as headaches and dizziness that bring the symptoms to the surface. But the patient will be awake, the hands or feet will be numb and there will be paresis or paralysis. The ability to perceive disappears or decreases speech impaired. The patient is pale in color with the eyelids narrow, the pulse weak is felt very slowly. Body temperature will be normal. You can understand these cases very easily in pictures.

FACTORS THAT CONTRIBUTE TO THE DEVELOPMENT OF STROKE DISEASE.

The effect of smoking and alcohol on the development of the disease. These harmful habits double the development of stroke compared to healthy people. Smoking and alcohol increase blood coagulation, accelerate the formation of thrombi (hardened blood clots) and damage the inner wall of the vessels. The vessel narrows. After that, blood supply to the brain tissue is disrupted. Quitting smoking sharply reduces the risk of developing a stroke and heart attack after 2-4 years. This is a phenomenon that has been proven.

ATHEROSCLEROSIS DISEASE ALSO DEVELOPS STROKE DISEASE.

That being said, with increasing age, atherosclerosis begins to occur a lot. Therefore, as age increases, the number of stroke cases increases. Cholesterol levels in the blood increase, the vessel walls become brittle, scars appear on the vessels, and the cholesterol substance gets stuck in the vessels, causing a stroke. low mobility increases the accumulation of cholesterol in the vessels which also leads to atherosclerosis, develops stroke and cardiovascular diseases. In people in constant motion, the heart promotes blood circulation by developing blood vessels well and reduces stroke.



The effect of stress on the disease. Scientists call the 20th century the age of stress. Because nowadays there are more and more diseases that arise due to nervous tension, namely stroke and

heart attack. It is known that the stroke that we ask for people who have missed the disease turns out to be a severe depression before the development of this disease. Therefore, stress increases the development of the disease. Also, in a person with constant compression, the development of hypertonia disease, diabetes mellitus, ischemic heart diseases are observed a lot. All these are considered diseases that increase the state of being a stroke. It is worth saying that physical labor and sports on a constant level are less exposed to mental - emotional tension. It is considered extremely important to prevent stroke.

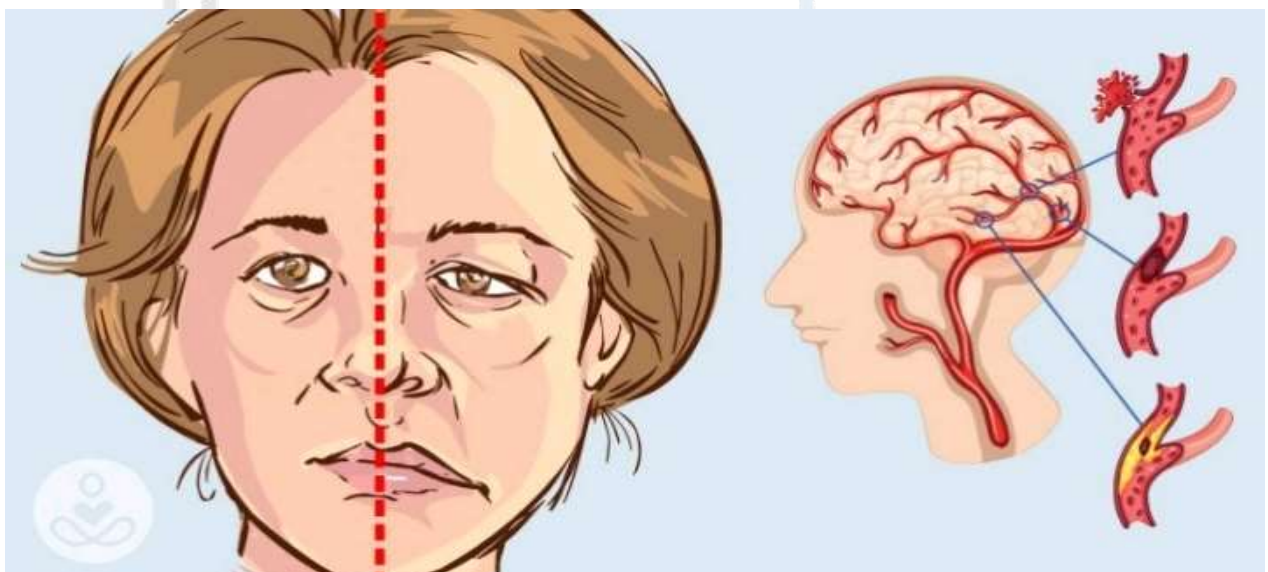
OBSERVED CASES IN STROKE PATIENTS.

Since stroke is a cranial disease, the patient experiences a lot of neurological changes. As an example, this disease is observed on the right side of the brain such people experience paralysis and sensory disturbances on the left sides of the body. Damage to the right hemisphere will make the body structures unable to control the lateral left side of the other, which will remain the same. In some cases, cases of self-suffocation are observed, with a semi-paralyzed arm not attached to itself. Some patients will have a different left-hand hoodie that looks like his cat or beautiful toys, while patient cases of pampering him have been observed. But such cases are not recognized by the patient.

CHANGES IN THE PATIENT'S FACIAL STRUCTURE IN LEFT BRAIN STROKE.

The condition of patients when stroke is observed in the left hemisphere of the brain. The state of speech disorders and semi-paralysis of such patients is observed. Usually, the behavior of a person with speech disorders is also rapidly changeable. A sudden speech disorder changes the psychology of the patient so that he does not make sense by accepting the speech of those around him only without a touch. He cannot give his opinion. It becomes difficult to communicate with such patients, they do not fulfill what the doctor and loved ones say, fight quickly or cry, refuse to eat, pee at the bottom and make it too easy to take care of. For this, it will be very difficult for the doctor to work with such patients.

WHAT CHANGES OCCUR IN THE EMOTION OF PATIENTS.



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The patient becomes self- numb, sometimes laughing at something not worth it. Naturally, they will be very capricious because the disorders of movement or speech separate it from nature. Their body is manifested in combination with a violation of the perception of the environment without pretending to be. For example, once patient leaves home a familiar person first cannot remember anything else. They become afraid of everything that means that whoever says something to the young child becomes gullible or ahsi. In stroke diseases, this condition is mild.

In order to avoid such unpleasant situations, everyone must first of all be attentive to the health of himself.

Nowadays, irritability situations are observed in any person these irritations develop not only stroke, but also the origin of other diseases.

In developed countries, such diseases are very rare because everyone pays great attention to their health. Because in developed countries, since each person gives a very high value to his health. In our country, we need to keep our elderly parents from getting nervous and suffering from depressions. Elderly people should be provided with peace of mind.

In order not to suffer from this disease, everyone needs to avenge himself. Young people should also be able to show affection to older people, keeping them away from all hard physical activities, keeping them away from the treats that offend them and taking them to different places to a new beautiful nature. In other words we must always keep the psyche homogeneous to keep them away from family treats. But it is never possible to limit yourself from the activities that will happen in society and in the family. A person who is completely separated from the family is also stressed, thinking that he is an unnecessary person.

USEFUL TIPS FOR STROKE PATIENTS AND THEIR RELATIVES.

First, a healthy psychological environment should be created around the womb, the patient. In recovery, the patient's mood comes first, while the patient, who is in a positive optimistic spirit, has recovered much faster than pessimistic patients. Therefore, if the doctor and the patient's ventricles must, in agreement, raise the patient's mood as much as possible, the patient's woman and children must always be able to convince the patient himself of his recovery by being a pole next to him so that the patient begins to convince himself to recover knowing that he has a place in society. Our brain is structured in such a way that when we command the brain to heal, our brain takes all the opportunity in our organ.

Semi-paralysis of the patient who has undergone a stroke and the absence of speech ability.

Since speech is the greatest blessing given to mankind, it is necessary to appeal to the authorities of this work on the restoration of this ability. With this work, a neuropsychologist or clinical speech therapist is engaged in this area. When the patient people in the strophe and begins to speak himself, his mood is increased, blood pressure is normalized, and half-paralysis in the limbs also recedes. We see that barge diseases or everything that a person does not like is turning out to be a complication of excessive compressibility or mental depressions and therefore create a healthy lifestyle, both in the family and in society. It is necessary to be able to follow the same

created healthy lifestyle. Therefore, it is possible that every person will be able to restore his health. doctors can only warn. Everyone should pay serious attention to their own health itself!

Conclusion: Our conclusion is that stroke it is a serious condition that requires urgent medical attention and is important for treatment. Treatment can often include dissolving blood clots, controlling blood pressure, and providing adequate oxygen to the brain, depending on the patient's condition. The rehabilitation process is also important to help restore the patient's functions.

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**МОДЕЛИРОВАНИЕ ПРОЦЕССА ПОЛУЧЕНИЯ
ВЫСОКОКАЧЕСТВЕННОГО ТОПЛИВА ИЗ ПРИРОДНОГО ГАЗА В
СРЕДЕ ASPEN HYSYS**

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АННОТАЦИЯ

В работе описан процесс получения синтез-газа путем паровой конверсии метана (ПКМ) в условиях Uzbekistan GTL, который является основным промышленным методом для получения синтез-газа, применяемого для производства аммиака, метанола и других химических продуктов. В работе рассмотрены термодинамические аспекты процесса и влияние различных параметров на выход продукции и выбросы в атмосферу. Процесс ПКМ проходит при высоких температурах (до 930°C) и давлениях, а для его моделирования используется пакет Aspen HYSYS. На основе моделирования и экспериментальных данных определены оптимальные условия для процесса: содержание метана в природном газе — 94%, температура конверсии — 930°C. Анализ выбросов показал, что оптимальные параметры для минимизации загрязнений и сохранения производительности установки находятся при соотношении H_2/CO от 2,6 до 3.

КЛЮЧЕВЫЕ СЛОВА

Моделирование, синтез газ, природный газ, паровая конверсия метана, водород, оксид углерода, Aspen HYSYS.

ANNOTATION

The paper describes the process of producing synthesis gas by steam conversion of methane (SCM) under the conditions of Uzbekistan GTL, which is the main industrial method for producing synthesis gas used for the production of ammonia, methanol and other chemical products. The thermodynamic aspects of the process and the influence of various parameters on output and emissions into the atmosphere are considered in the work. The SCM process takes place at high

temperatures (up to 930°C) and pressures, and the Aspen HYSYS package is used to simulate it. Based on modeling and experimental data, optimal conditions for the process have been determined: the methane content in natural gas is 94%, the conversion temperature is 930°C. The emission analysis showed that the optimal parameters for minimizing pollution and maintaining plant performance are at an H₂/CO ratio from 2,6 to 3.

KEYWORDS

Modeling, synthesis gas, natural gas, steam conversion of methane, hydrogen, carbon monoxide, Aspen HYSYS.

ANNOTATSIYA

Ilmiy maqolada ammiak, metanol va boshqa kimyoviy mahsulotlarni ishlab chiqarishda qo'llaniladigan sintez-gaz olishning asosiy sanoat usuli bo'lgan Uzbekistan GTL sharoitida metanni bug'li konversiyalash (MBK) yo'li bilan sintez-gaz olish jarayoni tasvirlangan. Ushbu maqolada jarayonning termodinamik jihatlari va turli parametrlarning mahsulot ishlab chiqarilishining samaradorligiga va atmosferaga ta'siri ko'rib chiqilgan. Metanni bug' bilan konversiyalash jarayoni yuqori haroratlarda (930°C gacha) va bosimlarda amalga oshiriladi va uni modellashtirish uchun Aspen HYSYS paketidan foydalanildi. Modellashtirish va eksperimental ma'lumotlar asosida jarayon uchun optimal sharoitlar aniqlandi: tabiiy gaz tarkibidagi metan miqdori - 94%, konversiya harorati - 930°C. Chiqindilar tahlili shuni ko'rsatdiki, ifloslanishni minimallashtirish va qurilmaning ish unumdorligini saqlash uchun optimal parametrlar H₂/CO nisbati 2,6 dan 3 gacha bo'lishi aniqlandi.

KALIT SO'ZLAR

Modellashtirish, sintez gazi, tabiiy gaz, metanning bug'li konversiyasi, vodorod, uglerod oksidi, Aspen HYSYS.

ВВЕДЕНИЕ

GTL-технологии по переводу газа в жидкое состояние (gas to liquids technologies) интересуют все большее число компаний.

Химический способ монетизации природного газа для применения в качестве моторного топлива заключается в его превращении в жидкие углеводороды в процессе Фишера-Тропша. В данном процессе производится широкий спектр продукции: топлива, базовые масла, сжиженные углеводородные газы (СУГ), нефтя и твердые парафины. Такая продуктовая линейка открывает большее количество рынков для реализации, однако требует значительных капитальных затрат.

В основе технологии «Uzbekistan GTL» лежит процесс фазы суспензионной дистилляции компании «Sasol» (Sasol Slurry Phase Distillate

Process™) (процесс SPD). Он состоит из трех этапов. На первом этапе природный газ соединяется с кислородом и образует синтез-газ. Синтез-газ затем подвергается конверсии Фишера-Тропша с образованием парафинистой синтетической сырой нефти. На конечном этапе синтетическая сырая нефть подвергается крекингу для получения конечной продукции. [1]

Синтез газ — это смесь оксида углерода с водородом в различных отношениях.

Топливо GTL — это полностью синтетическое высококачественное топливо [2], производимое из природного газа с использованием запатентованной технологии Sasol. Данное топливо считается топливом премиального класса, которое имеет следующие особенности:

Топливо GTL:

- Практически нулевое содержание серы (<5 мг/кг)
- Очень высокое цетановое число (>70)
- Практически нулевое содержание ароматических углеводородов ($<0,5$ масс. %)
- Практически без запаха и бесцветный
- Отвечает всем требованиям Европейского стандарта EN15940

Основной проблемой Республики Узбекистан является резкое ухудшение экологического состояния в Республике. По данным IQAir [3] во всех областях Республики превышена норма по содержанию мелких частиц, PM 2,5 которые в свою очередь возникают при работе ДВС на некачественном топливе и при работе нефтеперерабатывающих и нефтегазодобывающих заводов (рис. 1). Для улучшения этого состояния в работе определены оптимальные параметры синтез газа для получения максимальной производительности и обеспечения минимальных выбросов в атмосферу.



Рисунок 1. Диаграмма превышения норм по выбросам в атмосферу мелких частиц PM 2.5

ЛИТЕРАТУРА И МЕТОДОЛОГИЯ

Паровая конверсия метана — наиболее широко распространенный промышленный метод получения синтез-газа, на основе которого сейчас производится почти 95 % синтез-газа для производства аммиака, метанола и других продуктов. В ПКМ образуется богатый водородом синтез-газ с отношением $H_2/CO = 3$. Широкое промышленное внедрение технологии ПКМ началось с 1960-х гг., когда ускорился переход с угля на природный газ в качестве сырьевого источника химической промышленности. [4]

В промышленных условиях паровая конверсия проводится на никелевых катализаторах при температуре 800—1000 °С, давлении 30—50 атм и высоком соотношении $H_2/CO = 2,5-3,0$, необходимом для снижения коксообразования. Этот процесс является примером промышленного каталитического процесса, для которого решены сложнейшие технологические задачи, в то время как многие принципиальные вопросы теории процесса остаются до сих пор неясными.

В первом потоке подается природный газ обогащенный метаном (табл. 1).

Таблица 1. Состав природного газа подаваемого из Шуртанского ГХК

Мольные доли					
метан	оксид углерода	диоксид углерода	водород	пар	азот

При моделировании процесса применяется термодинамический пакет Пенг-Робинсона. А также применяется два набора реакций: 1-конверсионная; 2-равновесная реакция. В первом потоке подается газ из Шуртанского ГХК. Во втором потоке подается пар.

Природный газ подается в печь для повышения температуры, после чего температура на выходе составит $T_1 = 370^\circ\text{C}$, а перепад давления составит $\Delta P_1 = 1,96 \cdot 10^5$.

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Далее оба потока направляются в смеситель. После смешивания объединенный поток отправляется на подогреватель, температура на выходе

составит $T_1 = 500^\circ\text{C}$, а перепад давления составит $\Delta P_1 = 1,96 \cdot 10^5$. После чего поток еще раз отправляется на подогреватель, температура на выходе составит $T_1 = 870^\circ\text{C}$, а перепад давления составит $\Delta P_1 = 1,96 \cdot 10^5$.

Далее поток отправляется в конверсионный реактор, температура на выходе составит $T_1 = 930^\circ\text{C}$, а перепад давления составит $\Delta P_1 = 1,96 \cdot 10^5$. На выходе из конверсионного реактора в составе газа отношение водорода к оксиду углерода составит 3.

Далее газ охлаждается, температура на выходе составит $T_1 = 355^\circ\text{C}$, а перепад давления составит $\Delta P_1 = 1,96 \cdot 10^5$. Далее газ отправляется в равновесный реактор, где происходит окисление CO до CO_2 , а перепад давления составит $\Delta P_1 = 1,96 \cdot 10^5$:



Степень конверсии в этих реакторах составляет 66,85%. Далее газ отправляется в охладитель (рис. 2), температура на выходе составит $T_1 = 210^\circ\text{C}$, а перепад давления составит $\Delta P_1 = 1,96 \cdot 10^5$.

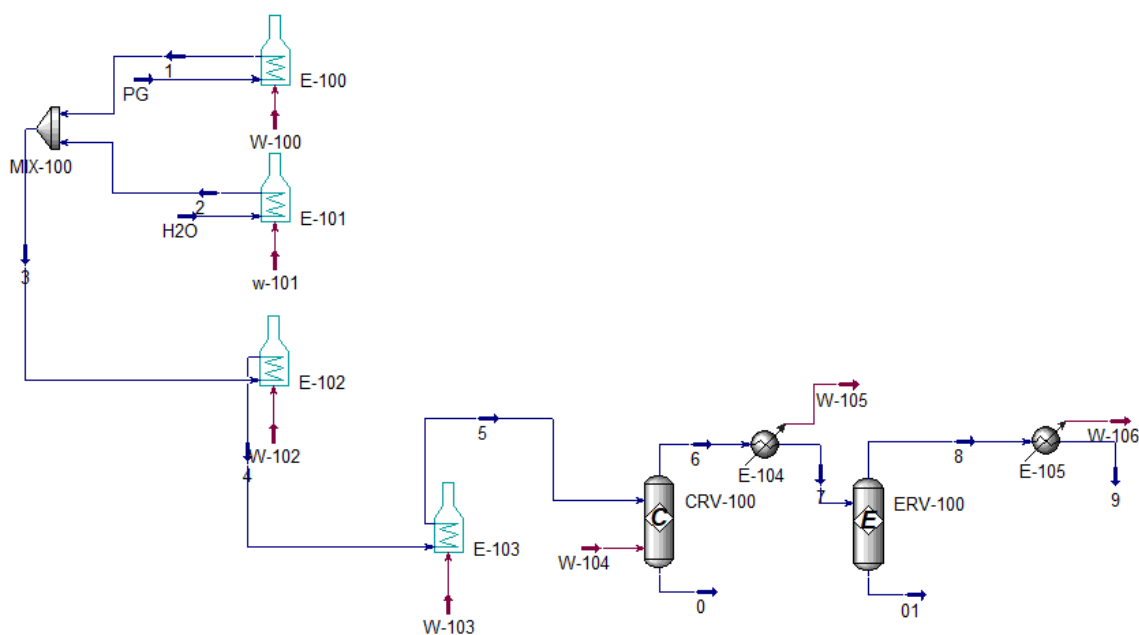


Рисунок 2. Цифровой двойник установки получения синтез газа

Далее для нахождения оптимальной температуры конверсии при отношении водорода к оксиду углерода от 2,6 до 3, с минимальными выбросами в атмосферу и сохранением производительности применим мультипликативный критерий оптимизации.

Основная зависимость представляет собой:

$$A = \frac{Q_B}{V_C} \quad (2)$$

РЕЗУЛЬТАТЫ

Был смоделирован процесс получения синтез-газа из природного газа в Aspen HYSYS. [5]. Исследовано влияние отношения водорода к оксиду углерода на такие параметры синтез газа, как концентрация веществ во входном газе, температура процесса конверсии метана паром, производительность установки и выбросы в атмосферу.

В ходе моделирования были получены графики зависимостей:

1) изменения отношения на выходе H_2/CO при разном содержании метана на входе (рис. 3);

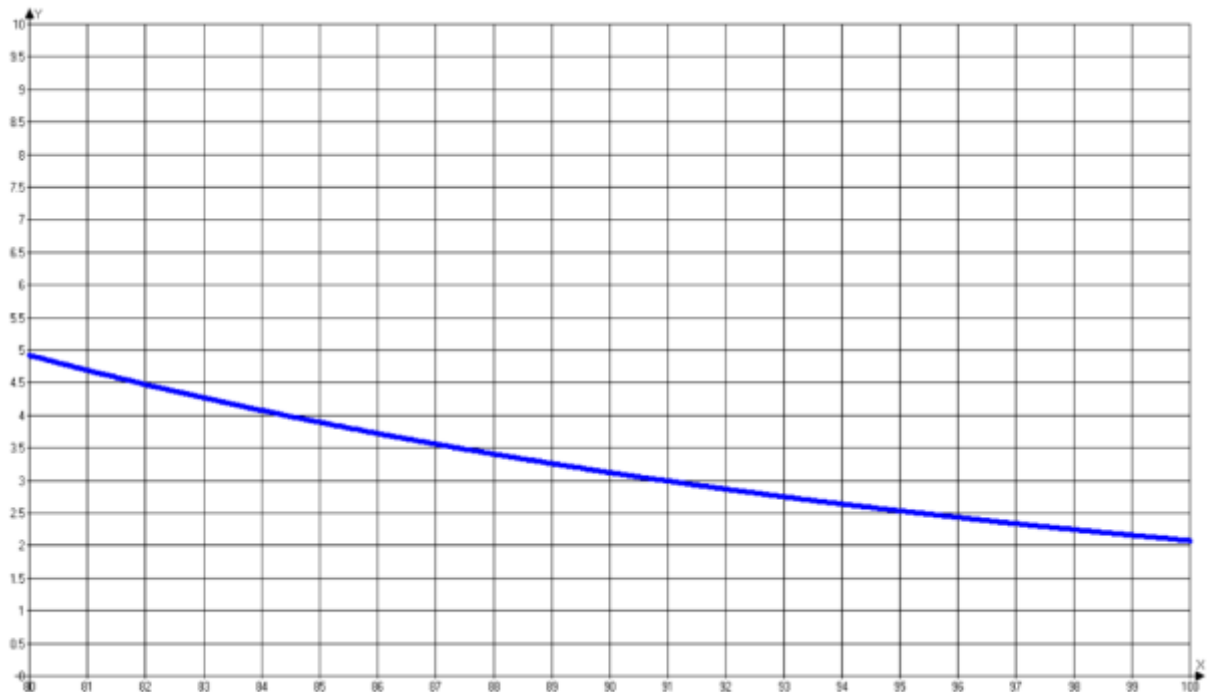


Рисунок 3. Изменение отношения на выходе H_2/CO при разном содержании метана на входе

2) изменения отношения на выходе H_2/CO при разной температуре конверсии (рис. 4);

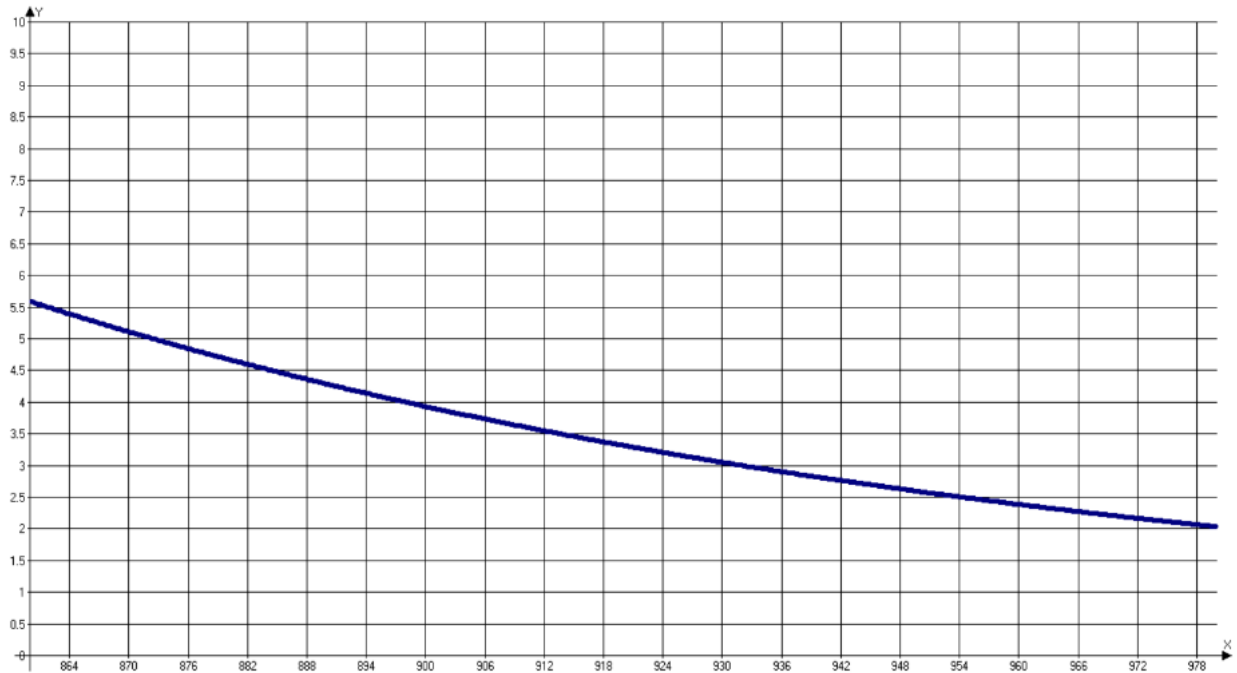


Рисунок 4. Изменение отношения на выходе H₂/CO при разной температуре конверсии

3) график зависимости производительности от отношения H₂/CO (рис. 5);



Рисунок 5. График зависимости производительности от отношения H₂/CO

4) график зависимости выбросов от отношения H₂/CO (рис. 6);

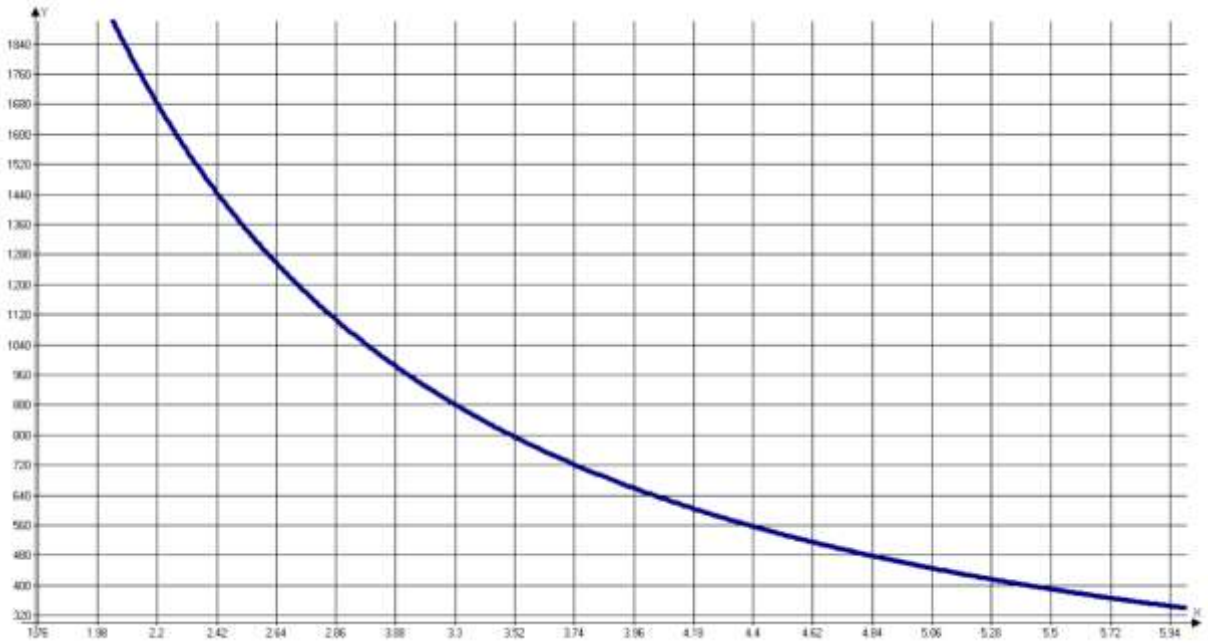
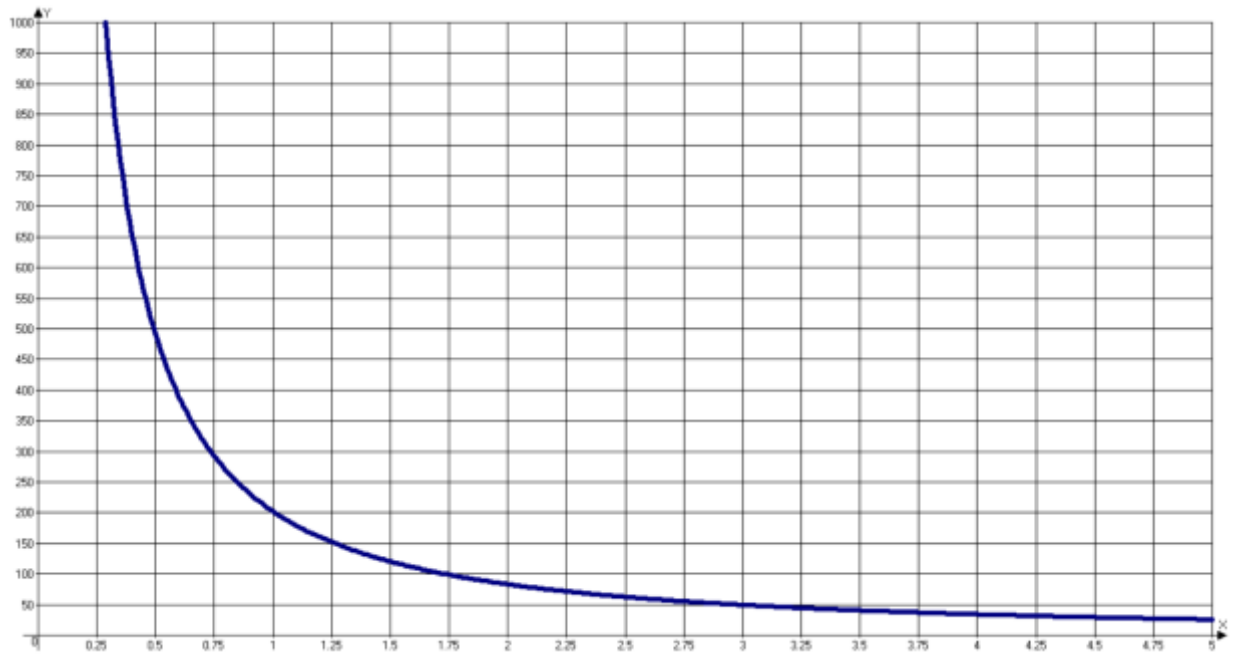


Рисунок 6. График зависимости выбросов от отношения H_2/CO

5) график мультипликативной функции зависимости выбросов к производительности установки.



ОБСУЖДЕНИЕ

Анализируя полученные результаты на рисунке 3 можно заметить, что с увеличением концентрации метана во входном газе уменьшается отношение водорода к оксиду углерода в выходном газе.

Рисунок 4 демонстрирует уменьшение отношения на выходе H_2/CO при увеличении температуры конверсии. Характер кривой близок к гиперболическому. При температуре $978\text{ }^\circ\text{C}$ отношение водорода к оксиду углерода составляет 2,1.

График зависимости на рисунке 5 показывает, что с увеличением отношения H_2/CO производительность установки синтез газа уменьшается.

Аппроксимируя полученный график выявляется функция зависимости, которая выглядит следующим образом:

$$V_c = 29,2 \cdot \left(\frac{n(H_2)}{n(CO)} \right)^{-0,315} \quad (2)$$

На рисунке 6 установлено, что с увеличением отношения водорода к оксиду углерода падает значения выбросов в атмосферу, что благоприятно сказывается на окружающую среду.

Аппроксимируя полученный график получим следующую зависимость:

$$Q = 5910,42 \cdot \left(\frac{n(H_2)}{n(CO)} \right)^{-1,59} \quad (3)$$

ЗАКЛЮЧЕНИЕ

1. Исследования показали, что наилучший результат при конверсии метана достигается при содержании метана в природном газе около 94% и температуре конверсии $930\text{ }^\circ\text{C}$. Эти параметры обеспечивают высокую производительность установки.

2. Идеальное отношение H_2/CO составляет 3, что является оптимальным для большинства промышленных приложений, требующих высокого содержания водорода в синтез газе.

3. Моделирование в Aspen HYSYS подтвердило, что для минимизации выбросов в атмосферу и поддержания высокой производительности необходимо поддерживать отношение H_2/CO в диапазоне от 2,6 до 3 при температуре $930\text{ }^\circ\text{C}$. Этот диапазон обеспечивает лучшие экологические и производственные показатели.

4. При снижении отношения H_2/CO выбросы вредных веществ в атмосферу увеличиваются. Поэтому важна тщательная оптимизация процесса для уменьшения негативного воздействия на окружающую среду.

5. Полученные данные позволяют предложить оптимальные условия эксплуатации установок для получения синтез газа, что повышает эффективность производства и снижает экологические риски.

Таким образом, предложенные условия паровой конверсии метана (температура 930°C и отношение водорода к оксиду углерода от 2,6 до 3) являются наиболее эффективными как с точки зрения производительности, так и с точки зрения экологической безопасности.

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FUNDAMENTALS OF THE SCIENTIFIC AND PRACTICAL MODEL OF ELECTRONIC GOVERNMENT IN THE CONTEXT OF THE DIGITAL ECONOMY

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Abstract: This article highlights the basics of the scientific and practical model of electronic government in the digital economy and provides information about them. The digital economy has a long list of unique features that cannot be found in other types of economies. Free goods and services like Wikipedia, email services like Gmail, and digital maps like Google Maps are all components of the modern digital economy with enormous economic values. However, they cannot contribute to national accounts, as indicators such as GDP only measure the monetary value of all final products at a price (Brynjolfsson and Collis, 2019; Brynjolfsson et al., 2019). In economic terms, therefore, we say that the digital economy has produced a ton of very valuable, but virtually cost-free and zero-marginal-cost services that cannot be captured in standard measures of economic efficiency. In this section, I outline some of the ways in which the digital economy has contributed to improving the economy.

Key words: digital economy; industry -4; digitization; smart economy; smart business; business model; transformation; e-economy; internet speed

Introduction

In the context of globalization, the digital economy has a direct impact not only on external migration, international trade and capital movements, tourism, foreign investment and other areas, but also on the economic growth of countries through IT development. According to experts, the transition to a digital economy is the main criterion for accelerated development of the state and society in general [3].

Mankind is going through an important period associated with the change of sectors in the economy, the digitization of this process, mobilization, the introduction of artificial intelligence in the industry, as well as the global pandemic. The development of a new digital economy is even more relevant in an environment where nearly a quarter of world GDP is projected to be in the digital sector by 2022.

However, the President of the Republic of Uzbekistan Sh. Mirziyoyev admitted in his address to the Oliy Majlis that, "although the country has risen by 8 positions in 2019 according to the International Information and Communication

Technologies Development Index we are still lagging far behind. It is also true that, most ministries, departments and enterprises are far from digital technologies” [1]. The digital economy is to include Uzbekistan in the list of democratic, economically developed countries as an accelerator (driving force) leading to the acceleration of our country's integration into the international arena. Therefore, in order to shed more light on the theoretical foundations of digital economy, it is necessary to focus on the views of scientists, to analyze in depth the factors influencing its development and to reveal its specific features. It is necessary to study the current situation in our country through analytical conclusions.

Also the infinite number of elements that make up a digital economy defines the complexity of interpreting this term. In our view, the digital economy requires a broader understanding of the complex integrated system of flexible technologies and communications of this intellectual society.

Literature review

The digital economy in our country consists of a deeper study of the theoretical views on it, the need to highlight the most important aspects, features and characteristics. This will allow us to effectively address the pressing economic issues in digitization. The digital economy provides the transition to a knowledge economy, the main factors of which are the knowledge, skills, abilities and capabilities of the staff. The implementation of the process of digitization of the economy consists of the continuous development and introduction of innovative digital technologies and the transition of society and the economy to a new stage of development. This, in turn, will accelerate the integration of our country into the international arena by the development of the digital economy.

Therefore, economists need to focus on the theoretical knowledge of the concept of digital economy to the economic concept. In particular, the concept of “digital economy” was introduced into scientific use in 1995 by Don Tapscott in his book Digital Economy. He understood it as an “economy based on digital technologies” [4]. The emergence of the term “digital economy” is also associated with Nicholas Negroponte, a researcher at the Massachusetts Institute of Technology, who used the concept of “e-economy” that year, explaining its differences and advantages over the rapid development of information and telecommunications technology.

The broadest definition of the digital economy in the Russian literature is given by Vladimir Ivanov: "the digital economy is a virtual environment that complements our reality"[4]. However, this definition of the digital economy does not represent it as a separate industry.

Roman Meshcheryakov, another professor at the Russian Academy of Sciences and a doctor of technical sciences, suggests two approaches to understanding the digital economy: extended and classical. In the broadest sense, "digital economy is economic production and the use of digital technology", in the classical way: "digital economy is an economy based on digital technology, and at the same time it is more accurate to describe only the field of electronic goods and services" [5].

The Organization for Economic Co-operation and Development (OECD) report defines digital economy as "a term used to describe markets that focus on digital technologies and refer to the types of economic, social and cultural activities supported by the Internet and other IT technologies" [6].

The international company Boston Consulting Group provides the following definition of the term under study: "The digital economy is an area of economic activity that includes online consumption, the cost of creating this consumer infrastructure" [6]. One of the generally accepted definitions were proposed by T. Mesenburg in 2001.

Considering the components of the digital economy, T. Mesenburg identified the following mandatory components [7]:

- 1) support infrastructure (hardware and software, networks and telecommunications);
- 2) electronic business (any organizational processes occurring in computer networks);
- 3) e-commerce (online sales).

A number of works by foreign scholars have been devoted to the formation and development trends of the digital economy, in particular; D. Tapcotti, T. Mesenburg, K. Shvab, V. Ivanov, R. Meshcheryakov and T. Yudina. In their research, these researchers focused on the development trends of the digital economy, its constant increase in the GDP structure of the world's leading countries, modern processes of digital transformation of the economy, and more. Therefore, in the context of the implementation of the strategy "Digital Economy - 2030" in Uzbekistan, the main directions and mechanisms of digital transformation of enterprises are still relevant and need scientific research.

The word "digitalization" is actually a new term that refers to the involvement of IT solutions in the process of innovative management and office work, resulting in the use of information technology in all systems, from the Internet to e-government.

A new direction of economic development is the transition of this economy to a digital economy. In the 21st century, scarce resources are becoming more expensive in social, political and economic processes. The concept of "digital economy" was

defined by the first American scientist N. Negropont, who said that "digital economy" is "the transition from the movement of atoms to the movement of bits." According to the World Bank, 66% of the total wealth of our planet - 365 trillion US dollars - falls on human capital, mainly on the level of knowledge of the individual. In the United States, the figure is 77 percent of national wealth - \$ 95 trillion. Therefore, the Head of our country in this year's Address to Oliy Majlis, emphasized the idea that "the greatest wealth is intelligence and knowledge, the greatest heritage is a good upbringing, the greatest poverty is ignorance!" [8].

Research methodology

The current study analyzes the theoretical interpretations of the digital economy and its importance by comparing digitization contribution to the economic growth relying on the existing literature. Discussions of the scholars' works have been studied and stated in the article.

Due to the significant impact of digital economy on the country economic growth, the current reforms in digitization in Uzbekistan are also presented in the article. The article also discusses the main country-wide electronic changes, target points and directions in digital reforms according to the time-set in the President's Address to the Oliy Majlis.

Analysis and results

It is well known that today the digital economy also plays an important role in creating added value. Various algorithms, processes and digital information are becoming a key determinant in the strategic development of corporate business. Digital non-financial factors determine the competitiveness of banks, affect their efficiency.

It should be noted that according to the International Telecommunication Union (ITU), 51.2% of the world's population used the Internet by the end of 2018, or 3.9 billion people actively used the Internet.

According to the ITU data, the share of the population using the Internet in developed countries in the total number of population increased from 51.3% in 2015 to 80.9% in 2018, which was slow and steady growth rate. In developing countries, the growth rate was significant, from 7.7% in 2005 to 45.3% in 2015. Among all regions of ITU, the share of Internet users in Africa increased from 2.1% in 2005 to 24.4% in 2018. Of the regions with the lowest rates of growth, 79.6% in Europe and 69.6% in North and South America used the Internet. In the CIS regions, 71.3% of the population use the Internet, 54.7% of the population of the Arab countries and 47% of the population of the Pacific region use the Internet. People who have access to basic telecommunications services are generally considered to have a better understanding of the industry. In the corresponding period, the number of registered

telephone subscribers in 2018 continued to decline, while the number of mobile phone subscribers from the number of subscribers worldwide increased by 12.4%. The last five years have seen an increase in the number of mobile phone subscribers in Asia-Pacific and Africa. Significant growth in the Americas and the CIS countries has led to a steady increase in the number of subscribers who have access to this broadband. Ongoing trend in 2018, there was an expansion of broadband connections, which increased by 1.1 billion compared to fixed telephone connection (942 million). The increase in the number of active subscribers worldwide through mobile broadband increased from 69.0 in 2017 to 69.3 in 2018. There was also a decline in European and Arab countries.[9]

It should be noted that almost all (96%) of the world's population has a mobile phone with 3 capabilities. In addition, 90% of the world's population has a higher speed or is connected to the Internet via a 3G set.

According to ITU estimates, in 2018, almost half of all households in the world have a single computer. In developed countries, this figure was 83.0% in 2018, and in developing countries - 36.3%. The highest rates of this indicator were observed in the Arab and CIS countries. In African countries, it increased from 3.6% in 2005 to 9.2% in 2018. Abdrasilova G.S, Bauer V.P, Chinese scientist Gun Yanhua, Truntsevsky Yu.V focused on "The digital economy and the digital environment of modern architecture." Also Ageev A.I, Bachilo I.L developed the works as "Methods of digital economy in the control and management of the real sector of the economy", Alekseenko OA and Veduta E.N. worked on "The role of the state in the digitization of the global world and the digitization of the economy", Akhromeeva TS and Lapidus L.V on the the value and meaning of the digital authenticity in the future, Bagautdinova N.G. emphasized on "new clear advantages of competition in the context of digitalization." [10]

Conclusion

The importance of IT and digitization forced the Uzbek government to focus on technological reforms. As a result of the changes being carried out in new Uzbekistan, openness, the development of international economic and political relations are created. Therefore, given that the digital economy is essential for the acceleration of the economy of our country, in order to accelerate the pace of its development, it is necessary to pay special attention to the following:

- It is necessary to form the infrastructure for the rapid development of mental intelligence in our country. To do this, first of all, it is necessary to separate gifted children (regardless of family life conditions) from the school education system and accelerate the organization of group-based centralized education in specialized

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boarding schools in order to form the mental faculties of people in our country (IT and software);

- Introduction of accelerated school education in the school program for gifted young schoolchildren, the creation of a system of self-motivation in various forms;

- Immediate introduction of a system of close acquaintance of gifted young schoolchildren with the prestigious higher education systems abroad (organization and formation of integrated joint learning processes (to familiarize with the accelerating human

intellectual intelligence around the world));

- Accelerate the growth of infrastructure for the creation of a platform that includes information programs, bringing high-speed technologies at the speed of modern information technologies, which are widely used around the world;

- Creation of infrastructure, including the organization of the introduction of high-speed technologies at the speed of modern information technologies, which are widely introduced worldwide. Thus, in such a rapidly developing world economy, the digital economy is a strong catalyst for innovation, growth and social welfare, and its development in Uzbekistan must become a modern requirement.

Deepening and expanding digitalization will increase the competitiveness of not only the world economy but also the economy of Uzbekistan, create conditions for the gradual transition to an innovative economy and knowledge economy, positively change the living standards and quality of life of the population.[11]

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UMUMIY O'RTA TA'LIM O'QUVCHILARINING MATEMATIK
TAFAKKURINI SHAKLLANTIRISH QOBILIYATINI OSHIRISH

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Annotatsiya: Mazkur tezisdagi yuqori sinf o'quvchilarida mantiqiy fikrlash qobiliyatini matematika darslarida shakllantirishning ahamiyati, fikrlashning dolzarbligi xususida;

Kalit so'zlar: Mantiq, fikrlash, maqsad, tafakkur, qobiliyat, ijodiy, mustaqil fikrlash, jarayon, idrok, axborot, pedagogik tayyorgarlik, o'qitish, tayyorlik,

Аннотация: В данной диссертации подчеркивается важность формирования способности логического мышления старшеклассников на уроках математики, актуальность мышления

Ключевые слова: Логика, мышление, цель, мышление, способность, творческое, самостоятельное мышление, процесс, восприятие, информация, педагогическая подготовка, обучение, готовность,

Abstract: This dissertation emphasizes the importance of developing the ability of logical thinking of high school students in mathematics lessons, the relevance of thinking;

Key words: Logic, thinking, goal, thinking, ability, creative, independent thinking, process, perception, information, pedagogical training, teaching, readiness.

Bugun mamlakatimizda innovatsion rivojlanish sohasiga oid ilmiy-tadqiqot ishlarini rivojlantirish borasida salmoqli ishlar amalga oshirilmoqda. Ilm-fan yutuqlarini raqamlashtirish va yoshlarni ilmiy faoliyatga jalb qilishga qaratilgan islohotlar samara beryapti. Ilm-fan va texnika yutuqlarini keng

qo'llagan holda iqtisodiyot tarmoqlariga, ijtimoiy va boshqa sohalarga zamonaviy innovatsion texnologiyalarni tezkor joriy etish O'zbekiston Respublikasi jadal rivojlanishining muhim sharti hisoblanadi. Shu boisdan mamlakatimizda innovatsion rivojlanish sohasidagi qator dasturlar, chora-tadbirlar tizimli va izchil amalga oshirilayapti. Yoshlarimiz mashg'ulotlar davomida zamonaviy pedagogik texnologiyalar, yuqori ilmiy natijalarga ega bo'lgan laboratoriyalar, axborotkommunikatsiya texnologiyalaridan keng foydalanish yuqoridagi ishlarni amalga oshirishning bosh poydevori bo'lib hisoblanadi.

Buyuk yunon faylasufi Suqrot "O'zingni bilsang-olamni bilasan" degan edilar. Biz hamma vaqtda, kundalik hayotimizda, ilmiy faoliyatimizda ham fikr yuritimiz. Lekin, mantiq ilmini bilmasdan turib fikr yuritishimiz mushkul. Mantiq olamdagi qonuniy, zaruriy bog'lanish va aloqalar, tartib va izchillik, tafakkurning ichki aloqadorligi, turli qarashlar orasidagi mantiqiy bog'lanishlarni o'z ichiga olgan bo'lib, bizni hech bir narsaga befarq bo'lmay, sinchkov qarashga, har bir voqea - hodisaga holis baho berishimizga, shu yo'l bilan muntazam va izchil fikr yuritishimizga va har qanday oqilona fikrlarimizni isbotlay bilishimizga o'rgatadi. Mantiq ilmi

qonun – qoidalarini atroflich o'rganish va mustaqil fikr yuritish qobiliyatini rivojlantirish orqali amaliy hayot uchun kerakli xulosalar chiqarish, davr ruhini anglash, voqea – hodisalarni haqqoniy tahlil qilish oson kechadi.

Fanlararo bog'lanish hodisasi ko'p o'lchamli. U mazmunining ko'p qirraliligi, o'qitish metodlari va shakllarining turli-tumanligi bilan ajralib turadi. Bu esa yuqori sinf o'quvchilarida matematika darslaridagi faoliyati bilan o'zaro bog'lanish asosini tashkil qiladi. O'qitishda fanlararo bog'lanishni amalga oshirish muammosining yuzaga kelishi matematika fanini ta'lim jarayonining o'quvchi ongida real dunyoning turli hodisalari to'g'risidagi bilimlarni alohida tizimli shakllantirishga yordam beradigan tuzilmaviy predmeti sababli paydo bo'lgan.

Ma'lumki, fanlararo bog'lanish hodisasi ko'p o'lchamli. U mazmunining ko'pqirraliligi, o'qitish metodlari va shakllarining turli-tumanligi bilan ajralib turadi. Bu esa yuqori sinf matematika darslarida o'quvchilarni o'quv-bilish faoliyati bilan o'qituvchilarning o'qitish faoliyatining o'zaro bog'lanishi asosini tashkil qiladi. O'quvchilarga matematika darslarini o'qitishda fanlararo bog'lanishni amalga oshirish muammosining yuzaga kelishi ta'lim jarayonining o'quvchilar ongida mantiqiy fikrlashni shakllantirishga yordam beradigan tuzilmaviy predmet paydo bo'ladi.

Matematika fani har qanday fanni rivojlantirish uchun muhim omil hisoblanadi. Maktabda matematika ta'limining maqsadlaridan biri o'quvchilarning mantiqiy tafakkurini rivojlantirishga yordam berishdir.

Keng ko'lamli psixologik-pedagogik adabiyotlarda (J.I.C.Vigotskiy, S.L.Rubinshteyn, N.F.Talizina, P.Ya.Galperin, N.I. Chuprikova, J.I.M.Fridman, A.M.Matyushkin va boshqalar) mantiqiy tafakkurni rivojlantirish xususiyatlari ko'rib chiqiladi. Mantiqiy fikrlash qobiliyati ta'limning muhim tarkibiy qismi hisoblanadi va bu ko'nikmaga o'rgatish bilimlarni uzatish kabi maktabning zaruriy vazifasidir. Matematika maktab o'quvchilarida mantiqiy fikrlashni rivojlantirish uchun katta imkoniyatlarni o'z ichiga oladi, bu erda bilimlarni o'zlashtirish va bu bilimlarni o'zlashtirish uchun mantiqiy fikrlashni amalga oshirilishi mumkin, ammo ular etarli darajada qo'llanilmaydi. O'qitish mazmunida o'quvchilarning matematik tayyorgarligiga qo'yiladigan talablarda maktab o'quvchilarini asosiy mantiqiy tushunchalar bilan tanishtirish yoki ularda mantiqiy savodxonlik va mantiqiy madaniyatni rivojlantirish ko'rsatilmagan. Matematikani o'rganish natijasidagina o'quvchilardan geometrik miqdorlarni hisoblash masalalarini yecha olish, masalalar yechish jarayonida argumentlar olib borish, hisoblashga oid, kattaliklar orasidagi funksional bog'lanishlarni aniqlashga oid, bog'lanishlarni grafik talqin qilishga oid, shuningdek, isbotlash masalalarini yecha bilish talab etiladi.

Mantiqiy fikrlash yuqori sinf o'quvchilarida mantiqiy fikrlash madaniyatini o'stirishga, masala yechish uchun zarur bo'lga bilimlar (qoida, dalil, qonun, teorema, ta'rif) ishga solishga, to'g'ri fikr yuritishga, bahs munozara paytida o'zining va boshqalarning fikr – mulohazalariga tanqidiy munosabatda bo'lishga, hozir javoblikka, suhbatdoshning fikr – mulohazalaridagi xatolarni anglashga yordam beradi. Shuningdek haqiqatni aniqlash, uni yoqlab chiqish, asoslash uchun mantiqiy qoidalardan foydalana bilish, o'z fikrini lo'nda va ishonarli qilib bayon etish ko'nikmalarini hosil qiladi.

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AND PLACE OF PSYCHOLOGICAL APPROACHES TO WORK ACTIVITY OF UNIVERSITY TEACHERS

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Psychology of Urganch State University.

Annotation. Educating the young generation, providing them with the education and upbringing process based on the requirements of the times, requires today's pedagogues not only to be experts in their fields, but also to acquire innovative and psychological knowledge at the same time. In the twenty-first century, which is the age of information, it is impossible to imagine the educational process without modern technology and psychological knowledge.

Keywords. Pedagogue, education, education, introvert, extrovert,

Introduction part. According to the report of the Statistics Agency at the beginning of the 2022/2023 academic year, the number of students studying in general education institutions in Uzbekistan was about 6.5 million. Undoubtedly, one of the most responsible jobs in society is the work of pedagogues working in the educational process. In our article, we try to highlight the importance and role of psychological knowledge in improving the effectiveness of the educational system.

The main part. The role of teachers is incomparable in the formation of the spiritual formation of the young generation and the formation of its system of views on the world. In general, the role of our pedagogues together with parents is significant and important in all life processes, their norms, a person's behavior in the way of life from the family to the street, finding a place in the society. Currently, the number of pedagogues working in general secondary schools in the Republic of Uzbekistan is 547,700 as of 2023-2024 (statistics agency). Of course, these are only pedagogues in the field of general secondary education, and besides, the number of pedagogues working in higher education and non-state educational organizations is quite significant. It goes without saying that the pedagogic field is one of the areas that should be studied and recognized in society.

The educational process will be more effective if the pedagogue works directly with the human personality, knowing what psychological changes occur in the student at different age periods and chooses the teaching method based on the age of the audience.

In particular, the junior school age is distinguished from other age periods by its several psychological characteristics. The period of junior school age in psychological literature covers the period from six to ten years. During this period,

the child is now experiencing the process of adaptation to learning activities, and the transition from play activities to direct learning activities can be quite difficult for the child. At the same time, rapid developments in cognitive processes are observed in the student at this time. He is first prepared psychologically for school education. Consequently, his psyche develops enough to acquire knowledge. A child of this age is distinguished from children of other ages by his sharpness of perception, clarity, purity, accuracy, his curiosity, kindness, benevolence, trustworthiness, brightness of his imagination, strength of his memory, clarity of thinking.

Of course, a teacher who does not know these features will inevitably face difficulties in working with students and effectively conducting the educational process. Similarly, each age period has its own characteristics, and conducting educational processes taking into account these characteristics at different stages of education requires a modern teacher not only to have deep knowledge of his specialty, but also to be aware of psychological knowledge. Above, we tried to shed some light on the period of elementary school age and its psychological characteristics and the importance of these characteristics in the educational process. On the other side of the story, pedagogical activity and how well one knows one's specialty is one of the important factors that determine the quality and effectiveness of education. A number of requirements and tasks are set for the pedagogue to effectively organize his activities.

1. Arming future teachers with the theoretical and methodological foundations of pedagogical skills.
2. Acquiring the system of knowledge about the components of the science of pedagogical skills, such as pedagogical technique, pedagogical cooperation (communication), pedagogical delicacy, pedagogical ability, educator's skill, management of the educational-educational process, speech culture, pedagogical creativity.
3. Future teachers will develop the need and desire to independently master the secrets of pedagogical skills reflected in our national customs and traditions and the rich creative heritage of Central Asian thinkers.
4. Based on the acquired pedagogical-psychological and methodical knowledge, skills and qualifications, each future teacher forms his personal pedagogical skills.
5. They regularly master the theoretical and practical foundations of organizing and managing the educational process based on the latest modern methods and forms typical of world standards.
6. To improve their professional skills, teachers acquire the forms, methods and tools of personal and creative professional development.

7. They form their professional skills based on the use of modern information technologies and the portal system.

The solution of these goals and tasks teaches the teacher-educator to keep up with the times, to live with the pain of educating young people and to see the future clearly. Each teacher will conscientiously imagine the actual problems, goals and tasks of our country and teach them to use their opportunities, knowledge, and experiences with enthusiasm, and educate them to have the skills of a creative approach to pedagogical activities.¹

In conclusion, we can say that in order to effectively organize pedagogical activities in the current educational process, it is necessary not only to be able to use the field of expertise, but also to be able to correctly use modern technologies, to know well the psychology of people receiving education, and to use them in their place. has become one of the leading factors determining the quality of education.

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¹A. Kholikov "Pedagogical mahurat" study guide Tashkent-2010. p. 12-13.

TYOLOGICAL FEATURES OF SUBJECTIVE PERCEPTION OF TIME

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Annotation: in this article, the perception of time is one of the main components of the mental Organization of human life, which helps to perceive the direction of movement, to understand the categories of past, present and future, and describes the course of human life.

Keywords: time, perception, rhythm, rationality, chronological time, substantive concept and relational concept, rationality.

In a long historical period from ancient civilizations to the present, attempts have been made in philosophy and psychology to understand the laws of phenomena and phenomena of the human era. Depending on specific cultural historical circumstances, time could act in the form of accepting life events, anticipating suitable opportunities, and actively filling time with its vital meaning [124]. Such an interest of scientists arises from the fact that time is an integral factor in the development of all psychological structures of an individual.

There are different approaches to the study of the phenomenon of time perception. Thus, one can single out studies that address the deterministic foundations of psychological time:

-Taking into account the presence of circadian rhythms or internal biological clocks as the main mechanism of time perception, they are responsible for assessing the time that can include periods of sleep and wakefulness, heart rhythms, etc. [177, 174, 157]. According to the researchers, such physical patterns determine the beginning and end of the next time interval, which predicts future events. Thus, the accuracy of temporal decisions will depend on the consistency of events and the ability to synchronize the internal rhythm with the external rhythm that the environment offers;

-Understanding the perception of time as an individual inner life plan, the structure of its time parameters lies in the life experience of events, phenomena, behavioral behavior, age, maturity and others. [29];

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- Reflection of time in the context of cultural historical development, which determines the value and worldview significance of time in the human perception of life [33, 107,108];

- The study of directions related to the impact of social time on human life, social experience, interpersonal relationships, the formation of time perspectives, etc [19, 31]

The development of psychology is accompanied by the development of new theoretical and methodological approaches that allow you to study the problems of time psychology from a new point of view. Application of the principle psychological systems theory V. E. Klochko makes it possible to consider the history of the formation of the phenomenon of time perception in psychology in the direction of a change in paradigmatic relations (classical, non-classical, post-classical) [54].

The classical paradigm in psychological knowledge is the ideal of rationality manifested in the idea of causal connections of the development of nature and society and regulatory mechanisms using the methods of Natural Sciences [47]. The psychological knowledge of this period is mainly based on the ideas of a strict natural-scientific approach, in a certain period time and space are perceived as a certain quantitative value, where time appears to be a chronological repository of processes and phenomena, and space includes things [53]. Time was the only flow of all processes, regardless of their composition. More emphasis was placed on improving chronological time measurement tools [29].

It should be noted that he experienced a moment of cultural consonance that allowed philosophers and theologians to deal with the problems of Natural Science, and scientists revealed the ideas of the creator and expressed ideas about the divine wisdom and power manifested in the creation of the world. With the support of religion and philosophy, scientists believed that the self-sufficiency of their activities would end all the possibilities of a rational approach to the phenomena of nature. The connection between the description of Natural Science and Natural Philosophy, in this sense, did not need justification. It can be considered self-evident that natural science and philosophy converge and that Natural Science reveals the principles of true natural philosophy. But, oddly enough, the self-sufficiency that scientists tasted was intended to survive the departure of the medieval God and the end of the guarantee once given to naturalism by theology... In other words, ycnexoo was a science that knew success, convinced that it managed to prove the powerlessness of nature to the concept of human consciousness.

In this regard, yu. B. In classical time psychology proposed by Molchanov, two pairs of concepts should be distinguished: substantive and relational [86, p. 5]: "the substantive concept considers time as a kind of person or disembodied substance,

which, according to its laws, is completely independent of itself, Space, Matter and space, from the interactions between events and material systems taking place in the world, but has a significant impact on their existence and movement...

The relational concept treats time as a property or attribute of matter, as a system of relations between physical phenomena and bodies. Thus, the substantive concept of time considers the essence of time as a substance indifferent to what it contains, and the relational concept is associated with a system of time phenomena characterized by explaining psychological time not only in terms of the perception of experience and chronology of time, but also in terms of time experiencing, its integrity. In the relational Concept, time acts as a system, does not exist outside its interaction between space and time.

During the period of the primacy of rationalism in science (from the beginning of the 17th century), time appeared on the one hand in the metaphysical imagination, on the other hand from a theological point of view, connecting the concept of time with continuity and eternity. R. Descartes shared the concepts of time and duration, related the duration to the subject, and considered it valid, since a person can accurately record the duration of things. He considered continuity to be an attribute of anything, while Infinite continuity is an attribute of the divine being, eternity has no limit, past, future, it is infinite [37]. R. The time understood by Descartes is not as real as it exists only in our minds. Time is the number of actions of what a person understands as a chronological arrangement of phenomena. T. Hobbs R. Adhered to Descartes' views and understood time as a subjective image of the number of actions that occurred within a given time; he also shared the concept of the length of things and space as an image specific to thinking [28].

B. The ideas of spinosis are based on the doctrine of the three "whales" of existence: substance, as an infinite, independent reason for the existence of everything; attributes in which matter manifests itself; methods limited by understanding an object about some phenomenon. Time in this theory is also represented by three concepts: duration, eternity and, in fact, time. Eternity is inherent only in the Divine Being, and the duration is inherent in things. Time is a chronological measure of what a person understands, relating its duration to the stable time of things. It is a continuum that mediates between divine continuity and the subjective image of human time [116]. Accordingly, B. In Spinoza's views, R. Loyalty to Descartes' views has also been observed.

A separate idea of time I. Was in Newton's works, a substantive concept of absolute time. The cosmos was understood as absolute, coming with rest, and time is independent of the world of things, it is an immutable homogeneous stream, directed from the past to the future to the present. In accordance with the ideas and. Newton

must reduce all physical processes to the motion of material points under gravity, respectively, the entire universe behaves according to eternal laws, and over time all phenomena are determined, which makes it easier to reconstruct past events and predict future events. I. Newton shared the exact time and the "real mathematician" absolute time in his works. Relative exact time includes all duration measures used to quantify the chronological order of time. In turn, absolute time is low, it is a storehouse of events, the course and duration of which do not affect real mathematical time [92].

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**АНТИДЕПРЕССАНТЛАР ВА УЛАРНИНГ УМУМИЙ ТАСНИФИ.
ПАРОКСЕТИННИ БИОЛОГИК СУЮҚЛИКЛАРДАН СУД
КИМЁВИЙ АНИҚЛАШ.**

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АННОТАЦИЯ

Мақолада энг долзарб муаммолардан бири бўлган инсонларнинг тушқун кайфияти, ўз жонига қасд қилишлари, ҳаётдаги умидсизлик, ишонччи йўқлиги, ваҳима, кўрқув каби рухий ва наркологиқ касалликларни даволашда турли хил андидепрессантларнинг қўлланилиши. Суд кимёсида андидепрессантларни токсикологик тадқиқоти. Андидепрессантларнинг кимёвий тузилишига кўра таснифи, андидепрессантларнинг таъсирига кўра таснифи, андидепрессантларнинг қўлланилиши, андидепрессантларнинг ножўя таъсирлари, суд кимёсида андидепрессантлардан Пароксетинни биологик суюқликлардан юпқа қаватли хроматография усулида аниқлаш ҳақида маълумотлар келтирилган.

Калит сўзлар. Андидепрессант, суицид, депрессия, пароксетин, амитриптилин, флуоксатин, флувоксамин, сертралин, карбамазепин, миртазапин.

АННОТАЦИЯ

В данной статье одной из наиболее актуальных проблем является использование различных андидепрессантов при лечении психических и наркотических заболеваний, таких как депрессивное настроение, суицид, безнадежность в жизни, неуверенность в себе, паника и страх. Токсикологическое исследование андидепрессантов в судебно-химической практике. Классификация андидепрессантов по химическому строению, классификация андидепрессантов по действию, применение андидепрессантов, побочные эффекты андидепрессантов, сведения об определении андидепрессантов, пароксетин из биологических жидкостей методом тонкослойной хроматографии в судебной химии.

Ключевые слова. Антидепрессант, суицидальные средства, депрессия, пароксетин, amitриптилин, флуоксетин, флувоксамин, сертралин, карбамазепин, мirtазапин.

ABSTRACT

In this article, one of the most urgent problems is the use of various antidepressants in the treatment of mental and drug-related diseases such as depressed mood, suicide, hopelessness in life, lack of confidence, panic, and fear. A toxicological study of antidepressants in forensic chemistry. Classification of antidepressants according to their chemical structure, classification of antidepressants according to their effects, use of antidepressants, side effects of antidepressants, information on the determination of antidepressants from biological fluids by thin-layer chromatography in forensic chemistry.

Keywords. Antidepressant, suicidal, depression, amitriptyline, fluoxetine, fluvoxamine, sertraline, carbamazepine, mirtazapine.

Долзарблиги. Давлатлар ривожланиб борар экан у билан бирга жамият ҳам ривожланиб, ўсиб боради. Лекин унинг ривожланишига жуда кўп омиллар тўсқинлик қилади. Ҳозирги кунда энг долзарб муаммолардан бири бу инсонларнинг тушкун кайфияти, ўз жонига қасд қилишлари бўлиб, бунинг оқибатида жуда кўп инсонлар ҳаётдан кўз юммоқдалар. Бундай ҳолат фан тилида суицид деб аталади. Ҳозирги пайтда замон жадал суратлар билан ривожланиб бормоқда. Ҳар куни янги технология омма эътиборига ҳавола этилмоқда. Деярли ҳар бир инсонда телефон, аксарият одамларда компьютер мавжуд. Улар бевосита глобал муаммога айланиб бораётган интернет билан боғлиқ ҳолда виртуал ҳаётда яшашмоқда. Интернетдаги турли видеороликлар бевосита инсоннинг онгига таъсир этиб унинг дунёқарашини бутунлай ўзгартириб юбормоқда. Бунинг оқибатида ўз жонига қасд қилиш, ҳаётдаги умидсизлик, ишонччи йўқлиги, ваҳима, кўрқув каби ҳолатлар келиб чиқмоқда. Рухий ва наркологик касалликларни даволашда турли хил антидепрессантлар қўлланилмоқда.

Антидепрессантларнинг умумий тавсифи – антидепрессантлар тушкун кайфият, кўрқув, ваҳима ҳолатларида яхши самарадорликка эга. Шу билан бирга седатив хусусиятларга эга. Бошқалари эса тушкун кайфият ва камҳаракатлик кузатилганда стимулловчи таъсир, яъни ҳаракат активлиги, диққат, фикрлаш жараёнининг тезлиги ва умумий рухий тонусни оширади.

Баъзи антидепрессантлар антидепрессив, стимулловчи ва седатив таъсир кўрсатади, улар “баланслашган таъсир кўрсатувчи” антидепрессантлар деб номланади. Антидепрессантларнинг фармакологик таъсири қуйидаги механизмга асосланган: норадреналин, серотонин ва дофамин қайта тикланишини кечиктириш; натрийга антагонист самаралар; мускариноген ацетилхолин рецепторларининг блокадаси; гистамин рецепторлар блокадаси, серотонин-2 (5-NT2) рецепторлари ва допамин D2 допамин рецепторларини блоклайди.

Антидепрессантларнинг таснифи: Антидепрессантларнинг кимёвий тузилишига кўра таснифи:

- 1) трициклик антидепрессантлар- амитриптилин, мелипрамин
- 2) тетрациклик антидепрессантлар- пиразидол, леривон
- 3) атипик трициклик ҳосилалар- тианептин
- 4) бициклик антидепрессантлар- пароксетин, тразодон, ситалопрам
- 5) моноциклик антидепрессантлар- флуоксетин, флувоксамин, велафаксин
- 6) бензамид унумлари- моклобемид
- 7) гидразин унумлари- фенилзин, ниаламид ва бошқалар.

Антидепрессантлар таъсирига кўра таснифи:

- а) седатив антидепрессантлар: амитриптилин, доксепин, флувоксамин-хавотир ва ажитация билан кузатиладиган депрессияларни даволашда ишлатилади.
- б) стимулятор антидепрессантлар: моклобемид, флуоксетин- тормозланиш, апатия, камҳаракатлик билан кечувчи депрессияларни даволашда ишлатилади.
- с) баланслашган таъсирли антидепрессантлар: пароксетин, золофт, мапротилин- депрессив синдром таркибидаги ҳам хавотир, ажитация ҳамда тормозланиш билан борадиган апатия ҳолатларида қўлланилади.

Антидепрессантларнинг қўлланилиши- деярли барча антидепрессантларни қўллаганда жавоб реакцияси амалда бир хиллиги исботланган. Тўлиқ антидепрессив таъсир юзага чиққунича, препаратнинг адекват дозасини б

хафта давомида қабул қилиши лозим бўлади. Ҳар бир бемор учун антидепрессант танлови индивидуал омилларга боғлиқдир.

Антидепрессантлар депрессия касаллигининг психологик ва нейровегетатив симптомларига таъсир қилади:

*Психологик симптомларга: тушкунлик, умидсизлик, айбдорлик ҳисси, иложсизлик, ўзини кучсиз ҳис қилиш, суицидал фикрлар киради.

*Симптоматик симптомларга: энергия етишмаслиги, диққатни йиға олмаслик, уйқусизлик ёки гиперсомния, иштаҳа бузилиши (тана вазни камайиши билан, баъзида эса ортиши) кундалик ҳаётдаги қизиқишларнинг пасайиши, психомотор кўзғалиш ёки тормозланиш, либидонинг пасайиши, хавотир ёки ажитация, когнитив функцияларнинг бузилиши. Катта депрессиянинг юқорида келтирилган соматик ва психологик симптомлар 5 тадан ортиғининг 2 ҳафтадан ортиқ вақт мобайнида мавжуд бўлиши антидепрессантларни қўллашга тўғридан тўғри кўрсатма бўлиб ҳисобланади.

Антидепрессантларнинг ножўя таъсирлари: Оғиз қуриши, қабзият, уйқучанлик, ортостатик гипотония, сийдик тутилиши, тана вазнининг ортиши, кўп терлаш, кўз ички босимининг ортиши, паркинсонизмнинг кучсиз симптомларини чақиритиши мумкин, талваса синдромларини чақиритиши мумкин, ажитация, бош оғриғи, гастроинтестинал, кўнгил айниши каби ножўя таъсирлар кузатилиши мумкин. Сертралин эса яққол ифодаланган гастроинтестинал ножўя таъсирлар келтириб чиқариши мумкин.

Ишнинг мақсади. Антидепрессантлар ва пароксетинни биологик суюқликлар (қон, сийдик) дан ажратиб олиш.

Ашөвий далиллардан антидепрессант Пароксетинни Юпка Қаватли Хроматография таҳлил усулини ишлаб чиқиш ва кимё-токсикологик текширишларга тадбиқ этиш. пароксетинни қон ва сийдикдан аниқлаш мақсад қилиб олинди. Тажриба 15*15 см ўлчамли “Силуфол” пластинкасида бажарилди. Бунинг учун 20 мл ли сийдик ёки 10 мл ли қон олиниб, 25 % ли аммиак билан рН=8,0-9,0 га келтирилди. Ажратгич воронкада 3 марта 10 мллидан хлороформ билан экстракция қилинди. Хлороформли қатлам ажратилди ва бирлаштирилди, сувсиз натрий сульфат орқали филтёрдан ўтказилди. 2 млли текширилувчи хлороформли эритмани 0,5 млли қолгунга қадар порлатилди. Хроматографик пластинканинг старт нуқтасига, порлатилган хлороформли суюқликдан 1 томчи томизилди, ундан 2 см ўнг

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томонга антидепрессантлардан Пароксетиннинг 0,01% ли метанол(этанол) даги эритмасидан томизилди. Пластинка хона ҳароратида қуритилгач толуол:ацетон:этанол: 25% аммиак (45:45:7:3) парлари билан тўйинтирилган камерага жойлаштирилди. Органик эритувчиларнинг намлиги пластинканинг 10 см баландликка кўтарилгач, пластинка камерадан олиниб қуритилди. Пластинка юзасига Драгендорф(Мунье бўйича тайёрланган) реактиви пуркалди, $R_f=0,41-0,45$ да зарғалдоқ-қўнғир ранг ҳосил бўлди.

Антидепрессантлар ва пароксетинни аниқлашда ишлатиладиган турли Эритувчилар системаси (камера) лар рўйхати қуйидаги жадвалда келтирилган (1-жадвал)

(1-жадвал)

Эритувчилар системаси	Нисбати
Толуол:ацетон:этанол:25%аммиак	45:45:7:3
Изопропанол:ацетон:25%аммиак:сув	22:25:4:7
Ацетон:25%аммиак	9:1
Бензол:хлороформ:этанол	10:5:10
Толуол:ацетон:25%аммиак	50:50:4
Этилацетат:этанол:25%аммиак	17:2:1

Хулоса

Антидепрессантлардан тўғри фойдаланиш, авваламбор, Рухий ва наркологик касалликларни даволашда ўз вақтида ташхисланишига, бемор ҳолатининг объектив тўхри баҳоланишига, ўз вақтида ва сифатли даволаш ишларини ўтказилишига бевосита боғлиқлиги барча адабиётларни таҳлил қилиш вақтида намоён бўлди. Антидепрессантларни биологик сувоқликлардан

ажратиб олиш, антидепрессантлар аниқлашнинг юпқа қаватли хроматография усули ўрганилди.

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АРТЕРИАЛЬНАЯ ГИПЕРТЕНЗИЯ: КЛИНИЧЕСКИЕ АСПЕКТЫ, ДИАГНОСТИКА И СОВРЕМЕННЫЕ ПОДХОДЫ К ЛЕЧЕНИЮ

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Аннотация: Артериальная гипертензия (АГ) — одно из самых распространенных хронических заболеваний, характеризующееся повышенным уровнем артериального давления (АД) в сосудах. Она является одним из главных факторов риска развития сердечно-сосудистых заболеваний, инсультов и почечной недостаточности. В данной статье рассмотрены современные подходы к диагностике, лечению и профилактике артериальной гипертензии с акцентом на клинические аспекты и факторы риска.

Ключевые слова: артериальная гипертензия, артериальное давление, сердечно-сосудистые заболевания, факторы риска, лечение.

Введение

Артериальная гипертензия — это хроническое состояние, при котором артериальное давление превышает нормальные показатели, что может привести к серьезным сердечно-сосудистым и органным осложнениям. По данным Всемирной организации здравоохранения (ВОЗ), около 1,13 миллиарда человек во всем мире страдают гипертензией, причем 2/3 из них проживают в развивающихся странах. АГ является причиной приблизительно 9,4 миллиона смертей ежегодно, что делает ее одной из самых серьезных глобальных проблем здравоохранения.

Определение и классификация артериальной гипертензии

Артериальная гипертензия определяется как повышение уровня систолического артериального давления (САД) выше 140 мм рт. ст. и/или

диастолического артериального давления (ДАД) выше 90 мм рт. ст. Классификация артериальной гипертензии основывается на уровнях артериального давления и включает следующие категории:

1. Нормальное давление: САД < 120 мм рт. ст. и ДАД < 80 мм рт. ст.
2. Предгипертензия: САД 120–139 мм рт. ст. и/или ДАД 80–89 мм рт. ст.
3. АГ 1 степени: САД 140–159 мм рт. ст. и/или ДАД 90–99 мм рт. ст.
4. АГ 2 степени: САД \geq 160 мм рт. ст. и/или ДАД \geq 100 мм рт. ст.

Эпидемиология и факторы риска

Распространенность артериальной гипертензии значительно варьируется в зависимости от региона, возраста и пола. Основные факторы риска включают:

- Генетическая предрасположенность. Семейная история гипертензии увеличивает риск развития заболевания.
- Возраст. Увеличение артериального давления с возрастом — один из самых сильных предикторов гипертензии.
- Ожирение. Лишний вес и ожирение напрямую связаны с повышенным артериальным давлением.
- Образ жизни. Низкая физическая активность, курение, злоупотребление алкоголем и неправильное питание также значительно повышают риск.
- Сопутствующие заболевания. Сахарный диабет, хроническая почечная недостаточность и дислипидемия часто сопровождаются гипертензией.

Механизмы развития артериальной гипертензии.

Механизмы развития артериальной гипертензии включают сложное взаимодействие различных факторов, таких как генетические предрасположенности, изменения в регуляции сосудистого тонуса, дисфункция почек и гормональные нарушения. Основные патофизиологические механизмы, участвующие в развитии АГ, можно разделить на несколько категорий:

1. Нарушение регуляции сосудистого тонуса.

Гипертензия часто возникает вследствие увеличения общего периферического сопротивления сосудов, что может быть вызвано нарушениями в эндотелиальной функции и дисбалансом вазодилататоров и вазоконстрикторов (например, оксида азота и эндотелина).

2. Ренин-ангиотензин-альдостероновая система (РААС).

Активизация РААС играет ключевую роль в регуляции артериального давления. Повышенная секреция ренина приводит к образованию ангиотензина II, мощного вазоконстриктора, который также стимулирует секрецию альдостерона, приводящего к задержке натрия и воды, что увеличивает объем циркулирующей крови и повышает давление.

3. Нарушение функции почек.

Почки играют важную роль в поддержании нормального уровня артериального давления за счет регуляции объема жидкости и электролитов. Нарушение почечной функции может привести к задержке натрия и воды, увеличению объема крови и, как следствие, к гипертензии.

4. Симпатическая нервная система.

Гиперактивация симпатической нервной системы также может способствовать повышению артериального давления через сужение сосудов, увеличение сердечного выброса и стимуляцию РААС.

Диагностика артериальной гипертензии

Диагностика артериальной гипертензии основывается на многократных измерениях артериального давления в условиях покоя. Ключевым диагностическим инструментом является тонометрия, которая проводится с использованием манжеты, наложенной на плечо. Согласно международным рекомендациям, для постановки диагноза АГ требуется подтвердить повышение давления на трех и более измерениях в разные дни.

Методы диагностики:

- Офисное измерение артериального давления.

Классический метод измерения АД в кабинете врача. Однако, результаты могут быть искажены феноменом “белого халата” — повышением давления в медицинской среде.

- Суточное мониторирование артериального давления (СМАД).

СМАД предоставляет наиболее точные данные, так как измеряет давление в течение 24 часов, включая дневные и ночные показатели, что позволяет исключить феномен “белого халата” и определить ночную гипертензию.

- Домашнее мониторирование артериального давления.

Пациент измеряет давление дома в течение нескольких дней, что помогает лучше оценить средний уровень АД в реальной жизни.

Современные подходы к лечению артериальной гипертензии

Лечение артериальной гипертензии направлено на снижение артериального давления до целевых уровней, предотвращение осложнений и улучшение качества жизни пациентов. Современные подходы включают модификацию образа жизни и применение медикаментозной терапии.

1. Модификация образа жизни.

Коррекция факторов риска является неотъемлемой частью успешного контроля АД. Основные рекомендации включают:

- Снижение веса.

Потеря 5-10% массы тела может значительно снизить артериальное давление.

- Рациональное питание.

Диета, богатая фруктами, овощами, цельными злаками и нежирными молочными продуктами, с ограничением соли (менее 5 граммов в сутки) и насыщенных жиров, показала эффективность в снижении давления.

- Физическая активность.

Регулярные аэробные упражнения (30 минут в день) помогают снизить давление на 5-7 мм рт. ст.

- Отказ от вредных привычек.

Полный отказ от курения и значительное ограничение потребления алкоголя являются важными шагами в управлении АД.

2. Медикаментозная терапия.

При недостаточной эффективности модификации образа жизни или в случае высоких исходных уровней давления, назначается медикаментозное лечение. Основные классы антигипертензивных препаратов включают:

- Ингибиторы АПФ и блокаторы рецепторов ангиотензина II (БРА).

Эти препараты блокируют РААС, уменьшая сосудистое сопротивление и снижая задержку натрия.

- Бета-блокаторы.

Они снижают симпатическую активность, уменьшая частоту сердечных сокращений и сердечный выброс.

- Диуретики.

Препараты этой группы способствуют выведению избытка соли и воды из организма, уменьшая объем циркулирующей крови.

- Блокаторы кальциевых каналов.

Они расслабляют гладкие мышцы сосудов, снижая их тонус и артериальное давление.

- Антагонисты альдостерона.

Эти препараты используются при резистентной гипертензии, подавляя задержку натрия и жидкости в организме.

Комбинированная терапия

Для большинства пациентов с АГ одной группы препаратов может быть недостаточно, особенно если давление значительно превышает целевые значения. В таких случаях часто применяют комбинированную терапию, включающую два или три антигипертензивных средства с различными механизмами действия. Наиболее популярные комбинации включают ингибиторы АПФ или БРА с диуретиками или блокаторами кальциевых каналов.

Резистентная артериальная гипертензия

Резистентная артериальная гипертензия определяется как состояние, при котором артериальное давление остается выше целевых значений, несмотря на применение трех и более антигипертензивных препаратов, включая диуретик, в адекватных дозах. Это состояние встречается примерно у

10–15% пациентов с АГ и представляет собой серьезную клиническую проблему.

Причины резистентной гипертензии могут включать:

1. Вторичная гипертензия. Некоторые пациенты могут страдать от заболеваний, вызывающих вторичную гипертензию, таких как первичный гиперальдостеронизм, феохромоцитома или заболевания почек.

2. Нарушение приверженности лечению. Неправильный прием препаратов, включая нерегулярный прием или несоблюдение дозировок, может быть основной причиной устойчивого повышения давления.

3. Неправильная диагностика. Недостаточная оценка артериального давления, включающая феномен “белого халата” или неправильные методы измерения, может привести к ложным заключениям о резистентности.

4. Факторы образа жизни. Ожирение, потребление избыточного количества соли, злоупотребление алкоголем и недостаток физической активности могут способствовать недостаточному контролю артериального давления.

Лечение резистентной АГ требует более агрессивного подхода, включающего комбинированную терапию, модификацию образа жизни и иногда инвазивные процедуры, такие как симпатическая денервация почек и барорефлексная стимуляция.

Профилактика артериальной гипертензии

Профилактика артериальной гипертензии важна на уровне населения, поскольку это заболевание можно предотвратить в значительной степени путем коррекции факторов риска. Основные меры профилактики включают:

- Пропаганду здорового образа жизни, включая снижение потребления соли, увеличение физической активности и отказ от вредных привычек.
- Скрининговые программы, направленные на выявление лиц с предрасположенностью к гипертензии.
- Образование населения относительно важности регулярного контроля артериального давления и своевременной медицинской помощи при его повышении.

Новые методы и перспективы лечения

Современные исследования в области лечения артериальной гипертензии активно развиваются. В частности, внимание ученых привлекают:

- Генные терапии. Эти методы направлены на изменение активности генов, ответственных за развитие гипертензии, и могут иметь потенциал для индивидуализированной медицины.
- Разработка новых препаратов. Исследуются новые классы антигипертензивных средств, такие как ингибиторы рецепторов эндотелина и агонисты растворимых гуанилатциклаз, которые могут расширить арсенал средств борьбы с АГ.
- Инвазивные методы. Такие как ренальная денервация, представляющая собой удаление нервных волокон, ответственных за симпатическую активацию почек, могут быть эффективными для пациентов с резистентной гипертензией.

Выводы

Артериальная гипертензия остается глобальной проблемой здравоохранения, являясь ведущим фактором риска сердечно-сосудистых заболеваний и смертности. Современные подходы к диагностике и лечению АГ включают точное измерение артериального давления, модификацию образа жизни и использование различных классов медикаментозных препаратов. Важность профилактики, как на индивидуальном, так и на популяционном уровне, трудно переоценить, так как раннее выявление и коррекция факторов риска позволяют значительно снизить распространенность заболевания и его осложнения.

Несмотря на существующие методы лечения, резистентная артериальная гипертензия остается значительной клинической проблемой, требующей дальнейших исследований и разработки новых методов терапии. В перспективе, развитие генной терапии, новых лекарственных средств и инвазивных методов может значительно улучшить прогноз пациентов с АГ, снизив риск осложнений и улучшив качество их жизни.

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MUZEYLARNING TARAQQIY ETISHI: TERMIZ ARXEOLOGIYA
MUZEYI TALQINIDA

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Annotatsiya: Mazkur maqolada o'tmishdan kelgan tarixiy madaniyat, ma'rifat, tabiat yodgorliklarining yaxlit tizimiga solingan yig'indisi bo'lgan muzeylarning bugungi kundagi o'rni haqida fikr yuritiladi. Milliy an'ana hamda qadriyatlarimizni tiklash, boy merosimizni chuqur o'rganish, uning mazmun-mohiyati va ahamiyatini xalqimiz, ayniqsa, yoshlar o'rtasida keng targ'ib etishga katta e'tibor qaratila boshlanganligi to'g'risida mulohazalar yoritiladi.

Kalit so'zlar: Muzey, arxeologiya, tarix, madaniyat, eksponat, topilma, numizmatika, ko'hna Termiz, Kampirtepa, Fayoztepa, madaniy meros.

Kirish: Muzeylar har bir xalq tarixi, madaniyati, turmush tarzi, milliy an'ana va qadriyatlarini o'rganish, ularni targ'ib etish va kelgusi avlodlarga yetkazishda muhim ahamiyat kasb etadi. Muzeylar ma'naviy va ma'rifiy ilm o'chog'i sifatida doim taraqqiyotda, rivojlanish va o'zgarishda. Ularning zaxiralarini doimo boyitib borish, to'plangan muzey ashyo va kolleksiyalarini kelajak avlodlarga bus-butun holatda yetkazish, asrab-avaylash har birimizdan alohida mas'uliyat talab etadi. Ushbu dargohda o'z kasbining fidoiy insonlari faoliyat yuritadilar. Ular tomonidan yaratiladigan har bir ekspozitsiya o'zining maftunkorligi, tarixiy ahamiyati va judayam boy tarixiy yodgorliklarni o'z ichiga qamrab olganligi bilan ahamiyatli hisoblanadi. Muzeylar ajdodlardan meros bo'lgan boylikni kelajak avlodga yetkazib beradigan ilmiy, ma'naviy-ma'rifiy xazina. Yillar davomida boyib, to'lib boraveradigan bu xazina faqatgina madaniy qadriyatlar namoyishigina bo'lib qolmay, uzoq tarix sahifalaridan so'zlovchi bebaho kitob hamdir. Har qanday davlat taraqqiyot sari intilar ekan, doimo tarixga nazar tashlab, mavjud urf-odatlar, an'analar va qadimiy yodgorliklarni o'rganishga va saqlashga intilishi tabiiy. Ayniqsa bu borada muzeylarning o'rni beqiyosdir. Chunki muzeylar o'tmishdan kelgan tarixiy madaniyat, ma'rifat, tabiat yodgorliklarining yaxlit tizimiga solingan yig'indisi bo'lib, amaldagi qonun-qoidaga muvofiq ravishda saqlanadi va namoyish qilinadi. Prezidentimiz Shavkat Mirziyoyev 2022-yil 27-may kuni «Muzeylarda xizmatlar sohasini rivojlantirish chora-tadbirlari to'g'risida»gi qarorni imzoladi. Ushbu qarorni qabul qilishdan maqsad - mamlakatdagi muzeylar faoliyatini qo'llab-

quvvatlash, ularning marketing siyosati va xizmatlar sohasini kompleks rivojlantirish, muzeylarga innovatsion texnologiyalarni samarali qo'llash kabilardan iborat bo'lib, bu mamlakatimizda nafaqat muzeylarning balki, ma'naviy-mafkuraviy ta'lim- tarbiyaning ham o'rni ortib borayotganidan darak beradi.

Asosiy qism: Bugungi kunda mamlakatimizda turli yo'nalishda 1200 dan ortiq davlat va nodavlat muzey faoliyat ko'rsatmoqda. Ushbu madaniyat maskanlari ajdodlarimizdan bizga meros bo'lgan boylikni kelajak avlodga yetkazib beradigan ilmiy, ma'naviy-ma'rifiy xazina bo'lib, u yillar davomida boyitilib, tarixdan meros bo'lgan ashyolar, insoniyat ijodi mahsuli sifatida yaratilgan san'at asarlari saralanib, muzeylardan joy olib, umuminsoniy boylikka aylantirilmoqda. Bugungi kunda muzeylarimizga katta ahamiyat qaratilmoqda, Prezidentimiz tashabbusi bilan bu sohada 10 yillik davlat dasturini qabul qilinganligi, ya'ni 2017-2027-yillar davomida yurtimizdagi barcha muzeylarni rekonstruksiya qilish, qayta ta'mirlash va ularning moddiy texnik bazasini mustahkamlash kabi yangi qonun va farmoyishlarning tasdiq topishi tufayli muzeylar faoliyati yanada tarqqiy topayotganining dalilidir. Temuriylar tarixi Davlat muzeyi, O'zbekiston tarixi Davlat muzeyi, Qatag'on qurbonlari xotirasi muzeyi, Termiz arxeologiya muzeyi, Olimpiya shon-shuhrati muzeyi kabi o'nlab maskanlar barpo etilgani va Samarqand, Buxoro, Xiva shaharlaridagi ochiq osmon ostidagi muzeylar qaytadan ta'mirlangani fikrimiz tasdig'idir.

Misol tariqasida Termiz arxeologiya muzeyini keltirish mumkin. Viloyat Arxeologiya muzeyi O'zbekiston Respublikasi birinchi Prezidentining 1998-yil 12-yanvardagi "Muzeylar faoliyatini tubdan yaxshilash va takomillashtirish to'g'risida"gi Farmoni, Vazirlar Mahkamasining 1998-yil 5-martdagi "Muzeylar faoliyatini qo'llab-quvvatlash masalalari to'g'risida" gi 98-sonli va 1999-yil 27-dekabrda "Termiz shahrining 2500 yilligini nishonlashga tayyorgarlik ko'rish va uni o'tkazish to'g'risida" gi 545-sonli qarorlari asosida tashkil etildi. Arxeologiya muzeyi O'zbekiston Respublikasi Vazirlar Mahkamasining 2001-yil 16-oktyabrdagi bayonnomasiga muvofiq, Madaniyat ishlari vazirligi tasarrufiga o'tkazildi va Madaniyat ishlari vazirligining 2001-yil 24-oktyabrdagi buyrug'iga asosan vazirlik tizimiga kiritildi. 2003-yil Termiz shahar Arxeologiya muzeyi fondidagi eksponatlarning umumiy soni 27346 ta edi. 2004- yil davomida esa Arxeologiya muzeyi fondidagi eksponatlarning umumiy soni 27457 taga etdi. Shundan 19 824 tasi numizmatika fondiga tegishli tangalar bo'lib hisoblanadi. Hozirgi kunga kelib, muzeyda jami bo'lib, 8.500 ga yaqin arxeologik ashyoviy topilmalar, 19 824 dona numizmatika fondiga oid turli davrlarga xos tangalar mavjud. Arxeologiya muzeyi o'zining 3 yillik faoliyati davomida muzey fondini to'ldirish bo'yicha bir qancha

ishlarni amalga oshirdi. Qolaversa Kampirtepa, Fayoztepa, Qoratepa va Zurmala yodgorliklarida olib borilayotgan qazishma ishlari natijasida chiqayotgan topilmalar ham Termiz Arxeologiya muzeyida restavratsiya qilinib, ko'rgazmalar zalidan joy olib kelmoqda. Butun tarixi davomida Termiz Markaziy Osiyo xalqlari madaniy taraqqiyoti va o'zbek xalqi davlatchiligi tarixida muhim rol o'ynagan. "Buyuk ipak yo'li"ning asosiy chorrahalaridan biri sifatida dunyo sivilizatsiyasi rivojiga sezilarli darajada hissa qo'shgan qadim shahardir. Buddizm dinining va u bilan bog'liq bo'lgan memorchilik an'analarning Xitoy va Uzoq Sharq mamlakatlariga tarqalishi ham aynan Termiz orqali yuz bergan. Termizning geografik jihatdan qulay joylashishi, iqlimi va strategik mavqei ko'plab davlatlar va hukmdorlarning diqqat-e'tiborini o'ziga tortar edi. Shuning uchun u Eron va grek, arab va mo'g'ul bosqinchilarining hujumlariga duchor bo'ldi, Movarounnahr ichki qon to'kishlarini boshidan kechirdi, mahalliy hokimlar zulmidan azob chekdi. Termiz istilochilarning olovli janglarida yonib ketar, kulga aylanar, qaddini rostlab paydo bo'lardi, o'sib shon-shuhrat va qudratga ega bo'lardi. U yana halok bo'lardi, yonardi, kulga aylanardi va yana o'zini tiklab ulg'ayardi. Ko'hna Termiz yoki Kushon Termizi Amudaryo bo'yida rivoj topgan bo'lsa, Chingizxon bosqinidan so'ng u sharqroqda Surxondaryo bo'yida qad ko'tarib gullab-yashnaydi. XVIII asrning ikkinchi yarmidagi o'zaro urushlar tufayli vayronaga aylangan Termiz XIX asrning ikkinchi yarmidan boshlab janubroqda Pattakesar qishlog'i zaminida bunyod etiladi va ravnaq topadi. Ko'hna Termiz obidalari o'zining takrorlanmasligi bilan hamisha qadimgi davr mualliflari, ilk o'rta asr Xitoy sayyohlari va musulmon davri tarixchilarining diqqat-markazida bo'lib keldi. Shu sabab ham aynan Termiz shahrida butun O'rta Osiyoda yagona bo'lgan Arxeologiya muzeyi qad rostladi.

Xulosa: O'sib kelayotgan yosh avlodni Vatanga muhabbat va sadoqat ruhida tarbiyalashda ham muzeylarning o'rni beqiyos. Muzeylar - tarixning sirli xilqatlarini o'zida mujassam etgan holda xalqlar madaniyatini, qadriyatlarini tarannum etuvchi maskan va davlatlarni bir-birlariga yaqinlashtiruvchi ko'prik hisoblanadi. Shu bilan birga, xalqning ma'naviy dunyosini ham boyitishga benihoya hissasini qo'shadi. Muzeylarga davlat ahamiyatida nazar tashlanishi, ularning rivoj topishi va qayta ta'mirlanishi, eksponatlar bilan boyitilishi bu- bizning yurtimiz tarixiga yanada chuqurroq nazar tashlanayotgani hamda tarix sari yana bir karra ildamroq qadam tashlanganidan dalolat beradi. Bugungi kunda deyarli 80% aholi muzeylar orqali bevosita tarix bilan yuzlashadilar. Zero, muzeylar tarixdan hikoya qiluvchi jonli buyumlar makonidir.

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**ADVANCED FOREIGN EXPERIENCE IN THE DEVELOPMENT OF
INVESTMENT ACTIVITIES OF COMMERCIAL BANKS.**

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Abstract: This article analyzes the investment activity of commercial banks, advanced foreign experience in the development of investment activity of commercial banks. Based on the literature analysis and the results of the conducted research, scientific and practical proposals for further development of the field are given.

Key words: world banking, investment, diversification, Chinese bank, capital

Enter

In developed countries, the main source of financing the investment activities of commercial banks is time and savings deposits attracted from customers. This is because, firstly, capital is a relatively expensive form of financing the activities of commercial banks; secondly, according to the essence of the activity of commercial banks, they are commercial organizations engaged in attracting temporary free funds of residents and enterprises to deposit accounts and placing them in the form of loans and investments. In the resource base of banks of developed countries, clients' funds occupy a high weight. In particular, in Finland and Italy, more than 30% of the total bank liabilities correspond to the funds of clients (including individuals). This figure is 80% in Japan and China.

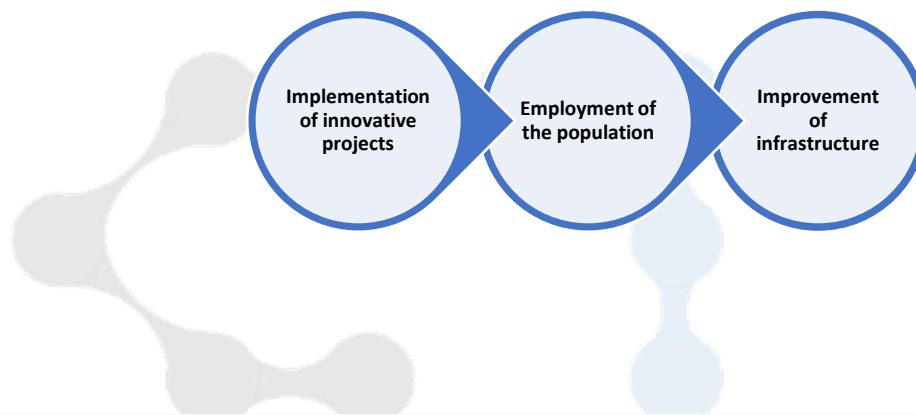
Investments in securities are an important component of investment activity in banking practices of developed countries.

In the development of investment activities in foreign banks, the main attention is paid to the correct assessment of risks. It is followed by an excellent management strategy, accuracy in decision-making, a large amount of initial capital, and a realistic and honest relationship with customers. Investments are the main source of income in the assets of a foreign bank, and short- and long-term loans, investments in government and company securities, as well as factoring, trust, forfeiture, leasing and credit-rental operations can be included.

Investment activity can help not only individuals, but also the entire country to achieve economic well-being. Economists and industry experts have given several

opinions about the investment activities of commercial banks. The authors thoroughly analyzed the investment activities of commercial banks, their types and the impact of these activities of banks on the economy.

The role of investment activity in the country



Research methodology.

In order to research the investment activity of commercial banks, comparative analysis, statistical data study, data grouping, induction and deduction methods were used.

Analysis and results.

The results of the research showed that investments made by banks in securities are 16.2% in French commercial banks, 15.5% in Germany, 23.8% in Italy, 7.8% in Great Britain, 23% in Spain, 8%, in the USA - 2.2%, in Belgium - 6.4%, in Japan - 10.2%. Due to the insufficient development of the financial market in our republic, commercial banks mainly participate in the financing of investments with long-term loans.

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The return of the funds spent by the investor in the implementation of investment activities and the income received in relation to it is considered valuable. It depends on the conditions created for the investor. These banks are usually divided into large and small banks according to their investment portfolios.

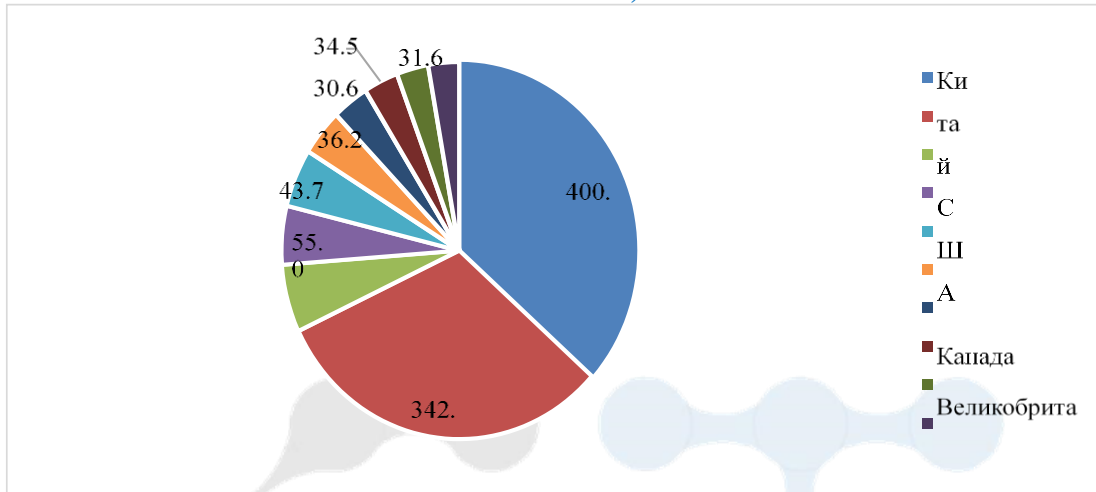
The largest banks in the world at the end of 2023.

In the ranking of the countries with the most profitable banking system, China, USA, Great Britain and France are among the European countries.

Рейтинг	Банк	Мамлакат	Банкнинг асосий капитали (млрд АҚШ долларда)
1	ICBC	КНР	508,848
2	China Construction Bank	КНР	404,322
3	Agricultural Bank of China	КНР	377,137
4	Bank of China	КНР	341,245
5	JP Morgan Chase	США	246,162
6	Bank of America	США	196,465
7	Citigroup	США	169,568
8	Wells Fargo	США	159,671
9	HSBC Holdings	Великобритания	156,292
10	Communication bank	КНР	150,742

The most profitable banking systems of the countries

(in billion dollars).



The characteristic features of the development of the Chinese banking system are its high concentration, which has slightly decreased in recent years, which indicates the increased competition in the market of banking services and the decreasing share of large commercial banks.

The results of analyzes and studies show that in the practice of foreign banks, determining the state of bank investment is carried out at the micro and macro levels. Determining the efficiency of bank investments at the micro level serves the interests of banks' shareholders, depositors and investors.

Types of investment activities of foreign commercial banks

Helping companies with their initial IPO

Issuing bonds to finance their companies with debt capital

Bond insurance

The research results show that the investment activity of commercial banks can be large-scale, and this activity can contribute not only to enterprises, but also to the development of the economy as a whole.

Conclusions and suggestions:

In short, the investment activity of commercial banks is important for the country's economy. In the practice of foreign banks, determining the efficiency of bank assets is carried out at the micro and macro level. Micro-level determination of bank investment activity serves the interests of banks' shareholders, depositors and investors. At the macro level, it is evaluated by indicators such as the share of

investment in total assets and the ratio of assets at risk to GDP, the state of the country's balance of payments, and the volume of loans per capita.

- the theoretical foundations of the development of investment activities of commercial banks is a multifactorial process, about which a number of classical and neoclassical economic theorists directly or indirectly put forward teachings. In particular, A. Smith emphasizes that the presence of division of labor is important for increasing the efficiency of bank assets. According to him, the division of labor in society binds people together based on their mutual interest, which provides an opportunity to exchange financial and material resources between them;
- according to the teachings of economic theorists, each bank is selfish in terms of increasing its profit, banks implement different strategies to increase their profit in the financial markets;
- one of the representatives of economic theorists, French P.J. Proudhon advocated the doctrine that banks should give interest-free loans. This teaching of his is contrary to the teaching within the scope of increasing the investment activity of banks and has not found its positive result in practice;

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ИСПОЛЬЗОВАНИЕ МЕТОДА КЕЙС-СТАДИ ПРИ ОБУЧЕНИИ
ИНОСТРАННОМУ ЯЗЫКУ СТУДЕНТОВ

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Аннотация: Кейс-метод – это метод создания учебных ситуаций, обеспечивающих организацию специализированного обучения иностранным языкам в педагогическом вузе, предлагается изучить проблему, взятую из реальной производственной практики, и найти пути решения этой проблемы.

Ключевые слова: Кейс-метод, ситуационный анализ, активные методы обучения, педагогические ситуации, иностранный язык.

**USING THE CASE STUDY METHOD IN TEACHING FOREIGN
LANGUAGE TO STUDENTS**

Annotation: The case method is a method of creating educational situations that ensure the organization of specialized teaching of foreign languages at a pedagogical university, it is proposed to study a problem taken from real production practice and find ways to solve this problem.

Key words: Case method, situational analysis, active teaching methods, pedagogical situations, foreign language.

Одним из наиболее известных методов современного обучения является метод кейс-стади. В отличие от традиционных методов преподавания иностранного языка в вузах, в основе которых лежит чтение лекций, а участие студентов в занятии минимально, метод кейс-стади требует активного участия студента в процессе обучения. В своём исследовании мы определяем «кейс-стади» как деятельность, ориентированную на студента, основанную на описании реальной ситуации, которая обычно включает проблему и её решение.

Обучение иностранным языкам в высшей школе осуществляется в рамках коммуникативно-деятельностного подхода, который предполагает формирование у студентов умений в различных видах иноязычной речевой деятельности (говорении, чтении, письме, аудировании).

Деятельностный подход предусматривает стимулирование познавательной деятельности учащихся посредством их активного вовлечения в различные индивидуальные, групповые, коллективные формы обучения, имеющие в большинстве своем интерактивный характер. В рамках деятельностного подхода обучение иностранным языкам можно организовать как деятельность или с помощью деятельности. Практика обучения

иностранным языкам в вузе показывает, что реализация деятельностного подхода к обучению возможна при использовании активных методов обучения.

Известный автор книги «Методы активного обучения», который был издан в 1991 году со стороны А.М. Смолкина дает следующее определение активным методам обучения. Активные методы обучения — это способы активизации учебно-познавательной деятельности студентов, которые побуждают их к активной мыслительной и практической деятельности в процессе овладения материалом, когда активен не только преподаватель, но активны и студенты. В своей классификации активных методов обучения для вуза А.М. Смолкин выделяет имитационные методы активного обучения, т.е. формы проведения занятий, в которых учебно-познавательная деятельность построена на имитации профессиональной деятельности. Все остальные относятся к не имитационным. Имитационные методы в свою очередь делятся на игровые и неигровые. К игровым относятся проведение деловых игр, инсценировок, к неигровым - анализ конкретных ситуаций или же кейс-методы.

Метод кейс-стади – это не просто методическое нововведение – это метод активного обучения на основе реальных ситуаций. Можно сказать, что этот метод направлен не столько на освоение конкретных знаний, или умений, сколько на развитие общего интеллектуального и коммуникативного потенциала студентов и преподавателей. Кейс – это маленькое литературное произведение, позволяющее не только получить информацию, но и погрузиться в атмосферу происходящего. Это помогает студентам представить себя в реальной жизненной ситуации, а не просто решать сложную задачу.

Проблема внедрения кейс-метода в практику высшего профессионального образования в настоящее время является весьма актуальной, что обусловлено двумя тенденциями: первая вытекает из общей направленности развития образования, его ориентации не столько на получение конкретных знаний, сколько на формирование профессиональной компетентности, умений и навыков мыслительной деятельности, развитие способностей личности, среди которых особое внимание уделяется способности к обучению, смене парадигмы мышления, умению перерабатывать огромные массивы информации; вторая вытекает из развития требований к качеству специалиста, который, помимо удовлетворения требованиям первой тенденции, должен обладать также способностью

оптимального поведения в различных ситуациях, отличаться системностью и эффективностью действий в условиях кризиса.

Что дает использование кейс-метода в изучении иностранного языка?

- Повышает уровень знания иностранного языка в целом. Использование терминов и их понимание более эффективно, чем простое их заучивание, так как требует умения их использовать;
- Развивает творческое мышление, заставляя думать на языке;
- Развивает навыки проведения презентации (умение публично представить свою работу на иностранном языке); Учит формулировать различные типы вопросов;
- Развивает умение вести дискуссию, аргументировать ответы, что способствует развитию речи без опоры на готовый текст;
- Совершенствует навыки профессионального чтения на иностранном языке и обработки информации;
- Учит работать в команде и вырабатывать коллективное решение;
- Позволяет полноценно решить индивидуальную и групповую самостоятельную работу студентов.

Разбирая кейс, студенты фактически получают на руки готовое решение, которое можно применить в аналогичных обстоятельствах. Увеличение в «багаже» студента проанализированных кейсов, увеличивает вероятность использования готовой схемы решений к сложившейся ситуации, формирует навыки решения более серьезных проблем. Процесс создания кейса представляет собой сложную педагогическую систему и осуществляется в несколько этапов: Формирование дидактических целей. На этом этапе определяется место кейса в структуре учебного курса, выявление знаний, умений и навыков, формирование социальных компетенций студентов. Методической целью может быть иллюстрация к теории и чисто практическая ситуация, или их совмещение. Цель должна быть весомой, чтобы заинтересовать студентов. Этому будет способствовать напряженность ситуации, конфликт или драматичность, которые позволят принять быстрое, своевременное и правильное решение. Кейс должен быть написан понятным студенту языком, без лишней терминологии; Построение программной карты кейса. Карта состоит из определенных тезисов, которые воплощаются в тексте. Это как бы каркас, который обрастает информацией, деталями для решения проблемы.

Составляется схема кейса:

- а) обозначается действие, действующие лица, дается их характеристика;

б) описывается ситуация (симптомы);

в) указываются элементы среды (внешние факторы);

- Социальная система для кейса. Сюда мы можем отнести организацию, учреждение, которые имеют непосредственное отношение к тезисам.
- Сбор информации в избранной системе. Информация дается объективной, достаточной и достоверной для составления тезисов;
- Построение модели ситуации. Ситуация максимально отражает деятельность системы, представленной в кейсе;
- Выбор жанра кейса. Преподаватель, который составляет кейс, выбирает вид кейса;
- Написание текста кейса. Это самая трудная часть, поскольку необходимо адекватно отразить собранную и проанализированную информацию, при этом помнить об аудитории, для которой составлен кейс;
- Диагностика правильности и эффективности кейса. Проводится учебно-методический эксперимент, построенный по определенной схеме, для выяснения эффективности кейса;
- Внедрение кейса в практику обучения.

По данной технологии необходимо выдавать студентам карточки с ролями и кейс перед занятием, чтобы студенты имели время на подготовку. В конце вступительного упражнения по каждому кейсу преподавателю следует проверять понимание общих фактов о ситуации и о персонажах, так как от знания деталей зависит последующая работа над кейсом. Функциональное поле кейсов предоставляет множество возможностей и дополняет традиционные классические методы обучения иностранному языку.

Таким образом, приходим к выводу, что студент рассматривает случай, приведенный в кейсе, вникает в него, может прогнозировать и демонстрировать свое решение, выносимое на обсуждение.

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**ХИРУРГИЧЕСКИЕ МЕТОДЫ ЛЕЧЕНИЯ БОЛЬНЫХ С
ОСЛОЖНЕННОЙ ТРАВМОЙ ГРУДОПОЯСНИЧНОГО ОТДЕЛА
ПОЗВОНОЧНИКА**

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Резюме. Повреждения позвоночника встречаются до 20% случаев среди всех травм скелета, из них до 55% повреждений приходится на груднопоясничный отдел позвоночника. Инвалидность при осложненных повреждениях позвоночника имеет высокие показатели и доходит до 89,8%. Цель исследования: улучшение результатов хирургического лечения больных с осложненной травмой груднопоясничного отдела позвоночника.

Проведено обследование и хирургическое лечение 85 больных с осложненными повреждениями груднопоясничного отдела позвоночника, в возрасте от 25 до 65 лет. Уровень повреждения Th10 – L2, число повреждений на уровне Th12, L1 – 67 больных. Оперативное лечение заключалось в проведении декомпрессии и стабилизации позвоночника системой ТПФ.

Оценивали возможности репозиции травмированных ПДС и декомпрессии дурального мешка при различных вариантах смещений с учетом сроков, прошедших с момента травмы, регресс посттравматического неврологического дефицита, а также стабильность фиксации травмированных ПДС. Результаты лечения прослежены у всех прооперированных больных: хорошие получены у 49 (69,4 %), удовлетворительные — у 33 (38,8 %), неудовлетворительные — у 3 (3,5 %). Выводы: больным с осложненными повреждениями позвоночника необходимо проведение ДЛЭ на уровне 2-3-х позвонков. При нестабильных переломах стабилизация поврежденного сегмента системой ТПФ.

Ключевые слова: позвоночник, травма, декомпрессия, стабилизация, ТПФ.

Вопросы диагностики и лечения травм позвоночника в настоящее время является одной из проблем современной нейрохирургии. По данным анализа литературных данных повреждения позвоночника встречаются до 20% случаев среди всех травм скелета (Корнилов Н.В., Усиков В.Д., 2000, Афаунов А.А., 2006, Афаунов А.А., Кузьменко А.В., Нестеренко П.Б., 2010, Аганесов

А.Г., Месхи К.Т., Хейло А.Л., 2010, Махкамов К.Э., Исраилов Д.У., Кузибаев Ж.М., 2012). Наиболее часто как самые подвижные отделы подвергаются повреждению шейный и груднопоясничные отделы позвоночника (Аганесов А.Г., Месхи К.Т., Хейло А.Л., 2010, Махкамов К.Э., Исраилов Д.У., Кузибаев Ж.М., 2012). Повреждения груднопоясничного отдела среди всех травм позвоночника составляют 40% случаев.

Осложненные повреждения позвоночника можно считать, как медицинской, так и большой социальной проблемой. Это связано с тем, что основную часть пострадавших составляют пациенты наиболее работоспособного возраста от 25 до 45 лет – 75%. Инвалидность при осложненных повреждениях позвоночника имеет высокие показатели и доходит до 89,8% (Коваленко К. Н., Шапкова Е. Ю., Янковский А. М., Муткии А. Ю., 1996, Austin G. M., 1990).

Основными принципами лечения осложненных повреждений груднопоясничного отдела позвоночника является не только декомпрессия спинного мозга и его корешков, но и стабильная фиксация поврежденного сегмента позвоночника, с целью восстановления опороспособности и ранней активизации пострадавших. В настоящее время из многих способов коррекции и надежной стабилизации поврежденного сегмента позвоночника предпочтение отдается системе транспедикулярной фиксации – ТПФ. Применение ТПФ систем для стабилизации дает возможность устранить стеноз позвоночного канала вызванный костными отломками. Это достигается за счет лигаментотаксиса во время установления и закрепления ТПФ систем. При этом отпадает необходимость вскрытия позвоночного канала, исключается дополнительная травматизация спинного мозга, сокращается время оперативного вмешательства.

Цель исследования: улучшение результатов хирургического лечения больных с осложненной травмой груднопоясничного отдела позвоночника.

Материал и методы.

В нейрохирургическом отделении Андижанского филиала РНЦЭМП с 2015 по 2020 год было проведено обследование и хирургическое лечение 85 больных с осложненными повреждениями груднопоясничного отдела позвоночника. Возраст больных от 25 до 65 лет, основной контингент больных составили больные в возрасте от 25 до 45 лет – 56 (65,8%). При распределении по полу: мужчин – 62 (72,9%), женщин – 23 (27,1%). Механизм травмы:

кататравма (падение с высоты) – 67 (78,8%) случаев, дорожно-транспортные происшествия – 16 (18,8%), ножевое ранение – 2 (2,3%) случая. По времени поступления в стационар – все больные доставлены в первые 6 часов после травмы.

Таблица 1.

Распределение больных по возрасту и полу.

Возраст больных	Мужчины		Женщины		Всего	
	абс.	в %	абс.	в %	абс.	в %
От 20 до 30 лет	11	12,9	5	5,8	16	18,8
От 31 до 40 лет	27	31,7	12	14,1	39	45,8
От 41 до 50 лет	11	12,9	3	3,5	14	16,4
От 51 до 60 лет	7	15,2	3	3,5	10	11,7
Старше 60 лет	6	7,0	-	-	6	7,0
Всего:	62	72,9	23	27,1	85	100

Всем больным проведено клинико-неврологическое обследование, рентгенологическое, МСКТ и МРТ исследования. По результатам проведенных методов обследования и инструментальных методов исследования получены следующие результаты.



Рис.1. МСКТ груднопоясничного отдела позвоночника: а) компрессионно-оскольчатый перелом тела L1 позвонка, посттравматический стеноз позвоночного канала.

Таблица 2.

Распределение больных по уровню травмы.

Пол	Уровень повреждения						Всего
	Th10	Th11	Th12	Th12-L1	L1	L2	
Мужчины	3	7	18	23	9	2	62
Женщины	2	3	9	7	1	-	23
Всего:	5	10	27	30	10	2	85

Как видно из приведенных данных в таблице 2, повреждения позвоночника на уровне Th10 и Th11 было у 15 больных, Th12, Th12-L1 у 57 больных, L1 и L2 у 12 больных. Основной контингент составили больные с повреждениями переходного отдела позвоночника. Изолированные повреждения на уровне 1 позвонка наблюдались у 64 (75,2%) больных, на уровне 2-х позвонков 19 (22,3%) больных и на уровне 3-х позвонков 2 (2,3%) больных.

По Универсальной классификации повреждений позвоночника тип А наблюдался у 31 (36,4%), тип В у 35 (41,1%) и тип С у 16 (18,8%) больных.

Из обследованных 85 больных осложненная травма имело место у 56 (65,8%) пострадавших, сопровождающаяся неврологическими нарушениями различной степени тяжести – от нарушения функции тазовых органов по типу задержки до от параплегии нижних конечностей с нарушением чувствительности. Из 56 у 12 (14,1%) в первые 3 дня отмечен регресс неврологической симптоматики, у остальных 44 (51,7%) больных в предоперационном периоде неврологический статус оставался без положительной динамики.

Учитывая вид повреждения позвоночника, рентгенологические, МСКТ и МРТ изменения, наличие признаков нестабильности поврежденного

сегмента позвоночника проведено оперативное лечение больных. Показаниями к оперативному методу лечения являлись:

- 1 Рентгенологические и МСКТ признаки перелома тел позвонков II-III степени.
- 2 Наличие костных фрагментов в позвоночном канале, вызывающие компрессию спинного мозга и его элементов.
- 3 МРТ признаки повреждения спинного мозга.
- 4 Изменения в неврологическом статусе.
- 5 Признаки нестабильного перелома позвоночника.

По виду проведенных оперативных вмешательств больные распределены следующим образом:

- 1 Стабилизация и фиксация поврежденного сегмента позвоночника с лигаментотаксисом – 56 (65,8%) больных;
- 2 Односторонняя гемиламинэктомия с последующей фиксацией ТПФ – 17 (20,0%) больных;
- 3 ДЛЭ на уровне 2-х позвонков, ревизия позвоночного канала, менингомиелорадикулолиз, фиксация системой ТПФ – 9 (10,5%) больных.

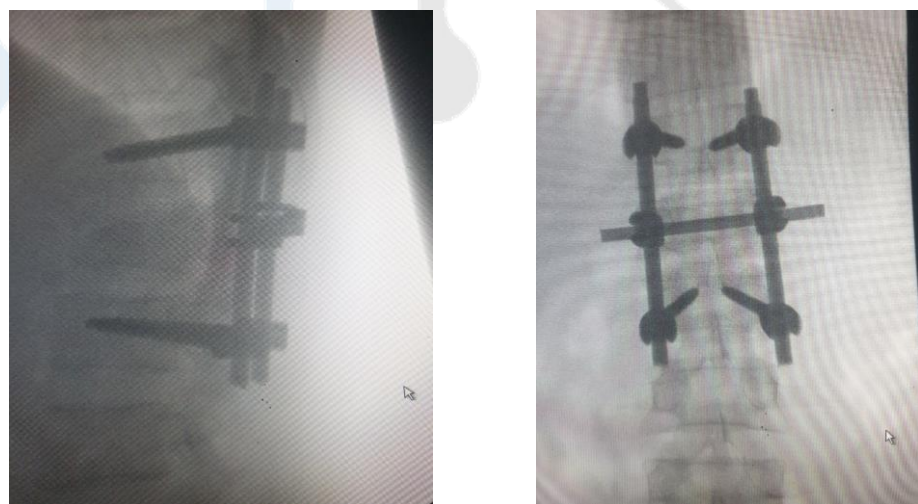


Рис.2. Стабилизация поврежденного сегмента позвоночника 4-х винтовой системой ТПФ. Закрытая репозиция вдавленных костных отломков за счет лигаментотаксиса.

Результаты.

Проводя анализ клинической эффективности различных технических вариантов ТПФ при повреждениях, сопровождающихся травматическим стенозом позвоночного канала, мы оценивали возможности репозиции травмированных ПДС и декомпрессии дурального мешка при различных вариантах смещений с учетом сроков, прошедших с момента травмы, регресс посттравматического неврологического дефицита, а также стабильность фиксации травмированных ПДС

Хорошим результатом считали стабилизацию травмированного отдела позвоночника с восстановлением анатомических взаимоотношений и опороспособности; остаточную кифотическую деформацию, не превышающую 10° , сужение просвета позвоночного канала — до 20—25 % на уровне выше L2 и до 30—35 % ниже L2 без клинической манифестации; отсутствие болевого синдрома при полной активизации больного; у пациентов с неврологическим дефицитом — нормализацию неврологического статуса или значительный регресс неврологических нарушений. Удовлетворительным результатом — стабилизацию позвоночника с восстановлением опороспособности при наличии кифотической деформации в травмированных сегментах $10—25^\circ$; возможное появление болевого синдрома после умеренных нагрузок; в неврологическом статусе при ПСМТ - возможное частичное восстановление утраченных функций либо сохранение неврологического дефицита на дооперационном уровне. Неудовлетворительным результатом - развитие нестабильности в травмированных ПДС, отсутствие опороспособности позвоночника, наличие деформации с локальным кифозом более 25° , неустранный стеноз позвоночного канала более 40 % выше уровня L2 и более 50 % ниже L2, усугубление неврологических расстройств.

Ближайшие результаты лечения прослежены у всех прооперированных больных: хорошие получены у 49 (69,4 %), удовлетворительные — у 33 (38,8 %), неудовлетворительные — у 3 (3,5 %). Неудовлетворительные результаты лечения связаны в двух случаях с дестабилизацией металлоконструкции, что потребовало в одном случае демонтажа и повторного установления металлоконструкции, в другом — продления фиксации выше еще на один уровень. В одном случае после операции отмечалось стойкое (ухудшение с уровня С до А по шкале ASIA/ISCSI) нарастание неврологической симптоматики.

Отдаленные результаты лечения через год после выполнения хирургических вмешательств прослежены у 52 (61,1 %) пациентов: хорошие — у 31 (59,6 %), удовлетворительные — у 16 (30,7 %), неудовлетворительные — у 3 (5,7 %). У 1 пациента выявлены перелом одного из винтов металлоконструкции, прорезывание смежного винта с развившейся грубой кифотической деформацией; еще у 1 — раскручивание крепежных гаек полиаксиальной металлоконструкции, что привело к кифотической деформации.

Выводы. 1 Больным с осложненными повреждениями позвоночника необходимо проведение ДЛЭ на уровне 2-3-х позвонков.

2 Для уточнения вида и характера повреждения позвоночника и спинного мозга необходимо проведение МСКТ и МРТ исследования.

3 При нестабильных переломах стабилизация поврежденного сегмента системой ТПФ.

4 Проведение декомпрессивно-стабилизирующих оперативных вмешательств способствуют восстановлению утраченных функций спинного мозга.

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PECULIARITIES OF INFORMAL LANGUAGE UNITS IN ENGLISH

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Abstract: This article explores the peculiarities of informal language in English, a dynamic and evolving aspect of communication that reflects social identities, cultural contexts, and technological advancements. Informal language encompasses slang, colloquialisms, and casual expressions that differ significantly from formal language in structure, usage, and context. The article examines the characteristics of informal English, its role in social interactions, and its impact on language development.

Key words: *Informal language, colloquialisms, slang, communication, concept, casual, linguistics*

Language is a living entity, constantly evolving to reflect the cultures and societies that use it. Among the various forms of language, informal language units play a crucial role in everyday communication. Informal language encompasses a range of expressions, slang, colloquialisms, and other non-standard forms that differ significantly from formal language. This article explores the peculiarities of informal language units in English, examining their characteristics, functions, and the contexts in which they thrive.

Informal language refers to the casual, everyday speech used in personal conversations, social media interactions, and other non-professional settings. Unlike formal language, which adheres to grammatical rules and conventions, informal language is characterized by its flexibility and spontaneity. Some key features of informal language units include:

1. Slang: Slang consists of words or phrases that are specific to particular groups or communities. These terms often arise from cultural references, regional dialects, or subcultures. For example, "lit" (meaning exciting) or "ghosting" (suddenly cutting off communication) have become popular in recent years.
2. Colloquialisms: These are expressions that are characteristic of a particular region or group. They often reflect local culture and can vary significantly from one area to another. For instance, "y'all" is commonly used in the Southern United States as a contraction for "you all."

3. Abbreviations and Acronyms: Informal communication frequently employs abbreviations and acronyms, especially in digital contexts. Terms like "LOL" (laugh out loud) or "BRB" (be right back) have become integral to online conversations.

4. Non-standard Grammar: Informal language often disregards traditional grammatical rules. For instance, sentences may be fragmented or lack subject-verb agreement. Phrases like "Me and my friends went to the movies" are commonly accepted in informal contexts.

5. Intonation and Emotion: Informal language heavily relies on tone, intonation, and body language to convey meaning. The same phrase can have different implications depending on how it is delivered.

Slang is not geographically limited or generalized. In this respect, it differs from dialectic units. Jargon also requires specificity in a certain sense. It should be in the same field, direction to which it belongs. In many cases, taboo concepts in each culture serve as the basis for the creation of slang words. Slang is more of a spoken word than a written word. Lexical units related to slang have a short life. Therefore, with the passage of time, popular slang words may become obsolete and lose their meaning. Since slang words are created, used by a small group of people for a certain period of time, studied by linguists and entered into the slang dictionaries of the language, it is considered a field of linguistics of relatively little interest to researchers in many languages. But, not all slang words are short-lived. Some of them settle in the language and remain. For example, the word "hot" in English. In the literary language, this word means warm compared to the weather, and in slang, it expresses the concept of charming, attractive (sexually). And this has become immutable.

Informal language serves several important functions in communication:

1. Building Rapport: Informal language fosters a sense of familiarity and intimacy between speakers. Using slang or colloquial expressions can create a relaxed atmosphere and strengthen social bonds.

2. Expressing Identity: The use of informal language can signify membership in a particular group or community. For example, teenagers might use specific slang to distinguish themselves from older generations.

3. Facilitating Humor: Informal language often incorporates humor through puns, playful language, or exaggeration. This can make conversations more engaging and enjoyable.

4. Enhancing Expressiveness: Informal language allows speakers to express emotions and attitudes more vividly. Words like "awesome," "bummed," or "chill" convey feelings that may not be as easily captured through formal vocabulary.

5. Adapting to Context: Informal language units are highly adaptable, allowing speakers to adjust their communication style based on the context or audience. This flexibility is particularly evident in digital communication, where tone can shift rapidly.

The rise of digital communication platforms has accelerated the evolution of informal language. Social media, texting, and online gaming have introduced new lexicons and modes of expression that challenge traditional linguistic boundaries. While informal language enriches communication, it also raises concerns about its influence on literacy and language acquisition among younger generations.

Informal language is a vibrant and integral aspect of English that reflects the complexities of human interaction. By understanding its peculiarities, we can appreciate the nuances of communication in various contexts. As society continues to evolve, so too will informal language, shaping the way we connect with one another.

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INFLUENCE OF COCOON SHAPE ON THE DYNAMIC FORCE OF THE COCOON THREAD COMING OUT OF THE SHELL

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Annotation. The article analyzes the shape of cocoons, which influences the technological process of their unwinding. In order to develop, depending on the tension of the cocoon thread on the shape of the cocoon for experimental studies used spherical and oval cocoons of medium caliber without interception and with interception of the varietal mixture of the hybrid Ipakchi-1 x Ipakchi-2. To determine the dynamic force of the cocoon thread coming off the shell, the cocoons of selected samples with a set degree of interception were unwound on a single unwinding machine equipped with a strain gauge system at a speed of 85 m/min. During unwinding, the thread tension was measured and the number of breaks was counted, and it was revealed that the shape of the cocoon affects the unwinding performance.

Key words: Cocoon shape, caliber, thread tension, single unwinding, breed, thread shedding forces.

According to their shape, cocoons are classified as spherical, oval, without an interception, with a weak and deep interception, cylindrical, pointed with one or two pointed ends. This not entirely accurate division of cocoons into groups gives only the most general idea of their shape. In the case of a geometric expression, the shape of the cocoon is characterized by the actual shape of the projection of the shell of the cocoon, cut lengthwise in the middle into two different parts. To obtain a projection of the cocoon, it is enough to attach any half of the shell with the cut side to the paper and trace its outline with a sharp pencil.

The shape of the cocoons greatly influences the technological process of their unwinding. According to scientists, the most convenient for unwinding are spherical and oval cocoons, with a shallow interception; cylindrical cocoons are not convenient, especially with pointed ends. During their steaming and unwinding, holes often form on the sharp ends, causing thread breakage and preventing further unwinding. Under normal conditions, the caterpillars of each breed of silkworm howl into cocoons of a certain shape unique to that breed. At the same time, it varies significantly even within one breed.

Cocoons obtained from rearing hybrids vary especially greatly in shape. In order to establish the dependence of the tension of the cocoon thread on the shape of the cocoon, for experimental studies we used spherical and oval cocoons of

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medium caliber without interception and with interception of a varietal mixture of the hybrid Ipakchi-1 x Ipakchi-2, harvest 2023.

It is known that the quantity that determines the shape of the cocoon can be characterized by the following expression:

$$\frac{D, d_p}{d_1, d_2}$$

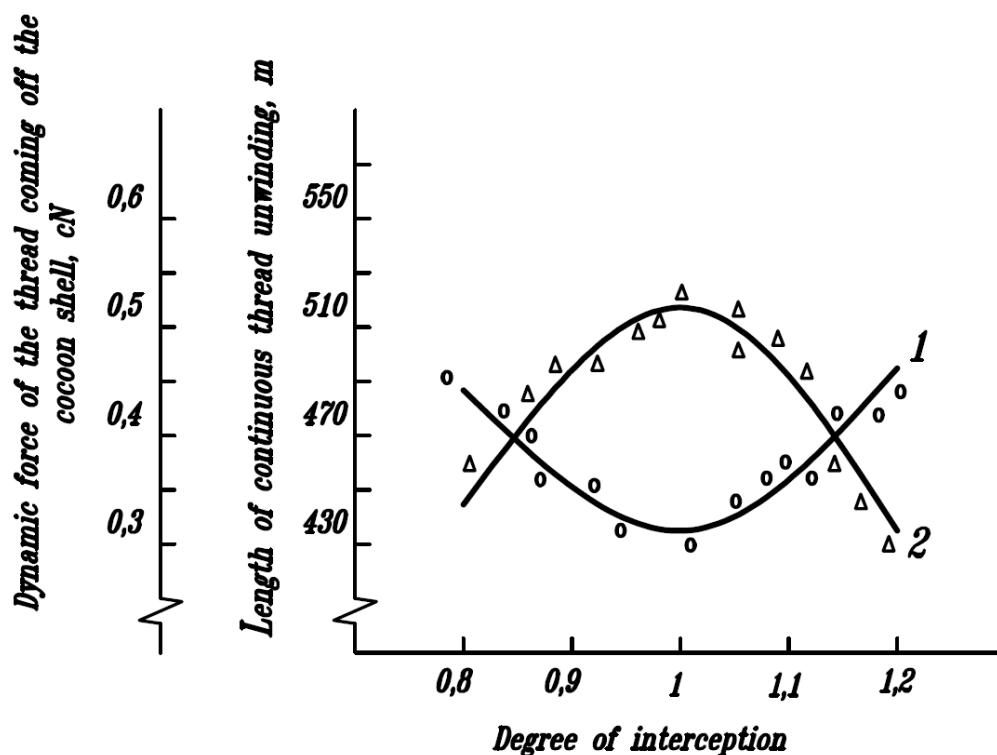
Where: D -is the length of the cocoon, mm; d_p -diameter of interception, mm; d_1 and d_2 – diameter of the hemispheres, mm.

As a numerical expression of the shape of the cocoons, the concept of “degree of interception” (C_p) was used - i.e. ratio of the average diameter of both hemispheres to the diameter of the interception

$$C_p = \frac{d_1 + d_2}{2d_p}$$

For a spherical cocoon, $C_p = 1$; oval without interception – $C_p < 1$, and with interception – $C_p > 1$.

To determine the dynamic force of the cocoon thread coming off the shell, the cocoons of selected samples with a set degree of interception were unwound on a single unwinding machine equipped with a strain gauge system at a speed of 85 m/min. The strain measuring system contains a power supply, an N-117 oscilloscope, a UT-4-1 amplifier, and a single cocoon thread tension sensor. During



unwinding, the thread tension was measured and the number of breaks was counted (Figure).

Fig. The influence of the degree of interception on the dynamic force of the thread coming off the cocoon (1) and the length of the continuously unwinding cocoon thread (2).

The location of the experimental data characterizing the tension of the thread on the degree of interception indicates the absence of a parabolic relationship between them. The experimental data were approximated to the analytical function using the least squares method. As a result, we obtained an equation of the form

$$Y_1=3.77X^2-7.45X+3.99$$

Where Y_1 is the dynamic force of the thread coming off the sheath, cN; X- degree of interception.

The smallest (0.29 cN) force of the cocoon thread coming off is observed when unwinding cocoons with a degree of interception equal to 1.0, i.e. spherical cocoons. Increasing the force of the cocoon thread coming off

$$Y_2=-1999.5X^2+3978.7X-1458$$

Where Y_2 is the length of the continuously unwinding cocoon thread, m.

Thus, the shape of the cocoon affects the unwinding performance; Moreover, it is preferable to unwind spherical cocoons due to the reduction in tension and the number of breaks

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**USE OF FABRICS WITH ENHANCED PERFORMANCE
CHARACTERISTICS IN MANUFACTURING SPECIAL APPAREL FOR
OIL AND GAS INDUSTRY WORKERS.**

Barotova Umida Mustafokhul kizi

Abstract:

This article provides complete information on material selection, justification and materials for the production of special clothes. Information about the classification processes of special clothes according to their application is given.

Key words: special clothes Skotchlayt, Momblan, Skotchlayt, Proban, Gidrofoyl

Due to the fact that special clothes are worn for a long time and are in constant contact with the human body, the materials used in making clothes are also required to be suitable for the human body. When choosing material for special clothing, protective equipment and the above features are taken into account. Clothing is not only a means of wearing, but the possibility of sewing fabrics in the production of sewing, its use is served by its durability and convenience. Fabrics used in sewing special clothes are also considered integrally related to the level of protection of the clothes and are divided into a number of groups: - special clothing fabrics for metallurgists (group 1) - special clothing fabrics for oil field workers (group 2) - for welders (svarshik) special clothing fabrics (group 3) are divided into the same types as special clothing fabrics (group 4) for workers in general production areas. Gases used in special clothes do not meet all requirements, those that are resistant to mechanical effects can absorb, transfer or retain liquid. Fire-resistant materials lose their integrity under the influence of bending and compression deformations. Those that are resistant to chemicals are less resistant to various mechanical effects. Special clothing fabric must directly meet the world standard requirements, quality indicators, regulatory legal documents of the material, types of raw materials [1]. For sewing special clothes, it is allowed to use fabrics woven from natural and mixed fibers. It is allowed to use clothes made of chemical fibers (materials) as outerwear for workers who work continuously (for more than 2 hours) at low temperatures. Below is information about a number of fabrics used in sewing special clothes. Special - a garment intended for the production of highly comfortable winter and summer special working clothes (suits, gowns, coveralls). In this clothing, people

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feel not only protected but also comfortable at work. Momblan is a special gas protection against high and low (from 400 to 600) temperature. Its distinctive feature is its lightness and small size. Manblan style clothes have special construction elements and are provided with conveniences at work. Tinsulet is an extremely lightweight, compact, micro-fiber heater that is widely used worldwide. Product of ZM company. Created 20 years ago. The fabric is made of thin synthetic fibers. The fiber is ten times thinner than that of conventional heaters. It is breathable and keeps heat well. Tinsulet has heat protection properties. After washing, it does not change its shape or size and does not stretch. Qakhraton provides full comfort even in cold weather. Scotchlite is a fabric made by adding a high-visibility microscopic glass lens. Scotchlite is a reflective material from car headlights. Scotchlite special clothing ensures high safety of workers. It can be felt even in the dark and protects from various unfortunate events. Hologfiber is a non-woven heater made of polyamide fibers acting as a twisted spiral spring. Hologfiber is characterized by air permeability despite its softness and high processing. Hologfiber, which is easy to clean, mixes, harmonizes and glues well with other fabrics. Proban is fire-resistant, produced in the Rhodia company, considered a leader among world technologies, provides fire protection, certified. 80-85% of global production is used as protective clothing. The fabric does not change under the influence of fire, the service life is extended. Even after a lot of use, it keeps its condition well. Flame retardant proban and oko-tex 100 standard certificate. It guarantees that the skin will not be damaged. Hydrofoil is a special foil produced by the Klopman company. This gas mask meets the requirements of EN 13034 and EN 368 in terms of protection against the effects of liquid, harmful chemicals. Limits the effect of water, oil and their mixtures in different proportions. Based on nanotechnologies, the layer covered by strong gas and liquid effects creates separate pieces without retaining it. Cordura is a water-resistant polyurethane coating and a special gasket made of thick nylon threads. The preparation of gas mixture is carried out in several stages, which allows high-quality, long-term use. Cordura melts at 260°C. Gazlama has high durability, friction, and is resistant to the effects of ultraviolet rays. Tyvek is a dense, thin, light and soft material. Produced by the Du Pont company, it captures small dust particles (up to 3 microns). Its further advantages are that it completely retains acid and alkali solutions up to 30%. This gauze is distinguished from others by the fact that it does not contain cotton fibers and silicon substances. The above company recommended Taikem C fabric by pouring polymer on the base, and Taikem F fabrics by lamination. The raw materials of this garment can protect against gas pressures of 2-5 barometers, splashing liquid and various mixtures of blood, respectively. Master universal ca 25 mbo c with antistatic yarn is designed for special summer suits and

corporate clothes. this fabric is intended for personnel working in closed buildings. It is worth noting that as a result of various treatments of the fabrics recommended for special clothes, the raw material does not protect, but may emit various harmful substances. Therefore, it is necessary to pass gas tests and recommend it for special clothes.

About approving model standards for free provision of special clothing, special footwear and other personal protective equipment in oil and gas production.

No. 267 of the Cabinet of Ministers of the Republic of Uzbekistan dated July 12, 2000 "On revision and development of regulatory documents on labor protection" (a collection of decisions of the Government of the Republic of Uzbekistan, 2000, No. 7, Article 39) and No. 153 of July 20, 2010 "On Further Improvement of the Regulatory Legal Framework for Labor Protection" (legislative documents of the Republic of Uzbekistan collection, 2010, No. 28-29, Article 234), I order:

1. Sample standards for free provision of special clothing, special shoes and other personal protective equipment in oil and gas production should be approved in accordance with the appendix.

2. This order shall enter into force ten days after its state registration in the Ministry of Justice of the Republic of Uzbekistan.

Based on the above regulations, different uniforms are issued depending on the workplace.

- Oil and gas exploration and production well drilling driller, oil and gas exploration and production well drilling assistant driller, oil and gas exploration and production well drilling assistant driller, mechanical rotary well driller drilling rig, mechanical rotary drilling of wells to the driller's assistant-Tarpaulin suit or waterproof fabric-lined gas suit, tarpaulin boots, tarpaulin gloves, hard hat, helmet worn under the hard hat. In winter, a fleece jacket and trousers with an extra warm lining and felt boots are provided.

- Mining worker working in an open-pit mine, diesel operator-drilling rig operator-Tarpaulin suit, boots or rubber boots, combination gloves, helmet, helmet worn under the helmet. In winter, a fleece jacket and trousers with an extra warm lining and felt boots are provided.

- For well sampler lifting machine- Tarpaulin suit, boots or rubber boots, combined gloves, helmet, helmet worn under the helmet. In winter, a fleece jacket and trousers with an extra warm lining and felt boots are provided.

- Support worker in pipe and tool shed or area (with transport) - Waterproof jacket, leather shoes or boots, tarpaulin gloves, jacket and pants with extra warm winter lining and felt boots is given.

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CORPUS LINGUISTICS: ANALYZING LARGE TEXT CORPORA IN ENGLISH

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Abstract: This paper delves into the field of corpus linguistics, focusing on the analysis of large text corpora in the English language. Corpus linguistics involves the systematic study of language through large collections of texts, known as corpora. This research explores the methodologies used in corpus analysis, the types of corpora available, and their applications in various linguistic studies. It highlights the significance of corpus linguistics in understanding language patterns, usage, and evolution. The paper also discusses the advantages and limitations of using large text corpora for linguistic analysis.

Keywords: Corpus linguistics, text corpora, linguistic analysis, English language, language patterns, language usage, language evolution, computational linguistics

КОРПУСНАЯ ЛИНГВИСТИКА: АНАЛИЗ КРУПНЫХ ТЕКСТОВЫХ КОРПУСОВ НА АНГЛИЙСКОМ ЯЗЫКЕ

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Аннотация: Эта статья посвящена области корпусной лингвистики, с акцентом на анализ крупных текстовых корпусов на английском языке. Корпусная лингвистика включает систематическое изучение языка через большие собрания текстов, известных как корпуса. Это исследование изучает методологии, используемые в корпусном анализе, типы доступных корпусов и их применение в различных лингвистических исследованиях. Оно подчеркивает значимость корпусной лингвистики в понимании языковых моделей, использования и эволюции языка. Статья также обсуждает преимущества и ограничения использования крупных текстовых корпусов для лингвистического анализа.

Ключевые слова: Корпусная лингвистика, текстовые корпуса, лингвистический анализ, английский язык, языковые модели, использование языка, эволюция языка, компьютерная лингвистика

**KORPUS LINGVISTIKA: INGLIZ TILIDAGI KATTA MATN
TO'PLAMLARINI TAHLIL QILISH**

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Annotatsiya: Ushbu maqola korpus lingvistikasi sohasiga, xususan, ingliz tilidagi katta matn to'plamlarini tahlil qilishga bag'ishlangan. Korpus lingvistikasi tilni katta hajmdagi matnlar to'plamlari orqali tizimli o'rganishni o'z ichiga oladi. Ushbu tadqiqot korpus tahlilida qo'llaniladigan metodologiyalar, mavjud korpuslarning turlari va ularning turli lingvistik tadqiqotlardagi qo'llanilishini o'rganadi. Ushbu tadqiqot korpus lingvistikasining til naqshlari, foydalanish va til evolyutsiyasini tushunishdagi ahamiyatini ta'kidlaydi. Maqolada, shuningdek, lingvistik tahlil uchun katta matn to'plamlaridan foydalanishning afzalliklari va cheklovlari muhokama qilinadi.

Kalit so'zlar: Korpus lingvistika, matn to'plamlari, lingvistik tahlil, ingliz tili, til naqshlari, til foydalanishi, til evolyutsiyasi, kompyuter lingvistikasi

Introduction

Corpus linguistics has emerged as a pivotal branch of linguistic research, leveraging the power of large text corpora to uncover patterns and nuances in language use. A corpus, in this context, refers to a systematically collected and structured set of texts stored in a digital format, which can be analyzed using various computational tools. The advent of digital technology and the increasing availability of textual data have propelled corpus linguistics to the forefront of contemporary linguistic studies.

In the realm of English language analysis, corpus linguistics offers invaluable insights into how language is used across different contexts, genres, and time periods. By examining large corpora, researchers can identify trends in vocabulary, grammar, semantics, and pragmatics that are not easily observable through traditional linguistic methods. This data-driven approach allows for a more empirical and objective understanding of language, bridging the gap between theoretical linguistics and real-world language use.

The applications of corpus linguistics are diverse, ranging from language teaching and lexicography to sociolinguistics and discourse analysis. For instance, language educators can use corpus findings to develop more effective teaching

materials that reflect authentic language use. Lexicographers can create more accurate and comprehensive dictionaries by analyzing word frequencies and collocations. Additionally, sociolinguists can study language variation and change over time by comparing different corpora.

Despite its numerous advantages, corpus linguistics also faces certain challenges. The quality and representativeness of the corpus, the selection of appropriate analytical tools, and the interpretation of quantitative data are critical factors that influence the validity of corpus-based studies. Nonetheless, the ongoing advancements in computational linguistics and data science continue to enhance the capabilities and applications of corpus linguistics.

This paper aims to explore the methodologies and applications of corpus linguistics in analyzing large English text corpora. It will discuss the construction and types of corpora, the tools and techniques used in corpus analysis, and the implications of corpus findings for various fields of linguistic research. By doing so, this study seeks to underscore the significance of corpus linguistics in advancing our understanding of the English language.

Materials and methodology

Materials: The primary materials for this study include several large, well-established English language corpora. These corpora are selected based on their size, diversity, and representativeness to ensure comprehensive analysis. The key corpora utilized in this research are:

1. The British national corpus (BNC): A 100-million-word collection of samples of written and spoken language from a wide range of sources, including newspapers, journals, books, conversations, and other spoken texts.
2. The corpus of contemporary American English (COCA): A 1-billion-word corpus that includes texts from spoken, fiction, popular magazines, newspapers, and academic journals from 1990 to the present.
3. The Google Books Ngram Corpus: A large-scale corpus of digitized books that provides data on word and phrase usage frequencies across centuries.
4. The Global Web-based English (GloWbE) Corpus: Contains 1.9 billion words from web-based English in 20 different countries.

Methodology: The methodology for analyzing these corpora involves several key steps, employing both quantitative and qualitative techniques to ensure a robust analysis.

1. **Corpus compilation and selection:** The chosen corpora are compiled to represent a broad spectrum of contemporary English usage. Each corpus is carefully selected to include a diverse range of genres and registers, ensuring that the analysis covers different aspects of language use.

2. **Data cleaning and preprocessing:** Before analysis, the text data undergoes preprocessing, which includes tokenization (breaking text into individual words or tokens), lemmatization (reducing words to their base or root form), and removing stop words (common words like "the" and "and" that do not contribute to meaning). This step ensures that the data is clean and suitable for analysis.

3. **Frequency analysis:** Frequency analysis is conducted to identify the most common words and phrases in each corpus. This involves calculating word frequencies and examining the distribution of words across different genres and registers. Tools like AntConc or WordSmith are used for this purpose.

4. **Collocation and concordance analysis:** Collocation analysis examines how words co-occur within a given window of text, helping to identify common phrases and word associations. Concordance analysis involves looking at the context in which a word appears to understand its usage and meaning. These analyses provide insights into the syntactic and semantic properties of words.

5. **Comparative analysis:** Comparative analysis is conducted to identify differences and similarities across the various corpora. This involves comparing word frequencies, collocations, and grammatical patterns across different genres, time periods, and geographical varieties of English.

6. **Statistical Analysis:** Statistical tools and methods, such as chi-square tests and t-tests, are employed to determine the significance of observed patterns and trends. These analyses help to validate the findings and ensure that they are not due to random variation.

7. **Qualitative analysis:** Qualitative analysis involves a more in-depth examination of specific texts or passages to understand nuanced language use and context. This step is essential for interpreting the quantitative findings and providing a comprehensive understanding of the language data.

8. **Visualization:** Data visualization techniques, including graphs, charts, and word clouds, are used to present the findings in an accessible and interpretable manner. Visualization tools such as Tableau and Voyant Tools facilitate the

presentation of complex data. By combining these methodologies, this study aims to provide a detailed and nuanced analysis of large English text corpora, contributing to a deeper understanding of language patterns, usage, and evolution in the English language.

Scientific novelty of the research: The study of corpus linguistics, particularly through the analysis of large English text corpora, offers several novel contributions to the field of linguistics. This research provides innovative insights and advances in several key areas:

1. Integration of diverse corpora: Unlike previous studies that often focus on a single corpus, this research integrates data from multiple large-scale corpora, including the British National Corpus (BNC), the Corpus of Contemporary American English (COCA), the Google Books Ngram Corpus, and the Global Web-Based English (GloWbE) Corpus. This comprehensive approach allows for a more holistic understanding of English language usage across different contexts, genres, and time periods.

2. Advanced computational techniques: The study employs cutting-edge computational tools and methodologies, including machine learning algorithms and natural language processing (NLP) techniques, to analyze large volumes of text data. These advanced techniques enable more accurate and efficient analysis of language patterns, providing deeper insights into the syntactic and semantic properties of English.

3. Focus on contemporary language use: By incorporating data from recent and contemporary sources, the research highlights the dynamic and evolving nature of the English language. This focus on modern language use helps to identify current trends and changes in vocabulary, grammar, and usage that are relevant for both linguistic theory and practical applications.

4. Multifaceted analysis: The research combines quantitative and qualitative analysis methods to provide a comprehensive examination of the data. Frequency analysis, collocation analysis, concordance analysis, and statistical tests are complemented by qualitative assessments of specific texts and contexts. This multifaceted approach ensures a thorough understanding of the linguistic phenomena under investigation.

5. Cross-corpora comparisons: One of the key innovations of this research is the comparative analysis across different corpora. By examining similarities and differences in language use across various datasets, the study provides new

perspectives on regional, stylistic, and temporal variations in English. This comparative approach enhances the robustness of the findings and their applicability to diverse linguistic contexts.

6. Application to 'anguage teaching and learning: The findings from this research have significant implications for language teaching and learning. By identifying authentic language patterns and common usage trends, the study informs the development of more effective teaching materials and strategies. This practical application bridges the gap between theoretical research and educational practice, contributing to improved language acquisition outcomes.

7. Insights into language evolution: The research contributes to the understanding of language evolution by tracking changes in word usage, grammar, and discourse over time. By analyzing data from the Google Books Ngram Corpus, which spans several centuries, the study provides valuable insights into how the English language has developed and adapted in response to cultural, social, and technological changes.

Overall, this research advances the field of corpus linguistics by offering a comprehensive, innovative, and practical analysis of large English text corpora. It sets the stage for future studies and applications that can further explore the complexities and nuances of language use in the digital age.

Results and discussion

Results: The analysis of large English text corpora yielded several significant findings, which are summarized as follows:

1. Frequency analysis: The frequency analysis revealed the most commonly used words and phrases across different corpora. High-frequency words included function words such as "the," "and," "to," and "of," consistent with findings from previous studies. However, content words like "technology," "global," and "internet" were notably frequent in contemporary corpora, reflecting modern societal trends.

2. Collocation and concordance analysis: Collocation analysis identified common word pairings and phrases, such as "social media," "climate change," and "economic growth." Concordance analysis provided context for these collocations, highlighting their usage in various genres and registers. For instance, "climate change" frequently appeared in academic and news texts, emphasizing its relevance in current discourse.

3. Comparative analysis across corpora: Comparative analysis showed significant differences in word usage between British and American English corpora. For example, words like "colour" (British) and "color" (American) demonstrated spelling variations, while terms like "autumn" (British) and "fall" (American) showed lexical differences. Additionally, the GloWbE Corpus revealed regional variations in word usage within different English-speaking countries.

4. Trends over time: Analysis of the Google Books Ngram Corpus revealed trends in language evolution over time. For example, the usage of words like "digital" and "sustainability" increased significantly from the late 20th century to the present, indicating shifts in societal focus and technological advancement. Conversely, terms like "telegraph" and "typewriter" showed a marked decline, reflecting changes in technology and communication.

5. Language usage patterns: Patterns in language usage highlighted differences across genres. Academic texts favored complex sentence structures and specialized vocabulary, while conversational texts showed simpler structures and colloquial expressions. This differentiation underscores the importance of context in understanding language use.

Discussion: The findings from this study provide valuable insights into the nature and dynamics of the English language. Several key points of discussion emerge from the results:

1. Implications for language teaching: The identification of high-frequency words and common collocations can inform the development of teaching materials and curricula. By focusing on words and phrases that learners are likely to encounter frequently, educators can enhance vocabulary acquisition and language comprehension. Additionally, understanding regional and genre-specific variations helps tailor instruction to meet diverse learner needs.

2. Understanding language evolution: The trends identified in language usage over time offer a window into the evolution of English. The rise of terms related to technology and environmental issues reflects broader societal changes and can inform studies on language adaptation. This evolutionary perspective is crucial for lexicographers, historians, and sociolinguists studying language change and continuity.

3. Addressing language variation: The comparative analysis across different English corpora highlights the importance of recognizing and addressing language variation. These variations have implications for translation, localization, and

international communication. Understanding these differences can improve cross-cultural communication and support the development of regionally appropriate language resources.

4. Enhancing computational linguistics: The methodologies employed in this study demonstrate the power of computational tools in linguistic analysis. Advanced techniques such as machine learning and natural language processing (NLP) enable large-scale analysis that would be impractical through manual methods. These tools not only enhance the accuracy and efficiency of linguistic research but also open new avenues for exploring complex language patterns.

5. Challenges and limitations: While corpus linguistics offers numerous advantages, it also faces challenges. The representativeness and quality of the corpora are critical factors that influence the validity of findings. Additionally, the interpretation of quantitative data requires careful consideration of context and nuance. Future research should continue to refine methodologies and address these limitations to ensure robust and reliable results.

In conclusion, the analysis of large English text corpora through corpus linguistics provides a comprehensive understanding of language use, variation, and evolution. The findings from this study have significant implications for language teaching, linguistic theory, and computational linguistics. By continuing to explore and refine these methodologies, researchers can further advance our knowledge of the English language and its complexities.

Conclusion

Corpus linguistics has proven to be an invaluable tool for analyzing large text corpora in the English language. This study has highlighted several key findings, including the identification of high-frequency words, common collocations, and language usage patterns across different genres and regions. The comparative analysis of British and American English, as well as the examination of language evolution over time, offers deep insights into the dynamic nature of English.

The implications of these findings are far-reaching. For language teaching, the results can inform the development of more effective curricula and teaching materials. The understanding of language variation enhances cross-cultural communication and supports the localization of language resources. Additionally, the integration of advanced computational techniques in linguistic analysis underscores the growing importance of interdisciplinary approaches in language research.

Despite the challenges and limitations inherent in corpus-based studies, such as the representativeness of corpora and the interpretation of quantitative data, the benefits are substantial. Future research should focus on addressing these limitations and further refining the methodologies to ensure even more robust and reliable results. Ultimately, the continued exploration of corpus linguistics will deepen our understanding of language use and evolution, contributing to both theoretical and practical advancements in the field.

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Eco-architecture time in demand

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Abstract: This scientific in the article " Eco-architecture time on the subject of " on demand ". main concepts light up given

Key words: Eco-architecture , . Biophilic Design , BREEAM, Bosco Verticale , LEED, The Crystal, Masdar City.

Introduction

Eco-architecture the term modern architecture in the field important importance occupation is doing It is the environment protection do , from resources efficient use and social stability to provide directed . Today's in the day climate change , energy shortage and ecological problems eco-architecture principles relevance increases . This in the article eco-architecture concept , his main principles , advantages and time in demand place in detail analysis will be done .

Eco-architecture Main Principles

Eco-architecture one how many main to principles based on :

1. Nature with Harmony :

Eco-architecture natural environment with in harmony construction process development goal does Building on this of place natural the landscape save stay , natural ventilation and from the light use enters Eco-architecture buildings most of the time natural to the environment suitable coming to forms have will be

2. Energy efficiency :

Energy spending reduce of eco-architecture the most important aspects is one . The sun to this panels , wind energy and another again recoverable energy from sources use enters Energy thrifty materials , for example , insulation materials and energy efficient appliances also to eco-architecture enters

3. Local of materials usage :

Local materials with working transport costs reduces and local the economy supports . Local of resources use not only to the environment damage not to deliver , maybe of society economic stability to increase help gives

4. Again work and hard waste decrease :

Eco-architecture in the process materials again work and waste reduce important Construction in the process waste minimize and again processing possible was of materials use of eco-architecture main principles is one .

5. Water resources efficient usage :

Water savings and efficient use of eco-architecture in development important role plays Natural drainage systems , rain water collector systems and the water again work methods to eco-architecture special has been approaches .

Eco-architecture Advantages

Eco-architecture one row advantages has :

1. To the environment Effect : Eco-architectural buildings to the environment less damage delivers They are energy , water and another natural of resources efficient uses waste reduces and carbon track shortens .

2. To health Benefit : Natural materials , air cleaning systems and ecological in terms of clean work release methods a person health improves . Such in buildings residents more convenience and healthy to the environment have will be

3. Economic economy : Eco-architecture through energy and the water saving , waste reduction is also local of resources use expenses reduces It is economical in terms of useful to be with together , long in term stability provides .

4. Social sustainability : Eco-architecture local teams to develop help gives Local of materials use and local worker strength attraction to do the team connections to strengthen service does

Time On demand place

Modern in the world eco-architecture climate change of resources decrease and ecological problems such as solution in reaching important role plays United Nations Organization (UN) and another international organizations stable development provide in order to eco-architecture standards current is doing Current in the day a lot countries eco-architecture programs done increasing being , this in the field innovative technologies , scientific studies and experiences active is developing .

1. Eco-architecture History

- Historical development : Eco-architecture concept appeared in the 60s of the 20th century was It is ecological problems and climate change about of the public mind to increase directed .

- Early examples : Swedish in the 1970s from the architects one how many ecological in terms of clean buildings to design entered And in the 1990s this direction more expanded and new materials , technologies with will be enriched .

2. Eco-architecture Materials

- Again processed materials : Eco-architecture in projects again processed materials wide is used . For example , re processed concrete , wood and metal.

- Biodiesel , biomass : They construction in the process used alternative energy sources as to eco-architecture is entered .

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- Natural plaster: Natural plaster materials, for example clay and lime, internal and external on the walls is used.

3. Eco-architecture Types

- Passive eco-architecture: Construction in the process natural from resources, for example, from the sun or from the wind maximum level use

- Active eco-architecture: Under construction energy thrifty systems (for example, the sun panels) and smart technologies own into takes

- Again recoverable energy buildings: Such buildings energy work release and spending minimize with separate stands

4. Eco-architecture and Social Sustainability

- Local teams with cooperation: Eco-architecture projects local teams with in cooperation done their increase needs in consideration get important

- Social Aspects: Eco-architectural buildings most of the time social problems solution to do help gives, for example, economic supply, housing supply and others

5. Eco-architecture and Climate Change

- Effects: Eco-architecture climate to change reduction, carbon dioxide gas reduce and to the climate adaptation to provide help gives

- Adaptive design: Eco-architecture methods climate to change suitable coming new construction standards in development help gives

6. Examples of eco-architecture

- Khatam Mosque (Azerbaijan): Energy efficiency and natural of materials use with eco-architecture example.

- The Edge (Amsterdam): Public transport, re processing possible was materials and energy efficiency according to in the world the most "green" office from the buildings one

- Bosco Verticale (Milan): Birds for to live place as to see possible has been vertical gardens with together to live place

7. Eco-architecture according to Innovations

- Green Technologies: Innovative materials, for example, acoustic and thermal insulating, ecological in terms of clean materials.

- Smart devices: In constructions energy spending monitoring and manage for smart technologies current to achieve

8. Challenges and Problems

- Financial Barriers: Eco-architecture projects done in raising financial of resources not enough

- Public reception: All public eco-architecture ideas does not support this while projects done in raising to difficulties take coming can

1. Eco-architecture and Management Systems

- LEED (Leadership in Energy and Environmental Design): This is a global standard of buildings energy efficiency and ecological in terms of cleanliness level evaluation for is used . LEED certification to buildings energy efficiency , water savings and internal the air quality improve according to indicators present is enough

- BREEAM (Building Research Establishment Environmental Assessment Method): Britain system buildings ecological in terms of evaluation and in certification is used . BREEAM building to the environment effect evaluates and ecological in terms of clean the design encourages .

2. Energy Savings Technologies

- The sun energy : Sun panels and the sun from collectors use , electricity energy and the heat work release for very efficient is a method . An example for , the sun which uses the water heating systems a lot eco-architectural in buildings is used .

- The wind energy : Wind turbine and another the wind energy systems through energy work release opportunity Such energy sources most of the time big eco-architecture in projects is used .

3. Stable Materials

- Green concrete : This concrete work in release again processed materials and natural resources is used . It is ecological in terms of less is harmful and stable construction process provides .

- Ecological fat hungry : Eco -architecture in projects often again recoverable wood materials is used . Local from sources received fat hungry to the environment less damage delivers

4. Water Save Systems

- It's raining water collection systems : Rain water collection and save it as well gardens and another use for to use systems eco-architecture in projects wide is used

- Water again work : Water again work and cleaning systems , for example , biological filters and the water cleaning stations , eco-architecture in the buildings important important have

5. Biophilic Design

- Nature with link : Biophilic design is people nature with to connect directed approach It is immovable of property internal and external environment natural elements , for example , plants , water elements and natural light with enrichment goal does

- Plants and green areas : In buildings green fields , gardens and vertical gardens such as elements a person health and well-being increases .

6. Eco-architecture In projects Innovations

- 3D printing release : Construction 3D printing in the process release technology new opportunities is opening . This is the method fast and thrifty construction enable gives also waste reduces

- Green Roofs : Green roofs the ecosystem development and energy spending reduce for very effective They are the heat insulation makes water suck takes and the air quality improves .

7. Global Projects

- Masdar City (UAE): Energy efficiency and again recoverable energy sources based on completely green city

- The Crystal (London): Eco-architecture example as built in the building energy efficiency and to the environment has been effect reduced .

8. Eco-architecture and The future

- Climate change with struggle : Eco-architecture modern climate change problems answer to give for necessary It is energy efficiency increase and waste reduce through social and ecological stability provides .

- Reasonable cities : Eco-architecture of cities in the future more green and stable to be for important " Reasonable the concept of " cities ". energy and resources to optimization help gives

Summary

Eco-architecture modern architecture in the environment important place holds It is to the environment caution with approach , energy efficiency increase and economic in terms of useful solutions to search goal does Eco-architecture not only present problems solution to do , maybe the future generations for stable and comfortable to live conditions also help to create gives Eco-architecture development each of us because it is our responsibility this process whole of humanity the future determines

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Ta'limda jarayonida sun'iy intellekt texnologiyalaridan foydalanishning afzalliklari va imkoniyatlari

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Abstract: The use of artificial intelligence (AI) technologies in the educational process plays an important role in updating and improving the effectiveness of modern pedagogical practices. This article examines the benefits and potential of SI technologies in education. First, with SI, individualized learning approaches can be implemented, allowing each student to be taught according to his or her unique needs. The article also shows the interactivity and motivational aspects of SI programs. Possibilities of using gamification elements to increase students' interest are analyzed. As a result, the application of artificial intelligence in the field of education not only develops knowledge, but also makes the educational process more interesting and effective.

Keywords: individualization, flexibility, interactive learning, feedback, ai, extended resources, innovative methodologies

Annotatsiya: Ta'lim jarayonida sun'iy intellekt (SI) texnologiyalaridan foydalanish, zamonaviy pedagogik amaliyotlarni yangilash va samaradorligini oshirishda muhim rol o'ynaydi. Ushbu maqolada, SI texnologiyalarining ta'limdagi afzalliklari va imkoniyatlari ko'rib chiqiladi. Birinchidan, SI yordamida individual ta'lim yondashuvlarini amalga oshirish mumkin, bu esa har bir talabaga uning o'ziga xos ehtiyojlariga mos ravishda ta'lim berish imkonini yaratadi. Shuningdek, maqolada SI dasturlarining interaktivligi va motivatsion jihatlari ham ko'rsatilib o'tiladi. O'quvchilarning qiziqishini oshirish uchun gamifikatsiya elementlaridan foydalanish imkoniyatlari tahlil qilinadi. Natijada, sun'iy intellektning ta'lim sohasidagi qo'llanilishi nafaqat bilim berishni rivojlantiradi, balki ta'lim jarayonini yanada qiziqarli va samarali qiladi.

Kalit so'zlar: individualizatsiya, moslashuvchanlik, interaktiv o'qitish, qayta aloqa, ai, kengaytirilgan resurslar, innovatsion metodologiyalar.

Аннотация: Использование технологий искусственного интеллекта (ИИ) в образовательном процессе играет важную роль в обновлении и повышении эффективности современной педагогической практики. В этой статье рассматриваются преимущества и потенциал технологий СИ в образовании. Во-первых, с помощью СИ могут быть реализованы

индивидуальные подходы к обучению, позволяющие обучать каждого учащегося в соответствии с его или ее уникальными потребностями. В статье также показаны интерактивные и мотивационные аспекты программ СИ. Анализируются возможности использования элементов геймификации для повышения интереса учащихся. В результате применение искусственного интеллекта в сфере образования не только развивает знания, но и делает образовательный процесс более интересным и эффективным.

Ключевые слова: индивидуализация, гибкость, интерактивное обучение, обратная связь, искусственный интеллект, расширенные ресурсы, инновационные методологии.

Zamonaviy ta'lim jarayonida sun'iy intellekt (SI) texnologiyalari katta ahamiyat kasb etmoqda. Bu texnologiyalar o'quvchilarning o'rganish jarayonini samarali qilish, individual yondashuvni ta'minlash va ta'lim sifatini oshirish imkonini beradi. Sun'iy intellekt yordamida ta'lim jarayonida yangi usullar va yondashuvlar joriy etilmoqda, bu esa o'quvchilarning bilimlarini chuqurlashtirish va ularning o'rganish jarayonini qiziqarli qilishga yordam beradi. Ushbu maqolada ta'limda sun'iy intellekt texnologiyalaridan foydalanishning afzalliklari va imkoniyatlari ko'rib chiqiladi.

Sun'iy intellekt (SI) texnologiyasining tarixi 1956-yilda, AQShning Dartmouth kollejida o'tkazilgan anjumanda boshlangan. Bu anjumanda John McCarthy "sun'iy intellekt" atamasini birinchi marta ishlatgan va bu soha mustaqil fan sifatida shakllangan.

Sun'iy intellektning rivojlanishi Alan Turingning 1950-yilda chop etilgan "Computing Machinery and Intelligence" maqolasi bilan boshlangan deb hisoblanadi. Turing o'z maqolasida mashinalar inson kabi fikrlay oladimi degan savolni ko'targan va bu savol sun'iy intellekt sohasidagi ilk tadqiqotlarga turtki bo'lgan¹.

Sun'iy intellekt texnologiyalari XX asrning o'rtalaridan boshlab rivojlanib kelmoqda va bugungi kunda ko'plab sohalarda qo'llanilmoqda. Masalan, tabiiy tilni qayta ishlash, kompyuter ko'rishi, o'zini-o'zi boshqaradigan avtomobillar va boshqa ko'plab texnologiyalar sun'iy intellekt asosida ishlaydi².

Sun'iy intellekt (SI) texnologiyalarining ta'limda qo'llanilishi ko'plab afzalliklarni taqdim etadi. Quyida ularning ba'zilarini ko'rib chiqamiz:

¹ https://uz.wikipedia.org/wiki/Sun%CA%BCiy_intellekt

² <https://cyberleninka.ru/article/n/sun-iy-intellekt-va-uning-asosida-yaratilgan-texnologiyalar-tahlili>

1. Personalizatsiya

Sun'iy intellekt yordamida har bir o'quvchiga individual yondashuvni ta'minlash mumkin. Bu texnologiyalar o'quvchilarning bilim darajasini tahlil qilib, ularga mos keladigan o'quv materiallarini taqdim etadi. Natijada, har bir o'quvchi o'ziga mos tezlikda va usulda o'rganish imkoniyatiga ega bo'ladi.

2. O'qitish jarayonini avtomatlashtirish

SI yordamida o'qituvchilar ma'lum vazifalarni avtomatlashtirishlari mumkin, masalan, testlarni tekshirish va baholash. Bu esa o'qituvchilarga ko'proq vaqtni o'quvchilarga individual yordam ko'rsatishga imkon beradi. Shuningdek, avtomatlashtirilgan tizimlar o'quvchilarning bilimlarini tez va aniq baholashga yordam beradi.

3. Interaktiv o'quv materiallari

Sun'iy intellekt asosida yaratilgan interaktiv o'quv materiallari o'quvchilarning qiziqishini oshiradi va ularning bilimlarini mustahkamlashga yordam beradi. Masalan, virtual laboratoriyalar, simulyatsiyalar va o'yinlar o'quvchilarga nazariy bilimlarni amaliyotda qo'llash imkonini beradi.

4. Ma'lumotlarni tahlil qilish

SI texnologiyalari yordamida katta hajmdagi ma'lumotlarni tahlil qilish va ulardan foydali xulosalar chiqarish mumkin. Bu o'qituvchilarga o'quvchilarning o'rganish jarayonini yaxshiroq tushunishga va ularning ehtiyojlariga mos ravishda ta'lim dasturlarini moslashtirishga yordam beradi.

5. O'quvchilarning faolligini oshirish

Interaktiv o'quv materiallari va SI asosida yaratilgan o'yinlar o'quvchilarning faolligini oshiradi va ularning o'rganish jarayonini qiziqarli qiladi. Bu esa o'quvchilarning bilimlarini chuqurlashtirishga va ularning o'rganish jarayonini samarali qilishga yordam beradi [1].

6. Ta'lim sifatini oshirish

Sun'iy intellekt texnologiyalari ta'lim jarayonini yanada samarali va qiziqarli qiladi. Bu texnologiyalar o'quvchilarning bilimlarini chuqurlashtirish va ularning o'rganish jarayonini tezlashtirishga yordam beradi. Shuningdek, SI yordamida ta'lim jarayonida yangi usullar va yondashuvlar joriy etilmoqda.

Sun'iy intellekt texnologiyalarining ta'limda qo'llanilishi o'quvchilarning bilimlarini chuqurlashtirish, ta'lim sifatini oshirish va o'qituvchilarning ishini yengillashtirishga yordam beradi. Kelajakda bu texnologiyalar yanada rivojlanib, ta'lim jarayonini yanada samarali qilishga xizmat qiladi [2-3].

Sun'iy intellekt (SI) texnologiyalarining ta'limda qo'llanilishi ko'plab imkoniyatlar yaratadi. Quyida ularning ba'zilarini ko'rib chiqamiz:

1. Individual yondashuv

SI texnologiyalari har bir o'quvchiga individual yondashuvni ta'minlash imkonini beradi. Bu texnologiyalar o'quvchilarning bilim darajasini tahlil qilib, ularga mos keladigan o'quv materiallarini taqdim etadi. Natijada, har bir o'quvchi o'ziga mos tezlikda va usulda o'rganish imkoniyatiga ega bo'ladi.

2. Avtomatlashtirilgan baholash

SI yordamida testlarni tekshirish va baholash jarayonini avtomatlashtirish mumkin. Bu esa o'qituvchilarga ko'proq vaqtni o'quvchilarga individual yordam ko'rsatishga imkon beradi. Shuningdek, avtomatlashtirilgan tizimlar o'quvchilarning bilimlarini tez va aniq baholashga yordam beradi.

3. Interaktiv o'quv materiallari

Sun'iy intellekt asosida yaratilgan interaktiv o'quv materiallari o'quvchilarning qiziqishini oshiradi va ularning bilimlarini mustahkamlashga yordam beradi. Masalan, virtual laboratoriyalar, simulyatsiyalar va o'yinlar o'quvchilarga nazariy bilimlarni amaliyotda qo'llash imkonini beradi.

4. Ma'lumotlarni tahlil qilish

SI texnologiyalari yordamida katta hajmdagi ma'lumotlarni tahlil qilish va ulardan foydali xulosalar chiqarish mumkin. Bu o'qituvchilarga o'quvchilarning o'rganish jarayonini yaxshiroq tushunishga va ularning ehtiyojlariga mos ravishda ta'lim dasturlarini moslashtirishga yordam beradi.

5. O'quvchilarning faolligini oshirish

Interaktiv o'quv materiallari va SI asosida yaratilgan o'yinlar o'quvchilarning faolligini oshiradi va ularning o'rganish jarayonini qiziqarli qiladi. Bu esa o'quvchilarning bilimlarini chuqurlashtirishga va ularning o'rganish jarayonini samarali qilishga yordam beradi.

6. Ta'lim sifatini oshirish

Sun'iy intellekt texnologiyalari ta'lim jarayonini yanada samarali va qiziqarli qiladi. Bu texnologiyalar o'quvchilarning bilimlarini chuqurlashtirish va ularning o'rganish jarayonini tezlashtirishga yordam beradi. Shuningdek, SI yordamida ta'lim jarayonida yangi usullar va yondashuvlar joriy etilmoqda.

Xulosa qilib shuni aytish mumkinki sun'iy intellekt texnologiyalarining ta'limda qo'llanilishi o'quvchilarning bilimlarini chuqurlashtirish, ta'lim sifatini oshirish va o'qituvchilarning ishini yengillashtirishga yordam beradi. Kelajakda bu texnologiyalar yanada rivojlanib, ta'lim jarayonini yanada samarali qilishga xizmat qiladi.

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UMUMIY O'RTA TA'LIM MAKTABLARIDA O'QUVCHILARNI INFORMATIKA VA AXBOROT TEXNOLOGIYALARI FANIGA QIZIQISHINI OSHIRISH USULLARI

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Annotatsiya: Ushbu maqolada umumiy o'rta ta'lim maktablarida o'quvchilarning informatika va axborot texnologiyalari faniga qiziqishini oshirish usullari ko'rib chiqiladi. Zamonaviy davrda axborot texnologiyalarining rivojlanishi, talab va imkoniyatlar bilan birga, o'quvchilarning ushbu sohada bilim olishga bo'lgan qiziqishini yanada kuchaytiradi. Maqola pedagoglarga ushbu sohada samarali yondashuvlarni qo'llash uchun tavsiyalar beradi va ta'lim jarayonining sifatini oshirishga yordam beradi.

Kalit so'zlar: interaktiv ta'lim, loyihaviy ishlash, mentorlik dasturlari, kodlash va dasturlash, onlayn resurslar

Abstract: This article examines ways to increase students' interest in informatics and information technologies in general secondary schools. In modern times, the development of information technologies, together with demand and opportunities, increases the interest of students in learning in this field. The article provides recommendations to pedagogues to use effective approaches in this field and helps to improve the quality of the educational process.

Keywords: interactive learning, project work, mentoring programs, coding and programming, online resources

Аннотация: В данной статье рассматриваются пути повышения интереса учащихся к информатике и информационным технологиям в общеобразовательных школах. В современное время развитие информационных технологий вместе со спросом и возможностями повышает интерес студентов к обучению в этой области. Статья дает рекомендации педагогам по использованию эффективных подходов в этой области и способствует повышению качества образовательного процесса.

Ключевые слова: интерактивное обучение, проектная работа, программы наставничества, кодирование и программирование, онлайн-ресурсы.

Bugungi kunda informatika va axborot texnologiyalari fani nafaqat texnologiya sohasida, balki kundalik hayotimizda ham muhim o'rin tutadi. Shuning uchun, o'quvchilarni informatika va axborot texnologiyalari faniga qiziqishini oshirish,

ularning kelajakdagi muvaffaqiyatlari uchun muhim ahamiyatga ega. Ushbu maqolada, o'quvchilarning informatika va axborot texnologiyalari faniga bo'lgan qiziqishini oshirish uchun samarali usullar va strategiyalar haqida so'z yuritamiz. Bu usullar orqali o'quvchilar nafaqat informatika fanini o'rganishdan zavq olishadi, balki kelajakda ushbu sohada muvaffaqiyatli mutaxassis bo'lishlari uchun zarur bo'lgan bilim va ko'nikmalarga ega bo'lishadi.

Informatika va axborot texnologiyalari faniga qiziqishni oshirishda bir qator muammolar mavjud. Birinchidan, ko'plab o'quvchilar informatika va axborot texnologiyalar fanini murakkab va qiyin deb hisoblashadi, bu esa ularning qiziqishini pasaytiradi. Ikkinchidan, ba'zi umumiy o'rta ta'lim maktablairda zamonaviy texnologiyalar va resurslar yetishmasligi sababli, o'quvchilar informatika fanini to'liq o'rganish imkoniyatidan mahrum bo'lishadi. Uchinchidan, o'qituvchilarning darslarni qiziqarli va interaktiv o'tkazish bo'yicha malakasi yetarli bo'lmasligi ham muammo hisoblanadi [1].

Bu muammolarni hal qilish uchun bir nechta yechimlar taklif etiladi. Birinchidan, o'quvchilarga informatika va axborot texnologiyalari fanining kundalik hayotdagi qo'llanilishi haqida ko'proq ma'lumot berish kerak. Bu ularning fan qanchalik muhimligini tushunishlariga yordam beradi. Ikkinchidan, umumiy o'rta ta'lim maktablarda zamonaviy texnologiyalar va resurslarni joriy etish zarur. Bu o'quvchilarga informatika va axborot texnologiyalari fanini amaliyotda qo'llash imkoniyatini beradi. Uchinchidan, o'qituvchilarni malakasini oshirish va darslarni interaktiv va qiziqarli o'tkazish bo'yicha treninglar o'tkazish kerak. Bu o'quvchilarning darslarga bo'lgan qiziqishini oshiradi va ularni informatika faniga jalb qiladi [2-3].

Informatika va axborot texnologiyalari faniga qiziqishni oshirish uchun quyidagi yechimlar taklif etiladi:

Interaktiv va amaliy darslar: O'quvchilarga informatika va axborot texnologiyalari fanini qiziqarli va amaliy tarzda o'rgatish uchun interaktiv darslar o'tkazish zarur. Masalan, kodlash bo'yicha amaliy mashg'ulotlar, robototexnika loyihalari yoki o'yinlar yaratish orqali o'quvchilarni jalb qilish mumkin [4].

Zamonaviy texnologiyalarni joriy etish: Umumiy o'rta ta'lim maktablarda zamonaviy texnologiyalar va resurslarni joriy etish orqali o'quvchilarga informatika fanini amaliyotda qo'llash imkoniyatini berish kerak. Bu o'quvchilarning fan bilan yanada chuqurroq tanishishlariga yordam beradi.

O'qituvchilarni malakasini oshirish: O'qituvchilarni malakasini oshirish va darslarni interaktiv va qiziqarli o'tkazish bo'yicha treninglar o'tkazish zarur. Bu o'quvchilarning darslarga bo'lgan qiziqishini oshiradi va ularni informatika faniga jalb qiladi.

Loyihalar va tanlovlar: O'quvchilarni turli loyihalar va tanlovlarda ishtirok etishga rag'batlantirish kerak. Bu ularning ijodkorligini rivojlantiradi va informatika faniga bo'lgan qiziqishini oshiradi.

Real hayot misollari: Informatika va axborot texnologiyalari fanining kundalik hayotdagi qo'llanilishi haqida misollar keltirish orqali o'quvchilarga fan qanchalik muhimligini tushuntirish kerak.

Bundan tashqari Informatika va axborot texnologiyalari darslarida o'quvchilarning qiziqishini oshirish va ularning amaliy ko'nikmalarini rivojlantirish uchun turli xil kichik loyihalarni amalga oshirish mumkin. Quyida ba'zi kichik loyihalar tayyorlashga misollar keltiramiz.

1. Veb-sayt yaratish: O'quvchilar HTML, CSS va JavaScript yordamida oddiy veb-sayt yaratishlari mumkin. Bu loyiha orqali ular veb-dizayn va dasturlash asoslarini o'rganadilar.

2. Mobil ilova ishlab chiqish: O'quvchilar App Inventor yoki boshqa dasturlash muhitlaridan foydalanib, oddiy mobil ilova yaratishlari mumkin. Bu loyiha ularning dasturlash va dizayn ko'nikmalarini rivojlantiradi.

3. Robototexnika loyihalari: LEGO Mindstorms yoki Arduino kabi platformalardan foydalanib, o'quvchilar robotlar yaratishlari va dasturlashlari mumkin. Bu loyiha ularning muhandislik va dasturlash ko'nikmalarini oshiradi.

4. O'yin yaratish: Scratch yoki Unity kabi dasturlash muhitlaridan foydalanib, o'quvchilar oddiy o'yinlar yaratishlari mumkin. Bu loyiha ularning ijodkorligini va dasturlash ko'nikmalarini rivojlantiradi.

5. Ma'lumotlar tahlili: O'quvchilar Python yoki R yordamida ma'lumotlar tahlili loyihalarini amalga oshirishlari mumkin. Masalan, ular turli ma'lumotlar to'plamlarini tahlil qilish va vizualizatsiya qilishlari mumkin.

6. Sun'iy intellekt loyihalari: O'quvchilar oddiy sun'iy intellekt algoritmlarini yaratishlari va ularni turli vazifalarda qo'llashlari mumkin. Masalan, yuzni tanish yoki matnni tasniflash kabi loyihalar.

Bu loyihalar o'quvchilarning informatika va axborot texnologiyalari faniga bo'lgan qiziqishini oshiradi va ularning amaliy ko'nikmalarini rivojlantiradi.

Quyidagi saytlardan foydalanishni ham o'rgatishimiz kerak bo'ladi.

1. Ziyonet: Bu portal ta'lim resurslari va materiallarini taqdim etadi. O'qituvchilar uchun turli fanlar bo'yicha darsliklar, metodik qo'llanmalar va boshqa o'quv materiallari mavjud.

2. UzEdu: O'zbekiston Respublikasi maktabgacha va maktab ta'limi vazirligining rasmiy sayti bo'lib, bu yerda o'qituvchilar uchun turli kurslar, seminarlar va malaka oshirish dasturlari haqida ma'lumotlar topish mumkin.

3. Eduportal.uz: Bu portal o'qituvchilar va o'quvchilar uchun turli xil ta'lim resurslarini taqdim etadi. Bu yerda darsliklar, video darslar va boshqa o'quv materiallari mavjud.

4. Khan Academy o'zbek: Khan Academyning o'zbek tilidagi versiyasi bo'lib, bu yerda matematika, informatika va boshqa fanlar bo'yicha bepul video darslar va mashqlar mavjud.

5. Coursera va edX: Bu xalqaro platformalarda o'zbek o'qituvchilari uchun ham turli xil bepul va pullik kurslar mavjud. Bu kurslar orqali o'qituvchilar o'z bilimlarini oshirishlari va yangi ko'nikmalarni o'rganishlari mumkin.

Xulosa

Informatika va axborot texnologiyalari faniga qiziqishni oshirish, o'quvchilarning kelajakdagi muvaffaqiyatlari uchun muhim ahamiyatga ega. Ushbu maqolada keltirilgan usullar va yechimlar orqali o'quvchilar informatika va axborot texnologiyalari fanini qiziqarli va amaliy tarzda o'rganishlari mumkin. Interaktiv darslar, zamonaviy texnologiyalarni joriy etish, o'qituvchilarni malakasini oshirish, loyihalar va tanlovlar, shuningdek, real hayot misollari orqali o'quvchilarning informatika va axborot texnologiyalari faniga bo'lgan qiziqishini oshirish mumkin. Bu usullar yordamida o'quvchilar nafaqat informatika fanini o'rganishdan zavq olishadi, balki kelajakda ushbu sohada muvaffaqiyatli mutaxassis bo'lishlari uchun yetarli bo'lgan bilim va ko'nikmalarga ega bo'lishadi.

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ХУДОЖЕСТВЕННЫЙ СТИЛЬ НА РУССКОМ И УЗБЕКСКОМ ЯЗЫКАХ

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Аннотация: В данной статье показаны художественный стиль, единство коммуникативной и эстетической функций языка, широкое использование элементов, свойственных другим стилям, широкое использование выразительных и изобразительных средств, образное употребление слов и стилистических фигур.

Ключевые слова: Эстетическая, воздействующая, коммуникативная, эпический, лирический, драматический, троп, метафора, эпитет, перифраз.

Annotation: This article shows the artistic style, the unity of the communicative and aesthetic functions of the language, the wide use of elements characteristic of other styles, the wide use of expressive and pictorial means, the figurative use of words and stylistic figures.

Keywords: Aesthetic, impactful, communicative, epic, lyrical, dramatic, trope, metaphor, epithet, periphrasis.

Литературно-художественный стиль — функциональный стиль речи, который применяется в художественной литературе. Этот стиль воздействует на воображение, психику и чувства читателя, передаёт мысли и чувства автора, использует всё богатство лексики, возможности разных стилей, характеризуется образностью, эмоциональностью речи.

Функции художественного стиля:

- Эстетическая. В художественном произведении слово не только несёт определённую информацию, но и служит для эстетического воздействия на читателя при помощи художественных образов.
- Воздействующая. Чем ярче и правдивее образ, тем сильнее он воздействует на читателя.
- Коммуникативная. Через символы и образы автор стремится выразить свои мысли, чувства и эмоции

Подстили и жанры художественного стиля:

- эпический (прозаический): сказка, рассказ, повесть, роман, эссе, новелла, очерк, фельетон;
- лирический (поэтический): стихотворение, ода, басня, сонет, мадригал, эпиграмма, эпитафия, элегия;
- драматический: драма, комедия, трагедия, мистерия, водевиль, фарс, феерия, мюзикл.

Характеристика художественного стиля:

Фонетико-стилистическая характеристика

- Широко используются многозначные слова, чтобы с их помощью можно было вкладывать в повествование скрытый смысл.

- Допустимо несоответствие в произносительной норме некоторых слов:

Мы, старики, уж нынче не танцуем,

Музы́ки гром не призывает нас.

А. С. Пушкин

- Авторское своеобразие стиля, проявляющееся в композиционных особенностях построения текста, языке героев.

Лексико-семантическая характеристика

- Лексика многообразна: может быть как литературной, так и вбирать в себя разговорные (иногда даже бранные) выражения, архаизмы, историзмы, научную терминологию, неологизмы.

- Средства художественной выразительности разнообразны и многочисленны.

Выразительно-изобразительные средства языка:

- Тропы (сравнения, олицетворения, аллегория, эпитет, метафора, метонимия, синекдоха и т. п.)

- Стилистические фигуры (гипербола, литота, анафора, эпифора, градация, параллелизм, риторический вопрос, умолчание и т. п.)

Троп (от др.-греч. *τρόπος* — оборот) — в художественном произведении слова и выражения, используемые в переносном значении с целью усилить образность языка, художественную выразительность речи¹.

Основные виды тропов:

1. Метафора (от др.-греч. *μεταφορά* — «перенос», «переносное значение») — троп, слово или выражение, употребляемое в переносном значении, в основе которого лежит неназванное сравнение предмета с каким-либо другим на основании их общего признака. («Природой здесь нам суждено в Европу прорубить окно»). Любая часть речи в переносном значении.

2. Метонимия (др.-греч. *μετωνυμία* — «переименование», от *μετά* — «над» и *ὄνομα/ὄνυμα* — «имя») — вид тропа, словосочетание, в котором одно слово замещается другим, обозначающим предмет (явление), находящийся в той или иной (пространственной, временной и так далее) связи с предметом, который обозначается замещаемым словом.

3. Эпитет (от др.-греч. *ἐπίθετον* — «приложенное») — определение при слове, влияющее на его выразительность. Выражается преимущественно именем прилагательным, но также наречием («горячо любить»), именем существительным («веселья шум»), числительным («вторая жизнь»).

4. Перифраз (от др.-греч. *περίφρασις* — «описательное выражение», «иносказание»: *περί* — «вокруг», «около» и *φράσις* — «высказывание») — это троп, описательно выражающий одно понятие с помощью нескольких. Перифраз — косвенное упоминание объекта путём не названия, а описания. («Ночное светило» = «луна»; «Люблю тебя, Петра творенье!» = «Люблю тебя, Санкт-Петербург!»).

¹ СЛОВОБРАЗОВАТЕЛЬНЫЕ ОСОБЕННОСТИ РУССКОГО И УЗБЕКСКОГО ЯЗЫКОВ В АСПЕКТЕ ГЕНДЕРНОЙ АСИММЕТРИИ "Ўзбекистонда хорижий тиллар" илмий-методик электрон журнал № 4 (23) / 2018

Словообразовательная характеристика:

- В художественных произведениях суффиксы могут придавать словам нужную эмоциональную окраску. С их помощью автор выражает различные оттенки чувств: суффикс выявляет и показывает отношение говорящего к обсуждаемому предмету, качеству, признаку.

Морфологическая характеристика:

- Частотность глаголов, которые придают речи динамичность.
- Чаще, чем в других стилях, употребляются личные местоимения, придающие тексту искренность.
- Большое количество прилагательных и причастий, передающих образное описание предмета.

Синтаксическая характеристика:

- Использование всего арсенала имеющихся в языке синтаксических средств: повествовательные, вопросительные, восклицательные, предложения; цитаты, прямая речь, деепричастные обороты.

Мой вывод состоит в том, что художественный стиль следует считать характерной чертой художественного стиля речи, так как это особенность художественного стиля речи, широта возможностей освещения языкового материала, участие всех лексических единиц, существующих в национальном языке, и тем, что он служит для выполнения эстетической задачи, ведь в других стилях такая возможность ограничена.

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USE OF INNOVATIVE TECHNOLOGIES IN PHYSICAL EDUCATION OF SCHOOL STUDENTS

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Abstract

This article discusses modern innovative technologies, their active use in sports and teaching physical education at school. The specific characteristics of each type, their positive aspects, and the effect on the student's health are described and explained in physical education classes.

Key words: innovative technologies, innovations, physical training, traditional technologies, non-traditional technologies, intensity, volleyball, basketball, static exercises, stretching, aqua aerobics, aqua aerobics, step aerobics, slide, bodybuilding.

The problem of protecting students' health has recently become increasingly important. The health of pupils is getting worse every year and the number of pupils exempted from physical education is increasing. Besides, many people are not interested in this science. Therefore, it is becoming more and more important for teachers to introduce new methods and evaluation criteria into their lessons, which is necessary to interest students. As a result, one of the primary tasks of a physical education teacher is to maintain and strengthen the health of schoolchildren. In solving this task, the use of health technologies such as fitness and aerobics, as well as the use of non-traditional health tools such as relaxation and breathing exercises, are of great importance. The current forms of physical education are outdated and its basic values are devalued.

In the modern world, innovative technologies are becoming increasingly popular and becoming more important. They are gradually being introduced into various fields such as science, culture, and education.

Innovations in education imply new methods of teaching, new ways of organizing classes, innovations in the organization of educational content, methods of evaluating educational results. Elements of innovative technologies can be divided into traditional and non-traditional methods.

We will consider traditional innovative technologies used in physical education classes.

Health technologies include:

- Physical exercises should be dosed taking into account the physical development of all students and their health groups;
- The temperature regime, ventilation of the room, the place of physical education should be strictly controlled;
- The condition of sports equipment should be monitored and repaired on time;

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- Condition of sports clothes should be checked;
- Using special exercises to keep the body straight and prevent and correct vision;
- Using a method that includes alternation of intensity and relaxation in education;
- Performing wet cleaning in the gym.

Society is developing and today there is a need to use new information and communication technologies in various spheres of human activity. Accordingly, a modern school should not lag behind the requirements of the times. This means that a modern teacher should use information and communication technologies in his practice. Because the primary task of the school is to educate a knowledgeable, independent, thinking generation.

We live in the age of information technology, and the teacher must keep up with the times. Therefore, in his work, he can use various programs, take into account the results, conduct computer tests. Also, a teacher can create his own website in order to spread his experience, provide sample visual aids in classes, find information for methodical, research and project work.

The use of an interactive whiteboard helps facilitate the teaching of technically complex sports such as volleyball and basketball in physical education classes. In the process of using the blackboard, the teacher can divide a certain technical method into slides and show it to the students at a pace they understand. In addition, if necessary, there is an opportunity to stop at one of the slides and explain the method in more detail. While the slides are being shown, you can use a special marker to show the directions of the hands, feet and body movements with sticks. Markers and sticks can also be used to show, for example, what the direction of the ball might be if the hands and feet are not working properly. This method of teaching technical movements is very effective and popular with students because it is taught in a visual way.

As for competition technologies, they allow students to fully express themselves in individual competitions. In addition, it helps them to improve the efficiency of working with the team. One type of lesson is competition lessons. After studying each topic, such lessons can be conducted. Pupils exempted from physical education lessons or children assigned to a special group due to health can participate as referees.

Game technologies are used in almost every lesson. They can be conducted in the form of an educational game at the end of each lesson. There are many action games based on volleyball, basketball and many other games. The more varied the games are, the more students will be interested in the lesson.

Level differentiation technology involves testing the physical fitness of schoolchildren at different levels. It is advisable to conduct such tests twice a year. In the main group of physical education, both school children and children with poor health can be given different tasks. Special education technology can also be included in this. This technology is especially relevant for students of adolescent age (seventh-ninth grades). At this age, physical differences between boys and girls become more apparent due to physiological changes. This requires a differential approach to training. We consider it appropriate to use special educational elements in physical education classes. This technology can be implemented if physical education teachers work together in classrooms. For example, girls can learn gymnastics with elements of acrobatics, while boys can improve football and volleyball techniques. If the lessons are organized in this way, the interests of boys and girls are taken into account.

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We will consider innovative innovative technologies used in physical education classes.

Another non-traditional innovative technology used in physical education classes can be Nordic walking (walking with sticks). This technology is especially relevant for children with poor health.

The ancient Chinese gypsy art can also be included in non-traditional innovative technologies. These exercises are divided into three classes according to the method of execution:

- 1) static exercises (they are sometimes called quiet);
- 2) dynamic exercises (i.e. moving);
- 3) static-dynamic exercises (combination of motionless states and movements).

These exercises help you learn to regulate your body, breathing, and mind, or a combination of these.

It is a system of physical exercises developed by scientists in the early 20th century to rehabilitate people after injuries. Currently, this set of exercises is actively used in school practice. They help develop the endurance of certain muscle groups and can be beneficial for those with spinal cord injuries.

Also, types of fitness technologies: stretching, aqua aerobics, step-aerobics, slide, bodybuilding are highlighted.

Stretching is a form of fitness and is a set of exercises that help stretch the muscles and connective tissues of the body.

Aqua aerobics is a type of gymnastics performed in water to rhythmic music. Nowadays, many schools are equipped with a swimming pool, because the third hour of physical education is included in general education institutions. This is related to the need to increase the importance of physical education and strengthen the health of students.

Oriental practices are also non-traditional innovative technologies used in physical education classes. Examples include yoga and tai chi.

It is worth noting the portfolio technology. The purpose of this is to ensure that students have a certain experience in collecting, systematizing and presenting results and achievements in the subject of "Physical Education". By creating and maintaining a portfolio, the dynamics of physical fitness indicators of students are observed, it helps to achieve success, increase self-confidence and develop interest in physical education.

The functional necessity of pedagogues in educational institutions is the application of innovations in the system of educating students with physical education. The use of innovative technologies in physical education implies a creative approach to the pedagogical process, the main goal of which is to increase students' interest in physical education and sports. This is probably the main goal that should be achieved, because improving the efficiency of the educational process is the main task for maintaining the health of students.

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THE IMPORTANCE OF IMPLEMENTING DIGITAL TECHNOLOGIES IN THE
EDUCATIONAL SYSTEM

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Abstract

The current progress of reforms in the socio-economic and political spheres in our country calls for a fundamental reform of the education system. Because the development of each field is determined by the knowledge, perception, thinking and skills of specialists in that field, teaching methodology. In this article, the implementation of digital technologies in the educational system of the Republic of Uzbekistan is considered as a social necessity, the concept of the "digitization" process is explained, the advantages of digital technologies and the conditions for effective use of digital technologies in education while maintaining the quality of teaching are given.

Key words: digital technologies, digitization, data search and sorting, digital economy, paradigm, electronic government, information and communication, IT-parks, Moodle, Hemis.

Digital technologies are gradually becoming an integral part of every area of our daily life. Today, it is difficult to imagine the activities of all industries without electronic, computer, network and other important automated technologies. Everything from communication and procurement to product development and the independent "work" of a company is going digital. For this reason, in the new paradigm of the development of the world economy, digital technologies are considered as the main source of production that determines the growth of social welfare.

Complex measures are being implemented in our country for the active development of the digital economy, the widespread introduction of modern information and communication technologies in all sectors and fields, first of all, in public administration, education, healthcare and agriculture. In particular, the implementation of more than 220 priority projects aimed at improving the electronic government system, further developing the local market of software products and information technologies, establishing IT parks in all regions of the republic, as well as providing the sector with qualified personnel has begun [1]. These changes lead to positive results such as the development of various fields, professional and personal growth of people. In particular, information, communication and digital technologies are very important in the education system. Introduction of Moodle and Hemis e-learning systems, organization of online courses, implementation of blended courses, operation of open resource courses (MOOC - Massive Open Online Course) in the educational process in higher education institutions are the main means of digital technologies in our country. is a clear example of developing the field of education.

Currently, the term "digitalization" is used in a narrow and broad sense. In a narrow sense, digitalization means the transformation of information into a digital form, which in many cases leads to a decrease in costs and the emergence of new opportunities. In a broad sense, the process of "digitization" usually refers to socio-economic change initiated by the widespread use and assimilation of digital technologies. It includes information creation, processing and transmission technologies. According to A. Murray, "digitalization is a paradigmatic change in our way of thinking, behavior, environment and communication with each other [2]. That is, digitization is a change in the paradigm of communication and interaction. According to E.L. Vartanova, M.I. Makseenko, S.S. Smirnov, digitalization is not only digitalization of information, but also a complex solution of infrastructural, administrative, behavioral, and cultural nature [3]. That is, we can conclude that the development of the Internet and mobile communication are the main technologies of digitization.

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Today, information and knowledge are the basis of the development of the society, and traditional concepts and models are not applied to it. As L.V. Shmelkova pointed out [4], the most important feature of a person who is compatible with the digital economy is the ownership of digital technologies and their use in professional activities. Digital technologies, on the one hand, help to further increase the volume and efficiency of production, on the other hand, they allow an individual approach in various areas. It should be noted that the Decision of the President of the Republic of Uzbekistan dated April 28, 2020 No. PQ-4699[5] was adopted. One of the main tasks of the further development of the digital economy and electronic government is the widespread introduction of digital technologies at all stages of the education system and the improvement of the level of digital knowledge necessary for the modern economy, the educational infrastructure improvement, as well as the opening of training centers based on digital knowledge in all regions of our republic by 2022 within the framework of the implementation of the "Five Initiatives" project. It is necessary to create the national pedagogical technology of Uzbekistan based on the national pedagogical traditions of our people and the current state of the education sector, studying the innovative technologies that are successfully used in enlightened and developed countries. Scientists and practitioners of our republic working in the field of pedagogy are striving to create and implement educational technologies that are scientifically based and adapted to the socio-pedagogical conditions of Uzbekistan.

In the last 15 years, the introduction of the latest generations of mobile devices into our lives, using them to quickly monitor events and events happening in the world through the Internet, and quickly receive all types of materials (video, audio, text, 3D, 5D, 7D graphics), storage and transmission capabilities emerged and led to the emergence of digital technologies. The emergence of digital technologies is replacing traditional teaching methods every day. Due to how quickly audiences are changing, it is appropriate to forget the old methods and introduce new teaching methods based on digital technologies. The organization of distance learning using digital technologies involves the use of simple tablets, sophisticated software and digital equipment instead of paper and notebooks.

International movement of learners, searching and sorting of information, getting knowledge anywhere and at any time and many other advantages indicate that it is convenient to use digital technologies in education.

Digital technologies:

- 1) technologies facilitate the activity of the teacher and student in learning and teaching;
- 2) helps make the educational process interesting;
- 3) serve for certain purposes such as assessment, sorting of information, management, integration of information, communication, development of relations between them and parents, cooperation between teachers, professional development.

The task of this trend in the field of education is not only to improve the computer literacy of teachers and students and to be able to purposefully use information technologies, but also to encourage students to think independently and creatively, to express their opinions, and to develop their communication skills. In this regard, based on the report of UNESCO and NMC Horizon media consortium, digital literacy is becoming an integral part of education as the reason for its ability to form vital skills in the learner, to ensure the student's future employment, independent and continuous education. is recorded. In order to effectively use digital technologies in education while maintaining the quality of teaching, the following tasks must be successfully solved:

First of all, it is necessary to improve the Internet infrastructure in our country, to increase the quality of services provided by mobile operators, and to create conditions and privileges for the most important population, especially students and young people, to master the latest achievements of modern information and communication technologies;

Secondly, to expand the scope of use of digital technologies in the organization of the educational process and to develop information resources, teaching tools and distance learning technologies, to involve creative students in digitization projects of the university, and to make proposals to the competent authorities on

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making changes to the regulatory and legal documents regulating the activities of higher education institutions, organization of centers equipped with highly efficient digital devices, classrooms, laboratories, media studios, etc., and use of the experience gained in all higher education institutions of Uzbekistan

Thirdly, to ensure the solid integration of modern information and communication technologies and educational technologies, in this regard, to create additional conditions for the continuous development of the professional skills of pedagogues;

Fourth, organizing and conducting courses for teacher training on topics such as the use of interactive presentation systems, the development of interactive and multimedia presentations in connection with the Internet for lectures and seminar classes;

Fifth, to implement the process of distance education at any time using real-time interactive presentation systems, video conference systems, virtual halls, electronic resources.

Sixth, the use of cloud technologies, virtual reality, augmented reality, and the use of 3D printing in the development of didactic materials and experience designs, the use of digital didactics and digital learning models, and scientific discussions for teachers and students to discuss projects, thesis, scientific research, etc. Websites should be developed. Only then will we be able to use digital technologies to provide students and young people with knowledge at the level of today's demand without reducing the quality of education.

In short, the reputation of the teacher and the effectiveness of his activity depend not only on the level of knowledge of the course content and his pedagogical ability, but also on the level of the teacher's use of modern information and communication technologies in the collection, processing and teaching of specific educational material. In other words, education in the digital age must be rethought and the educational paradigm changed, because students no longer want to learn in the traditional way, and teachers do not need to continue teaching in such a conventional way.

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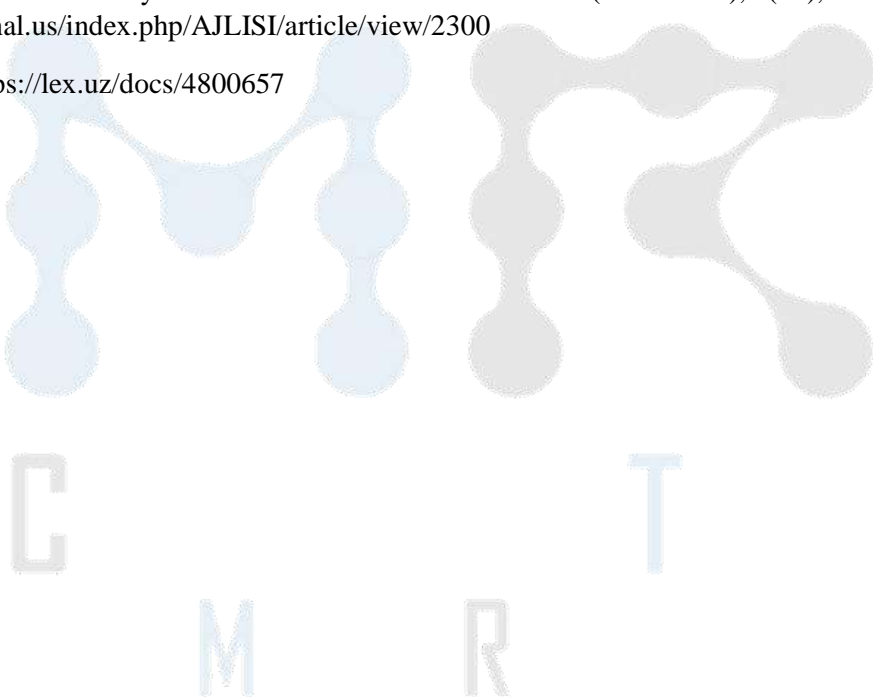
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Innovatsion yondashuv asosida boshlang'ich sinf o'quvchilarining og'zaki nutqini rivojlantirishning asosiy mazmuni

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Annotatsiya: Mazkur maqola boshlang'ich sinf o'quvchilarining og'zaki nutqini rivojlantirishda innovatsion yondashuvlardan foydalanishning mazmuni va ahamiyatini yoritadi. Bugungi kunda ta'lim jarayonida yangi pedagogik texnologiyalarni qo'llash va o'quvchilarning til ko'nikmalarini rivojlantirishda innovatsion metodlarning tutgan o'rni juda muhim. Innovatsion yondashuvlar o'quvchilarni mustaqil fikrlash, to'g'ri muloqot qilish va og'zaki nutq madaniyatini rivojlantirishga yordam beradi. Maqolada quyidagi asosiy masalalar ko'rib chiqiladi:

- Og'zaki nutqni rivojlantirishda zamonaviy texnologiyalarning o'rni.
- Yangi pedagogik usullarning boshlang'ich sinf o'quvchilari nutqini shakllantirishga ta'siri.
- O'quvchilarda kommunikativ kompetentsiyani rivojlantirish yo'llari.
- Og'zaki nutqni o'rgatishda didaktik materiallar va interfaol o'yinlardan foydalanishning samaradorligi.

Innovatsion yondashuvlar asosida og'zaki nutqni rivojlantirishda o'qituvchi va o'quvchilar o'rtasidagi muloqot hamda o'quv jarayonining faol ishtirokchisi bo'lishi orqali o'quvchilarning og'zaki nutq qobiliyatlarini oshirish ko'zda tutilgan.

Kalit so'zlar: Innovatsion yondashuv, boshlang'ich ta'lim, og'zaki nutq, kommunikativ kompetensiya, didaktik o'yinlar, interfaol usullar, badiiy adabiyot, audiovizual vositalar, refleksiya.

Основное содержание развития устной речи учащихся младших классов основано на инновационном подходе

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Аннотация: В данной статье освещается содержание и важность использования инновационных подходов в развитии устной речи учащихся начальных классов. Сегодня очень важна роль инновационных методов в использовании новых педагогических технологий и развитии языковых навыков учащихся в образовательном процессе. Инновационные подходы помогают студентам развивать самостоятельное мышление, правильное общение и культуру устной речи. В статье рассматриваются следующие основные вопросы:

- Роль современных технологий в развитии устной речи.
- Влияние новых педагогических методов на формирование речи младших школьников.

- Пути развития коммуникативной компетентности студентов.

- Эффективность использования дидактических материалов и интерактивных игр при обучении устной речи.

При развитии устной речи на основе инновационных подходов планируется повышение навыков устной речи учащихся посредством общения преподавателя с учениками и активного участия в учебном процессе.

Ключевые слова: Инновационный подход, начальное образование, устная речь, коммуникативная компетентность, дидактические игры, интерактивные методы, художественная литература, аудиовизуальные средства, рефлексия.

The main content of the development of oral speech of elementary school students based on an innovative approach

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Abstract: This article highlights the content and importance of using innovative approaches in the development of oral speech of primary school students. Today, the role of innovative methods in the use of new pedagogical technologies and the development of students' language skills in the educational process is very important. Innovative approaches help students to develop independent thinking, correct communication and the culture of oral speech. The following main issues are considered in the article:

- The role of modern technologies in the development of oral speech.

- The effect of new pedagogical methods on the formation of speech of primary school students.

- Ways to develop students' communicative competence.

- Effectiveness of using didactic materials and interactive games in teaching oral speech.

In the development of oral speech based on innovative approaches, it is envisaged to improve the oral speech skills of students through communication between the teacher and students and active participation in the educational process.

Key words: Innovative approach, primary education, oral speech, communicative competence, didactic games, interactive methods, fiction, audiovisual means, reflection.

Kirish. Boshlang'ich sinf o'quvchilarining og'zaki nutqini rivojlantirishda novatsion yondashuv quyidagi asosiy mazmuni o'z ichiga oladi:

1. Kommunikativ kompetensiya – o'quvchilarning o'z fikrlarini ravon va tushunarli ifodalashlari uchun zarur bo'lgan bilim, ko'nikma va malakalar to'plami.

2. Didaktik o'yinlar – o'quv jarayonida o'yin shaklidagi mashg'ulotlardan foydalanish orqali nutqiy faoliyatni rivojlantirish.

3. Interfaol usullar – savol-javob, guruhlarda ishlash, munozara va hamkorlikda bajariladigan topshiriqlar orqali og'zaki nutqni mustahkamlash.

4. Badiiy adabiyot – bolalarning estetik didini oshirish, og‘zaki nutq so‘z boyligini kengaytirish maqsadida badiiy asarlardan foydalanish.

5. Audiovizual vositalar – video, audio va multimediyalar yordamida nutqiy qobiliyatlarni rivojlantirish.

6. Refleksiya va tahlil – o‘quvchilarning o‘z nutqiy faoliyatlarini baholash va takomillashtirish imkoniyatlarini yaratish.

Boshlang‘ich sinf o‘quvchilarining og‘zaki nutqini rivojlantirish ta‘lim jarayonining eng muhim tarkibiy qismlaridan biri bo‘lib, o‘quvchilarning kelgusidagi bilim olishida va ijtimoiy muhitga moslashuvida katta ahamiyat kasb etadi. Innovatsion yondashuvlar asosida og‘zaki nutqni rivojlantirish esa ta‘limning samaradorligini oshirishga qaratilgan yangicha usullarni o‘z ichiga oladi.

Innovatsion yondashuvlar asosida og‘zaki nutqni rivojlantirish mazmuni:

1. Interfaol metodlar: Bolalar nutqini rivojlantirish uchun interfaol metodlardan foydalanish natijasida o‘quvchilar faol ishtirok etishadi. Bu metodlar o‘zaro muloqot qilish, muhokama, rolli o‘yinlar va juftlikda yoki guruhda ishlash orqali amalga oshiriladi. Bunday metodlar bolalarning so‘z boyligini oshirish va mustaqil fikrlash qobiliyatini rivojlantirishda yordam beradi.

2. Axborot-kommunikatsiya texnologiyalari (AKT): Dars jarayonida audio, video materiallar, multimedialar orqali o‘quvchilarning nutq faoliyatini rivojlantirish AKT yordami bilan amalga oshiriladi. Ular o‘quvchilarning diqqatini jalb etib, o‘zaro muloqotni jonlantirishda muhim ahamiyatga ega.

3. O‘yin texnologiyalari: Rolli o‘yinlar, dramatisatsiya va didaktik o‘yinlar orqali bolalarda nutq faoliyati rivojlanadi. O‘yin orqali bolalar o‘z fikrini ifoda etishni, muloqot qilishni o‘rganadi va shuningdek, so‘z boyligini kengaytiradi.

4. Refleksiya va baholash metodlari: O‘quvchilarning og‘zaki nutqini rivojlantirish uchun o‘z-o‘zini baholash va refleksiya muhim hisoblanadi. O‘qituvchilar o‘quvchilarga o‘z nutqidagi kamchiliklarni anglash va o‘zini takomillashtirishga ko‘maklashishlari zarur.

Mavzuga oid adabiyotlarning tahlili. Vygotskiy L.S. (1986) - Nutq va tafakkur o‘rtasidagi bog‘liqlikni o‘rganish natijasida Vygotskiy bolalarning nutqini rivojlantirishda ijtimoiy muhitning o‘rni katta ekanligini ta‘kidlagan. Uning tadqiqotlariga ko‘ra, bolalar nutqi ijtimoiy munosabatlar jarayonida shakllanadi va rivojlanadi. Piaget J. (1959) - Piagetning kognitiv rivojlanish nazariyasiga ko‘ra, bolalarning nutq qobiliyati ularning tafakkuri va idrokiga bog‘liq holda rivojlanadi. Dars jarayonida bolalarning bilim olish darajasini hisobga olish innovatsion yondashuvlarni muvaffaqiyatli amalga oshirishda muhim omildir. Dewey J. (1916) - Dewey ta‘lim tizimida faol o‘quv jarayonini taklif qilgan. Uning nuqtai nazariga ko‘ra, bolalar o‘quv jarayonida faol ishtirok etganlarida, ular bilimlarni yanada mustahkam o‘zlashtiradilar. Innovatsion yondashuvlar, ayniqsa, faoliyat va tajriba asosida nutqni rivojlantirish Deweyning ta‘lim falsafasiga to‘g‘ri keladi. Chomsky N. (1965) - Chomsky til va nutqni rivojlantirishning biologik asoslarini o‘rgangan. U bolalarning tilni o‘zlashtirish qobiliyatini tabiiy jarayon deb hisoblab, bunda inson miyasidagi lingvistik qobiliyatlarning ahamiyatini alohida ta‘kidlagan. Bu qarashlar til va nutqni o‘rgatishda tabiiy rivojlanish nuqtai nazaridan foydalanish uchun asos bo‘lib xizmat qiladi. Bakhtin M.M. (1981) - Bakhtinning dialogik prinsiplariga ko‘ra, nutq ijtimoiy muloqot jarayonida shakllanadi. Og‘zaki nutqni rivojlantirishda dialog va muloqotga asoslangan metodlardan foydalanish samarali natijalar beradi.

Ushbu adabiyotlar asosida, innovatsion yondashuvlarning asosiy yo'nalishlari sifatida bolalarning faol ishtiroki, texnologiyalardan foydalanish, o'zaro muloqotni tashkil etish, o'yin elementlaridan foydalanish va o'z-o'zini rivojlantirish imkoniyatlarini yaratish ko'zda tutiladi. Boshlang'ich sinf o'quvchilarining og'zaki nutqini rivojlantirish innovatsion yondashuvlar asosida amalga oshirilganda, o'quvchilarning so'z boyligi, talaffuz, mantiqiy izchillik va nutq madaniyatini shakllantirishga e'tibor qaratiladi. Bu jarayonni samarali qilish uchun zamonaviy usullar va texnologiyalarni qo'llash lozim. Quyida bunday yondashuvlar keltirilgan:

1. Interaktiv o'quv jarayoni:

- Multimediali resurslar: Audio va video materiallar yordamida o'quvchilarga turli mavzular bo'yicha nutq namunalarini ko'rsatish. Bu o'quvchilarga talaffuzni eshitish va uni qayta aytishga yordam beradi.

- Rol o'ynash o'yinlari: Har xil rollarni ijro etish orqali bolalar og'zaki nutq malakalarini oshiradi. Masalan, do'konda xarid qilish yoki muhim voqea haqida suhbatlashish.

2. Texnologiyalardan foydalanish:

- Talaffuzni tekshiruvchi dasturlar: O'quvchilar talaffuzlarini yozib, uni maxsus dasturlar orqali tekshirishlari mumkin. Bu ularga o'z xatolarini ko'rishga va tuzatishga imkon beradi.

- Onlayn o'yinlar va interaktiv mashqlar: Nutq malakalarini rivojlantirish uchun turli onlayn platformalar va o'yinlar o'quvchilarning qiziqishini oshiradi va ularga amaliy mashqlarni taklif qiladi.

3. Jamoaviy loyihalar va hamkorlik:

- Guruhli suhbatlar va muhokamalar: O'quvchilar guruhlarda biror mavzu bo'yicha suhbatlar olib boradi. Bu usul ularni o'z fikrlarini ravon va aniq bayon qilishga o'rgatadi.

- Prezantatsiyalar va hikoya qilish: Bolalarga mustaqil ravishda kichik prezentatsiyalar tayyorlash topshiriladi. Bu ularga o'z nutqlarini rejalashtirish va ifodalashda yordam beradi.

4. Tadbirlar va uchrashuvlar:

- Nutq musobaqalari va ijodiy kechalar: O'quvchilarga turli mavzularda nutq so'zlash imkoniyatlari beriladigan tadbirlar tashkil etish. Bu ularning ishonchini oshirish va chiqish madaniyatini rivojlantirishga yordam beradi.

5. Innovatsion metodlar:

- Klaster va mind-mapping texnikasi: O'quvchilar o'z fikrlarini klaster (so'zlar guruhini tuzish) yoki aql xaritalari yordamida tartibga solishadi, bu ularga mantiqan to'g'ri va izchil gapirishda yordam beradi.

- Gamifikatsiya: O'quv jarayoniga o'yin elementlarini qo'shish orqali bolalarning qiziqishi ortadi, ularning og'zaki nutqi rivojlanishiga rag'batlantiruvchi ta'sir ko'rsatadi. Innovatsion yondashuvlardan foydalanish orqali o'quvchilarning og'zaki nutqi rivojlanishi tezlashadi va samaradorlik oshadi. Bu usullar nafaqat bilim olish jarayonini qiziqarli qiladi, balki o'quvchilarning o'z fikrlarini aniq va mantiqan to'g'ri ifodalash qobiliyatini shakllantiradi.

Grafik shakllantirish orqali o'quvchining og'zaki nutqini rivojlantirish ta'lim jarayonida samarali usullardan biri hisoblanadi. Bu yondashuv ko'pincha bolalarning til va nutq ko'nikmalarini o'stirish uchun qo'llaniladi, ammo har qanday yoshda ham foydali bo'lishi mumkin. Quyida grafik shakllantirish orqali og'zaki nutqni rivojlantirishning asosiy usullari keltirilgan:

1. Rasmi materiallar orqali o'rgatish: Rasm, diagramma, grafik va suratlar orqali tushuntirish o'quvchilarning vizual fikrlashini rivojlantiradi va ularga o'z fikrlarini ifoda etishga

yordam beradi. Masalan, o'quvchi rasmga qarab, u haqida hikoya tuzadi yoki savollarga javob beradi.

2. Komikslar va hikoyalar yaratish: O'quvchilar turli mavzularda komiks yoki hikoyalarni grafik asosida yaratishi mumkin. Bu jarayon ularning voqealar ketma-ketligini tushunishiga va uni og'zaki bayon qilishiga yordam beradi.

3. Mavzuni vizual tasvirlash: O'quvchiga tushuntirilayotgan mavzuni diagramma yoki jadval shaklida tasvirlashni topshirish orqali uning mavzu bo'yicha fikrini ochiq, to'g'ri va ravshan ifoda etishga rag'batlantirish mumkin.

4. Rasm asosida suhbatlashish: Rasmlar asosida savol-javob qilish o'quvchilarning tasavvur qilish va og'zaki ifodalash qobiliyatini rivojlantirishga yordam beradi. Bu texnika bolalar va o'smirlar uchun ayniqsa samarali.

5. Grafik organayzerlardan foydalanish: Venn diagrammalari, kontseptual xaritalar va boshqa grafik organayzerlar yordamida fikrlarni tuzish va bayon etish.

Grafik shakllantirish orqali o'quvchining og'zaki nutqini rivojlantirish ta'lim jarayonida samarali usullardan biri hisoblanadi. Bu yondashuv ko'pincha bolalarning til va nutq ko'nikmalarini o'stirish uchun qo'llaniladi, ammo har qanday yoshda ham foydali bo'lishi mumkin. Quyida grafik shakllantirish orqali og'zaki nutqni rivojlantirishning asosiy usullari keltirilgan:

1. Rasmlari materiallar orqali o'rgatish: Rasm, diagramma, grafik va suratlar orqali tushuntirish o'quvchilarning vizual fikrlashini rivojlantiradi va ularga o'z fikrlarini ifoda etishga yordam beradi. Masalan, o'quvchi rasmga qarab, u haqida hikoya tuzadi yoki savollarga javob beradi.

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5. Grafik organayzerlardan foydalanish: Venn diagrammalari, kontseptual xaritalar va boshqa grafik organayzerlar yordamida fikrlarni tuzish va bayon etish o'quvchilarga murakkab tushunchalarni osonroq tushunishga va og'zaki ifoda qilishga yordam beradi.

Ushbu usullar orqali o'quvchilar faqat tasvirlarni ko'rish bilan cheklanmay, ularni o'z nutqlariga kiritish orqali o'z og'zaki ko'nikmalarini yaxshilashadi.

Og'zaki nutqni rivojlantirishda interaktiv metodlardan foydalanish o'quvchilarning faol ishtirokini ta'minlab, ularga o'z fikrlarini aniq va ravshan ifodalash imkonini beradi. Bu metodlar o'quv jarayonini yanada jonli, qiziqarli va samarali qilishga xizmat qiladi. Quyida og'zaki nutqni rivojlantirishda qo'llaniladigan asosiy interaktiv metodlar keltirilgan:

1. Rolli o'yinlar (Role-playing)

Rolli o'yinlar o'quvchilarning muayyan vaziyatlarga kirib, o'z fikrlarini ifoda etish va turli ijtimoiy rollarni bajarish orqali og'zaki nutqini rivojlantirishga yordam beradi. Bu metod ularga turli nuqtai nazarlarni tushunish va muomala qobiliyatlarini shakllantirishga imkon beradi.

2. Munozara (Debate)

Munozaralar o'quvchilarga o'z fikrlarini himoya qilish, dalillar keltirish va raqib tomonning fikriga qarshi dalillar ishlab chiqish imkonini beradi. Bu usul o'quvchilarni fikrlashga, tahlil qilishga va og'zaki muloqotda faol bo'lishga o'rgatadi.

3. Savol-javob (Questioning). Savol-javob jarayonida o'qituvchi yoki o'quvchilar o'zaro savollar berib, javob olish orqali muloqotni davom ettirishadi. Bu usul o'quvchilarning fikrlash va tezkor javob berish ko'nikmalarini rivojlantiradi hamda ularni e'tiborli va faol suhbatdosh bo'lishga undaydi.

4. Muammoli vaziyatlarni hal qilish (Problem-solving)

O'quvchilarga turli muammoli vaziyatlarni taqdim etib, ularni jamoaviy yoki yakka tartibda hal qilish vazifasi qo'yiladi. Bu usul ulardan vaziyatni tahlil qilish, muammoni tushuntirish va yechimni og'zaki bayon qilishni talab qiladi.

5. Guruhli muhokamalar (Group discussions)

Guruhlarga bo'linib, muayyan mavzu yoki muammolar ustida ishlash orqali o'quvchilar o'z fikrlarini aniq, qisqa va tushunarli ifoda etishni o'rganadilar. Bu usul jamoada ishlash, fikr almashish va o'zaro muomala qilish ko'nikmalarini rivojlantiradi.

6. Intervyu o'tkazish. O'quvchilar bir-birlari bilan intervyu shaklida muloqot qiladilar. Bu usul o'z savollarini aniq ifodalash va javoblarni eshitib, qayta ishlash qobiliyatini rivojlantiradi. Bu metod og'zaki nutqning sodda va muloqotga yo'naltirilgan shaklini o'rgatadi.

7. Ssenariy asosida suhbat (Scenario-based dialogue) O'quvchilarga turli hayotiy yoki kurgazmali vaziyatlar asosida suhbat qurish taklif etiladi. Bu metod ularni real vaziyatlarda qanday gapirish kerakligini mashq qilish orqali og'zaki nutqni rivojlantirishga yordam beradi.

8. Ko'rgazmali chiqishlar (Presentations) O'quvchilar tayyorlagan prezentatsiyalar orqali o'z fikrlarini keng auditoriyaga taqdim etadilar. Bu usul nafaqat og'zaki nutqni rivojlantiradi, balki o'zini erkin tutish va auditoriyani boshqarish qobiliyatini ham o'stiradi.

9. Dialog shaklida darslar. Bu usulda dars suhbat tarzida olib boriladi. O'qituvchi va o'quvchilar orasida faol muloqot bo'lib, mavzuni birgalikda muhokama qiladilar. O'quvchilar o'z savollarini berib, yangi tushunchalarni o'zlashtiradilar va og'zaki ifodalashda tajribalarini oshiradilar.

Interaktiv metodlar orqali o'quvchilar faqat eshituvchi emas, balki faol ishtirokchi bo'lib, o'z nutqini oshkorona rivojlantirishga imkon topadilar. Bu metodlar o'quvchilarning fikrlash doirasini kengaytirib, ularda muloqotga kirishish, o'z fikrini aniq ifodalash va boshqa odamlarning fikrlarini tushunishga rag'batlantiradi.

Dialog shaklidagi darslar o'quvchilar nutqini rivojlantirishda juda samarali usul bo'lib, bu jarayonda o'quvchilar faqatgina eshituvchi emas, balki suhbatning faol ishtirokchilari bo'lishadi. Dialog shaklidagi darslar o'quvchilarni doimiy ravishda o'z fikrlarini ifoda etishga, savollarga javob berishga va o'zaro muloqot qilishga undaydi. Buning natijasida o'quvchilarning nutq madaniyati, fikrlarini to'g'ri va mantiqan ifodalash qobiliyatlari shakllanadi.

Dialog shaklidagi darslar orqali o'quvchilar nutqining rivojlanish jihatlari:

1. Faollik va ishtirokni rag'batlantiradi:

O'quvchilar dars davomida muhokamalarga faol qo'shilib, o'z fikrlarini ochiq ifoda etadi. Suhbatda o'z fikrlarini bildirishga o'rganib, ular og'zaki nutqini takomillashtiradi. Bu ularga o'z o'ylaganlarini tez va aniq ifodalashda yordam beradi.

2. Savol-javob orqali tahliliy fikrlash:

Dialog davomida o'qituvchi va o'quvchilar o'rtasida savol-javob bo'lib, o'quvchilar savollarga javob berish bilan birga, o'zlari ham savollar berishga o'rganadi. Bu ularda tahliliy va tanqidiy fikrlash ko'nikmalarini shakllantiradi, chunki ular har bir savolga javob berish uchun chuqurroq o'ylashga majbur bo'ladi.

3. Nutqning mantiqiylikini oshiradi:

Dialog shaklidagi darslarda o'quvchilar fikrlarini izchil va mantiqan ifoda qilishni o'rganadi. Suhbat davomida o'z fikrlarini asoslash, dalillar keltirish va boshqalar bilan o'zaro fikr almashish jarayonida ular nutqni to'g'ri tuzishga e'tibor beradi.

4. Suhbat madaniyatini shakllantiradi:

O'quvchilar dialogda qatnashish orqali suhbatda qanday tinglash, gaplashish, o'z navbatini kutish va boshqa odamning fikrini hurmat qilish kabi suhbat madaniyati elementlarini o'zlashtiradi. Bu ularda samarali muloqot ko'nikmalarini shakllantiradi.

5. Til boyligini oshiradi:

Dialoglar davomida o'quvchilar turli xil so'z va iboralarni qo'llashga o'rganadi. Turli mavzular bo'yicha suhbatlashish orqali ularning so'z boyligi ortadi va yangi tushunchalarni nutqida ishlatishga o'rganadi.

6. Improvizatsiya qobiliyatini rivojlantiradi:

Dialogda o'quvchilar turli vaziyatlarga tezda moslashib, o'ylash va gapirishni bir vaqtning o'zida bajarishi kerak bo'ladi. Bu ularning og'zaki nutqda improvizatsiya qilish, tezkor va ravon gapirish qobiliyatlarini rivojlantiradi.

7. O'z fikrini himoya qilish va muloqot qilish ko'nikmasini oshiradi:

Dialog shaklidagi darslarda o'quvchilar o'z fikrlarini himoya qilish, boshqalarning fikrlarini eshitish va ularga munosabat bildirishni o'rganadi. Bu ularga kelajakda turli munozaralarda yoki suhbatlarda muvaffaqiyatli ishtirok etishga yordam beradi.

Masalan, tarix darsida muhokama shaklida dars tashkil etilsa, o'quvchilar biror tarixiy voqea haqida savol-javob orqali fikr yuritishi, o'z qarashlarini bildirib, boshqa o'quvchilar bilan bahslashishi mumkin. Shu tarzda ular tarixiy faktlarni o'z og'zaki nutqlari orqali bayon qiladi, voqealar o'rtasidagi bog'liqliklarni izohlashga harakat qiladi va fikrlarini asoslashni o'rganadi.

Umuman olganda, dialog shaklidagi darslar o'quvchilarning o'z fikrlarini to'g'ri va mantiqli ifoda qilish, o'zaro hurmatli muloqot olib borish va yangi bilimlarni tezroq o'zlashtirishga ko'mak beradi.

Boshlang'ich sinf o'quvchilarining og'zaki nutqini rivojlantirish innovatsion yondashuv asosida turli metod va usullarni qo'llashni talab qiladi. Innovatsion yondashuvlar pedagogik jarayonlarda o'quvchilarning faol ishtirokini ta'minlash, kreativlikni rag'batlantirish va o'zaro muloqotni rivojlantirish uchun mo'ljallangan. Ushbu jarayon og'zaki nutqning rivojlanishi uchun o'quv materiallari, interaktiv usullar va texnologiyalarni o'z ichiga oladi.

Asosiy mazmun:

1. Faol o'rganish usullari: O'quvchilarga mavzuni o'rganishda mustaqil izlanish va yangilik yaratish imkoniyatini beradigan interaktiv usullarni qo'llash (masalan, rolli o'yinlar, muammoli ta'lim).

2. Kommunikativ yondashuv: Muloqot qilish ko'nikmalarini rivojlantirish uchun turli guruhli va juftlikda ishlash shakllari qo'llaniladi, bunda o'quvchilar bir-birlari bilan faol suhbat olib boradilar.

3. Texnologiyalardan foydalanish: Multimediali vositalar va interaktiv platformalar yordamida o'quv jarayonini qiziqarli va ta'sirchan qilish orqali og'zaki nutq rivojlantiriladi.

4. Ijodiy topshiriqlar: O'quvchilarga erkin ifodalash imkoniyatini beradigan ijodiy topshiriqlar orqali so'z boyligini oshirish va nutqning ifodalilik darajasini rivojlantirish.

Tadqiqot metodologiyasi:

1. Eksperimental tadqiqot: Boshqaruv va eksperimental guruhlar orqali innovatsion yondashuvlar qo'llanilgan darslarning samaradorligini o'rganish.

2. Kuzatish usuli: Darslarda o'quvchilarning og'zaki nutqi qanday rivojlanayotganini kuzatish va baholash.

3. Anketalar va so'rovnomalar: O'qituvchilar va o'quvchilarning fikr-mulohazalarini aniqlash orqali innovatsion usullar samaradorligini tahlil qilish.

4. Taqqoslash: An'anaviy va innovatsion yondashuvlar asosida o'tkazilgan dars natijalarini taqqoslash.

Ushbu yondashuvlar o'quvchilarning og'zaki nutqini shakllantirishda innovatsion metodlarning qanday ta'sir ko'rsatishini tahlil qilishga yordam beradi. Boshlang'ich sinf o'quvchilarining og'zaki nutqini rivojlantirishda ota-onaning roli juda muhim. Bu yoshdagi bolalar o'z dunyoqarashini shakllantiradi va til o'rganish jarayonining eng faol davrini boshdan kechiradilar. Ota-onalar bu jarayonda quyidagi usullar orqali bolalarning og'zaki nutqini rivojlantirishga hissa qo'shishi mumkin:

1. Muloqot qilish: Bolalar bilan ko'p suhbatlashish, ularni turli mavzular bo'yicha gapirishga undash, savollar berib, javob olish nutq ko'nikmalarini rivojlantirishda muhim omildir.

2. Kitob o'qish: Ota-onalar bolalarga muntazam ravishda kitob o'qib berishlari, hikoyalarni muhokama qilishlari bolalarning lug'at boyligini oshiradi va nutq rivojlanishini rag'batlantiradi.

3. O'rnak bo'lish: Ota-onalar o'zlari aniq va to'g'ri nutq orqali bolalarga o'rnak bo'lishi muhimdir. Nutq madaniyatiga e'tibor berib, so'zlarning to'g'ri talaffuzi, iboralarning o'rinni ishlatilishi kabi ko'nikmalar bolalar tomonidan qabul qilinadi.

4. O'yinlar va mashg'ulotlar: Og'zaki nutqni rivojlantiruvchi o'yinlar, masalan, hikoya tuzish, ro'yhat tuzish, so'z topish kabi o'yinlar bolalarni faollikka undaydi va ularning nutqini yaxshilaydi.

5. Shaxsiy rivojlanishni qo'llab-quvvatlash: Har bir bolaning individual qobiliyatlarini hisobga olib, uning rivojlanishiga yordam berish, qiziqishlari asosida nutqni rivojlantiruvchi mashg'ulotlar o'tkazish ham muhim.

Ota-onalar va maktabning hamkorligi, ularning bir-birini qo'llab-quvvatlashi orqali bolalar o'quv jarayonida yanada muvaffaqiyatli bo'lishadi va ularning og'zaki nutqi tezroq rivojlanadi. Ota-onalarning bolalar bilan doimiy va sifatli muloqotda bo'lishi, ularga o'qish va o'yinlar orqali tilni rivojlantiruvchi imkoniyatlar yaratib berishi bolaning og'zaki nutqini rivojlantirishda katta rol o'ynaydi. Bolalar ota-onaning so'zlashuv uslubidan o'rganadi, shu bois ota-onalar o'z nutqiga ham e'tibor berishlari zarur.

Sizning ta'kidlashingizdek, ota-onalar faqatgina o'qituvchilarga bog'lanib qolmasdan, farzandlarining rivojlanish jarayonida faol ishtirok etishlari, o'quvchi bolaga hayotiy ko'nikmalarni o'rganish uchun zarur muhit yaratishlari lozim.

Boshlang'ich sinf o'quvchilarining og'zaki nutqini rivojlantirishda innovatsion yondashuvlar qo'llanilishi ta'lim jarayonining samaradorligini oshiradi. Innovatsion yondashuvlar o'quvchilarning nutqini rivojlantirishda yangi texnologiyalar, didaktik materiallar va o'quv

jarayonini interaktiv metodlar asosida tashkil etish bilan bog'liqdir. Bu jarayonda quyidagi asosiy yo'nalishlar ajratiladi:

Asosiy mazmun:

1. Interaktiv metodlar:

- Rolli o'yinlar va munozaralar orqali o'quvchilar og'zaki nutqini rivojlantirishga katta e'tibor qaratiladi. Bu usullar o'quvchilarda muloqot qobiliyatini shakllantiradi, o'z fikrini ochiq va aniq ifoda qilishni o'rgatadi.

2. Multimedia vositalaridan foydalanish:

- Video va audio materiallar, animatsiyalar yordamida o'quvchilar nutqini rivojlantirishning yangicha yondashuvlari amalga oshiriladi. Audiovizual materiallar bolalarda tasavvur va tushunchani kengaytiradi, so'z boyligini oshiradi.

3. Axborot-kommunikatsion texnologiyalar:

- Dasturiy ta'minot va mobil ilovalar o'quvchilarga mustaqil ravishda nutq mashqlarini bajarishda yordam beradi. Masalan, ovozni to'g'ri talaffuz qilish, jummalarni tuzish, ifodali o'qishni o'rganish kabi vazifalar interaktiv tarzda amalga oshiriladi.

4. O'yin texnologiyalari:

- O'quvchilar o'yin orqali o'z bilimlarini boyitadi va ular muloqotda faol ishtirok etadi. Bu texnologiyalar bolalarda raqobatbardoshlik, ijodiy yondashuv va mustaqil fikrlashni rivojlantiradi.

Tahlil va natijalar: Innovatsion yondashuvlar boshlang'ich sinf o'quvchilarining og'zaki nutqini rivojlantirishda samarali bo'lib, bu usullar orqali o'quvchilarning darslarga qiziqishi ortadi, ularning faolligi va muloqot qobiliyati sezilarli darajada o'sadi. Ta'lim jarayoniga yangi texnologiyalarni kiritish, o'yin elementlaridan foydalanish natijasida o'quvchilarning so'z boyligi oshadi, matnlarni to'g'ri va ifodali o'qish qobiliyati rivojlanadi.

1. O'quvchilarning nutqi aniq va tushunarli bo'ladi.

2. Ularning muloqotga kirishish qobiliyati oshadi, ya'ni ijtimoiy hayotda faol ishtirok etish malakasi shakllanadi.

3. O'quvchilarda mustaqil fikrlash va og'zaki nutq orqali o'z fikrini ifoda etish qobiliyati rivojlanadi.

4. O'quvchilar jamoaviy ishlarni samarali bajarishni o'rganadi, bu esa ularga nutqni boyitish va ifodali qilishda yordam beradi.

Innovatsion yondashuvlar ta'lim tizimida zamonaviy talablarga mos kelib, boshlang'ich sinf o'quvchilari uchun og'zaki nutqni rivojlantirishda yangi imkoniyatlar yaratadi.

Xulosa qilib aytganda, dialog shaklidagi darslar o'quvchilarning og'zaki nutqini rivojlantirishda muhim vosita hisoblanadi. Ushbu metod o'quvchilarni faollikka undaydi, tahliliy va mantiqiy fikrlash ko'nikmalarini shakllantiradi, suhbat madaniyati va til boyligini oshiradi. Shuningdek, o'quvchilar o'z fikrlarini erkin ifoda qilish, o'zaro muloqot qilish va fikrlarini himoya qilish qobiliyatlarini rivojlantiradi. Bu yondashuv orqali o'quvchilar dars davomida muloqot qilishni o'rganib, kelajakda samarali va mantiqli suhbatdosh bo'lib yetishadilar. Innovatsion yondashuvlar asosida boshlang'ich sinf o'quvchilarining og'zaki nutqini rivojlantirish ta'lim jarayonining samaradorligini oshiradi. Zamonaviy interaktiv metodlar, masalan, dialogli darslar, rolly o'yinlar, texnologiyadan foydalanish va grafik shakllantirish kabi usullar o'quvchilarda mustaqil fikrlash, nutqni ravn va mantiqiy ifodalash ko'nikmalarini shakllantiradi. Innovatsion yondashuvlar bolalarni qiziqitirib, ularning faolligini oshiradi hamda kommunikativ qobiliyatlarini

kengaytiradi. Shu tarzda, boshlang'ich sinflarda og'zaki nutqning rivoji yanada samarali va o'quvchilarning o'z-o'ziga ishonchini oshiradigan jarayonga aylanadi.

Boshlang'ich sinf o'quvchilarining og'zaki nutqini rivojlantirishning innovatsion yondashuv asosidagi mazmuni o'quvchilarning til va nutq malakalarini yanada yaxshilashga qaratilgan bo'lib, turli metod va usullardan foydalanishni o'z ichiga oladi. Bunda quyidagi asosiy yo'nalishlar ko'zda tutiladi:

1. Interaktiv metodlar: O'quvchilarni dars jarayoniga faol jalb etish, muloqot qilish va fikr almashish imkoniyatlarini yaratish orqali nutqni rivojlantirish.

2. Texnologiyalarni qo'llash: Multimedia vositalaridan foydalanish, audio va video materiallar orqali o'quvchilarga yangi so'zlar va iboralarni o'rgatish.

3. O'yin texnologiyalari: O'yin shaklida tashkil etilgan mashg'ulotlar o'quvchilarning qiziqishini oshirib, ularga og'zaki nutqni o'rganishda yordam beradi.

4. Kreativ yondashuvlar: Hikoyalar to'qish, rolli o'yinlar, ertaklar asosida dialoglar yaratish o'quvchilarning ijodiy fikrlash va nutq rivojiga xizmat qiladi.

5. Refleksiv yondashuv: O'quvchilarning o'z nutqini kuzatish va baholash, xatolarini tuzatishga yo'naltirilgan metodlar orqali til o'rganish jarayonini optimallashtirish.

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Pisixologiyada yetuklikning o'spirinlik va erta yetuklik davrlarida shaxsning o'g'irlik jinoyatlari sodir qilish shart-sharoitlari, sabab va oqibatlarini, shaxslarning o'zini-o'zi anglashdagi determinantlari

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Annotatsiya: Psixologiyada yetuklikning o'spirinlik va erta yetuklik davrlarida shaxsning o'g'irlik jinoyatlari sodir qilishga olib keluvchi psixologik ichki kechinmalari, motivi-maqsadi, sabab-sharoitlari, ruxiyatidagi o'zgarishlar, ruxiyatiga ta'sir qiluvchi psixologik ijtimoiy va iqtisodiy omillari, jinoyat sodir qilishdagi o'zini-o'zi anglash jarayonidagi psixologiyasidagi buzulishlar va determinantlari muhokama qilinadi.

Kalit so'zlar: Psixologiya, yetuklik, jinoyat, o'g'irlik, ruxiyat, sabab, shart-sharoitlar, oqibat, jinoyatchi shaxs, determinant.

Ushbu maqolaning maqsadi. Psixologiyada yetuklikning o'spirinlik va erta yetuklik davrlarida shaxslarning psixologiyasidagi o'zgarishlar, ichki va tashqi ta'sir etuvchi omillar ya'ni oilaviy turmush tarzi hamda ijtimoiy xayot tarzidagi o'zgarishlar natijasida o'g'irlik jinoyatlarini sodir qilishga yetaklovchi sabablar, sharoitlar, omillar, oqibatlar va jinoyatchi shaxsnini shakllanishi xususiyatlari haqida tushuncha berishdir. Shaxslarning ongli ravishda o'g'irlik jinoyati sodir qilgan insonning psixologik holati va o'zini-o'zi anglash jarayonlari determinantlari haqida tushuncha berishdir. O'g'irlik jinoyatlari sodir qilgan shaxs ya'ni jinoyatchi shaxs bilan qanday ishlashni va sodir etgan jinoyatining ijtimoiy xuquqiy oqibatlarini psixologik anglashi, o'zini-o'zi anglash jarayonlarini o'rganishdir.

Ish huquqni muhofaza qilish organlari, psixologlar, sotsiologlar, pedagoglar uchun shaxslarning kelgusida o'g'irlik jinoyatlari sodir qilinishini oldini olish maqsadida psixologik o'rganishlar sohasida ishlaydigan barcha uchun foydali bo'lishi mumkin.

Аннотация: В психологии - психологические внутренние переживания человека, приводящие к совершению краж в период подросткового и раннего взросления, мотив-цель, причины, изменения настроения, психологические, социальные и экономические факторы, влияющие на настроение, обсуждаются нарушения преступности и детерминанты психологии в процессе самореализации.

Ключевые слова: Психология, зрелость, преступление, воровство, менталитет, причина, условия, следствие, преступник, определитель.

Abstract: In psychology, the psychological internal experiences of a person that lead to the commission of theft crimes in the periods of adolescence and early maturity, the motive-goal, the reasons, the changes in the mood, the psychological social and economic factors affecting the mood, the crime Disorders and determinants of psychology in the process of self-realization are discussed.

Keywords: Psychology, maturity, crime, theft, mentality, cause, conditions, consequence, criminal person, determinant.

Shaxs tomonidan o'g'irlik jinoyatlarini sodir qilish sabablari va uni sodir etilishiga imkon bergan shart-sharoitlar nafaqat jinoyat protsessi, kriminologiya, kriminalistika fanlarida, shu bilan birga psixologiya, falsafa kabi qator ijtimoiy fanlar orqali ham o'rganiladi. Shu nuqtai-nazardan jinoyatning sabablari va shart-sharoitlarini batafsil o'rganish, ularni tadqiq qilish ham huquqiy,

ham psixologik, ham falsafiy, shuningdek ijtimoiy yondashuvlarni talab qiladi. O'g'irlik jinoyatning sabablari va uni sodir etilishiga imkon bergan shart-sharoitlarni tadqiq etar ekanmiz, eng avvalo, "sabab" hamda "sharoit" so'zlarining lug'aviy ma'nolariga to'xtalib o'tish lozim. "Sabab" so'zi tilimizda bir qator ma'nolarda qo'llaniladi, ya'ni

- biror ish-harakat, voqea, hodisaning yuzaga kelishida, sodir bo'lishida omil bo'lgan boshqa voqea;

-biror ish-harakat yoki holat uchun asos bo'lgan narsa; biron bir vaqt mobaynida bo'lgan o'zgarishdan so'ng ikkinchi boshqa bir natijaning zaruran kelib chiqishini ta'minlovchi asosiy hodisa¹.

"Sharoit" so'zi esa ob'ektiv holdagi muayyan vaziyat, biror narsaning bo'lishiga ta'sir etuvchi holat, imkoniyat sifatida izohlanadi².

Mazkur tushunchalar lug'aviy ma'nolariga ko'ra ham o'zaro uzviy bog'liq. O'g'irlik jinoyatning sodir etilishiga asos bo'lgan sabablar, o'z navbatida, muayyan sharoitlarda ma'lum bir oqibatlarni keltirib chiqaradi. Sabab va oqibatning o'zaro bog'liqligi, bu ikki voqe'likning esa sharoit bilan uzviy aloqada ekanligi qonuniyati jinoyatchilikni ilmiy-nazariy jihatdan chuqur tahlil qilish imkonini beradi.

Professor Z.Zaripov jinoyatning sabablari va shart-sharoitlarini quyidagicha tavsiflagan, ya'ni "jinoyatchilik sabablari ijtimoiy-psixologik voqe'lik sifatida jinoyatchilik hamda jinoyatlarni keltirib chiqaruvchi o'ziga xos jarayonlar tizimidir, jinoyatchilikning sharoitlari esa o'ziga xos ravishda uning sabablari yuzaga kelishini jadallashtiruvchi holatlarni o'z ichiga oladi"³.

Jinoyati sodir etilishiga imkon bergan sabab va shart-sharoitlar S.Danilovning fikricha, ob'ektiv va muqarrar ravishda jinoyatning sodir etilishiga olib keladigan, huquqiy ahamiyatga ega bo'lgan hodisalar majmuidir⁴.

Har qanday jinoiy faoliyat ko'p jihatdan jinoyat sodir etgan shaxsning o'ziga xos individual-psixologik xususiyatlariga uzviy bog'liqdir. Qonunga itoat qiladigan va o'zini-o'zi yuksak darajada boshqara oladigan halol inson uchun «jinoiy» vaziyatlar yo'q va bo'lishi ham mumkin emas. Vaziyat o'z-o'zicha jinoyatni keltirib chiqara olmaydi, u faqat g'ayriijtimoiy fe'lga ega bo'lgan shaxsning muayyan qarashlari va maqsadlarini amalga oshirishi uchun mos bo'lishi mumkin, xolos⁵.

Jamiyatda o'g'irlik jinoyatining ijtimoiy psixologik sabab va sharoitlarini ijtimoiy hayotning barcha sohalarida mavjud bo'lgan salbiy hodisa, voqea, jarayonlar keltirib chiqaradi. Har qanday jamiyatda, uning rivojlanishining barcha bosqichlarida ijtimoiy-psixologik sabab va sharoitlarni keltirib chiqaradigan ob'ektiv va sub'ektiv sabab va sharoitlar mavjud, lekin ular turli darajada bo'ladi. Har qanday muayyan o'g'irlik jinoyati sodir qilinishi asosida yotgan ijtimoiy-psixologik hodisalar, ya'ni g'ayriijtimoiy qarashlar, odatlar, ko'nikmalar, niyatlar, xulq-atvor sub'ektiv sabab va sharoitlar deb ataladi. Shaxsdan tashqarida bo'lgan va uning psixologiyasiga ta'sir qilib, unda g'ayriijtimoiy qarashlar, odatlar, xulq atvorni shakllantiradigan, uni mustahkamlaydigan hodisa, voqea, jarayonlar esa ob'ektiv sabab va sharoitlar deb ataladi.

Professor Z.Zaripov o'g'irlik jinoyatga imkon bergan sabab va sharoitlarni miqyosiga ko'ra, mazmunan hamda o'z tabiati va ba'zi xususiyatlariga ko'ra guruhlariga ajratilishini qayd etgan. Muallif o'g'irlik jinoyatning sabab va sharoitlarini miqyosiga ko'ra o'g'irlik jinoyatlarining umumiy holati bo'yicha, o'g'irlik jinoyatlarning turlari bo'yicha, alohida olingan o'g'irlik jinoyatlar bo'yicha kabi tasniflagan⁶. Shu bilan birga professor Z.Zaripov o'g'irlik jinoyatlarni yuzaga keltiruvchi **kriminogen-determinantlar o'z mazmuniga ko'ra**, ijtimoiy-iqtisodiy,

g'oyaviy, siyosiy, ijtimoiy-ruhiy, tarbiyaviy, ijtimoiy boshqaruv yo'nalishidagi sabab va sharoitlardan iborat bo'lishi mumkinligini qayd etgan.

Psixolog olim Dj. Birren tadqiqotlarida «yetuklik» insonning qarilik davri bilan uyg'unlashadi. Dj. Birrenning takidlaganidek o'spirinlik – 12-17 yoshlar oralig'ida va erta yetuklik – 17-25 yoshlar oralig'idagi¹ davrlarda psixikasidagi o'zgarishlar ya'ni ishonuvchanlik, uquvsizlik, irodasizlik, imkoniyatsizlik, xissiyotlarga berilishning kuchayishi, xayoliy kechinmalarning kuchliligi sababli shaxsning ruxiyatidagi, tafakkuridagi, istaklaridagi va mayllaridagi moddiy dunyoga xaddan ziyod qizikishning ortishi va tezda barcha moddiy qiymatliklarni, mol-dunyoni o'ziniki qilishga, qanday yo'l bilan bo'lsada ongida badavlat shaxs siymosini yaratishga bo'lgan ruxiyatidagi intilishning natijasida shaxs o'zi kelgusidagi huquqiy oqibatni anglagan holda jismoniy yoki yuridik shaxsning mol-mulkini, yoki moddiy kimatliklarini o'g'irlash motivatsiyasi ko'chayadi. Har qanday xolat vaziyatga qaramasdan yukoridagi psixologik mayllarini qondirish va realizatsiya qilish maqsadida psixologik sub'ektiv va ob'ektiv sabablarga ko'ra o'g'irlik jinoyati sodir qiladi. Shaxs o'g'irlik jinoyatini sodir qilish jarayonida qilmishning jinoiy yo'l bilan g'ayri qonuniyligini o'z-o'zi to'liq anglagan va tushungan holda o'zganing mulkini yashirin ravishda talon-taroj qiladi. Ushbu jinoyat sodir etish jarayonida shaxsning ruxiyatida nafsning quliga aylanib qatiyatsizlik, ko'rkinch, yashirin tarzda, jirkanch holatda g'ayri qonuniy maqsadini amalga oshirish uchun tish-tirnog'i bilan o'g'irlik jinoyatni sodir qiladi. Shaxs ilk bor jinoyat sodir qilgandan so'ng sodir qilgan jinoyati oshkor bo'lib qolish extimollar nazariyasidan kelib chiqqan holda uning ruxiyatida jinoyatchi shaxs menligi vujudga keladi va ruxiyatida kuchli qo'rqinch paydo bo'lib barcha shaxslardan xattoki eng yaqinlaridan ham yashirinish xissi mo'loqat o'rnatmaslik xissi juda rivojlanadi. Yon atrofdagi shaxslarga g'araz niyatlarda qarashlar paydo bo'lib yon atrofdagi barcha shaxslar uning sodir qilgan o'g'irlik jinoyatini oshkor qilish extimoli bo'lgan shaxs sifatida gavdalanadi va tabiiyki jizzakilik, qo'rquv, yashirinlik, yakkalik xislari paydo bo'ladi. Eng achinarlisi o'g'irlik natijasida egallab olgan moddiy qiymatliklarni kanday kay tartibda va usilda ishlata olish imkoniyatini izlash realizatsiya qilish ya'ni muommolari yuzaga keladi. Ushbu yuzaga kelgan muommolar natijasida va ichki kechinmalari natijasida jinoyatchi shaxs psixologiyasida beporvolik yoki tartibsizlik yuzaga keladi va birdaniga moddiy qimmatliklarni xech qanday ongsiz, uysiz sarflash jarayoniga o'tadi. Natijada sodir etgan o'g'irlik jinoyatini fosh bo'lishiga o'zi anglamagan holda sabachi bo'ladi.

Tasniflar qatoriga jinoyatchilikka sabab bo'ladigan nazoratsizlik, loqaydlik, sovuqqonlik kabi omillarni ham kiritish maqsadga muvofiq. Jinoyat sodir etilishiga imkon bergan sabablar va shart-sharoitlarning tushunchasi, mazmun-mohiyati, tasnifi va ahamiyati xususida o'rganilgan muhim ma'ulumotlar asosida quyidagi xulosalarga kelindi:

- birinchidan, jinoyatchilik sabablari atrof-muhitda kechayotgan o'ziga xos jarayonlar tizimi bo'lib, mavjud ijtimoiy-psixologik voqe'liklar o'rtasidagi sababiy bog'lanish asosida jinoiy oqibatni keltirib chiqaradi;

- ikkinchidan, jinoyatchilik sabablari ma'lum vaqt oralig'ida shakllangan, rivojlangan, yetilgan ko'p omilli, ya'ni sabablar zanjiri sifatida yoki qisqa vaqt oralig'ida ma'lum bir aniq voqe'lik ta'sirida paydo bo'lgan bir omilli sabablardan iborat bo'ladi;

- uchinchidan, jinoyat sodir bo'lishiga imkon yaratgan sharoitlar uning sabablari yuzaga kelishini jadallashtiradi yoxud jinoyatning sabablari yuzaga chiqib faol harakatga kelishi uchun qulay fursat, qulay vaqt omili sifatida namoyon bo'ladi.

Pisixologiyada yetuklikning o'spirinlik va erta yetuklik davrlarida shaxsning o'g'irlik jinoyatlari sodir qilish shart-sharoitlari, sabab va oqibatlarini, shaxslarning o'zini-o'zi anglashdagi determinantlari asosida o'g'irlik sodir etgan jinotchi shaxs psixologik portretini o'rganish, uning psixologik kesinmalarini aniqlashga yordam beradi. O'rganish natijalari shuni ko'rsatdiki, o'g'irlik jinoyat sodir etgan yoki etish jarayonidagi shaxslarning psixologik ijtimoiy iqtisodiy sabablar, ijtimoiy turmush tarzidagi shaxslararo munosabatlar, shart-sharoitlarini, ko'pincha, ruhiy tushkunlik, yetishmovchilik, ishsizlik, oiladagi tarbiya, nafsga bo'lgan moyillarning kuchayishi kabi omillar ta'sir ko'rsatishi aniqlandi. Shuni ta'kidlash kerakki, kelgusida o'g'irlik jinoyatlarini sodir etilishini oldini olish va shaxsni qo'llab-quvvatlash, jinoyat oqibatlarini huquqiy nuqtai nazardan tushuntirish. Buning uchun o'smirlik ya'ni o'rta ta'lim, o'rta maxsus davrlarida, yetuklikning o'spirinlik va erta yetuklik davrlarida uyushgan yoshlarga pedagoglar va amliyotchi xodimlar bilan birgalikda o'quv jarayonlarida uchrashuvlar o'tkazish, umuman olganda, tushuntirish va o'rgatish ishlarini ko'chaytirish amaliy darslarga amaliyotchi XMQO xodimlarini muntazam ravishda qatnashtirish hamda xamkorlikda g'oirlik jinoyati sodir etish extimoli bo'lgan shaxslar psixologik portretini o'rganish muhim yo'nalishi bo'lib, jinoyatlar bilan bog'liq jarayonlarni chuqurroq anglash, va oldini olishga yordam beradi.

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**DEVELOPING STUDENTS' GENERAL HUMAN VALUES COMPETENCY IN
THE NEW UZBEKISTAN EDUCATION CONDITIONS**

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Annotation: this article describes the content and analysis of the development of competence in students regarding universal values in the educational conditions of New Uzbekistan, in a time when the influence of various foreign ideas that have a negative effect on the human mind is increasing. , education, promotion and propaganda work in the development of students' competence in universal human values, through pedagogical means of developing high human qualities such as national, universal values, religious tolerance, patriotism, and the spirit of loyalty to the motherland illuminated.

Key words: national value, universal value, national tradition, traditions, patriotism, spirituality, national idea, propaganda, national pride, national pride, history ,

Today, the main goal of comprehensive reforms in the education system, the development of students' competence regarding universal human values, their importance in the development of the state and society is a constant research object of world scientists. In the Inchon Declaration of UNESCO, signed in South Korea until 2030, "Education is the main driving force of development and an important activity that achieves the goals of sustainable development ¹" and its main tasks include " history is the obligation to change lives , to educate people in a new way." It is not for nothing that it is recognized as a call for strong and innovative actions for the development of the country .

of the President of the Republic of Uzbekistan dated April 20, 2017 "On measures for the further development of the higher education system", ²based on the priority tasks of the fundamental improvement of the higher education system and the socio-economic development of the country, the personnel training system was established. radical improvement indicates that great attention is paid to the quality of ensuring the creation of necessary conditions for the training of highly educated specialists at the level of international standards.

Emphasizing the complex, integral nature of competence in educational practice today, three levels or aspects of it are distinguished in the world community in educational management models :

- 1) integrative competence - the ability to acquire knowledge and skills and use them in the rapidly changing conditions of the external environment;
- 2) socio-psychological competence - intelligence, knowledge and skills to understand people's behavior, motivation of their work, high level of openness and communication culture.

¹ Obrazovanie 2030 Inchonskaya deklaration i ramohnaya programma deystviy .: Republic of Korea s 19 po 25 maya 2015 g.

² Resolution No. PQ2909 of the President of the Republic of Uzbekistan dated April 20, 2017 "On measures to further develop the higher education system"

3) competence in certain areas of management activity - decision-making, information gathering, methods of working with people, etc.

From the point of view of new socio-educational ideas, the concept of competence is developing further. One of the stages of competence development in a student is related to expanding the scope of its components by including additional areas of competence important for the subject's professional activity. Scientist J. Raven, who put forward the main ideas of the competent approach emphasizes the importance of this: "when we compare more and less competent teachers, drivers, blacksmiths, managers, and military officers, in each case the political behavior displayed by the masters of their work turns out to be the most important." .

Because, in our republic, in parallel with the improvement of the continuous education system, special attention is being paid to the development of the competence of students regarding universal values in pedagogic education. " To study our values, spiritual-ethical, philosophical and pedagogical heritage, the history of the formation and development of public education from original sources, to enrich the scope of the theory and history of pedagogy based on objective data, to further expand the possibility of developing our pedagogical thinking methodological foundations were created ³. " In the conditions of the new Uzbekistan, the issue of developing the competence of students regarding universal values is accepted in our country in the "Strategy of Actions" for the further development of the Republic of Uzbekistan, and at the same time, an in-depth analysis of the development path of our country, today the world market is mine In the conditions of sudden changes in the industry, increasing competition in the conditions of globalization, the development and implementation of a completely new approach and principles for the development of our country at a more stable and rapid pace has been defined as a priority task ⁴. As a result, the period studied in the researches related to the history of pedagogic teachings in the conditions of New Uzbekistan created a ground for the scientific study of issues such as the development of competence in students regarding universal values.

In today's rapidly developing era, despite the research work being carried out in the field of education and a number of positive changes achieved, in order to increase the effectiveness of the educational system, first of all, it is necessary to accelerate the dynamics of the development of education, to effectively use the conditions and opportunities created in it, to In the training of competitive specialists for educational institutions, the issue of educating a competent person based on their national values is of urgent importance.

A scientist psychologically defines competence as a criterion for understanding the surrounding world and the proportionality of interaction with it, or if it is defined in more detail, it is a set of knowledge, skills and abilities that allow the successful implementation of activities, or a person's ability to relate to the environment and development. It also touches on the main factors of mastering the methods of influencing people.

In particular, development of competence in students regarding universal human values rapidly developing the globalized and integrated world is rapidly changing, the negative influence of various foreign ideas is increasing in the processes of the young generation's awareness of

³Decision of the President of the Republic of Uzbekistan dated May 24, 2017 No. PQ-2995 "On measures to further improve the system of preservation, research and promotion of ancient written sources".

⁴Decree of the President of the Republic of Uzbekistan No. PF-4947 of February 7, 2017 "On the Strategy of Actions for Further Development of the Republic of Uzbekistan" // Collection of legal documents of the Republic of Uzbekistan. - T., 2017. No. 6.

national identity, loyalty to universal values, and the strengthening of individual spirituality, for people's minds and hearts in the era of intensifying ideological struggles, the importance of inculcating the spirit of loyalty to universal values in the educational process is increasing. In the spiritual life of the people, self-awareness plays an important role. Therefore, in the development of the competence of students regarding universal values, the same spiritual and moral education should be given special attention to the essence of national self-awareness, concepts of people, nation and their interrelationship. It is noted that it is necessary to pay attention. Analyzing the essence-logical aspect of the development of competence in students regarding universal human values, within the framework of the study of the research conducted by us, it is necessary to focus on the analysis of the scientific opportunities in the work of local and foreign researchers, focusing on competence, pedagogical ability. we found

LMDolgova, a foreign scientist ⁵, competence is the organization and implementation of activities based on acquired knowledge. Competence implies experience of independent activity based on universal knowledge. Competence is the presence of knowledge and skills in a socio-practical form, and it is recognized that it is manifested in cases where socio-cultural requirements are imposed by the society on the results of the educational process.

SEshishkov ⁶:

- general competence based on knowledge, experience, values and dispositions acquired through study;

the ability to make connections between knowledge and situations, and the importance of finding a problem-appropriate way of solving them.

EFZeer ⁷'s research, competence is a set of knowledge, skills, as well as methods of performing certain tasks in the individual's activity, which consists of the following components:

socio-legal competence - knowledge and skills in the field of social institutions and interpersonal activities, as well as thorough mastery of professional communication methods and rules of conduct;

special competence - readiness to independently carry out certain types of activities, the ability to solve common professional issues and evaluate the results of one's work, the ability to independently acquire new knowledge and skills in one's specialty ;

personal competence - the ability to constantly improve professional skills and qualifications, to show oneself in professional activities;

⁵Dolgova L.M. P robnye deystviya uchashchikhsya v prostanstve innovatsionnoy school . 2007. P.191-193.

1. ⁶ Shishkov S.E. [Monitoring kachestva obrazovatel'nogo protsessa v shkole /S.E.Shishiov, V.A.Kalniy.-M: Pedagogicheskoe obshchesto Rossii, 1999. – 320 p.](#)

⁷Zeer E.F. Modernization of professional education: a competent approach // *Obrazovanie i nauka. Izvestia . Ural. otdeleni e RAO. 2004. – No. 3. – S. 42-53.*

self-competence - having a true vision of one's socio-professional capabilities, being able to overcome professional difficulties, explained aspects such as.

According to the scientist, professional competence can be seen in the following professional characteristics of a specialist:

–professional goal orientation of a person: striving for success and achievements, carrying out joint activities with the team and burning for the interests of the team, reliability, worthiness of one's profession, etc.;

–professionally important qualities: conscientiousness, ability to analyze one's mental state, independence, responsibility, intellectual maturity, ability to assess and predict, communicative, professional mobilization, ability to solve problems, etc.;

–occupationally important psychophysiological qualities: ability to work, ability to skillfully perform manual work, psychomotor skills, eye contact skills, etc.

Orientation of the educational process to the competency approach requires a review and development of methodological conditions in education, the content and application of new pedagogical technologies, because competencies do not refer to knowledge and skills in any subject. As traditional education focuses on the acquisition of a specific set of knowledge, skills and competencies by the learner, today, while acquiring in-depth knowledge, they can be applied when the need or opportunity arises. , you can meet people who can't use it at the right time and place.

Therefore , the methods and technologies of competence-oriented education should ensure the easy transfer and adaptability of abilities formed in certain conditions to other conditions, that is, they should create the characteristic of "non-adaptive activity". Therefore, the main goal of developing students' competence in universal values, educating young people in the spirit of creative ideas, loyalty to universal values, and educating them on the basis of their national values is important. Therefore, since the development of competence in students regarding universal values is recognized as the main factor, turning into self-confidence and faith, it is necessary to educate students as personnel who will burn their lives for the fate of the country in the spirit of loyalty to the motherland, national and universal values, and training values. not what he gave us, but what I did for the country!" defining the slogan as the main issue of one's professional and life activity is important.

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Faleronymous names are based on nominative - motivational principles

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Abstract

In the article, the faleronym names are based on the nominative-motivational principle and motivated, as well as their lexical-semantic analysis.

Key words: faleronym, naming, sign, feature, activity, incentive, reward, reward.

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Phaleronyms are names of orders, medals, badges and awards that are the product of intellectual, intellectual and artistic activity of a person. When giving a name to phaleronim, their unique characteristics were taken as a motivation. Motive means the basis, symbol chosen by namers to name the object. In the process of naming phaleronyms, the known activity is important. The namer chooses one of the signs of the named object, or one of his imaginations, dreams, and wishes about it. Therefore, in naming the awards, well-known activities and characteristics are important. We will pay attention to the meaning of the word reward, which is one of the types of faleronym. The word "Prize" was adopted from Arabic to Uzbek and means "appreciation", "payment": "A form of incentive for special achievements in a field of activity (valuable item, money, medal, order, etc.). High award. State award. Prize money. Give a reward. Get a reward. To present for an award"[1].

Awards are also one of the tools that motivate people to new achievements. They are divided into the following types: 1) ordinary reward - a type of incentive given before the holiday and for good work in workplaces; 2) awards given by the ministry and hokimiyat - certificates of commendation, letters of thanks, certificates of honor and awards based on material funds;

3) certificates of honor, letters of thanks given to encourage pupils, students, graduate students and their teachers in the educational system; 4) state awards are one of the means of motivating people by the state. This award is one of the highest among other awards. On October 28, 2000, the State Prize of the Republic of Uzbekistan named after Alisher Navoi, the State Prize of the Republic of Uzbekistan named after Abu Raikhan Beruni, and others were accepted. In some cases, they are graded: State Award of the first degree, State Award of the second degree, State Award of the third degree; 5) State award to creative writers and poets. Such awards are still being given. They include State Prize named after Hamid Olimjon, State Prize named after Abdulla Qadiri, State Prize named after Cholpon, State Prize named after Zulfiya. The State Prize of Uzbekistan named after Hamza was established and awarded to artists who worked in poetry, cinema and theater.

The faleronym "Muhammad al-Khorazmi" is named after the great mathematician, astronomer and geographer, founder of the science of algebra, Muhammad ibn Musa al-Khorazmi. The word "algebra" is taken from his treatise "Al-kitab al-mukhtasar fi lisab al-jabr wa al-muqabala".

This award is given individually to scientists, including foreign citizens and stateless persons, who proposed a solution to a specific problem in practice based on the results of their

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fundamental and applied scientific research in the field of mathematics. The award may be made to an individual for one or more achievements in mathematics. The dignonym "Muhammad Al-Khorazmi" lexically consists of two words. Muhammad is the name of the prophet, and the 47th sura of the Holy Qur'an is named after them. Since the 8th century, he has been mentioned in the literature as the first propagator of Islam and the messenger of Allah. Muhammad means praiseworthy. This name is derived from the Arabic root "hamd". This name is based on praise[2]. The name Khorezmi is based on the name of the place. If Klippert and Lerx interpret the name of the toponym "Khorazm" as "low flat land", Burnuf, Zahau, Zeiger as "fertile land", or on the contrary, Yusta and Spiegel interpret it as "bad, barren land", researchers interpret the toponym with the word Hurr, Horsed, "sun". connect and interpret Khorezm as the "land of the sun"[3]. According to S.P. Tolstov, it is probably related to the name of the tribe-Khurrit, one of the founders of the Mitanni state in Ancient Asia, meaning Khorezm-"Khvari-zem" (land, land of the Hurrians)[4]. Often, after toponyms, the suffix -iy is added to form nisbas. In this case, it is formed from the names of towns and villages with the suffix - ий. Khorezm, Bukhari, etc. Muhammad ibn Musa al-Khwarazmi means that he is from Khorazmi, the son of Muhammad Musa.

"Imam Bukhari" order. On August 15, 2022, the President of Uzbekistan signed the law on the establishment of the Order of Imam Bukhari. According to the law, the order of "Imam Bukhari" consists of two levels: 1. "High-ranking Imam Bukhari" order; 2. "Imam Bukhari" order.

One of the religious dignonyms is the "Imam Bukhari" order. His real name was Abdullah Muhammad ibn Ismail ibn Ibrahim ibn al-Mughira ibn Bardizbah al-Bukhari al-Jafi. Because he was born in Bukhara, he was given the Bukhari nisab. He made a great contribution to the development of hadith science. He wrote his works and all the information he collected with his own hand. Imam al-Bukhari's collection "Al-jami' as-sahih" (Reliable collection of hadiths) is used as the main source after the Holy Qur'an. During the creation of this collection, he collected about six hundred thousand hadiths, of which about three hundred thousand are "sahih" and two hundred thousand are "non-sahih". divided into sahih" and knew them by heart. Imam Bukhari created more than twenty works during his academic career. He died in the village of Khartang, Payariq district, Samarkand region. "Imam" is an Arabic word meaning "Leader standing in front", the word "Imam" has been actively used since the 14th century. It has the following meanings: 1. The great leader of all Muslims in Islam. Imam Muhammad. 2. Founders of sects in Islam. Imam Azam. 3. Famous scholars Hujjat ul-Islam Imam Muhammad Ghazali. The word imam is a title that means leader of the clergy, imam of the mosque, religious servant, and mullah.

An anthroponym is made from a Bukhari-toponym to form a dignonym. It is indicated that he was born in the city of Bukhara. Nishopuri's book "Khazain ul-Ulum" expressed the following opinion about Bukhara: now Bukhara (settled) is a mawze, (previously) a swamp, some of its lands were orchards, orchards and green fields, and some places were such that even an animal had a place to set foot. could not find. The reason for this is that in the regions on the Samarkand side, the snow melts in the mountains and the water (flows) accumulates there. The name Bukhara appears in the works of the historian Nasharkhi in the 10th century. According to linguists, the word Bukhara comes from the ancient Indo-Sanskrit word "Vihara" which means "Fortress". This city was also called Numijkat and Fakhira[6].

The State Prize named after Alisher Navoi was established on September 13, 1989. This award is given to the brightest and most meaningful works in the field of literature, art and architecture, which are a special example in the cultural life of the country and enrich the treasury

of national values. Alisher Navoi wrote in two languages. He gave the pseudonyms Foni to his works in Persian, and Navoiy to his works written in Turkish.

He wrote the historical work "Tarihi muluki Ajam" ("History of the Kings of Ajam"), the review "Majolis un-nafais" ("Complex of the Nobles"), and the scientific book "Mezon ul-Awzon" ("Measure of Weights") about aruz weight. book, book "Khazayin ul-maani" ("Treasure of Meanings"), epic "Lison ut-tayr" ("Language of birds") and scientific work "Muhokamat ul-lughatayn" ("Discussion of two languages") created

Especially Alisher Navoi's epic "Khamsa" is enriched with themes of advice, love, loyalty, loyalty, patriotism, hard work. The work is famous for being written in Turkish in verse and prose. The principle of naming this faleronim is positive (positive). If we pay attention to Falereonim's analysis: Alisher (ar.-ft.) means to be brave and courageous like a lion and to be supported by Ali[7]. This name consists of two parts, Ali and lion. Ali is an Arabic word that means "high", "great", "exalted", [8] and "sher" means "brave", "lion", "strong" in Persian. Because Ali is the caliph, this name is widespread in Islamic countries. For his heroism and bravery in battles, Ali was given the Persian lion title "Haydar". Haydarali means "Lion of Ali Allah". Nickname of Navoi Alisher. The Arabic word "Navo" means "melody", "melody", "mungli un", "lineage", "wealth". So, Navoi's nickname has also become my nickname.

Beruni (Abu Rayhan Beruni) State Award of the Republic of Uzbekistan is an award in the field of science and technology, established on September 6, 1967. It has been awarded as the State Award of the Republic of Uzbekistan since March 5, 1991. Researches and scientific and technical programs of the republic that make a great contribution to the development of science to a certain scientist or group of scientists, are of high practical importance, ensure that the science and technology of the republic reaches the level of world achievements, are widely recognized by the public, and have been published three or more times. is awarded for original textbooks designed for higher educational institutions, incorporating new scientific ideas. Ubaidullo Karimov, a scholar of Beruni, stated that "the scholar's name is Muhammad, his father's name is Ahmed, and Beruni is his name, that is, his origin and lineage." "Beruni" is derived from the Persian word "berun" which means "outside" and "born outside the city". Nickname of Abu Rayhan, which means "merciful", "merciful" in Arabic. Beruni's ratio has also become Faleronim.

"Zulfiya" award. Zulfia's poems expressing the happy fate of Uzbek women and the dreams of people who are thirsty for peace and work are the basis for the name of this award. Zulfia's love for poetry and literature was awakened in her childhood. Her poems were published in various newspapers when she was studying at school and women's pedagogical institute. His first collection of poems is published under the name "Life Leaflets". The main theme of this collection was about youth, love, human heart. He works in various large publishing houses, newspapers and magazines. Zulfia met Hamid Olimjon at the Institute of Language and Literature under the Committee of Sciences of Uzbekistan, their relationship turned into love and they got married. Zulfia works as the editor-in-chief of Saodat magazine, the state publishing house of Uzbekistan. Her husband Hamid Olimjon dies in a car accident. Poems from the poetess's collections "Hayat Jhilosi", "Orik Gulaganda", "Dreams", "Soginish" and other collections dedicated to the memory of Hamid Olimjon reflect feelings and longing. Therefore, the nominative basis of the "Zulfia" award is the exemplary service of women to their family and homeland.

In short, the award is established, determined and awarded by the state. Awards are named on the basis of their characteristics based on the nominative positive principle. Awards increase people's work efficiency, feed them with love for life. Increases public image.

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Cognitive and Emotional Aspects of Integrated STEAM-English Education: Initiatives and Obstacles

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Abstract. Modern education in the twenty-first century is experiencing a fundamental transformation, embracing cross-disciplinary methods to equip learners for an increasingly dynamic global environment. STEAM education, which integrates Science, Technology, Engineering, Arts, and Mathematics, has emerged as a leading educational framework. Our analysis examines how incorporating STEAM methodologies into English language teaching creates comprehensive and enriched learning opportunities.

Аннотация. Современное образование в двадцать первом веке переживает фундаментальную трансформацию, охватывая междисциплинарные методы, чтобы вооружить учащихся для все более динамичной глобальной среды. STEAM-образование, которое объединяет науку, технологию, инженерию, искусство и математику, стало ведущей образовательной структурой. Наш анализ изучает, как включение методологий STEAM в преподавание английского языка создает всеобъемлющие и обогащенные возможности обучения.

Key words: STEAM, training, English, knowledge, language

Ключевые слова: STEAM, обучение, английский язык, знания, язык

The STEAM educational framework cultivates essential 21st-century competencies including analytical thinking, innovative problem-solving, teamwork, and effective communication. When these principles are woven into English language instruction, students develop not only linguistic proficiency but also acquire a diverse skillset crucial for their future success.

Conventional language instruction often occurs in a vacuum, disconnected from practical applications. However, by integrating STEAM elements into English language classrooms, students can practice their language skills in meaningful, real-world scenarios. For instance, students might conduct scientific investigations, compile technical documentation, or engage in artistic endeavors—all while using English as their medium of communication. This approach transforms abstract language concepts into tangible learning experiences.

STEAM's emphasis on practical, experiential learning enhances English language acquisition through immersive activities. When students participate in hands-on projects that require English communication in authentic situations, they develop a deeper understanding of both the language and the subject matter. This integration creates a more dynamic and memorable learning experience, moving beyond traditional textbook-based instruction to engage students in meaningful, context-rich language practice. STEAM projects often involve solving real-world

problems, encouraging students to think critically and communicate effectively. When integrated with English language learning, these projects offer a platform for students to express themselves linguistically while addressing complex challenges. Through collaborative project-based learning, students develop language skills in a dynamic and interactive environment, preparing them for the communication demands of the future. The arts component of STEAM emphasizes creativity and self-expression. Incorporating artistic elements into English language instruction allows students to explore language in a more imaginative way. Creative writing, drama, and multimedia presentations provide avenues for students to express themselves linguistically, fostering a deeper connection with the language and promoting individuality. STEAM education often involves exploring global challenges and collaborating across borders. English language instruction within a STEAM framework exposes students to diverse perspectives, enhancing their cross-cultural communication skills. Engaging with English in the context of global issues helps students develop a more profound understanding of the language's role as a tool for international communication.

STEM education is not a separate subject, it involves the integration of knowledge from different fields, so STEM education can be used to teach children in different subject areas. Integration of knowledge from different spheres allows future professionals to be successful in most fields. Virtually all experts note that progressive technologies increase motivation for learning and expand basic knowledge in the field of design and programming.

At the same time, STEM-education is traditionally associated with robotics, construction, computer modeling, and other areas associated with engineering rather than humanities and linguistics. However, the potential of STEM-education as a means of developing a child's speech is enormous: collective scientific and technical creativity, in the process of which it is necessary to agree, communicate, formulate new ideas; mandatory defense of creative projects and research works, and so on.

Early learning of foreign languages is a problem that invariably arouses interest and acute controversy in society. On the one hand, there is an objective understanding of the sensitivity of the period of primary school age for foreign language education. On the other hand, the pedagogical community is concerned about the actual issues of organization, methodological support, continuity and continuity of this process. At the same time, the real practice of education reflects the growing interest of parents in receiving educational services for their children's learning foreign languages.

The mastery of foreign languages is regarded as the most important factor of socio-economic, scientific, technical and cultural progress. Teaching foreign languages to children at primary school age contributes to the formation of prerequisites for further learning activities. Foreign languages are studied with a view to their subsequent functioning as a tool for comprehensive information exchange, interaction between national cultures and the assimilation of universal values. The country's needs for specialists capable of using foreign languages to ensure various types of communication are increasing. These needs, expressing the essence of the social order to the sphere of language education, determine the content of the pedagogical goal at the socio-economic level.

The main direction in teaching English remains traditional classical methods. However, pedagogical science does not stand still, new methods based on new educational technologies appear.

STEM technologies as applied to the Physics and Mathematics Lyceum are the implementation of **physics, mathematics and science projects** by pupils. The connection of STEM technologies is that the implementation of projects is carried out in English. The teaching material does not allow for the full use of STEM technologies, but in almost every module there are topics in which it is possible to use project-based research methods. Mostly, of course, these are mini projects.

Some modules contain topics related to ecology. For example, in 8th grade there is a theme "Paper bags vs. plastic bags", "Eco-clothes". These topics have interdisciplinary links between English and ecology and chemistry. Within the framework of the theme "Eco-clothing", pupils make a presentation about different types of fabrics, their peculiarities and in what clothes they are used, also visual material with different pieces of fabrics is made. For example, cotton, bamboo, nylon, wool, denim.

In grade 9 the ecology topic is also presented in the module "In danger" about animals that are on the verge of extinction. The pupils are given the task to prepare a project about the animals living in Uzbekistan and the problems they face. In addition, the pupils make posters with pictures of animals and write a few sentences about the animals, using special vocabulary on the subject.

In grade 9, learners go through the topic about electronic garbage. Students are asked to find material about the placement and disposal of electronic waste in different countries.

The abbreviation STEM (science, technology, engineering, math) in English means synthesis of science, technology, engineering and mathematics. Recently, many also add the letter A (arts) to this abbreviation, which means different types of arts: humanities, foreign languages, new media, painting, dance, theater, music, i.e. the connection with art and design is assumed.

STEAM is one of the trends in global education, which implies a blended learning environment, and shows the child how to apply science and art together in everyday life.

Summarizing the results we can say that the possession of modern pedagogical technologies (STEM-technologies, project-based learning technology, problem-based learning technology, cooperation technology, computer technologies) is a component of teacher's methodological culture. The introduction of new technologies into the educational process changes the position and habitual attitudes not only of the schoolchildren, but also of the teacher.

Skills of the XXI century is a special direction that is being actively discussed at different levels. The essence of the concept is as follows: the key skills that defined literacy in the industrial era were reading, writing and arithmetic. In the twenty-first century, however, the emphasis is shifting towards critical thinking skills, the ability to interact and communicate, and creativity. By incorporating STEAM ideas into English language training, education is transformed into a dynamic, multidisciplinary experience. Educators can educate kids not only to understand English but also to thrive in an interconnected and fast changing world by integrating the power of language with the creativity and problem-solving abilities inherent in STEAM. This comprehensive approach establishes the groundwork for lifelong learning, critical thinking, and innovation.

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**SYNTHESIS AND APPLICATION OF POLYVINYL CHLORIDE-BASED
SORBENTS FOR HEAVY METAL ION REMOVAL FROM INDUSTRIAL WASTEWATER**

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Abstract:

This research explores the synthesis of polyvinyl chloride (PVC)-based sorbents modified with various organic compounds, including diethylamine, monoethanolamine, and sodium diethyldithiocarbamate. These sorbents demonstrate high efficacy in the sorption of heavy metal ions such as Cu(II), Cd(II), Zn(II), and Ag(I). The study presents the physicochemical analysis of these sorbents, including IR-spectroscopy and thermal analysis, and evaluates their performance in static and dynamic conditions. The results show that the modified PVC sorbents are highly effective in removing toxic metal ions from industrial wastewater, making them a promising solution for environmental remediation.

Keywords: Polyvinyl chloride, sorbents, heavy metal removal, wastewater treatment, modification, environmental protection.

Introduction

The increasing industrial demand and growing environmental concerns have led to the development of advanced materials capable of efficiently removing toxic substances from wastewater. Sorbents, especially those based on synthetic polymers like polyvinyl chloride (PVC), are gaining attention for their ability to selectively adsorb heavy metal ions from industrial wastewater. PVC is known for its high chemical stability and mechanical strength, making it an ideal candidate for modification into functional sorbents.

Modified PVC-based sorbents, particularly those functionalized with nitrogen and sulfur-containing compounds such as amines and dithiocarbamates, exhibit enhanced sorption capacities for metal ions. This research aims to synthesize and evaluate PVC-based sorbents for the removal of heavy metals, such as copper (Cu), cadmium (Cd), zinc (Zn), and silver (Ag), from wastewater, providing an eco-friendly and cost-effective solution to pollution control.

Polyvinyl chloride (PVC) is widely recognized for its versatility and durability, making it one of the most significant polymers in various industries such as construction, automotive, and pharmaceuticals. The modification of PVC, particularly for sorbent production, has been the focus of numerous studies due to its potential to improve sorption properties and enhance the polymer's performance in industrial applications.

PVC is typically modified using reactive compounds such as amines, resulting in materials with enhanced physical and chemical properties. These modifications are essential for the development of new functional materials, including sorbents with improved selectivity for metal ion adsorption. The chemical structure of PVC allows it to form complexes with various reagents, enhancing its ability to act as an efficient sorbent. Modified PVC sorbents, particularly those involving amine groups, have

shown high effectiveness in absorbing heavy metal ions, making them suitable for environmental applications such as wastewater treatment.

The modification process often involves introducing functional groups that improve the material's ability to interact with specific ions. For instance, diethylenetriamine and monoethanolamine have been used to modify PVC, leading to sorbents with significantly enhanced capacity for binding metal ions like cadmium, copper, and silver. These modifications not only increase the sorbent's efficiency but also provide stability under varying environmental conditions, which is crucial for practical applications in hydrometallurgy and water purification.

Furthermore, the study of PVC's physicochemical properties reveals its robustness against harsh chemicals, contributing to its wide range of applications. It is highly resistant to acids, alkalis, and organic solvents, making it ideal for producing durable materials that can withstand aggressive environments. Additionally, the polymer's polar nature and partially crystalline structure facilitate its interaction with modifying agents, which is critical for enhancing its sorption and mechanical properties.

One of the main advantages of using PVC-based materials is the ability to modify them through relatively simple chemical processes. These modifications enable the production of sorbents with tailored characteristics, such as increased ion exchange capacity and specific selectivity for certain metal ions. The development of these advanced materials is crucial for addressing modern industrial challenges, particularly in fields that require efficient separation and purification technologies

2. Materials and Methods

2.1. Materials

The PVC used in this study was obtained from commercial suppliers. The following modifiers were employed: diethylamine (DEA), monoethanolamine (MEA), and sodium diethyldithiocarbamate (DEDC). The metal ions used for sorption experiments were sourced from standard laboratory solutions containing Cu(II), Cd(II), Zn(II), and Ag(I).

2.2. Synthesis of PVC-Based Sorbents

The synthesis of modified PVC sorbents involved the following steps:

Preparation of PVC Solution: PVC was dissolved in an appropriate solvent to form a homogeneous solution.

Addition of Modifiers: The selected organic modifiers were added to the PVC solution at varying concentrations. The mixture was stirred to ensure proper dispersion.

Crosslinking and Gelation: The mixture was subjected to heat to facilitate crosslinking, leading to gel formation.

Molding and Drying: The gel was poured into molds and allowed to cure at room temperature. The resulting sorbents were then dried and ground to a fine powder for characterization and testing.

2.3 Physicochemical Characterization

The synthesized sorbents were characterized using:

IR Spectroscopy: To identify functional groups and confirm modifications.

Thermal Analysis: Differential thermal analysis (DTA) and thermogravimetric analysis (TGA) were performed to evaluate thermal stability and degradation patterns.

2.4. Sorption Experiments

2.4.1. Static Sorption Tests

Static adsorption tests were conducted by mixing a known weight of the sorbent with a fixed concentration of metal ion solution in a series of glass flasks. The flasks were shaken at a constant

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temperature for a predetermined period. After equilibration, samples were filtered, and the residual metal ion concentrations were measured using atomic absorption spectrometry (AAS).

2.4.2. Dynamic Sorption Tests

Dynamic tests were carried out using a column packed with the modified sorbents. A continuous flow of metal ion solution was passed through the column, and samples were collected at regular intervals. The sorption capacity was assessed by calculating the breakthrough curves and the amount of metal ions removed.

3. Results (continued)

3.1. Physicochemical Characterization (continued)

The thermal analysis results showed that the sorbent modified with sodium diethyldithiocarbamate (DEDIC) had the highest thermal stability, with degradation starting at 300°C, whereas sorbents modified with diethylamine (DEA) and monoethanolamine (MEA) exhibited degradation at lower temperatures, around 250°C. These results indicate that the choice of modifier affects the thermal properties of the sorbents, making DEDIC-modified PVC sorbents more suitable for high-temperature applications.

3.2. Sorption Capacity of Modified PVC Sorbents

The sorption capacities of the modified PVC sorbents for heavy metal ions (Cu^{2+} , Cd^{2+} , Zn^{2+} , and Ag^+) were evaluated in both static and dynamic conditions. The results from the static sorption tests showed that the sorbents exhibited different adsorption capacities depending on the type of metal ion and the modifier used.

Sorbent Modifier	Cu^{2+} Sorption Capacity (mg/g)	Cd^{2+} Sorption Capacity (mg/g)	Zn^{2+} Sorption Capacity (mg/g)	Ag^+ Sorption Capacity (mg/g)
Diethylamine (DEA)	45.2	38.5	41.8	48.6
Monoethanolamine (MEA)	50.1	42.3	44.7	52.4
Sodium Diethyldithiocarbamate (DEDIC)	55.8	47.9	50.2	60.3

From these results, it was evident that the DEDIC-modified PVC sorbents exhibited the highest sorption capacity for all metal ions tested, particularly for Ag^+ and Cu^{2+} ions. This can be attributed to the strong complex-forming abilities of DEDIC, which enhances the binding of metal ions to the sorbent surface.

3.3. Dynamic Sorption Tests

The breakthrough curves obtained from the dynamic sorption tests showed that DEDIC-modified PVC sorbents had the highest retention time for metal ions compared to the other sorbents. The total metal ion removal efficiency was also significantly higher in dynamic conditions, especially for Cu^{2+} and Ag^+ , where over 95% of the ions were removed from the solution during the dynamic flow tests.

Sorbent Type	Cu^{2+} Sorption Capacity (mg/g)	Cd^{2+} Sorption Capacity (mg/g)	Zn^{2+} Sorption Capacity (mg/g)	Ag^+ Sorption Capacity (mg/g)

PVC + DEA (Diethylamine)	18.5	12.3	10.1	15.7
PVC + MEA (Monoethanolamine)	20.1	14.7	11.5	17.9
PVC + DEDC (Sodium diethyldithiocarbamate)	22.8	16.3	14.2	21.4

The DEDC-modified PVC sorbents showed the highest sorption capacity for all metal ions, with significant affinity for Ag^+ and Cu^{2+} . This can be attributed to the strong complexation ability of DEDC with metal ions. The DEA-modified sorbents demonstrated moderate sorption capacities, while the MEA-modified sorbents showed higher performance than DEA-modified sorbents but lower than those modified with DEDC.

3.3 Static Sorption Performance

The static sorption experiments revealed that equilibrium was reached within 4 hours for all sorbents, with no significant changes in sorption capacity observed beyond this time. The sorption isotherms followed a typical Langmuir adsorption model, indicating monolayer adsorption on a homogeneous surface. The maximum sorption capacity (q_{max}) values derived from the Langmuir isotherms further confirmed the superior performance of DEDC-modified sorbents.

3.4. Dynamic Sorption Performance

In dynamic conditions, the breakthrough curves showed that DEDC-modified PVC sorbents had the longest breakthrough time, indicating a higher retention capacity for metal ions under continuous flow conditions. The breakthrough times for DEA and MEA-modified sorbents were shorter, correlating with their lower sorption capacities. The dynamic sorption capacity was highest for Ag^+ , followed by Cu^{2+} , Cd^{2+} , and Zn^{2+} ions, similar to the static tests.

4. Discussion

The results of this study clearly demonstrate that modifying PVC with specific organic compounds significantly enhances its sorption capacity for heavy metal ions. The improved performance of DEDC-modified sorbents can be attributed to the sulfur-containing functional groups, which are known to form strong complexes with metal ions such as Ag^+ and Cu^{2+} . These findings suggest that the choice of modifier plays a crucial role in determining the sorbent's efficacy.

The physicochemical analysis also highlighted the differences in thermal stability among the modified sorbents. The higher thermal stability of DEDC-modified sorbents makes them suitable for applications in environments where higher temperatures may be encountered, such as in industrial wastewater treatment facilities.

The adsorption mechanism, as inferred from the Langmuir model, suggests that metal ion binding occurs through monolayer adsorption on the surface of the modified PVC sorbents. The sorbents' high selectivity for Ag^+ and Cu^{2+} ions indicates potential for applications in the recovery of valuable metals from industrial effluents, in addition to environmental cleanup.

The dynamic sorption tests further confirmed the practical applicability of these sorbents in continuous flow systems, where extended breakthrough times are desirable for efficient wastewater treatment. The superior performance of DEDC-modified sorbents in these tests points to their potential use in industrial-scale processes.

5. Conclusion

This study successfully synthesized and characterized PVC-based sorbents modified with diethylamine (DEA), monoethanolamine (MEA), and sodium diethyldithiocarbamate (DEDIC). Among the modified sorbents, the DEDIC-modified PVC sorbent exhibited the highest sorption capacity for heavy metal ions such as Cu^{2+} , Cd^{2+} , Zn^{2+} , and Ag^+ . The sorption isotherms indicated that the adsorption followed a monolayer mechanism, with DEDIC-modified sorbents providing the best performance in both static and dynamic conditions.

The results of this research indicate that modified PVC-based sorbents are promising materials for the removal of heavy metal ions from industrial wastewater. Future studies should explore the regeneration and reuse of these sorbents, as well as their long-term stability in real-world wastewater treatment applications.

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Геометрическое проектирование сорочечных тканей

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Аннотация. Под процессом формирования ткани понимают не только процесс образования элемента ткани путем переплетения минимум двух систем нитей, но и придания этому элементу заданной формы определяемой уработкой нитей в ткани.

На строение тканей влияют следующие параметры:

- сырьевой состав, выбираемый с учетом назначения ткани и требований, которые к ним предъявляются;

- диаметры нитей основы и утка и их соотношения, в которых увеличение диаметра нитей одной системы повышает разрывную нагрузку и удлинение ткани этой системы и уработку нитей другой системы;

- плотность ткани по основе и утку, и их соотношения, в которых изменение плотности ткани одной системы нитей вызывает изменение технологических параметров выработки строения и свойств ткани;

- оценка напряженности выработки ткани на ткацком станке, которая характеризуется наполнением ткани волокнистым материалом, т.е. отношением фактической плотности к максимальной плотности ткани;

- вид переплетения нитей ткани, которая характеризуется числом перекрытий одной системы другой системы в пределах раппорта ткани. Переплетения, имеющие наименьшее число перекрытий имеют большую разрывную нагрузку и уработку нитей в ткани, и выработка тканей сопровождается на станке большей напряженностью;

- технологические параметры, к которым следует отнести натяжение нитей основы и утка и их соотношения, величина заступа, размеры и расположение зева.

Эти параметры изменяют расположение нитей в ткани, а следовательно и строение ткани, в частности уработку нитей в ткани.

На практике обычно используют показатель относительной уработки - абсолютная уработка в процентах. Следует различать уработку нитей в ткани и уработку нитей в ткачестве [3].

Уработка нитей в ткани

$$a_o(a_y) = \frac{l_n - l_{тк}}{l_n} \cdot 100, \quad (1)$$

где a_o, a_y – уработка основных (уточных) нитей, %;

l_n – длина распрямленной основной (уточной) нити, вынутой из ткани;

$l_{\text{тк}}$ – длина отрезка ткани в направлении основы (утка).

Уработка основных нитей в ткачестве a_o (%):

$$a_o' = \frac{l_o - l_c}{l_o} \cdot 100, \quad (2)$$

где l_o – длина куска основы со шлихтовальной машины, м;
 l_c – длина куска суровой ткани, м.

Уработка уточных нитей в ткачестве a_y' (%):

$$a_y' = \frac{l_y - B}{l_y} \cdot 100, \quad (3)$$

где l_y – длина уточной нити, проложенной в зев на ткацком станке, см (м).

Она может быть меньше или больше ширины заправки по берду.

Ориентировочно l_y можно принять равной ширине заправки по берду B_3 (для челночных, бесчелночных пневморепродуктивных и пневматических станков);

B – ширина суровой ткани, см (м).

Усадка ткани по ширине в процессе ткачества a_y'' (%).

$$a_y'' = \frac{B_3 - B}{B_3} \cdot 100. \quad (4)$$

$$B_3 = l_y$$

$$a_y' = a_y''.$$

При проектировании ткани величину уработок нитей в ткани и фаз строения ткани определяют по следующим аналитическим и эмпирическим формулам.

По формуле О.С. Кутепова [4].

$$a_o = \frac{t(\sqrt{b^2 + c^2} - c)}{CR_y} \cdot 100; \quad (5)$$

$$a_y = \frac{t(\sqrt{b^2 + c^2} - c)}{CR_o} \cdot 100, \quad (6)$$

где t – число пересечек в пределах раппорта той нити, уработка которой определяется;

$$b = \frac{d_o + d_y}{2};$$

$$C = \frac{10}{P_y} - \text{для расчета } a_o; \quad (7)$$

$$C = \frac{10}{P_o} - \text{для расчета } a_y; \quad (8)$$

R_o, R_y – соответственно число основных и уточных нитей в раппорте переплетения;

По формуле В.И. Смирнова [5].

$$a_o = \left(\sqrt{1 + \frac{h_o^2}{l_y^2}} - 1 \right) \cdot 100 \quad (9)$$

$$a_y = \left(\sqrt{1 + \frac{h_y^2}{l_o^2}} - 1 \right) \cdot 100 \quad (10)$$

где l_o, l_y – соответственно геометрическая плотность ткани по основе и утку ($l_o = \frac{100}{P_o}; l_y = \frac{100}{P_y}$, где P_o и P_y – соответственно плотность ткани по основе и утку); h_o, h_y – рассчитывают по следующим формулам:

$$h_o = \frac{d_o + d_y}{2} + \frac{(l_o - l_y) \sqrt{3(d_o + d_y)^2 - (l_y - l_o)^2}}{2 \sqrt{(d_o + d_y)^2 - (l_y - l_o)^2}}, \quad (11)$$

$$h_y = \frac{d_o + d_y}{2} - \frac{(l_o - l_y) \sqrt{3(d_o + d_y)^2 - (l_y - l_o)^2}}{2 \sqrt{(d_o + d_y)^2 - (l_y - l_o)^2}}; \quad (12)$$

По формуле Ф.Т. Пирса [6] (для равно плотных и тканей полотняного переплетения).

$$a_o = \left(\frac{28d_o}{4l_o} \right)^2 \quad (13)$$

$$a_y = \left(\frac{28d_y}{4l_y} \right)^2 \quad (14)$$

где d_o, d_y – диаметры нитей основы и утка, дюйм; l_o, l_y – геометрическая плотность ткани по основе и утку, дюйм; a_o, a_y – уработки нитей основы и утка, %;

По формуле К.Г. Алексева (ткани полотняного переплетения).

$$a_y = 10^2 - \frac{10^4}{\sqrt{10^4 + P_o^2 \eta^2 \left(\frac{d_o + d_y}{1+a}\right)^2}}; \quad (15)$$

$$a_o = 10^2 - \frac{10^4}{\sqrt{10^4 + P_y^2 \eta^2 a^2 \left(\frac{d_o + d_y}{1+a}\right)^2}}; \quad (16)$$

где P_o, P_y – число нитей основы и утка на 10 см ткани; d_o, d_y – диаметры основной и уточной нити; η – коэффициент смятия, зависящий от величины натяжения;

$a = \frac{h_o}{h_y}$ – фаза строения ткани:

$$a = \frac{P_o}{P_y} \sqrt[3]{\frac{C_y}{C_o}},$$

где C_o, C_y – жесткости основной и уточной нитей.

По формуле Н.С. Ереминой [8].

$$a_o + a_y = \frac{14 \sqrt[3]{C} \sqrt[6]{\frac{P_o}{P_y}}}{\sqrt[6]{\frac{1000}{T_{cp}}}}; \quad (17)$$

$$\frac{a_o}{a_y} = \frac{0,074 \frac{P_o}{P_y} \sqrt[3]{C^5 \frac{T_y}{T_o}}}{\sqrt[6]{\frac{1000}{T_{cp}}}}; \quad (18)$$

где C – коэффициент связанности ткани P_o, P_y – число основных и уточных нитей на 10 см в ткани; T_{cp} – средняя линейная плотность пряжи в ткани:

$$T_{cp} = \frac{1000(T_o + T_y)}{2T_o T_y};$$

Анализ этих формул показывает, то что они построены на базе геометрической модели и не учитывают реологические свойства нити в ткани. Очевидно, в процессе формирования ткани продолжается по мере продвижения её от опушки ткани до товарного валика, но и после снятия её со станка, так как происходит изменение её ширины и длины, а также плотности ткани по основе и утку. Следовательно, под процессом формирования ткани

понимают не только процессе образования элемента ткани путем переплетения минимум двух систем нитей, но и придания этому элементу заданной формы определяемой уработкой нитей в ткани.

Выводы. Проанализированы аналитические и эмпирические формулы уработки нитей в ткани, построенных на базе геометрической модели, не учитывающие реологические свойства нити в ткани. Реологические свойства учитывает не только процессе образования элемента ткани, путем переплетения минимум двух систем нитей, но и придание этому элементу заданной формы определяемой уработкой нитей в ткани.

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Аннотация

В данной статье рассматриваются интересные факты о металле калий, его химические свойства, применение и роль в природе. Особое внимание уделяется его физическим характеристикам, биологическому значению для живых организмов и использованию в промышленности. Статья также описывает процессы, связанные с получением калия и методами его анализа, на основе которых строятся выводы о его важности в современном мире.

Ключевые слова. Калий, щелочной металл, химические свойства, биологическая роль, применение калия, промышленность, физические характеристики.

Abstract

This article discusses interesting facts about the metal potassium, its chemical properties, applications and role in nature. Particular attention is paid to its physical characteristics, biological significance for living organisms and industrial use. The article also describes the processes associated with the production of potassium and the methods of its analysis, on the basis of which conclusions are drawn about its importance in the modern world.

Keywords. Potassium, alkali metal, chemical properties, biological role, use of potassium, industry, physical characteristics.

ВВЕДЕНИЕ

Калий (K) — один из щелочных металлов, который играет ключевую роль как в химических процессах, так и в биологии. Его открытие относится к началу XIX века, когда английский химик Хамфри Дэви впервые выделил его методом электролиза. Калий является седьмым наиболее распространённым элементом в земной коре и встречается в различных соединениях, особенно в виде солей. Этот металл отличается высокой реакционной способностью и широко используется в различных отраслях промышленности. В данной статье будут рассмотрены несколько интересных фактов о калии, его свойствах и применении.

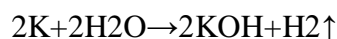
АНАЛИЗ ЛИТЕРАТУРЫ И МЕТОДОЛОГИЯ

На протяжении многих лет калий был предметом исследований в различных областях химии и биологии. В научной литературе особое внимание уделяется его химическим свойствам, высокой реакционной способности и применению в производственных процессах. Например, работа Дэвиса (2010) описывает реактивные свойства калия с водой, где подчеркивается его активность и способность выделять водород при контакте с водой. В другом исследовании Уилкинсона (2012) изучается биологическая роль калия в организме человека, особенно его участие в передаче нервных импульсов и поддержании осмотического давления в клетках.

Ряд публикаций посвящён исследованию применения калия в агрохимической промышленности. Калийные удобрения, такие как хлорид калия (KCl), играют ключевую роль в повышении урожайности сельскохозяйственных культур. Исследования Питерсона (2015) показывают, что достаточное количество калия в почве способствует развитию корневой системы растений и улучшает их устойчивость к стрессовым факторам.

Для написания данной статьи был использован метод анализа научных источников и литературных данных, связанных с химическими и физическими свойствами калия. Основной акцент делался на химическую реакционную способность калия, его биологическую значимость и использование в промышленности. Процесс изучения включал анализ научных статей, публикаций, учебников по химии и биологии, а также отраслевых отчётов о применении калия в сельском хозяйстве и производстве.

Для статьи о металле калий можно привести следующую химическую формулу, которая демонстрирует реакцию калия с водой:



Эта формула описывает типичную реакцию калия (K) с водой, в результате которой образуется гидроксид калия (KOH) и выделяется водород (H₂).

РЕЗУЛЬТАТЫ

Химические свойства калия

Калий — мягкий, легко режущийся металл серебристого цвета. Он относится к группе щелочных металлов и обладает высокой реакционной способностью, особенно с водой. При контакте с водой калий мгновенно начинает реагировать с выделением водорода и образованием гидроксида калия (KOH), что сопровождается значительным выделением тепла и может привести к воспламенению водорода. Этот факт делает калий особенно интересным с точки зрения химических реакций, которые могут быть использованы в лабораториях и промышленных процессах.

Биологическая роль калия

Калий необходим для жизни всех организмов. В теле человека калий играет ключевую роль в поддержании клеточного метаболизма, передачи нервных импульсов и работы мышц, включая сердце. Недостаток калия в организме может привести к мышечной слабости, аритмиям и другим серьёзным проблемам. Интересно отметить, что растения также сильно зависят от калия — он участвует в фотосинтезе и регулирует поступление воды в клетки.

Применение калия

Калий широко используется в сельском хозяйстве, в основном в качестве удобрения. Одним из самых распространённых удобрений является хлорид калия, который повышает плодородие почвы. Калий также используется в производстве стекла, мыла и взрывчатых веществ. В медицине его соединения применяются для лечения гипокалиемии — состояния, вызванного недостатком калия в организме.

The infographic table for Potassium (K) is organized as follows:

- Top Row:** Two large 'K' symbols flanking 'KEY FACTS' and 'FACTS'.
- Second Row:** 'CHEMICAL PROPERTIES', 'CHEMICAL PROPERTIES', 'BIOLOGICAL ROLE', 'INDUSTRIAL USES', and 'INDUSTRIAL USES'.
- Third Row:** 'CATEGORIES', 'CHEMICAL PROPERTIES', 'BIOLOGICAL ROLE', 'INDUSTRIAL USES', and 'INDUSTRIAL USES'.
- Fourth Row:** 'BASICITY', 'CHEMICAL PROPERTIES', 'BIOLOGICAL ROLE', 'INDUSTRIAL USES', and 'INDUSTRIAL USES'.
- Fifth Row:** 'CHEMICAL PROPERTIES', 'CHEMICAL PROPERTIES', 'BIOLOGICAL ROLE', 'INDUSTRIAL USES', and 'INDUSTRIAL USES'.
- Sixth Row:** 'CHEMICAL PROPERTIES', 'CHEMICAL PROPERTIES', 'BIOLOGICAL ROLE', 'INDUSTRIAL USES', and 'INDUSTRIAL USES'.
- Seventh Row:** 'CHEMICAL PROPERTIES', 'CHEMICAL PROPERTIES', 'BIOLOGICAL ROLE', 'INDUSTRIAL USES', and 'INDUSTRIAL USES'.
- Eighth Row:** 'CHEMICAL PROPERTIES', 'CHEMICAL PROPERTIES', 'BIOLOGICAL ROLE', 'INDUSTRIAL USES', and 'INDUSTRIAL USES'.
- Ninth Row:** 'CHEMICAL PROPERTIES', 'CHEMICAL PROPERTIES', 'BIOLOGICAL ROLE', 'INDUSTRIAL USES', and 'INDUSTRIAL USES'.
- Tenth Row:** 'CHEMICAL PROPERTIES', 'CHEMICAL PROPERTIES', 'BIOLOGICAL ROLE', 'INDUSTRIAL USES', and 'INDUSTRIAL USES'.
- Eleventh Row:** 'CHEMICAL PROPERTIES', 'CHEMICAL PROPERTIES', 'BIOLOGICAL ROLE', 'INDUSTRIAL USES', and 'INDUSTRIAL USES'.
- Twelfth Row:** 'CHEMICAL PROPERTIES', 'CHEMICAL PROPERTIES', 'BIOLOGICAL ROLE', 'INDUSTRIAL USES', and 'INDUSTRIAL USES'.
- Thirteenth Row:** 'CHEMICAL PROPERTIES', 'CHEMICAL PROPERTIES', 'BIOLOGICAL ROLE', 'INDUSTRIAL USES', and 'INDUSTRIAL USES'.
- Fourteenth Row:** 'CHEMICAL PROPERTIES', 'CHEMICAL PROPERTIES', 'BIOLOGICAL ROLE', 'INDUSTRIAL USES', and 'INDUSTRIAL USES'.
- Fifteenth Row:** 'CHEMICAL PROPERTIES', 'CHEMICAL PROPERTIES', 'BIOLOGICAL ROLE', 'INDUSTRIAL USES', and 'INDUSTRIAL USES'.
- Sixteenth Row:** 'CHEMICAL PROPERTIES', 'CHEMICAL PROPERTIES', 'BIOLOGICAL ROLE', 'INDUSTRIAL USES', and 'INDUSTRIAL USES'.
- Seventeenth Row:** 'CHEMICAL PROPERTIES', 'CHEMICAL PROPERTIES', 'BIOLOGICAL ROLE', 'INDUSTRIAL USES', and 'INDUSTRIAL USES'.
- Eighteenth Row:** 'CHEMICAL PROPERTIES', 'CHEMICAL PROPERTIES', 'BIOLOGICAL ROLE', 'INDUSTRIAL USES', and 'INDUSTRIAL USES'.
- Nineteenth Row:** 'CHEMICAL PROPERTIES', 'CHEMICAL PROPERTIES', 'BIOLOGICAL ROLE', 'INDUSTRIAL USES', and 'INDUSTRIAL USES'.
- Twentieth Row:** 'CHEMICAL PROPERTIES', 'CHEMICAL PROPERTIES', 'BIOLOGICAL ROLE', 'INDUSTRIAL USES', and 'INDUSTRIAL USES'.

Вот таблица, которая наглядно представляет ключевые факты о калии (K), включая его химические свойства, биологическую роль, промышленное использование и меры предосторожности.

ЗАКЛЮЧЕНИЕ

Калий — это уникальный элемент, который играет важную роль как в природе, так и в промышленности. Его химические свойства делают его важным компонентом многих технологических процессов, тогда как биологическая значимость калия подчеркивает его важность для здоровья и жизнедеятельности организмов. Будущее изучение калия может привести к новым открытиям, касающимся его использования в медицине и других отраслях.

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Annotatsiya: Maqolada avtomobil sportida psixofizik tayyorgarlik muammolari raqobatbardosh faoliyatning o'ziga xos xususiyatlari ko'rib chiqilgan. Mezonlarni tanlash va ralli poygachilarining tayyorgarligini optimallashtirish masalalari eng muhim yo'nalishlardandir. Ushbu sport turida tayyorgarlik tizimini takomillashtirish o'rganilgan.

Kalit so'zlar: Avto rally, jismoniy tayyorgarlik, nazorat, sportchi, psixofizik tayyorgarlik, mashqlar.

Аннотация: В статье рассмотрены проблемы психофизической подготовки в автомобильном спорте, особенности конкурентной деятельности. Важнейшими направлениями являются вопросы выбора критериев и оптимизации подготовки раллистов. Изучено совершенствование системы подготовки в этом виде спорта.

Ключевые слова: Авторалли, физическая подготовка, контроль, спортсмен, психофизическая подготовка, упражнения.

Annotation: The article examines the problems of psychophysical training in motor sports, the peculiarities of competitive activity. The most important areas are the selection of criteria and optimization of rallying training. The improvement of the training system in this sport has been studied.

Key words: Parallels, physical training, control, athlete, psychophysical training, exercises.

In the Republic of Uzbekistan, popularization of car sports, as an example of holding sports events in car sports, wide involvement of the young generation in technical and practical sports and promotion of this type of sport are gaining priority.

A number of scientists have conducted studies on the effect of compressive force in motor sports, and it is generated by non-deformable aerodynamic elements, which increases the stability of high-speed vehicles. [1,2,3]

However, in these works, the effect of vibrations was not considered, aerodynamic elements that arise in real conditions of use, stability indicators when passing small-radius curves were not revealed.

LITERATURE ANALYSIS AND RESEARCH METHODOLOGY.

In the last twenty years, special and scientific methodical literature discussed the issues of improving the psychophysical condition as part of the training of qualified athletes, but these issues were hardly discussed in the special literature devoted to the training of auto pilots. In general, issues of training and control of physical and mental abilities of athletes, which make up the structure of psychophysical training, have been studied the least. [4,5,6,7]

DISCUSSION AND RESULTS.

Thus, the insufficient study of a number of important issues of improving the training of rally racers determined the relevance of the chosen research topic.

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The study and analysis of the traditional option of training auto racers showed that it is relatively low, its effectiveness is insufficient development of a number of important physical and especially psychological qualities in a one-year training cycle. did not ride.

The results of the correlation analysis revealed a high degree of interdependence of the indicators ($n = 0.70-0.92$). Physical (at the level of 100 m running speed and anaerobic threshold - V100 m and VPTDB, respectively) and (psychological training, which evaluates the characteristics of attention, counter-reaction to a moving object time, in accordance with simple and complex sensorimotor reaction) that shows their prognostic value in psychophysical training can show.

In order to experimentally check the possibility of optimizing professional training, Table 1 shows the comparative volumes of the training loads performed by the control and experimental groups A-group Amudarya District Patriotic Organization team and N-group, Nukus private team, respectively. During the experiment, the comparative study of the structure of the psychophysical preparation of the teams revealed that the structure of the psychophysical preparation increased.

Only the results of the two-year follow-up of the experimental groups were determined through didagogical control. 2 types of generalizing factors that had a significant impact on the structure of the psychophysical abilities of racing drivers at different stages of the year gradually decreased. In general, the role of physical fitness and mental endurance has increased.

Among the leading factors that have a significant impact on this are the following:

Gradual volumes of loads performed by athletes of the control (A) and experimental (N) groups

Preparation steps		General preparation			Special preparation		
Groups		A	N	Δ_{A-N}	A	N	Δ_{A-N}
Types of preparation and exercises		time	time	%	time	time	%
Fast	Sprint *	2,8	4,2	+43	6,0	7,2	+20
	Sacrahs *	2,4	2,4	0	2,7	3,0	+11
Endurance	The mode is IPK	3,5	5,0	+43	5,2	8,5	+39
	Mode PTDB	6,2	9,5	+53	14,5	21,5	+48
	Recovery	3,0	3,0	0	8,3	7,0	-16
	Max Power*	4,0	4,0	0	7,0	7,0	0
	Endurance	5,0	5,0	0	12,5	12,5	0
	**	5,4	8,0	+48	11,9	16,0	+35
	Trainers ***	19,0	19,0	0	42,0	42,0	0
	Driving techniques	28	28	0	120	120	0
Total volume stage loads		79,3	87,9	+11	230,1	144,7	244,7

Notes: 1) * – taking into account rest breaks; 2) ** – the same thing, including URM exercises; 3) *** – total working time in all specialized simulators.

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Preparation steps		Initial competitions			Main competitions			In just one year		
Groups		A	N	Δ_{A-N}	A	N	Δ_{A-N}	A	N	Δ_{A-N}
Types of preparation and exercises		time	time	%	time	time	%	time	time	%
Quick power	Sprint *	5,0	5,0	0	3,2	3,2	0	17,0	19,4	+4
	Sacrahs *	1,5	1,7	+13	0	0	0	6,6	7,1	+8
Endurance	Mode	2,8	3,5	+25	0	0	0	11,5	17,0	+48
	IPK	9,1	13,0	+43	2,3	4,5	+49	32,1	48,5	+51
	Mode	6,4	7,5	+17	3,9	5,0	+28	221,6	22,5	+4
Power	PTDB	2,0	2,0	0	0	0	0	13,0	13,0	0
	Recovery	6,0	6,0	0	3,0	3,0	0	26,5	26,5	0
Technical tactician	Maximum	5,4	8,0	+48	0	0	0	22,7	32,0	+41
	strengt h*	15,5	15,5	0	5,0	5,0	0	81,5	81,5	0
	Endurance	104	104	0	68	68	0	320	320	0
Total volume phase loads		157,7	166,2	+5	85,4	88,7	+4	552,5	587,5	+6

Notes: 1) * – taking into account rest breaks; 2) ** – the same thing, including URM exercises; 3) *** – total working time in all specialized simulators.

- 1) integrated psychomotor training (contribution of the generalized factor to the total variance of the sample - 24.64%);
- 2) load tolerance with an important mental component (21.23%);
- 3) general recovery ability of the body (19.48%);
- 4) increased power component of load of concentration ability (18.6%);
- 5) differentiation of intensive aerobic activities (18%);
- 6) the ability to divide and switch attention (14.3%);
- 7) ability to solve problems of increasing complexity (12.82%);
- 8) objects in difficult working conditions (12.54%).

At the end of the scientific experiment, the generalized factor of body recovery played a leading role in the subjects of group A (contribution to the total variance of the sample - 19.48%), and in group N, the factor of tolerance to force load (14.91%).

Figure 2 shows the so-called psychophysical fitness profiles of both groups of racers. A significant superiority of athletes of group A was observed in terms of training indicators such as recovery from loads in different directions (numbers 12-15), as well as psychomotor indicators

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(numbers 17-28). The data of this scientific experience show the high selectivity of the effect of specialized preparations.

Conclusion: During the pedagogical experience, the following relative increase in the physical fitness indicators of the athletes of the A, N-groups was determined.

Reliable relative changes in speed indicators in group A reached 2.33% compared to 1.42% in group N. The values of the relative changes in the parameters describing endurance in the experimental group were 2.76–5.23% compared to 1.05–3.93% in subjects.

The change in strength indicators in both groups was approximately the same, 5.11–14.5% in the experimental group and 4.85–16.8% in the control group.

According to indicators describing recovery processes, the athletes of group A achieved a decisive advantage. Subjects of this group had a reliable increase from 6.4 to 13.6%, while in the N-group, the relative changes were unreliable and amounted to 2.2-2.7%.

The high level of correlation of indicators of physical (V100 m, V PTDB) and psychological training (attention) allows them to be used as informative indicators of psychophysical training of racing drivers.

The use of the experimental methodology of purposefully changing the volume of loads in physical and psychological directions ensured acceptability in relation to competitive activities. specialized psychological (on average 40%) abilities of drivers allowed to increase the endurance level of rally driver training components up to 5%, and psychological preparation up to 13%.

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ABSTRACT. The paper of the is to initiate the study of real AW*-algebras in the framework of the theory of real C*-algebras and W*-algebras. It happens that in some aspects real AW*-algebras behave unlike complex AW*-algebras and sometimes their properties are completely different also from corresponding properties of real W*-algebras. We prove that if the complexification $A + iA$ of a real C*-algebra A is a (complex) AW*-algebra then A itself is a real AW*-algebra. By modifying the Takenouchi's examples of complex non-W*, AW*-factors we show that there exist real non-W*, AW*-factors. The correspondence between real AW*-factors and involutive (i.e. with period 2) *-anti-automorphisms of (complex) AW*-factors is established. We give the decomposition of real AW*-algebras into types *I*, *II* and *III* similar to the case of complex AW*-algebras or W*-algebras. It is proved that if A is a real AW*-factor and its complexification $M = A + iA$ is also an AW*-algebra (and therefore an AW*-factor) then the types of A and M coincide.

KEYWORDS: AW*-algebra, C*-algebra, factor, involutive *-antiautomorphism, complex Hilbert space, commutant, complexification, linear *-automorphism, conjugate, bicommutant, quaternions algebra, projection, isomorphic.

1. INTRODUCTION

The theory of operator algebras was initiated in a series of papers by Murray and von Neumann in thirties. Later such algebras were called von Neumann algebras or W*-algebras. These algebras are self-adjoint unital subalgebras M of the algebra $B(H)$ of bounded linear operators on a complex Hilbert space H , which is closed in the weak operator topology. Equivalently M is a von Neumann algebra in $B(H)$ if it is equal to the commutant of its commutant (von Neumann's bicommutant theorem). A factor (or W*-factor) is a von Neumann algebra with trivial center and investigation of general W*-algebras can be reduced to the case of W*-factors, which are classified into types *I*, *II* and *III*.

Real operator algebra is a *-algebra consisting of bounded (real) linear operators on a real Hilbert space H . If it is closed in the weak operator topology we have real W*-algebra, and if it is uniformly closed (i.e. in the norm topology) then we come to the notion of the real C*-algebra.

In his monograph [7] Li Bing-Ren has set up the fundamentals of real operator algebras and gave a systematic discussion of the real counterpart for the theory of W*- and C*-algebras.

A slightly different (but almost the same up to *-isomorphism) definition of real W*-algebras was given by E. Størmer [13,14]: A real von Neumann algebra (or real W*-algebra) is a real *-algebra \mathfrak{R} of bounded linear operators on a complex Hilbert space containing the identity operator $\mathbf{1}$, which is closed in the weak operator topology and satisfies the condition $\mathfrak{R} \cap i\mathfrak{R} = \{0\}$. The smallest (complex) von Neumann algebra $U(\mathfrak{R})$ containing \mathfrak{R} coincides with its complexification $\mathfrak{R} \cap i\mathfrak{R}$, i.e. $U(\mathfrak{R}) = \mathfrak{R} \cap i\mathfrak{R}$. Moreover \mathfrak{R} generates a natural involutive (i.e. of order 2) *-antiautomorphism $\alpha_{\mathfrak{R}}$ of $U(\mathfrak{R})$, namely $\alpha_{\mathfrak{R}}(x + iy) = x^* + iy^*$, where $x + iy \in U(\mathfrak{R})$, $x, y \in \mathfrak{R}$. It is clear that $\mathfrak{R} = \{x \in U(\mathfrak{R}) : \alpha(x) = x^*\}$. Conversely, given a (complex) von Neumann algebra U and any involutive *-antiautomorphism α on U , the set $\{x \in U : \alpha(x) = x^*\}$ is a real von Neumann algebra in the above sense.

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It is not difficult to see that two real von Neumann algebras generating the same (complex) von Neumann algebra are isomorphic if and only if the corresponding involutive *-antiautomorphisms are conjugate. Thus the study of the above real von Neumann algebra can be reduced to the study of pairs (U, α) , where U is a (complex) von Neumann algebra and α - its involutive *-antiautomorphism.

2. PRELIMINARIES

Let H be a complex Hilbert space, $B(H)$ denote the algebra of all bounded linear operators on H . The *weak (operator) topology* on $B(H)$ is the locally convex topology, generated by semi norms of the form: $\rho(a) = |(\xi, a\eta)|$, $\xi, \eta \in H$, $a \in B(H)$. W^* -algebra is a weakly closed complex *-algebra of operators on a Hilbert space H containing the identity operator $\mathbf{1}$. Recall that W^* -algebras are also called *von Neumann algebras*.

Let further M be a W^* -algebra. The set M' of all elements from $B(H)$ commuting with each element from M is called the commutant of the algebra M . The *center* $Z(M)$ of a W^* -algebra M is the set of elements of M , commuting with each element from M . It is easy to see that $Z(M) = M \cap M'$. Elements of $Z(M)$ are called *central* elements. A W^* -algebra M is called *factor*, if $Z(M)$ consists of the complex multiples of $\mathbf{1}$, i.e. if $Z(M) = \{\lambda\mathbf{1}, \lambda \in \mathbb{C}\}$. We say that a W^* -algebra M is *injective* if there exists a projection P in $B(H)$ onto M such that $\|P\| = 1$ and $P(\mathbf{1}) = \mathbf{1}$. This is equivalent to the condition that M is *hyperfinit*, i.e., that there exists an increasing sequence $\{M_n\}$ of matrix subalgebras of the algebra M containing $\mathbf{1}$ and such that the union $\cup_n M_n$ is weakly dense in M .

Let e, f, h be projections from M . We say that e is equivalent to f , and write $e \sim f$, if $e = \omega^* \omega$, $f = \omega \omega^*$ for some partial isometry ω from M . A projection e is called: *finite*, if $e \sim f \leq e$ implies $f = e$; *infinite* - otherwise; *purely infinite*, if e doesn't have any nonzero finite subprojection; *abelian*, if the algebra eMe is an abelian W^* -algebra. A W^* -algebra M is called *finite*, *infinite*, *purely infinite*, if $\mathbf{1}$ is a finite, infinite, purely infinite respectively; M is σ -finite, if any family of pairwise orthogonal projections from M is at most countable; *semifinite*, if each projection in M contains a nonzero finite subprojection; *properly infinite*, if every nonzero projection from $Z(M)$ is infinite; *discrete*, or of type *I*, if it contains a faithful abelian projection (i.e. an abelian projection with the central support $\mathbf{1}$); *continuous*, if there is no abelian projection in M except zero; M is of type *II*, if M is semifinite and continuous; type I_{fin} (respectively I_∞), if M is of type *I* and finite (respectively properly infinite); type II_1 (respectively type II_∞), if M is of type *II* and finite (respectively properly infinite); type *III*, if M is purely infinite. It is known that any W^* -algebra has a unique decomposition along its center into the direct sum of W^* -algebras of the I_{fin} , I_∞ , II_1 , II_∞ and *III* types.

A linear mapping $\alpha : M \rightarrow M$ is called a **-automorphism* (respectively a **-antiautomorphism*) if $\alpha(x^*) = \alpha(x)^*$ and $\alpha(xy) = \alpha(x)\alpha(y)$ (respectively $\alpha(xy) = \alpha(y)\alpha(x)$), for all $x, y \in M$. A mapping α is called *involutive* if $\alpha^2 = id$. A *-automorphism α is called *inner* if there exists a unitary u in M , such that $\alpha(x) = u x u^*$, for all $x \in M$. A *-automorphism is called *centrally trivial* if

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$\alpha(x_n) - x_n \rightarrow 0$ *-strongly as $n \rightarrow \infty$ for any central sequence $\{x_n\}_{n \in \mathbb{N}}$. We shall denote by $Aut(M)$ the group of all *-automorphisms, by $Aut(M)$ the group of all *-antiautomorphisms, by $Int(M)$ the group of all inner *-automorphisms, and by $Ct(R)$ the subgroup of its centrally trivial *-automorphisms of M . Two *-automorphisms or *-antiautomorphisms α and β are said to be conjugate (or outer conjugate), if $\alpha = \theta \cdot \beta \cdot \theta^{-1}$ (respectively $Adu \cdot \alpha = \theta \cdot \beta \cdot \theta^{-1}$) for some *-automorphism θ (and an inner *-automorphism Adu). A linear functional ω on M is called *positive*, if $\omega(x^*x) \geq 0$ for all $x \in M$. A positive linear functional ω on M with $\|\omega\| = 1$ is called a state. Let M_+ be the positive part of M . A *weight* on M is a homogeneous additive function $\omega: M_+ \rightarrow [0, +\infty]$ (we suppose that $0 \cdot +\infty = 0$). A weight (or a state) ω is called: *faithful*, if for any $x \in M_+$, $\omega(x) = 0$ implies $x = 0$; *normal*, if for any net $\{x_\alpha\}$ in M , increasing to an element x , we have $\omega(x) = \sup_\alpha \omega(x_\alpha)$; *finite*, if $\omega(x) < \infty$ for all $x \in M_+$; *semifinite*, if for any $x \in M_+$ there exists a net of elements $\{y_\alpha\} \in M_+$, such that $\omega(y_\alpha) < \infty$, and $y_\alpha \rightarrow x$ in σ -weak topology; ω is a trace, if $\omega(uxu^*) = \omega(x)$ for all $x \in M_+$ and each unitary $u \in M$.

The type of a W^* -algebra is tightly connect with the existence of traces on it. Namely a W^* -algebra M is a finite if and only if it possesses a separating family of finite normal traces; it is semifinite if and only if it possesses a faithful semifinite normal trace; M is purely infinite if and only if there is no nonzero semifinite normal trace on M (see [15]).

Definition. [4]. By a real C^* -algebra we mean a real Banach *-algebra R such that the relation $\|a^*a\| = \|a\|^2$ holds and the element $1 + a^*a$ is invertible for any $a \in R$.

Definition*. [8,9]. A real C^* -algebra R such that $R + iR$ is a complex W^* -algebra is referred to as a real W^* -algebra.

We proceed with another definition of a real W^* -algebra, which can be found in papers of Størmer.

Definition. [2,13].** A unital weakly closed real *-algebra R in $B(H)$ such that $R \cap iR = \{0\}$ is called a *real W^* -algebra*.

A real W^* -algebra R is called a (real) factor if its center $Z(R)$ consists of elements $\lambda 1$, $\lambda \in \mathbb{R}$. We say that a real W^* -algebra R is of type I_{fin} , I_∞ , II_1 , II_∞ and III , $\lambda \in [0, 1]$ if the enveloping W^* -algebra $U(R) = R + iR$ (i.e., the least W^* -algebra containing R) is of the corresponding type with respect to the usual classification of W^* -algebras.

3. MAIR RESULTS

Let A be a real C^* -algebra, with the complexification $M = A + iA$. Then M is a complex C^* -algebra and, as we have seen in the previous section, if A is a real AW^* -algebra M may not be a (complex) AW^* -algebra. Now let us consider the converse problem if $M = A + iA$ is an AW^* -algebra is A necessarily a real AW^* -algebra? The following result gives a positive answer to this problem.

Proposition 1. *Let A be a real C^* -algebra and let $M = A + iA$ be its complexification. Suppose that M is an AW^* -algebra. Then A is a real AW^* -algebra.*

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Proof. As we have mentioned in the first section, A coincides with the fixed point set under the conjugate linear $*$ -automorphism " $\bar{\cdot}$ ": $x + iy \mapsto x - iy$ of M , where $x, y \in A$, i.e. $A = \{a \in M : \bar{a} = a\}$. If S is a nonempty subset in A then for its right-annihilator (with respect to M) we have

$$R_M(S) = \{a \in M \mid sa = 0 \text{ for all } s \in S\}$$

and

$$a \in R_M(S) \Leftrightarrow sa = 0, \forall s \in S \Leftrightarrow \overline{sa} = \bar{s} \bar{a} = s \bar{a} = 0, \forall s \in S$$

because $\bar{\bar{s}} = s \in A$. This means that $a \in R_M(S)$ if and only if $\bar{a} \in R_M(S)$.

Now suppose that M is an AW*-algebra, then $R_M(S) = gM$ for a suitable projection $g \in M$. Since $g \in R_M(S)$ from above it follows that $\bar{g} \in R_M(S)$. Therefore \bar{g} is a projection and $\bar{g} \in gM$, i.e. $\bar{g} = g\bar{g}$. Thus $(\bar{g})^* = (g\bar{g})^* = (\bar{g})^* g^* = \bar{g}g = \bar{g} = g\bar{g}$ i.e. $g = \bar{\bar{g}} = \overline{g\bar{g}} = \bar{g}g = \bar{g}$. This means that $g \in A$. But then

$$R_M(S) = R_M(S) \cap A = gM \cap A = gA,$$

i.e. A is a real AW*-algebra.

Proposition 2. *There exist real AW*-factors which are not real W*-factors.*

Theorem 1. *A real AW*-algebra A is a real W*-algebra if and only if*

- (i) *A possesses a separating family of normal states;*
- (ii) *its complexification $M = A + iA$ is an AW*-algebra.*

Proof. Necessity is obvious, since if A is a real W*-algebra, then $M = A + iA$ is a (complex) W*-algebra (see [7, Chap.5]). Therefore, M is an AW*-algebra and it possesses a separating family of normal states, the restrictions of which on A give a separating family of normal states on A .

Sufficiency. Let $M = A + iA$ be an AW*-algebra and let A possess a separating family of normal states, which we denote by $\{f_\gamma\}$, i.e. for any $a \in A, a \geq 0, a \neq 0$ exists $f \in \{f_\gamma\}$ with $f(a) = 0$.

For $x \in a + ib \in M, a, b \in A$, we put $\alpha(x) = a^* + ib^*$. A straightforward calculation shows that α is an involutive (i.e. with period 2) $*$ -anti-automorphism of M , and $A = \{a \in M : \alpha(a) = a^*\}$.

The extension of f_γ by linearity on M we denote by f_γ^0 , and we shall show, that the family $\{f_\gamma^0\}$ is a separating family of normal states on M .

For $x = a + ib \in M_s = \{x \in M : x^* = x\}$ we have $a^* = a, b^* = -b$, and since f_γ is hermitian we obtain $f_\gamma^0(x) = f_\gamma(a) + if_\gamma(b) = f_\gamma(a)$, since $f_\gamma(b) = 0$. Thus, for $x \in M_s$ we have

$$f_\gamma^0(x) = \frac{1}{2} f_\gamma(x + \alpha(x)),$$

and $x + \alpha(x) \in A$, since $x + \alpha(x) = 2a$.

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If $x \geq 0$, then $\alpha(x) \geq 0$ (because α is a $*$ -anti-automorphism), and hence $x + \alpha(x) \geq 0$, i.e. $x + \alpha(x) \in A^+$. Therefore $f_\gamma^0(x) = \frac{1}{2} f_\gamma(x + \alpha(x)) \geq 0$, i.e. all functionals f_γ^0 are positive on M . Moreover, we have $f_\gamma^0(1) = f_\gamma(1) = 1$, i.e. $\{f_\gamma^0\}$ is a family of states on M .

Now let us show, that each state f_γ^0 is normal. If $\{x_\nu\} \subset M$ is an arbitrary net with $x_\nu \searrow 0$, then since α is an order isomorphism of M , we have $\alpha(x_\nu) \searrow 0$. Therefore $x_\nu + \alpha(x_\nu) \searrow 0$ and $x_\nu + \alpha(x_\nu) \in A^+$. Since f_γ is a normal we obtain

$$f_\gamma^0(x_\nu) = \frac{1}{2} f_\gamma(x_\nu + \alpha(x_\nu)) \rightarrow 0$$

i.e. all functionals f_γ^0 are normal on M .

Finally, let $x \in M$, $x \geq 0$ and $f_\gamma^0(x) = 0$ for all γ . Then $x + \alpha(x) \in A^+$, and since $\{f_\gamma^0\}$ is a separating family of states, $x + \alpha(x) = 0$. Hence we have $x = -\alpha(x) \in M^+ \cap (-M^+) = \{0\}$, i.e. $x = 0$. Thus, the AW*-algebra M possesses a separating family of normal states $\{f_\gamma^0\}$. By the theorem of Pedersen [10] M is a W*-algebra. Therefore, by [7] A is a real W*-algebra.

Now, let M be a (complex) AW*-factor, α its involutive $*$ -anti-automorphism. Then as it was mentioned above the set $A = \{a \in M : \alpha(a) = a^*\}$ is a real C*-algebra such that $M = A + iA$ (actually $\bar{x} = \alpha(x^*)$ in terms of operation "·") and from Proposition 4.3.1 it follows that A is a real AW*-factor. It is known that two real W*-algebras generating the same (complex) W*-algebra, are isomorphic if and only if the corresponding involutive $*$ -anti-automorphisms are conjugate [2,13,14]. A similar result is also valid for real AW*-algebras:

Proposition 3. *Let α and β be involutive $*$ -anti-automorphisms of a (complex) AW*-factor M . Then the real AW*-factors*

$$A = \{x \in M : \alpha(x) = x^*\} \text{ and } B = \{x \in M : \beta(x) = x^*\}$$

are real $$ -isomorphic if and only if the involutive $*$ -anti-automorphisms α and β are conjugate, i.e. $\beta = \theta\alpha\theta^{-1}$ for a suitable $*$ -automorphism of the AW*-factor M .*

Proof. Let A and B be real $*$ -isomorphic with a $*$ -isomorphism $\theta_0 : A \mapsto B$. Then θ_0 can be naturally extended to a (complex) $*$ -isomorphism θ of their complexifications $A + iA$ and $B + iB$ both coincide with M . Therefore θ is a $*$ -automorphism of M and $\theta(A) = B$, i.e. $\alpha(x) = x^*$ if and only if $\beta(\theta(x)) = (\theta(x))^* = \theta x^*$. Thus for $x \in A$ we have

$$\beta(\theta(x)) = (\theta(x))^* = \theta(x^*) = \theta\alpha(x), \text{ i.e. } \beta = \theta\alpha\theta^{-1}\alpha(x) \text{ for all } x \in A.$$

Since $\theta^{-1}\beta^{-1}\theta\alpha$ is a $*$ -automorphism on M which is identical on A and any real $*$ -automorphism of A can be uniquely extended to a complex $*$ -automorphism of M , it follows that $\theta^{-1}\beta^{-1}\theta\alpha = id$ on whole M , i.e. $\theta\alpha = \beta\theta$ and $\beta = \theta\alpha\theta^{-1}$, i.e. α and β are conjugate.

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Conversely, if α and β are conjugate, i.e. $\beta = \theta\alpha\theta^{-1}$ for a suitable complex *-automorphism θ of M , then $\theta\alpha = \beta\theta$ and $\alpha(x) = x^*$ if and only if $\beta(\theta(x)) = \theta x^* = (\theta x)^*$, i.e. $\theta(A) = B$. Therefore, θ restricted on A gives the needed *-isomorphism between real AW*-factors A and B .

Now we consider one of the main results of this section.

Theorem 2. *Let A be a real AW*-algebra and its complexification $M = A + iA$ is a (complex) AW*-algebra. Then A is of type I if and only if M of type I.*

Corollary. *Let A be a real AW*-algebra of type I, and its complexification $M = A + iA$ is a (complex) AW*-algebra. Then A is a real W*-algebra if and only if its center Z_A is a real W*-algebra.*

Proof. If A is a real W*-algebra then, obviously, its center Z_A is a real W*-algebra. Conversely, let A be an AW*-algebra of type I and its center is a W*-algebra. Then by Theorem 4.5.2, $M = A + iA$ is an AW*-algebra of type I, and its center $Z_M = Z_A + iZ_A$ is a W*-algebra. From Kaplanskys theorem [6, Theorem 2] it follows that M is an W*-algebra. Therefore, A is a real W*-algebra.

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**Интенсивные методы обучения русскому языку: Применение и адаптация
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Аннотация. В данной статье описаны ключевые интенсивные методы обучения, их характеристики и принципы работы.

Ключевые слова: Адаптация интенсивных методов, Метод CLIL, ролевые игры, деловые симуляции.

Введение. Интенсивные методы обучения русскому языку представляют собой педагогические подходы, направленные на ускоренное и эффективное освоение языка. Эти методы особенно актуальны для студентов инженерно-технологических направлений, которым необходимо быстро приобрести практические навыки для профессиональной деятельности.

В Узбекистане образовательные учреждения внедряют различные интенсивные методы обучения русскому языку, чтобы удовлетворить потребности студентов и повысить их уровень владения языком. Рассмотрим несколько успешных практик и методик, которые продемонстрировали свою эффективность в контексте обучения русскому языку в стране.

1. Программа «Русский язык в технопарках»

Одним из ярких примеров является программа «Русский язык в технопарках», реализуемая в рамках учебных курсов для студентов технических вузов. Эта программа направлена на создание языковой среды, максимально приближенной к профессиональной деятельности.

- Особенности программы: Студенты принимают участие в проектах и лабораторных работах, где весь процесс общения и документации происходит на русском языке. Занятия включают обсуждение современных технологий, разработку инновационных решений и презентацию результатов.

Рассмотрим основные интенсивные методы обучения, их определения и особенности.

1. Метод полного погружения (Immersion Method)

Метод полного погружения предполагает, что студенты находятся в языковой среде, где русский язык используется во всех аспектах их деятельности. Это метод активно используется для создания условия, максимально приближенного к реальной языковой практике.

- Характеристика: Студенты обучаются в русскоязычных средах или участвуют в курсах, где весь процесс общения и обучения проходит на русском языке.

- Цель: Развить естественное понимание и использование языка, улучшить навыки разговорной речи и аудирования.

- Примеры применения: Языковые лагеря, курсы с интенсивным погружением, языковые обмены.

2. Метод интенсивного обучения (Intensive Course Method)

Метод интенсивного обучения предполагает значительное увеличение объема учебных занятий в короткий период времени. Этот метод ориентирован на быстрое освоение языка за счет частых и продолжительных занятий.

- Характеристика: Увеличенное количество учебных часов в неделю, интенсивная работа над всеми аспектами языка (грамматика, лексика, произношение).

- Цель: Быстрое достижение уровня общения на языке, улучшение грамматических и лексических навыков.

- Примеры применения: Интенсивные языковые курсы, интенсифицированные программы обучения в университетах.

3. Метод проектного обучения (Project-Based Learning)

Метод проектного обучения включает выполнение реальных или смоделированных проектов, которые требуют использования русского языка. Этот метод помогает студентам применить свои языковые знания в практических задачах.

- Характеристика: Работа над проектами, которые могут включать исследовательскую деятельность, разработку и презентацию, работу в группах.

- Цель: Развить навыки практического применения языка, улучшить способности к сотрудничеству и критическому мышлению.

- Примеры применения: Проектные работы, групповые исследования, создание мультимедийных материалов.

4. Метод обучения через задачи (Task-Based Learning)

Метод обучения через задачи основан на выполнении конкретных языковых задач, которые студенты должны решить, используя русский язык. Этот метод акцентирует внимание на использовании языка для выполнения реальных задач.

- Характеристика: Задания ориентированы на решение практических проблем и задач, которые требуют активного использования языка.

- Цель: Развить практические навыки использования языка, улучшить способность к решению реальных проблем.

- Примеры применения: Сценарные задания, ролевые игры, деловые симуляции.

5. Метод интегрированного обучения (Content and Language Integrated Learning, CLIL)

Метод CLIL предполагает интеграцию обучения языку с другими предметами, что позволяет студентам изучать русский язык одновременно с профессиональным содержанием.

- Характеристика: Студенты изучают русский язык в контексте других дисциплин, таких как инженерия, экономика или технологии.

- Цель: Обеспечить изучение языка в контексте профессиональной деятельности, улучшить понимание специализированной терминологии и концепций.

- Примеры применения: Курс русского языка с элементами технического или инженерного обучения, дисциплины, где язык используется для изучения профессиональных тем.

6. Метод кооперативного обучения (Cooperative Learning)

Метод кооперативного обучения акцентирует внимание на групповой работе, где студенты взаимодействуют друг с другом, чтобы достичь общих учебных целей.

- Характеристика: Работы в группах, совместное выполнение заданий, обмен знаниями и опытом.

- Цель: Развить навыки работы в команде, улучшить способности к общению и сотрудничеству на языке.

- Примеры применения: Групповые проекты, обсуждения, совместные задания.

Заключение

Интенсивные методы обучения русскому языку включают разнообразные подходы, которые могут быть адаптированы в зависимости от целей и потребностей студентов инженерно-технологических направлений. Эти методы направлены на ускоренное и эффективное освоение языка, что позволяет студентам быстрее достигать нужного уровня владения языком и успешно применять его в профессиональной деятельности.

Адаптация интенсивных методов обучения русскому языку для студентов инженерных и технологических направлений требует учета специфики их профессиональной подготовки и потребностей. Интенсивные методы, такие как метод полного погружения, проектное обучение и метод обучения через задачи, могут быть эффективно применены, если они адаптированы к особенностям инженерных и технологических дисциплин. Рассмотрим, как именно эти методы можно адаптировать для студентов таких направлений.

1. Интеграция профессионального контента

Одним из ключевых аспектов адаптации интенсивных методов является интеграция профессионального контента в учебный процесс. Студенты инженерных и технологических направлений нуждаются в изучении языка в контексте своей специальности, чтобы эффективно использовать язык в профессиональной деятельности.

- **Использование профессиональной лексики:** Включение специализированной терминологии и концепций в учебные материалы помогает студентам лучше понимать язык в контексте их профессиональной области.

- **Практические задания и проекты:** Разработка заданий и проектов, связанных с инженерией и технологиями, позволяет студентам применять язык в реальных профессиональных ситуациях. Например, создание технических отчетов, проектирование и представление инженерных решений на русском языке.

- **Симуляции профессиональных ситуаций:** Проведение симуляций, таких как технические обсуждения, презентации проектов или ролевые игры, позволяет студентам практиковать язык в контексте их будущей профессиональной деятельности.

2. Использование технологий для интерактивного обучения

Инновационные технологии, такие как виртуальная и дополненная реальность, могут быть адаптированы для создания интерактивных учебных материалов, которые отражают специфику инженерных и технологических направлений.

- **Виртуальные лаборатории:** Создание виртуальных лабораторий, где студенты могут проводить эксперименты и исследования на русском языке, способствует практическому освоению языка в контексте их специальности.

- **Мультимедийные презентации и моделирование:** Использование мультимедийных инструментов для создания презентаций, моделирования технических процессов и демонстрации инженерных решений помогает студентам лучше понять профессиональный язык и его применение.

3. Проектное обучение с фокусом на инженерные задачи

Метод проектного обучения может быть адаптирован для студентов инженерных и технологических направлений путем включения задач и проектов, которые имеют непосредственное отношение к их области знаний.

- **Проектные работы:** Разработка и выполнение проектов, связанных с инженерией и технологиями, таких как создание прототипов, исследование новых технологий или разработка технической документации.

- **Групповые проекты:** Работа в группах над инженерными проектами позволяет студентам практиковать язык в сотрудничестве с другими, а также развивать навыки командной работы и коммуникации.

4. Интенсивные курсы с фокусом на технический язык

Интенсивные курсы должны включать элементы, специфичные для инженерных и технологических направлений, чтобы студенты могли сосредоточиться на изучении языка, необходимого для их профессиональной деятельности.

- Фокус на технической лексике и грамматике: Разработка учебных материалов, которые включают техническую лексику и грамматику, используется в инженерных текстах и документации.
- Специализированные учебные программы: Создание учебных программ, которые включают практические задания, направленные на изучение языка через выполнение профессиональных задач и решение инженерных проблем.

5. Адаптивное обучение для инженерных направлений

Адаптивные методы обучения могут быть использованы для создания персонализированных учебных планов, которые соответствуют потребностям студентов инженерных и технологических направлений.

- Индивидуальные планы обучения: Разработка индивидуальных планов, которые учитывают уровень знаний студентов и их профессиональные интересы, позволяет сосредоточиться на изучении языка, наиболее релевантного для их специальности.
- Динамическое регулирование: Регулирование учебного материала и методов в зависимости от прогресса студентов и их потребностей, что обеспечивает более эффективное обучение.

Заключение. Адаптация интенсивных методов обучения русскому языку для студентов инженерных и технологических направлений требует интеграции профессионального контента, использования технологий, проектного обучения и создания специализированных учебных программ. Такие адаптации позволяют студентам не только улучшить свои языковые навыки, но и подготовиться к профессиональной деятельности, используя язык в контексте их специальности.

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Quality Management in Education System

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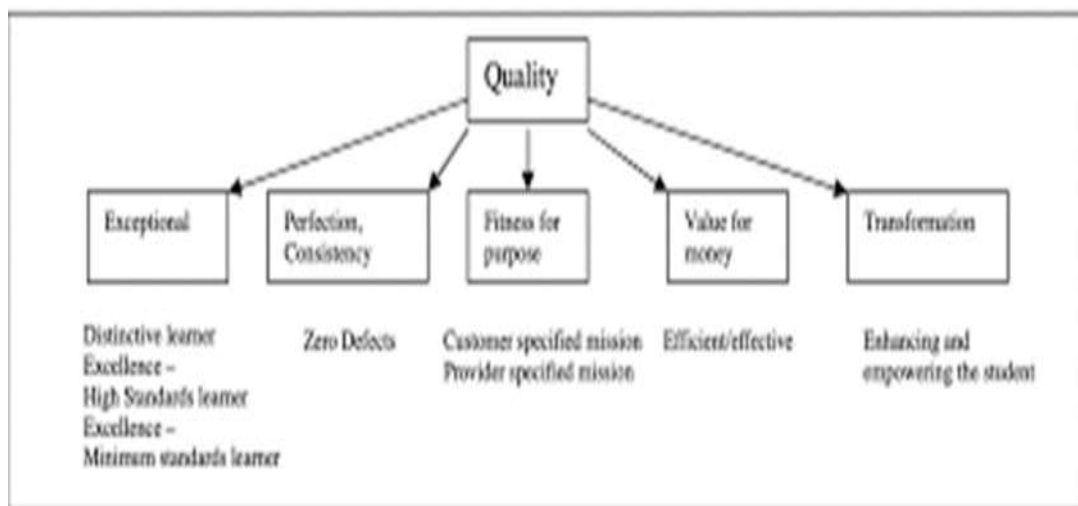
Annotation. This article discusses the use of international indicators and their importance in ensuring quality and quality management in education. Quality management and its importance are presented.

Key words: quality, quality menegment, educational services, quality assurance.

A definition of quality is "your focus on the satisfying your customer's needs". Therefore, it can be said that the "quality of a product or service" is the extent to which it incorporates features and characteristics that allow the customer to use it. At the same time you are satisfying their needs.

Quality can also be defined as being fit for the intended purpose, or "fit for purpose".

In addition a simple definition is "conformance to requirements". We can get information about quality and unit type from 1- picture.



1-picture. Quality and its types

Now we will look at the quality management system.

Quality management in education is a process that involves using principles and techniques to improve the quality of educational services. Quality management focuses on improving processes, products, and practices to ensure they meet or exceed customer expectations. It also seeks to create an environment where excellence is rewarded, stakeholders are engaged, and resources are used efficiently.



2-picture. Quality management system

This practical approach will help educators understand how to effectively use quality management in their work as well as provide strategies for implementing it within their own organizations. By having a better understanding of what quality means in education and how best to achieve it, educators can become more successful leaders in their fields.

Quality management is essential in education to ensure that students receive the best possible learning experience and outcomes. Quality assurance systems focus on monitoring, evaluating, and improving operations to provide consistency and improve results for learners. Quality management can help teachers by providing them with tools to assess student performance, identify areas of improvement and develop strategies for teaching.



3-picture. Factor affecting the Quality assurance in Higher Education

It also encourages collaboration among school administrators, faculty members, parents, and students in order to better serve the needs of all learners. Quality management promotes continuous assessment of educational programs so that problems are identified early on before they become more serious or costly issues.

Additionally, it provides a framework for evaluating new initiatives such as technology-based learning programs so that schools can determine if they will be effective investments in terms of student achievement. Ultimately quality management helps educators create an environment where all students have access to top-notch educational opportunities.

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Developing a Quality Management System (QMS) is an important practical step for quality management in education. It provides a structured framework that enables educational organizations to achieve their goals and objectives, as well as to ensure that the services provided meet the expectations of students, staff, parents, and other stakeholders. A QMS can provide guidance on how best to deliver quality improvements through processes such as monitoring performance against standards, measuring customer satisfaction levels, or implementing corrective measures when needed.

Additionally, it helps identify areas where resources are needed or where improvement activities need to be implemented. By developing a QMS, education providers can ensure they are providing quality services by consistently meeting their requirements and those of external customers.

This will help them gain long-term sustainability through delivering reliable outcomes that lead to improved student achievement and higher overall satisfaction rates with educational offerings.

Engaging stakeholders in quality management is an essential step for any educational institution. Stakeholders include parents, teachers, students, and administrators, as well as external partners such as employers or funding agencies. To ensure a successful system of quality management in education, it is important to involve all parties in the process.

This allows each stakeholder to provide valuable input on how best to improve the institution's quality standards. Furthermore, engaging stakeholders helps build trust and understanding between the different organizations involved in a school's education system.

By working together towards common goals and objectives, institutions can develop programs that are tailored to meet their specific needs while maintaining high-quality standards across the board. Quality management should be seen not only as managing resources but also as involving people who have vested interests in achieving excellence in education outcomes.

Training and development can be a powerful tool for quality management in education. It can help to identify areas of improvement for staff, students, and administrators. Through training programs tailored to the specific needs of a school or college, educators can become more efficient in their duties and increase organizational efficiency overall.

Training sessions on how to use technology effectively will also provide employees with the skills necessary to better serve students in digital classrooms. Finally, providing teachers with professional development opportunities increases job satisfaction which leads to improved morale among faculty members who are more likely to stay at their current institutions longer.

These benefits ultimately lead to higher student achievement rates as well as increased retention rates among faculty members who are engaged in quality management initiatives within educational institutions.

Assessment is one of the most important aspects of quality management in education. By implementing effective assessment practices, educational institutions can ensure that their students are receiving high-quality instruction and learning experiences.

Effective assessment provides an opportunity to measure student performance against established standards and objectives, identify areas for improvement, and give timely feedback to

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inform instructional practice. These assessments also enable educators to ensure adequate progress toward academic goals as well as monitor achievement over time.

Implementing a comprehensive system of assessment allows for data-driven decision-making when it comes to assessing student needs, curriculum alignment, and teaching strategies.

Quality management in education is essential for providing students with the best possible learning experience. It ensures that educational institutions meet their standards and objectives, while also ensuring a safe and productive learning environment for all involved.

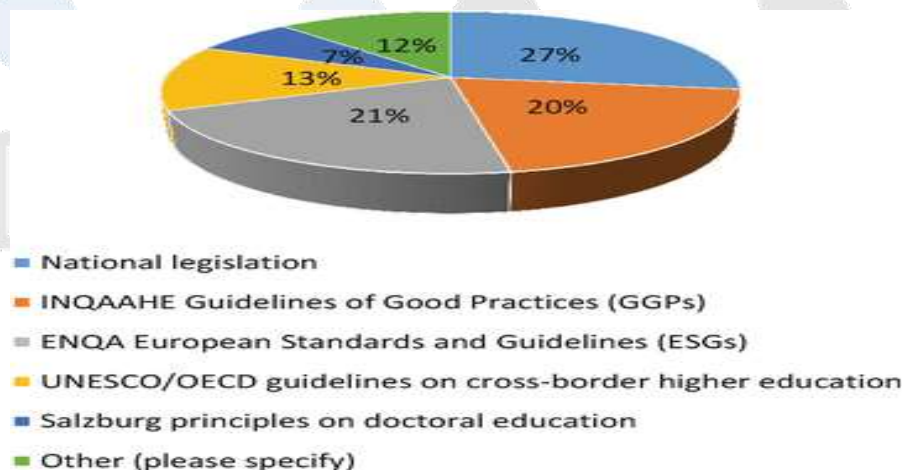
Quality management can help improve student outcomes by increasing accountability, providing better training opportunities, and creating a culture of continuous improvement. It can also reduce costs associated with poor quality or inefficient processes.

By emphasizing the importance of quality assurance in teaching, faculty are more likely to take ownership of their courses and be actively engaged in improving their quality over time. Additionally, it encourages collaboration among departments as well as between teachers, administrators, and other stakeholders to ensure that everyone is working toward the same goal: delivering excellent education to students.

The challenge of implementing practical quality management programs in educational institutions is significant. Quality assurance and improvement efforts need to be tailored to the unique context of an institution, while also being based on general principles of continuous improvement.

Additionally, educational organizations often have limited resources that must be allocated strategically. Developing a comprehensive plan for quality management can require significant up-front costs and time commitment from staff, faculty, and administrators alike.

We can see about Quality assurance in higher education in this diagramm



1-diagram. Quality assurance in higher education, global prospective

Furthermore, measuring the impact of any changes or initiatives over time requires rigorous data collection and analysis methods that may not always be available or feasible in a school setting. Finally, effective communication strategies are essential for successful implementation; educators must ensure that stakeholders understand why they are investing in quality assurance activities and how these investments will benefit the organization as a whole

Conclusion

In conclusion, to implement quality management in education, Educators and administrators should work together to ensure that the highest standards are met for students' learning experiences.

Quality management principles such as continuous improvement, process optimization, customer satisfaction, and risk assessment can all be used to help schools strive for success. By implementing the principles of quality management into leadership practices and organizational structures, schools will have an opportunity to increase student performance and create a more positive learning environment.

Ultimately, it is up to educators and administrators alike to take necessary steps towards ensuring that their school system meets the needs of its stakeholders: parents, teachers, staff members, and most importantly - students.

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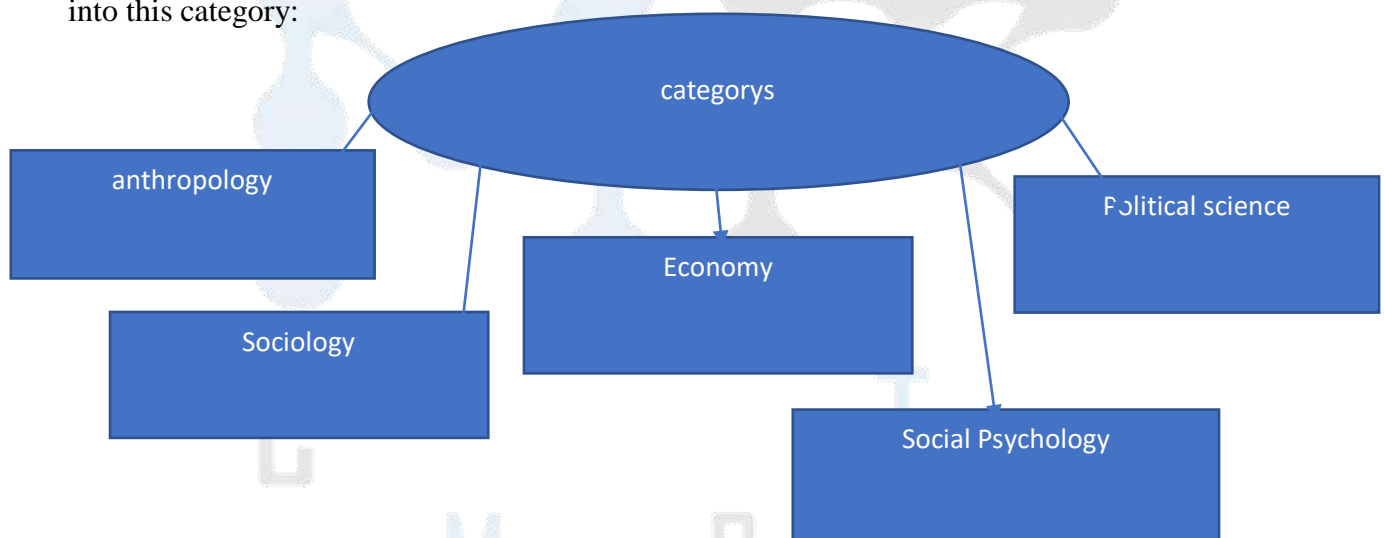
SOCIAL ECONOMY AND ITS MAIN DIRECTIONS

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Abstract. This article discusses the features of the development of socialization in the economy and its characteristics. A cross and comparative analysis of the influence of the choice of the direction of development of processes in the economy has been carried out. Recommendations are given for the implementation of developments in the industry.

Key words; Analysis, method, evaluation, technology, economics.

Social economics is a social science and branch of economics that focuses on the relationship between social behavior and the economy. Social economics is also called socioeconomics. The social sciences as a field of study are separated from the natural sciences, which cover topics such as physics, biology, and chemistry. Social sciences study the relationships between people and societies, as well as the development and functioning of societies, rather than studying the physical world. These academic disciplines rely more heavily on interpretation and qualitative research methodologies. Some say there are seven social sciences, others say there are four, five, six, or something else. Opinions differ on what should be included, but most experts agree that the following five fields definitely fall into this category:



History is also sometimes seen as a branch of the social sciences, although many historians often believe that the subject has closer ties to the humanities. Both the humanities and social sciences study humans. What distinguishes them is the technique used: the humanities are considered more philosophical and less scientific. Social economics is primarily concerned with the interaction between social processes and economic activity in society. Social economics can attempt to explain how a particular social group or socio-economic class behaves in society, including their actions as consumers. Social economics theories sometimes diverge from traditional economic theories. They can take into account factors that go beyond basic economic theory, including the impact of the environment and ecology on consumption and well-being.

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Social economists often study the different economic choices of people from different socio-economic classes. A socio-economic class is a group of people with similar characteristics. These characteristics may include social and economic status, level of education, current occupation, and ethnic origin or heritage. Different socio-economic classes may have different priorities regarding how they direct their funds, or they may not be able to afford certain goods or services due to limited income. These goods or services may include access to more advanced or comprehensive health care, educational opportunities, and the ability to purchase food that meets certain dietary guidelines. There are two broad points of view in social economics. Although they are opposite in their approach, they can be considered complementary. The first, first proposed by Nobel laureate Gary Becker, applies the basic theoretical and applied tools of neoclassical microeconomics to areas of human behavior that are not traditionally considered part of the economic sciences, such as crime and punishment, drug abuse, marriage, and family decisions. The second view applies ideas from other social sciences, such as sociology, psychology, and identity group studies, to economic subjects such as consumer behavior or labor markets. These social economics practitioners use history, current events, politics, and other social sciences to predict social trends that have the potential to affect the economy. There is a strong correlation between socio-economic status and family structure, as well as other outcomes such as parenting methods and child development. Single-parent households are more likely to have low incomes, and low-income households are more likely to suffer from domestic violence and child neglect. These differences are also reflected in the deterioration of health later in life. Children with lower socioeconomic status tend to enter school with lower levels of reading and language development, as well as lower social skills. In later years, these disadvantages can manifest themselves in lower academic success and, ultimately, lower incomes as they reach adulthood. A person's socio-economic status can significantly affect their level of education and financial security. A person from an affluent social class is likely to have more opportunities for higher education and can be expected to pursue such a goal, while people from low-income families generally do not have such opportunities. Socio-economic well-being refers to the combination of social and economic factors that provide the best outcomes for an individual's health and well-being. While a high income is not strictly required, an adequate level of financial security is an important factor in mental and physical health, as well as learning outcomes.

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USE OF NEW PEDAGOGICAL TECHNOLOGIES IN TEACHING PHYSICS IN TECHNICAL HIGHER EDUCATION COUNTRIES

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Abstract. *This article considers the importance and methods of using new pedagogical technologies in the teaching of physics in technical universities. The article examines the impact of modern teaching methods, interactive learning methods and modern technologies on physics education. Also, researches and experiments conducted with the aim of deepening students' knowledge, developing independent thinking and increasing practical skills through new pedagogical approaches are presented.*

Key words: *pedagogical technologies, physical education, interactive teaching, educational methods, independent thinking, higher education, educational innovations, practical skills, improving student knowledge, modern educational methods.*

Introduction

Today, in such a period of development, the application of scientific, technical and technological achievements to educational processes is one of the main requirements of the "National Personnel Training Program". The use of innovative pedagogical technologies in educational processes is important in improving the consciousness and knowledge of students, as well as in the formation of their thinking abilities. The goal of innovative pedagogical technology is to increase the effectiveness of education and training at each stage of the subjects taught in educational institutions, to achieve a high level of mastery with less time and less effort. In this case, every subject taught in subjects should be planned with the goal of what the student should know, work, and apply by the end of the lesson.

Methodology

Taking into account the above, a new, original laboratory designed for long-term use, which reflects the most important physical processes, effects and laws in physics, and can directly arouse students' interest in physics. It consists in creating a series of "Virtual laboratories". A virtual laboratory consists of a realistic simulation of a specific process. The procedure for conducting laboratory exercises using virtual laboratory work is slightly different from that of real laboratory exercises. This difference is determined by the virtual nature of laboratory work, the need to use a computer, the possibility of repeating it many times, and having enough time to do more than one task during one session.

Virtual physics laboratories using IT technologies have several main functions and advantages:

Availability and flexibility: Students can experience anytime and anywhere, which is especially important for distance learning.

Safety: Virtual labs eliminate risks associated with conducting experiments that can be dangerous in real life.

Modeling and simulation: allows you to imagine physical phenomena and perform experiments that are difficult or impossible to do in reality.

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Interactivity: Students can interact with laboratory elements, change parameters and immediately see the results of their actions.

Data Analytics: The ability to collect, process and analyze data in real-time, which helps advance data science.

Feedback and Evaluation: Automated systems can provide instant feedback and evaluate the results of experiments.

Integration with other learning resources: Virtual labs can be linked to lectures, tutorials, and other resources to create an integrated learning experience.

Variety of Experiments: A wide range of experiments covering different areas of physics, from mechanics to quantum physics.

Arousing interest: Using modern technology and games can increase students' interest in learning physics.

Collaboration and Group Projects: Opportunities for students to work together on experiences that develop teamwork skills.

These features make virtual labs a powerful tool for teaching physics, allowing students to deepen their understanding of material and build practical skills.

Today, there are many ways to create virtual physics laboratories. Examples of these include:

Several functions of virtual physics laboratories are concrete examples of the use of IT technologies:

- **Modeling physical processes:**

Example: Using programs like PhET Interactive Simulations, which allow you to simulate body movements, electrical circuits, and other physical phenomena. Students can change parameters (such as mass or force) and observe changes in the system.

- **Availability and flexibility:**

Example: Platforms like Labster offer 24/7 access to virtual labs. Students can take courses and experiments from anywhere in the world using only the Internet and a computer.

- **Interactivity:**

Example: Virtual labs from Simulations Plus, where users can drag and drop components (such as resistors in an electrical circuit) and see changes in the circuit in real time.

- **Security:**

Example: Virtual experiments, such as working with hazardous chemicals in a chemistry lab, allow students to learn reactions without risking their own health.

- **Data analysis:**

Example: VPL virtual laboratory (Virtual Physics Lab) includes tools for collecting experimental data and graphically visualizing them, which helps in analyzing the results.

- **Feedback and rating:**

Example: Systems like Smart Science Lab provide automated reports on experiment results and advice on how to improve assignments.

- **Various experiences:**

Example: LabXchange virtual labs offer a variety of experiences in mechanics, optics, and thermodynamics, allowing students to choose topics that interest them.

- **Gamification:**

Example: The Gizmos platform includes game elements where students earn points for completing tasks and can compete with each other, making learning more fun.

- **Cooperation:**

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Example: Platforms like Collaborate allow students to work in groups on virtual experiments, share results, and discuss problem-solving approaches.

- Integration with other educational resources:

Example: Virtual labs on platforms like Canvas or Moodle can be combined with lectures, tests, and other learning materials to create a unified learning environment.

These features and examples show how IT technologies can significantly enrich the physics learning experience [1].

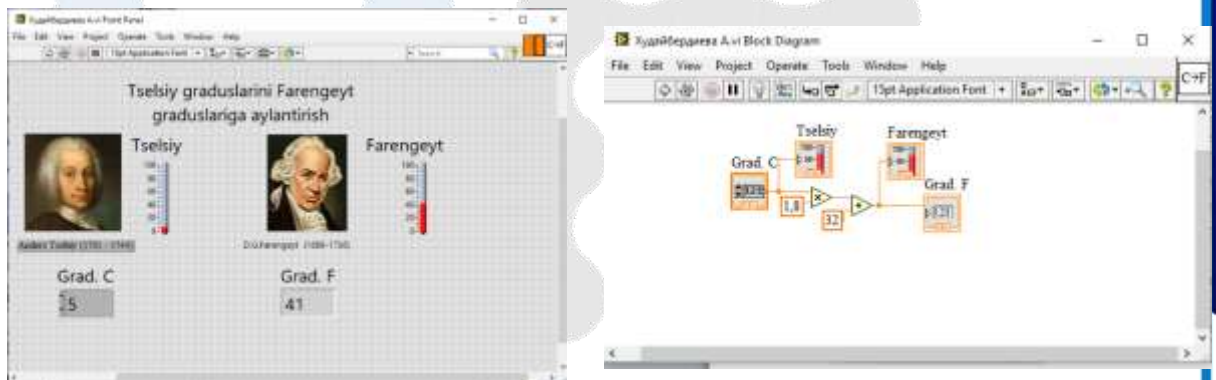
Results and discussion

many developed countries, the best way to solve the problem is to recommend PYTHON, a simple and modern programming language for researchers and teachers, which does not take up much space on the computer (total size 25 MB) and codes spoken in English [2].

Among them, one of the most convenient programs for virtual laboratory training is the LabVIEW program. In the LabView application, using special block diagrams, quantities can be related to each other based on an equation. This is similar to building an algorithm in the form of a block diagram. There is a possibility to graphically express the results of the quantities in the block diagrams. LabVIEW includes data collection, processing, display and storage for a set of devices. LabVIEW has a search tool and debugging, code tuning.

Figure 1(a,b) shows the front panel (a) and block diagram (b) of the virtual stand made in LabVIEW software that converts degrees Celsius to degrees Fahrenheit [3,4].

Figure 1-a, b.



Virtual laboratory work (VLI) created in the LabVIEW graphical programming environment allows the realization of the above goals. VLI reflects laboratory work and physical processes that cannot be carried out in a teaching laboratory under normal conditions. VLI is not a dry animation, but each process is a reflection of a real event, and the appearance is a three-dimensional image of the real equipment, the initial data and the parameters to be changed are in textual form. not graphically, i.e. it is done by pressing the button, turning the desired screw, just like in real equipment. This provides students with virtual reality.

Figure 2-(a,b,c) shows the circuit of the amplifier built on the optotransistor (a), the image on the oscillograph (b), and the characteristics of the amplifier on the Bode plotter (c) performed in the Multisim program [5].

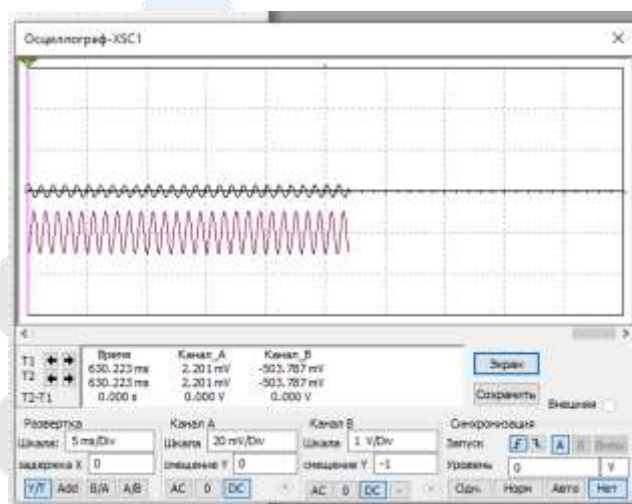
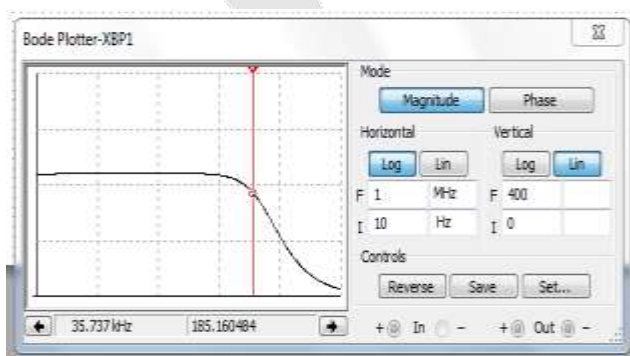
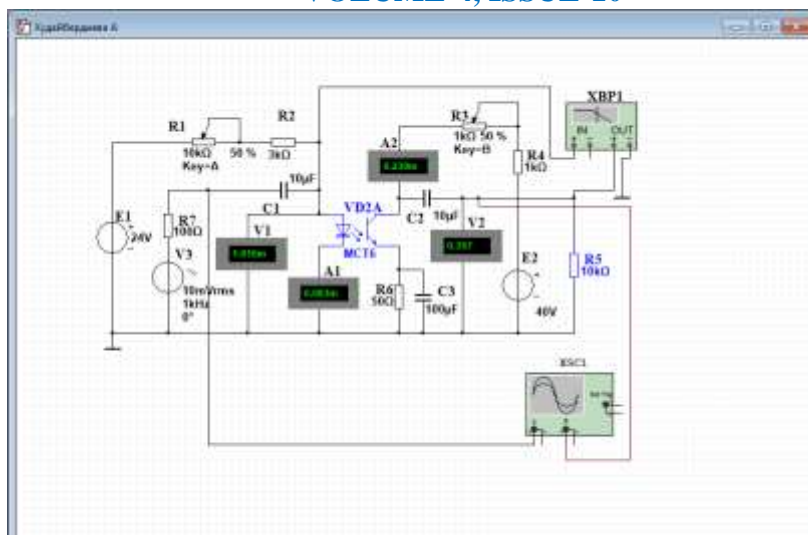


Figure 2a, b, c

Conclusion

Thus, if laboratory exercises in physics taught in educational institutions are conducted in the form of a "virtual laboratory", on the one hand, time is saved, and on the other hand, it can be used as a simulator for students before performing real laboratory work. is highly effective.

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RAQOBATBARDOSHLIKNI OSHIRISHDA EKSPORT SUB'EKTLARI UCHUN
MOLIYAVIY QO'LLAB-QUVVATLASH MEXANIZMLARI

Ergashova Umida Almat qizi

Termiz iqtisodiyot va servis universiteti, Bank ishi ta'lim yo'nalishi 2-kurs talabasi

Annotatsiya

Maqolada eksport sub'ektlari uchun raqobatbardoshlikni oshirish maqsadida qo'llaniladigan moliyaviy qo'llab-quvvatlash mexanizmlari ko'rib chiqiladi. Eksport faoliyatini kengaytirish, mahsulotlar sifatini yaxshilash va yangi bozorlarni zabt etishda davlat tomonidan taqdim etiladigan moliyaviy yordamning ahamiyati tahlil qilinadi. Subvensiyalar, eksport kreditlari, soliq imtiyozlari va sug'urta mexanizmlari orqali eksport sub'ektlariga yordam berish strategiyalari misollar orqali ko'rsatiladi.

Kalit so'zlar: Eksport, raqobatbardoshlik, moliyaviy qo'llab-quvvatlash, subvensiyalar, kreditlar, soliq imtiyozlari, eksport sug'urtasi, davlat yordam mexanizmlari.

Abstract

The article examines the mechanisms of financial support used in order to increase the competitiveness of export entities. The importance of financial assistance provided by the state in expanding export activities, improving the quality of products and conquering new markets is analyzed. Strategies to help export entities through subsidies, export credits, tax credits and insurance mechanisms are illustrated through examples.

Key words: Export, competitiveness, financial support, subsidies, loans, tax incentives, export insurance, state aid mechanisms.

Kirish qismi. Jahon bozorida raqobatbardosh bo'lish har bir mamlakat iqtisodiy siyosatining asosiy maqsadlaridan biri hisoblanadi. Eksport mamlakat iqtisodiyotiga ijobiy ta'sir ko'rsatib, valyuta tushumlarini oshiradi va yangi ish o'rinlari yaratadi. Shu sababli davlatlar eksport sub'ektlariga turli moliyaviy yordam va qo'llab-quvvatlash mexanizmlarini taqdim etib, ularning raqobatbardoshligini oshirishga intilmoqda. Moliyaviy qo'llab-quvvatlash eksportning kengayishi, sifatni oshirish va xalqaro bozorlarga kirish uchun muhim vositalardan biridir. Ushbu maqolada eksport sub'ektlari uchun moliyaviy yordam shakllari va ularning samaradorligi ko'rib chiqiladi.

Raqobatbardoshlikni oshirish iqtisodiyotni rivojlantirish va mamlakatning global bozorlaridagi o'rnini mustahkamlashda muhim ahamiyatga ega. Xususan, eksport sub'ektlari raqobatbardoshligini oshirish uchun samarali moliyaviy qo'llab-quvvatlash mexanizmlari ishlab chiqilishi zarur. Moliya, investitsiya va boshqa resurslar eksportchilarni yangi bozorlar o'zlashtirish, mahsulot sifatini oshirish va innovatsiyalarni amalga oshirishda qo'llab-quvvatlashga yordam beradi.

Eksport sub'ektlari raqobatbardoshligini oshirishda moliyaviy mexanizmlarning o'rnini, ularning har biri iqtisodiy rivojlanishga qanday ta'sir ko'rsatishi, shuningdek, mavjud muammolar va ularni hal etish yo'llari ko'rsatiladi. Shuni ta'kidlash joizki, samarali moliyaviy qo'llab-quvvatlash mexanizmlari nafaqat iqtisodiy, balki ijtimoiy va ekologik jihatlarni ham inobatga olishi kerak, bu esa barqaror rivojlanishga xizmat qiladi.

Ushbu tadqiqotda, eksport sub'ektlarini moliyaviy qo'llab-quvvatlash mexanizmlarini ko'rib chiqish, ularning raqobatbardoshligini oshirishdagi o'rnini tahlil qilish va zamonaviy tendentsiyalarni o'rganish maqsad qilingan. Shuningdek, mazkur mexanizmlarni takomillashtirish bo'yicha takliflar berish, natijada mamlakatning eksport salohiyatini yanada oshirish imkoniyatlarini yaratish

rejalashtirilmoqda.

Metodologiya

Raqobatbardoshlikni oshirishda eksport sub'ektlari uchun moliyaviy qo'llab-quvvatlash mexanizmlarini tadqiq etish jarayoni bir qator bosqichlarni o'z ichiga oladi. Ushbu metodologiya tadqiqotning maqsadlari va yo'nalishlarini belgilab, zarur usullarni qo'llash orqali sifatli va samarali natijalarga erishishga qaratilgan.

1. Tadqiqotning maqsadi va vazifalari

Maqsad: Raqobatbardoshlikni oshirishda eksport sub'ektlari uchun moliyaviy qo'llab-quvvatlash mexanizmlarining samaradorligini tahlil qilish.

Vazifalar:

- Eksport sub'ektlarining moliyaviy ehtiyojlarini aniqlash.
- Moliyaviy qo'llab-quvvatlash mexanizmlarini o'rganish va tahlil qilish.
- Mavjud mexanizmlarning kuchli va zaif tomonlarini baholash.
- Takliflar va tavsiyalar ishlab chiqish.

2. Tadqiqot usullari

- Adabiyotlarni tahlil qilish: Mavzuga oid ilmiy maqolalar, iqtisodiy hisobotlar va statistik ma'lumotlarni o'rganish. Bu usul tadqiqot mavzusiga oid bilimlar bazasini kengaytirishga yordam beradi.

- So'rovnoma va intervyular: Eksport sub'ektlari va moliya institutlari bilan so'rovnomalarni o'tkazish. Intervyular orqali moliyaviy mexanizmlarning samaradorligi va qiyinchiliklari haqida ma'lumotlar to'plab, ularni tahlil qilish.

- Kvantitativ va sifatli tahlil: Olingan ma'lumotlarni statistik usullar orqali tahlil qilish. Bu qismda raqobatbardoshlik ko'rsatkichlari, moliyaviy ko'rsatkichlar va boshqa statistik ma'lumotlar o'rganiladi.

- Kazo tahlili: Mahalliy va xalqaro muvaffaqiyatli eksport sub'ektlarining amaliyotini o'rganish, ularning moliyaviy qo'llab-quvvatlash mexanizmlaridan qanday foydalanayotganini tahlil qilish.

3. Tadqiqot jarayoni

- Dastlabki bosqich: Mavzu bo'yicha adabiyotlarni o'rganish va tadqiqot savollarini aniqlash.

- Ma'lumotlar to'plash: So'rovnoma va intervyularni o'tkazish, mavjud statistik ma'lumotlarni yig'ish.

- Tahlil qilish: Olingan ma'lumotlarni tahlil qilish va natijalarni yig'ish.

- Natijalarni ishlab chiqish: Tahlil natijalaridan kelib chiqqan holda xulosalar va tavsiyalar ishlab chiqish.

4. Kutilayotgan natijalar

- Eksport sub'ektlarining moliyaviy ehtiyojlari va ularga mos keladigan moliyaviy mexanizmlar to'g'risida chuqur tushuncha.

- Moliyaviy qo'llab-quvvatlash mexanizmlarining samaradorligi va ularning raqobatbardoshlikka ta'siri to'g'risida aniq ma'lumotlar.

- Takliflar va tavsiyalar, eksport sub'ektlarining raqobatbardoshligini oshirishga yordam beradigan amaliy ko'rsatmalar.

Ushbu metodologiya eksport sub'ektlari uchun moliyaviy qo'llab-quvvatlash mexanizmlarini tahlil qilishda aniq yo'nalishlarni belgilashga imkon beradi va tadqiqotning muvaffaqiyatli o'tkazilishiga xizmat qiladi.

1. Eksport sub'ektlarini qo'llab-quvvatlashning umumiy ko'rinishi

Eksport sub'ektlariga davlat tomonidan ko'rsatiladigan moliyaviy yordam mexanizmlari ularning xalqaro bozorga chiqishida muhim rol o'ynaydi. Bunday yordam turlari subvensiyalar, kreditlar, soliq imtiyozlari va eksport sug'urtasidan iborat bo'lishi mumkin. Bu mexanizmlar mahsulotlar sifatini yaxshilash, marketing faoliyatini rivojlantirish va logistikani samarali tashkil etish imkonini beradi. Bunday qo'llab-quvvatlash natijasida eksport sub'ektlari jahon bozorida raqobatbardosh bo'lib, mamlakat iqtisodiyoti o'sishiga hissa qo'shadi.

2. Subvensiyalar va grantlar

Subvensiyalar — davlat tomonidan eksport qiluvchilarga beriladigan moliyaviy yordamning bir ko'rinishi bo'lib, ular mahsulot ishlab chiqarish va eksportni kengaytirish uchun ishlatiladi. Grantlar esa eksportni rivojlantirish uchun sub'ektlarga ajratiladigan moliyaviy resurslardir. Bu mablag'lar texnologik yangilanish, mahsulot sifatini oshirish yoki yangi mahsulotlarni ishlab chiqarish uchun ajratiladi. Subvensiyalar va grantlar kichik va o'rta biznes sub'ektlari uchun katta ahamiyatga ega, chunki ular xalqaro bozorga chiqishda resurs yetishmovchiligini bartaraf etadi.

3. Eksport kreditlari va sug'urtasi

Eksport kreditlari eksport qiluvchilarga xalqaro bozorga chiqish uchun moliyaviy resurslarni yetkazib beruvchi asosiy vositalardan biri hisoblanadi. Kreditlar asosan uzoq muddatli investitsiyalarga yo'naltirilgan bo'lib, eksport qiluvchilarga ishlab chiqarish hajmini oshirish va yangi bozorlarni zabt etishga imkon beradi. Eksport sug'urtasi esa xalqaro savdo bilan bog'liq risklarni kamaytirishga xizmat qiladi. Masalan, eksport qiluvchilarning to'lovni olmaslik xatarini kamaytirish, iqtisodiy beqarorlik yoki siyosiy xavflarga qarshi himoya qilishda sug'urta tizimi muhim rol o'ynaydi.

4. Soliq imtiyozlari

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Soliq imtiyozlari eksport qiluvchilarni rag'batlantirishning yana bir samarali mexanizmidir. Davlatlar eksport qiluvchilarga daromad solig'i yoki qo'shimcha qiymat solig'i bo'yicha imtiyozlar taqdim etib, ularning xalqaro bozordagi raqobatbardoshligini oshiradi. Soliq imtiyozlari eksport faoliyati bilan shug'ullanuvchi kompaniyalar uchun ishlab chiqarish xarajatlarini kamaytiradi, bu esa ularning mahsulotlarini jahon bozorida arzonroq va raqobatbardosh qiladi.

5. Moliyaviy qo'llab-quvvatlash mexanizmlarining eksportga ta'siri

Jadval-1: Raqobatbardoshlikni oshirishda eksport sub'ektlari uchun moliyaviy qo'llab-quvvatlash mexanizmlari

Mexanizm	Tavsif	Foydalar	Muammolar
1. Kreditlar	Banklar va moliya institutlari tomonidan taqdim etiladigan mablag'lar	Qo'shimcha investitsiyalar; ishlab chiqarish hajmini oshirish	Yuqori foiz stavkalari; kredit olishdagi murakkabliklar
2. Subsidiyalar	Davlat tomonidan beriladigan moliyaviy yordam	Xarajatlarni kamaytirish; raqobatbardosh narxlar	Budjet cheklovlari; subsidiyalarni olish jarayoni murakkabligi
3. Investitsiya fondlari	Xususiy va davlat investitsiyalari	Innovatsiyalar; yangi texnologiyalarni joriy etish	Investitsiya risklari; investorlarni jalb qilish qiyinligi
4. Export kreditlari	Tashqi savdoni qo'llab-quvvatlash uchun mo'ljallangan kreditlar	Tashqi bozorlarda raqobatlashish imkoniyati	Moliya shartlari; qiyinliklar bilan to'g'ridan-to'g'ri munosabatlar
5. Kichik biznesni qo'llab-quvvatlash dasturlari	Kichik va o'rta bizneslarni moliyalash	Biznesning rivojlanishi; yangi ish o'rinlari	Resurslar cheklanganligi; dasturlarni amalga oshirishdagi muammolar

Natijalar

1. Raqobatbardosh narxlar: Samarali moliyaviy qo'llab-quvvatlash mexanizmlari orqali eksportchilar xarajatlarini kamaytirishi va raqobatbardosh narxlarda mahsulotlar taklif etishi mumkin.

2. Innovatsiyalarni rag'batlantirish: Investitsiya fondlari va kreditlar innovatsion faoliyatni oshirishda muhim rol o'ynaydi, bu esa mahsulot sifatini yaxshilaydi.

3. Yangi bozorlarni o'zlashtirish: Export kreditlari va davlat subsidiyalari orqali eksportchilar yangi bozorlarni tezroq o'zlashtirish imkoniyatiga ega bo'ladi.

4. Kichik va o'rta biznesning rivojlanishi: Kichik biznesni qo'llab-quvvatlash dasturlari orqali iqtisodiy rivojlanish va ish o'rinlari yaratilishi rag'batlantiriladi.

5. Barqaror rivojlanish: Moliya va iqtisodiy strategiyalarni birlashtirish orqali iqtisodiyotning barqaror rivojlanishi ta'minlanadi.

Ushbu natijalar eksport sub'ektlarining raqobatbardoshligini oshirishda muhim yo'nalishlarni belgilaydi va kelajakda yanada samarali mexanizmlarni ishlab chiqish uchun asos bo'lib xizmat qiladi.

Eksport sub'ektlariga davlat tomonidan taqdim etiladigan moliyaviy yordam raqobatbardoshlikni oshirishda juda samarali bo'lib, u xalqaro bozorlarda muvaffaqiyatli faoliyat yuritishga zamin yaratadi. Moliyaviy yordamlar mahsulot sifatini yaxshilash, marketing strategiyalarini rivojlantirish va logistika xarajatlarini kamaytirish orqali eksport qiluvchilarga jahon bozorida mustahkam o'rin egallashga imkon beradi.

Xulosa. Eksport sub'ektlarini moliyaviy qo'llab-quvvatlash mexanizmlari mamlakat iqtisodiyotini rivojlantirish va xalqaro bozorlar bilan integratsiyani chuqurlashtirishda muhim omildir. Subvensiyalar, eksport kreditlari, soliq imtiyozlari va sug'urta kabi vositalar eksport qiluvchilarga xalqaro savdoda raqobatbardosh bo'lish imkonini beradi. Ushbu mexanizmlar yordamida milliy iqtisodiyot barqaror rivojlanadi va eksport salohiyati oshadi. Davlatning eksportni qo'llab-quvvatlash siyosati uzoq muddatda iqtisodiy o'sishga katta hissa qo'shadi.

Raqobatbardoshlikni oshirishda eksport sub'ektlari uchun moliyaviy qo'llab-quvvatlash mexanizmlari katta ahamiyatga ega. Ularning samarali ishlashi eksportchilarni global bozorlar bilan raqobatlashishga tayyorlaydi. Har bir mexanizm o'zining afzalliklari va kamchiliklariga ega bo'lib, ularni to'g'ri strategiya bilan birlashtirish muhimdir. Shu bilan birga, davlat va xususiy sektor o'rtasidagi hamkorlikni rivojlantirish, moliyaviy xizmatlarni takomillashtirish va innovatsiyalarni qo'llab-quvvatlash orqali eksport sub'ektlarining raqobatbardoshligini oshirish mumkin.

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САНОАТ КОРХОНАЛАРИ ФАОЛИЯТИДА РАҚАМЛИ ТЕХНОЛОГИЯЛАРНИ ҚЎЛЛАШ ҲОЛАТИ ВА УНГА ТАЪСИР ЭТУВЧИ ОМИЛЛАР

Раджапова Латофат Сардаровна

Аннотация. Ушбу мақолада саноат корхоналари фаолиятида рақамли технологияларнинг жорий этилиши ва у билан боғлиқ омиллар муҳокама қилинган. Саноат корхоналарида рақамли технологияларни жорий қилишдаги асосий омиллар, жумладан, инвестициялар, раҳбариятнинг стратегик қарашлари ва кадрларни тайёрлаш жараёни таҳлил қилинади. Мақоланинг мақсади рақамли технологияларнинг саноатдаги аҳамиятини кўрсатиш ва уларнинг жорий этилишидаги керакли чораларни аниқлашдир.

Шунингдек, мақолада саноат корхоналарида рақамлаштиришнинг аҳамияти ва қулайликлари, ушбу йўналишда республикамизда амалга оширилиши лозим бўлган ишлар кўрсатиб берилган.

Калит сўзлар. Рақамли технологиялар, рақамлаштириш, трансформация, саноат корхоналари, сунъий интеллект, автоматлаштириш, самарадорлик, рақобатбардошлик, IT, онлайн платформа.

Кириш. Саноат корхоналарини рақамлаштириш бугунги кунга келиб ривожланган мамлакатлар иқтисодиётининг ривожланишидаги асосий ҳаракатлантирувчи куч сифатида намоён бўлмоқда. Шу боис **Ўзбекистон Республикаси Президентининг 2023 йил 11 сентябрдаги “Ўзбекистон-2030”** Стратегиясини тасдиқлаш тўғрисидаги **ПФ-158-сон Фармони** мамлакатимиз иқтисодиётини янада ривожлантириш мақсадида амалга оширилиши лозим бўлган энг устувор вазифалар сифатида, “...таракқиётга эришиш учун, рақамли билимлар ва замонавий ахборот технологияларини жадал амалиётга жорий этиш” [1] вазифалари белгиланган.

Рақамли технологияларнинг жорий этилиши саноат корхоналари фаолиятида самарадорликни ошириш, операцияларнинг аниқлигини таъминлаш ва корхонанинг рақобатдошлигини кўтаришда муҳим омил бўлмоқда. Сунъий интеллект, Интернет нарсалари (IoT) ва бошқа рақамли технологиялардан фойдаланиш, ишлаб чиқариш жараёнларини автоматлаштириш ва тўлиқ назорат остида бўлишига ёрдам бериши кутилмоқда.

Мақолада саноат корхоналарида рақамли технологияларнинг фаолиятидаги ҳолати, уларнинг самарадорликка таъсири ва жорий этиш жараёнидаги асосий омиллар муҳокама қилинади. Ушбу тадқиқот саноат корхоналарида рақамли трансформацияни амалга оширишнинг жаҳатларини белгилаш ва бу жараёндаги керакли чораларни аниқлашга ёрдам беради.

Мавзуга оид адабиётлар таҳлили. Иқтисодиёт фанлари доктори Владимир Иванов таърифича: “Рақамли иқтисодиёт – бу бизнинг

ҳақиқатимизни тўлдирадиган виртуал муҳитдир” деб таърифлаган. Томск давлат университетининг профессори, Р. Мешчеряковнинг фикрича “рақамли иқтисод” атамасига иккита ёндашиш мавжуд деб ҳисоблайди. Рақамли технологиялар асосида иқтисодиётнинг ва электрон товар ва хизматлар эксклюзив домен тавсифловчи рақамли иқтисодиёт: биринчи ёндашув “классик” деб номланиб, классик мисоллар - телетиббиёт, масофавий таълим, дори-дармонларни сотиш (фильмлар, телевизорлар, китоблар ва бошқалар). Иккинчи ёндашув: “рақамли иқтисод” илғор рақамли технологиялардан фойдаланган ҳолда иқтисодий ишлаб чиқаришдир[2].

“Рақамли иқтисодиёт” атамаси биринчи марта 1995 йилда Канадалик олим Дон Тапскот томонидан "Электрон рақамли жамият: тармоқ асрининг афзалликлари ва камчиликлари" номли китобида ишлатилди. Ушбу асар, рақамли технологияларнинг иқтисодий фаолиятга таъсири, жамият ва бозор муносабатларини ўзгартиришга бағишланган.

Томас К. Саноат 4.0 концепцияси рақамли технологияларнинг жорий этилиши ва уларнинг ишлаб чиқариш самарадорлигини оширишдаги роли тўғрисида кўплаб тадқиқотлар олиб боради. Ушбу тадқиқотларда IoT, автоматлаштириш ва мижозларга хизмат кўрсатиш жараёнлари ҳақида маълумотлар берилган.

Мамлакатимиз олимларидан Гулямов С.С., Аюпов Р.Ҳ.ларнинг “Рақамли иқтисодиётда блокчейн технологиялари” ўқув қўлланмасида рақамли иқтисодиётни қуйидагича таърифлашган. “Рақамли иқтисодиёт – жараёнларни таҳлил қилиш натижаларидан фойдаланиш ва катта ҳажмдаги маълумотларни қайта ишлаш асосида турли хилдаги ишлаб чиқаришлар, технологиялар, асбоб-ускуналар, товарлар ва хизматларни сақлаш, сотиш ва етказиб бериш самарадорлигини жиддий равишда оширишга имкон берадиган ва рақамли кўринишдаги маълумотлар асосий ишлаб чиқариш омили деб саналган хўжалик фаолиятидир” [3].

1995 йилда америкалик дастурчи Николас Негропonte "рақамли иқтисодиёт" терминини амалиётга киритди. Ҳозирда бу истилоҳни бутун дунёдаги сиёсатчилар, иқтисодчилар, журналистлар, тадбиркорлар - деярли барча қўлламоқда. 2016 йилда Бутунжаҳон банки дунёдаги рақамли иқтисодиётнинг аҳволи ҳақида илк марта маъруза эълон қилди.

Тадқиқот методологияси. Тижорат банклари фаолиятини трансформация қилишда рақамлаштириш бўйича мавжуд бўлган илмий тадқиқотларни ўрганиш, трансформация жараёнида рақамли технологияларни кенг жорий қилган ҳолда мазкур йўналишда хорижий банклар томонидан эришилган ютуқларни ўрганиш ва иқтисодий жиҳатдан таққослаш ва таҳлил қилишдан кенг фойдаланилган.

Таҳлил ва натижалар. Бугунги кунда ахборот технологиялари ижтимоий ишлаб чиқаришнинг барча жабҳаларида жумлада саноат ишлаб чиқаришни бошқариш тизимида ҳам қўлланмоқда. Корхоналарда замонавий ахборот технологияларининг асосий вазифалари керакли маълумотларни ёзиб

бориш, ишлаб чиқариш жараёнлар ҳолатни реал вақт режимда кузатиш, узатилаётган ва қабул қилинаётган маълумотларнинг аниқлиги, ишончилиги ва хавфсизлигини таъминлаш, маълумотларни қидириш ва таҳлил қилишни осонлаштириш, ахборотларни сақлашни янада яхшилаш, ҳисоботлар тайёрлашда ходимлар меҳнат ва вақт тежаш, корхоналар бўғинлари орасидаги ўзаро боғланиш ва ахборотлар оқими сифатини кўтариш кабилар. Ҳозирги шароитда ишлаб чиқариш самарадорлиги саноат корхоналари учун ўта муҳим омил ҳисобланади.

Ўзбекистон ҳам шаклланаётган глобал рақамлаштириш шароитда муносиб ўринни эгаллашга интилмоқда. Ушбу мақсадларга эришиш учун мамлакат Ҳукумати томонидан Ўзбекистонда рақамлаштириш жараёнларини фаоллаштириш, замонавий ахборот-коммуникация технологияларини тез суръатларда ривожлантириш, уларни иқтисодиёт ва жамиятнинг барча соҳаларида жорий этиш ҳамда фойдаланишнинг стратегик устуворликлари белгиланган.

Ривожланган мамлакатларда замонавий корхоналарнинг барчасида (CAD- Computer-Aided Design), (CAM-Computer-Aided Manufacturing), (ERP - Enter Prise Resource Planning), (MES-Manufacturing execution System), (SCADA-Supervisory Control And Data Acquisition) каби ахборотни бошқариш тизимларидан кенг фойдаланиб келинмоқда (1-жадвал).

1-жадвал

Замонавий корхоналарда ахборотни бошқариш тизимлари¹

№	Дастурий таъминотлар номи	Қўлланилиш соҳаси
1	CAD (Computer-Aided Design)	Лойиҳалаш ишларини бажариш учун автоматлаштирилган тизим
2	CAM (Computer-Aided Manufacturing)	Автоматик тизим ёки автоматлаштирилган тизимнинг модули. Рақамли бошқарувга эга дастгоҳ ва ускуналар учун бошқариш дастурларини тайёрлаш учун ишлатиладиган тизим.
3	ERP (entERPrise Resource Planning)	Ишлаб чиқариш жараёнлари даражасидаги корхона ресурсларини режалаштириш ва бошқариш тизими.
4	MES (Manufacturing execution System)	Ишлаб чиқариш жараёнини бошқариш тизими. Ҳар қандай ишлаб чиқариш доирасида ишлаб чиқаришни синхронлаштириш, мувофиқлаштириш, таҳлил қилиш ва оптималлаштириш муаммоларини ҳал қилиш учун мўлжалланган махсус дастурий таъминот.
5	SCADA (Supervisory Control And Data Acquisition)	Диспетчерлик назорати ва маълумотларни йиғишга мўлжалланган ва бошқариш объекти тўғрисидаги маълумотларни йиғиш, қайта ишлаш, акс эттириш ва архивлаш тизимларини ишлаб чиқиш ёки реал вақтда ишлашини таъминлаш учун мўлжалланган дастурий таъминот тўплами.

¹ Тадқиқотчи томонидан ишлаб чиқилган.

Юқорида жадвалда келтириган дастурлардан энг оммобопи Корхона ресурсларини бошқариш тизими ERP va CRM тизимлари ҳисобланади.

ERP (Enterprise resource planning). ERP тизими бу – ERP стратегиясини, яъни ишлаб чиқариш ва турли операцияларни интеграциялаш, меҳнат ресурсларини бошқариш, молиявий менежмент ва активлар бошқарувининг ташкилий стратегиясини амалга оширувчи махсус дастурий пакет. ERP жорий этилиши корхоналарнинг 95% бизнес жараёнларини яхшилашга олиб келади. Ишлаб чиқарувчилар ERP дастурий таъминотини сотиб олмоқчи бўлган компанияларнинг 47 фоизида энг катта қисмини ташкил этди. Ишлаб чиқарувчилардан кейин таъминотчилар (18%), хизматлар (12%) ва қурилиш (4%) ERP дастурий таъминотидан энг кўп фойдаланадиган бошқа соҳалардир. Ушбу стратегия дастурий таъминотнинг махсус интеграциялашган тўплами орқали ташкилот ресурсларини доимий равишда мувозанатлаштиришга ва оптималлаштиришга қаратилган, бу эса фаолиятнинг барча йўналишлари учун маълумот ва жараёнларнинг умумий моделини тақдим этади. Бугунги кунда аксарият ташкилотлар турли бизнес муаммоларни ҳал қилишда бир қатор хавфсиз тизимлардан фойдаланишмоқда.

CRM (Customer Relationship Management) тизимлари. Ахборот-коммуникация технологиялари нуқтаи назаридан қараганда, CRM – бу ходимнинг мижозлар билан муносабатларини бошқариш воситаси бўлиб, ташкилотларга уларнинг ўзаро алоқасини қайд қилиш, даромад олиш имкониятларини мумкин қадар кенгайтириш ва ташкилий, меъёрий қоидаларга риоя қилиш самарадорлигини ошириш имконини беради.

CRM тизими мижоз ҳақидаги маълумотларни аниқлаштиришни амалга оширувчи компьютер дастури бўлиб, ушбу тизим ёрдамида янги мижозларни жалб қилиш ва аввалги мижозларни йўқотмаслик, харажатларни пасайтириш, меҳнат унумдорлигини ошириш ва натижада савдо ҳажми ва даромадни кўпайтириш, ташкилот рақобатбардошлилигини ошириш каби мақсадларда қўлланилади.

Таҳлилларга кўра мамлакатимизда кўплаб йирик корхоналарда ҳам тўлиқ бўлмасида мазкур ахборотни бошқариш тизимларидан фойдаланиб келинмоқда. Масалан 2023 йил ҳолатига кўра (ERP) ахборотни бошқариш тизимлари “Навоий кон-металлургия комбинати” АЖда 80 фоиз, “Ўзавтосаноат” АЖ да 40 фоиз, “Ўзэлтехсаноат” уюшмасида 36 фоиз, “Олмалиқ кон-металлургия комбинати” АЖ 20 фоиз жорий этилган (2-жадвал).

2-жадвал.

Йирик саноат корхоналарида ERP va CRM ахборотни бошқариш тизимларини жорий этилганлик ҳолати (%)

№	Асосий кўрсаткичлар	2023 йил
1	Стандартлаштириш метрология ва сертификатлаштириш агентлиги	20
2	“Олмалиқ кон-металлургия комбинати” АЖ	20
3	“Навоий кон-металлургия комбинати” АЖ	80

№	Асосий кўрсаткичлар	2023 йил
4	“Ўзавтосаноат” АЖ	
	<i>Ресурсларни бошқариш тизими (ERP) орқали бошқарув ва ишлаб чиқариш жараёнларини автоматлаштириш улуши</i>	40
	<i>Харидорларга онлайн режимда автоулов ва эҳтиёт қисмларни савдо қилиш, ҳамда сервис марказ хизматларидан фойдаланиш тизимларини (CRM-тизимлари) жорий этиш</i>	30
	<i>Ишлаб чиқариш жараёнларини (Industry 4.0, RFID, PLC) автоматлаштириш</i>	20
5	“Ўзэлтехсаноат” уюшмасини	36
6	“Ўзбеккўмир” АЖ	10

Экспертлар фикрича ўзбекистонда саноат корхоналарига ахборот коммуникация технологиялари АКТнинг жорий қилинганлик ҳолатини аниқлаш учун мамлакатда АКТнинг ривожланиш даражага назар ташлаш мақсадга мувофиқ бўлади. Булар ЯИМда рақамли иқтисодиётнинг улуши, АКТ тармоғига киритиладиган инвестициялар ҳажми, Интернетнинг тезлиги, мамлакат ҳудудининг интернет билан таъминланиш даражаси, аҳолининг ундан фойдаланиш қулайлиги, электрон савдонинг ривожланиши, ташкилотларнинг АКТ соҳасидаги мутахассислар билан таъминланиш даражаси, бундан ташқари мамлакатда ахборот технологияларининг ривожланиш даражасини баҳоловчи халқаро рейтинглардаги кўрсаткичлар муҳим аҳамиятга эга.

Ўзбекистонда, 2023 йил рақамли иқтисодиётнинг улуши мамлакат ялпи ички маҳсулотига 2,0 фоизни ташкил этди. Мутахассисларнинг фикрича аслида рақамли иқтисодиётнинг ЯИМ ги улуши, 7-8 фоиз ўртача ва нормал кўрсаткич ҳисобланади. Ушбу кўрсаткич ривожланган мамлакатларда жумладан, Буюк Британияда 12,4%, Жанубий Кореяда - 8%, Хитойда - 6,9%, Ҳиндистонда - 5,6%, Россияда эса - 2, 8%. %, Қозоғистон – 3,9% (2.3-жадвал).

Таҳлиллар шуни кўрсатмоқдаки мамлакатда рақамли иқтисодиётни ривожлантириш ҳамда саноат корхоналарида АКТ юқори даражада жорий этиш учун бир қанча муаммолар мавжуд. Юқорида АКТ бўйича келтирилган кўрсаткичлар қониқарли даражада эмас. Жумладан, ахборот коммуникация тизими (АКТ) соҳасига инвестициялар жалб қилиш суръатининг пастлиги, АКТ соҳасида инфратузилмани яхши ривожланмаганлиги, Оптик толали алоқа линияларнинг етарли даражада эмаслиги, тажрибали кадрлар етишмаслиги, Саноат корхоналарида рақамли технологияларни жорий қилиш учун аниқ бир стандартни йўқлиги, шунингдек давлат тарафидан қўллаб-қувватлов камлиги каби кўплаб ечилиши керак бўлган муаммолари.

Ҳозирда саноат корхоналари фаолиятини рақамлаштириш жараёнида кўплаб омиллар таъсир ўтказади. Ушбу омиллар, корхонанинг рақамли технологияларни жорий этиши, ишлаб чиқариш самарадорлигини ошириш ва рақобатдошликни таъминлашга ёрдам беради. Қуйида, саноат корхоналари фаолиятини рақамлаштиришга таъсир этувчи асосий омилларни кўриб чиқамиз:

1. Технологик иновациялар

Янги технологияларнинг ривожланиши: Сунъий интеллект, Интернет нарсалари (IoT), автоматлаштириш ва бозорга олиб келадиган инновацион ечимлар рақамлаштириш жараёнини тезлаштиради.

маълумотлар таҳлили: Маълумотларни тўплаш ва таҳлил қилиш имконияти корхона фаолиятини яхшилашга хизмат қилади.

2. Молиявий ресурслар

Инвестициялар: Рақамли технологияларни жорий этиш учун керакли маблағларнинг мавжудлиги муҳим. Инвестициялар, технологик янгиланишларни амалга ошириш ва фаолиятни рақамлаштириш учун зарур.

Рентабеллик: Рақамлаштириш жараёнида молиявий самарадорликка эришиш корхонанинг ривожланишига ижобий таъсир кўрсатади.

3. Раҳбариятнинг стратегик қарашлари

Рақамли трансформация стратегияси: Корхона раҳбариятининг рақамли технологияларга бўлган муносабати, уларни жорий этишнинг стратегик режаси фаолият самарадорлигига таъсир қилади.

Раҳбариятнинг қараш: Масалан, раҳбарлар рақамли трансформациянинг аҳамиятини тўғри англаган бўлса, уни амалга оширишда фаол бўлишади.

4. Кадрлар ва таълим

Кадрларни тайёрлаш: Рақамли технологияларни фаолиятга жорий этиш учун мослашувчан ва малакали кадрларни тайёрлаш муҳим.

Маърифат ва маданият: Ходимларни рақамли технологиялардан самарали фойдаланишга ўргатиш корхонанинг рақамлаштириш жараёнида муҳим аҳамиятга эга.

5. Ижтимоий омиллар

Мижозлар билан муносабатлар: Рақамли технологиялар мижозларга хизмат кўрсатишни яхшилаш, уларнинг талабларига мослашиш имконини беради.

Ижтимоий тармоқлар: Ижтимоий алоқа каналлари рақамли технологияларни жорий этишда муҳим роль ўйнайди.

6. Рақобат муҳити

Рақобат шароити: Бозорда рақобатнинг ўзгариши ва рақобатчиларнинг рақамлаштиришга бўлган қарашлари саноат корхоналари фаолиятига таъсир этади.

Саноат трендлари: Рақамли иқтисодиётнинг глобал трендлари корхоналарни рақамлаштиришга тўғридан-тўғри таъсир кўрсатади.

Саноат корхоналари фаолиятини рақамлаштириш жараёни бир қатор омилларга боғлиқ. Технологик иновациялар, молиявий ресурслар, раҳбариятнинг стратегик қарашлари, кадрларни тайёрлаш, ижтимоий омиллар ва рақобат муҳити бу жараёнда муҳим роль ўйнайди. Ушбу омилларни иноватга олиш, рақамли трансформацияни самарали амалга ошириш ва корхонанинг рақобатдошлигини ошириш имконини беради.

Хулоса ва таклифлар.

Саноат корхоналари фаолиятини рақамлаштириш жараёнини таҳлил қилиш натижасида унга таъсир этувчи қуйидаги омиллар мавжудлиги бўйича хулосаларга келиш мумкин:

Ички омиллар:

Молиявий ресурслар: Рақамли технологияларга инвестиция киритиш учун етарли молиявий маблағларнинг мавжудлиги муҳим аҳамиятга эга.

Кадрларнинг малакаси: Янги технологиялар билан ишлашга қодир бўлган мутахассисларни тайёрлаш зарурати.

- **Ташкилот маданияти:** Раҳбарият ва ходимларнинг янгиликка очиқлиги, мослашувчанлик ва ўзгаришларга тайёрлиги.

- **Ишлаб чиқариш активларининг ҳолати:** Эскирган ускуналар ва технологиялар янги рақамли ечимларни жорий этишни қийинлаштиради.

• **Ташқи омиллар:** -

- **Давлат сиёсати:** Рақамлаштиришни қўллаб-қувватловчи давлат сиёсати, имтиёзлар ва субсидияларнинг мавжудлиги.

- **Рақобат:** Бошқа корхоналарнинг рақамлаштириш жараёнларидаги муваффақиятлари таъсири.

- **Технологик тараққиёт:** Рақамли технологияларнинг доимий ривожланиши ва янги имкониятларнинг пайдо бўлиши.

- **Ахборот инфратузилмаси:** Юқори тезликли интернетга ва булутли хизматларга бўлган кириш имконияти.

Таклифлар

Саноат корхоналарини рақамлаштириш жараёнини тезлаштириш учун қуйидаги чораларни кўриш мумкин:

- **Давлат даражасида рақамлаштириш стратегиясини ишлаб чиқиш:** Бу стратегияда рақамли технологияларни ривожлантиришнинг устувор йўналишлари, давлат томонидан қўллаб-қувватлаш механизмлари ва турли вазирлик ва идораларнинг ҳаракатларини мувофиқлаштириш белгилаб берилиши керак.

- **Кадрларни тайёрлаш тизимини ривожлантириш:** Рақамли технологиялар соҳасида мутахассисларни тайёрлашга қаратилган профессионал таълим тизимини яратиш.

- **Корхоналарга молиявий кўмак бериш:** Рақамли технологияларни жорий этиш учун имтиёзли кредитлар, субсидиялар ва солиқ имтиёзларини бериш.

- **Бизнес ва илм-фан ҳамкорлигини мустаҳкамлаш:** Саноат корхоналари ва илмий ташкилотлар ўртасида ҳамкорликни ривожлантириш, биргаликда инновацион лойиҳаларни амалга ошириш.

- **Аҳолининг рақамли саводхонлигини ошириш:** Аҳоли, жумладан, саноат корхоналари ходимларининг рақамли саводхонлигини оширишга қаратилган тадбирларни амалга ошириш.

- **Рақамли инфратузилмани ривожлантириш:** Юқори тезликли интернетга ва замонавий телекоммуникация хизматларига бўлган киришни кенгайтириш.

- **Қонунчилик базасини такомиллаштириш:** Рақамлаштириш жараёнини тартибга солувчи қонунчилик базасини такомиллаштириш, янги технологияларни жорий этиш учун тўсиқларни бартараф этиш. Ушбу таклифлар саноат корхоналарини рақамлаштириш жараёнини тезлаштириш ва мамлакат иқтисодиётининг рақобатбардошлигини оширишга хизмат қилади.

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HEPATITIS B, C IN DENTISTRY

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Abstract: Hepatitis B (HBV) and Hepatitis C (HCV) are significant concerns in dentistry due to the risk of transmission through blood and bodily fluids. Dental professionals are at an elevated risk of exposure, particularly during procedures involving sharp instruments or aerosols. Vaccination for HBV and strict adherence to infection control protocols, including the use of personal protective equipment (PPE) and proper sterilization, are essential preventive measures. While there is no vaccine for HCV, standard precautions effectively minimize transmission risk. This article highlights the importance of preventive strategies, post-exposure protocols, and the management of dental patients with hepatitis to ensure the safety of both healthcare providers and patients.

Keywords: Hepatitis B, Hepatitis C, dentistry, infection control, viral transmission, vaccination, personal protective equipment, post-exposure protocol.

Hepatitis B (HBV) and Hepatitis C (HCV) are viral infections that primarily affect the liver, leading to both acute and chronic forms of liver disease. These infections pose significant health concerns worldwide due to their potential to progress to serious conditions such as cirrhosis and liver cancer. In dentistry, where healthcare providers are frequently exposed to blood and bodily fluids, the transmission of HBV and HCV is a critical concern. Understanding the risks, preventive measures, and best practices related to hepatitis in dental settings is essential to ensure the safety of both patients and dental professionals. Hepatitis B and C are bloodborne pathogens that are transmitted primarily through contact with infected blood, though they can also be spread through other body fluids. The primary routes of transmission for both viruses include unprotected sexual contact, perinatal transmission (from mother to child during childbirth), and exposure to infected blood through sharing needles, blood transfusions (especially before blood screening became widespread), and healthcare-related exposures. In dentistry, the primary concern is occupational exposure to blood or saliva contaminated with blood, making adherence to infection control protocols vital. Hepatitis B is caused by the hepatitis B virus (HBV), a DNA virus that is more infectious than HIV due to its stability in the environment and its ability to survive outside the body for extended periods. Acute HBV infection can range from asymptomatic to severe, while chronic infection may lead to long-term liver damage. Vaccination against HBV has proven to be an effective preventive measure, significantly reducing the incidence of the infection. Hepatitis C, on the other hand, is caused by the hepatitis C virus (HCV), an RNA virus. It is often referred to as a “silent epidemic” because the majority of individuals infected with HCV remain asymptomatic for years or even decades. Unlike HBV, there is no vaccine for HCV, though recent advancements in antiviral therapies have led to highly effective treatments that can cure the infection in most patients. In the context of dentistry, both viruses pose risks due to the potential

for transmission through blood and bodily fluids, emphasizing the need for strict adherence to standard precautions.

Risk of Transmission in Dental Settings. Dental professionals are at an elevated risk of exposure to HBV and HCV due to the nature of their work, which involves frequent contact with blood and saliva. The most common routes of transmission in dental settings include needle-stick injuries, cuts from sharp instruments, and exposure of mucous membranes or non-intact skin to contaminated blood or bodily fluids. Although the risk of transmission is relatively low compared to other healthcare settings, it is still significant, particularly for HBV, given the virus's high infectivity. The risk of HBV transmission from an infected patient to a healthcare worker after a needle-stick injury is approximately 30% if the worker is not vaccinated. For HCV, the risk of transmission following a needle-stick injury is around 1.8%. These statistics highlight the importance of preventive measures, such as vaccination for HBV and the implementation of stringent infection control protocols. Dental procedures that generate aerosols or involve the use of sharp instruments pose the highest risk for transmission. Procedures such as tooth extractions, periodontal treatments, and endodontic therapies can lead to the release of blood-contaminated saliva into the air, increasing the potential for exposure. Additionally, the use of high-speed drills and ultrasonic scalers can create aerosols that may contain viral particles. It is essential for dental professionals to recognize these risks and take appropriate precautions to minimize the possibility of infection.

Prevention of Hepatitis B and C in Dentistry. Prevention of HBV and HCV transmission in dentistry relies on several key strategies, including vaccination, adherence to standard precautions, and the implementation of effective infection control measures. While vaccination is available for HBV, there is no vaccine for HCV, making prevention even more crucial for this virus. The HBV vaccine is highly effective and is recommended for all healthcare workers, including dental professionals. Vaccination typically involves a series of three shots administered over a six-month period, and most individuals who complete the series develop long-term immunity. It is important for dental practitioners to ensure that they are vaccinated and that their vaccination status is up to date, as this is one of the most effective ways to prevent HBV transmission in clinical settings. For both HBV and HCV, the use of standard precautions is critical in reducing the risk of transmission. Standard precautions are infection control practices that apply to all patients, regardless of their known infection status. These practices include the use of personal protective equipment (PPE) such as gloves, masks, protective eyewear, and gowns to create a barrier between the healthcare worker and potentially infectious materials. Proper hand hygiene is also a fundamental component of standard precautions, as it helps prevent the spread of infectious agents.

In addition to PPE and hand hygiene, the proper handling and disposal of sharp instruments are essential to prevent injuries that could lead to transmission. Dental professionals should follow established protocols for the safe use of needles and other sharp devices, including the use of engineering controls such as needle recapping devices and the immediate disposal of used needles in puncture-resistant containers. In the event of a needle-stick injury, it is important to follow post-exposure protocols, which may include testing for HBV and HCV and administering post-exposure prophylaxis (PEP) for HBV if necessary. Environmental infection control is another important aspect of preventing hepatitis transmission in dental settings. Surfaces and equipment that may come into contact with blood or bodily fluids should be thoroughly disinfected between

patients, and instruments should be sterilized according to established guidelines. Dental units that generate aerosols should be equipped with high-efficiency particulate air (HEPA) filters or other appropriate ventilation systems to reduce the risk of airborne transmission.

Management of Dental Patients with Hepatitis B or C. Treating patients with known HBV or HCV infection requires special considerations to ensure both patient and provider safety. Dental professionals should follow the same standard precautions for all patients, regardless of their infection status, to prevent discrimination and ensure that appropriate infection control measures are consistently applied. However, additional precautions may be necessary for patients with active hepatitis infection, particularly if they have high viral loads or evidence of liver dysfunction. It is important to obtain a thorough medical history from patients, including any history of liver disease, hepatitis infection, or antiviral treatment. For patients with chronic hepatitis, it may be necessary to consult with their physician to determine their current health status and any potential contraindications to dental treatment. For example, patients with advanced liver disease may have impaired blood clotting, which could increase the risk of bleeding during invasive procedures. In such cases, dental procedures should be planned carefully, and appropriate measures, such as the use of local hemostatic agents, may be needed to control bleeding. In addition to managing potential complications, dental professionals should be aware of the potential stigma and discrimination that patients with hepatitis may face. It is important to maintain confidentiality and provide care without prejudice, as patients with hepatitis are entitled to the same level of care and respect as any other patient.

Post-Exposure Protocols. Despite the best preventive efforts, accidental exposures to bloodborne pathogens can still occur in dental settings. When a needle-stick injury or other potential exposure to HBV or HCV occurs, it is important to follow established post-exposure protocols to minimize the risk of infection. For HBV, the protocol depends on the vaccination status of the exposed individual. If the dental professional has been vaccinated and is immune, no further action is necessary. However, if the exposed individual is unvaccinated or has an incomplete vaccination series, post-exposure prophylaxis with hepatitis B immunoglobulin (HBIG) and initiation of the HBV vaccine series is recommended. For HCV, there is currently no post-exposure prophylaxis available. Instead, the protocol focuses on monitoring the exposed individual for signs of infection. Baseline testing for HCV antibodies and liver function tests should be performed at the time of exposure, with follow-up testing at regular intervals to detect any signs of infection.

Conclusion

Hepatitis B and C pose significant risks in dentistry due to the potential for transmission through blood and bodily fluids. However, with appropriate preventive measures, including vaccination, adherence to standard precautions, and proper infection control practices, the risk of transmission can be effectively minimized. Dental professionals must remain vigilant and committed to maintaining the highest standards of infection control to protect both themselves and their patients from these serious viral infections. Additionally, the management of patients with hepatitis should be conducted with sensitivity and care, ensuring that all patients receive the necessary dental treatment while minimizing the risk of complications.

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ЛИНГВИСТИЧЕСКИЕ ОСОБЕННОСТИ ЯЗЫКОВЫХ СРЕДСТВ И СПОСОБОВ ОБРАЗОВАНИЯ СЛЕНГОВ В ПРОЦЕССЕ ИНТЕРНЕТ-КОММУНИКАЦИИ

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Аннотация. В данной статье рассматриваются лингвистические особенности описания языковых средств и способов образования сленгов в процессе Интернет - коммуникации.

Ключевые слова и словосочетания: сленг, Интернет-коммуникации, лингвистика, средства образования, процесс.

Введение. Глобальное развитие, которое несут современные, новейшие сетевые технологии развиваются с огромной скоростью, что также способствует появлению новых языковых пластов в процессе интернет-коммуникации, которая, в свою очередь, является универсальной единицей общения во всем своем многообразии, и непосредственно влияет на коммуникативную обстановку во всем мире.

Основная часть. Необходимость постановки проблемы вопросов лингвистических особенностей интернет-коммуникаций в русском языке обусловлена взаимосвязью языковых контактов в условиях Интернет-коммуникации молодого поколения, в особенности студенческой молодежи. Так как семантическое освоение сленга устной и письменной речи. А также речи компьютерной приобретает особое значение, потому что заимствованное слово постепенно начинает употребляться в языке как определенная лексическая единица, приобретая в речи определенные формы употребления [1, с. 17]. Носители языка находят в своем родном языке соответствующий эквивалент. Если имеет место соответствующая языковая единица, то значение заимствованного слова ещё более проясняется и конкретизируется. Определяется место употребления в языке, актуализируется его использование.

В последние десятилетия с каждым днем растет интерес у пользователей к глобальной сети Интернета, как площадка для особенного источника информации, коммуникации и для самовыражения личности, идей, мысли и т.д.

Коммуникация – это социально обусловленный процесс передачи и восприятия информации как в межличностном, так и в массовом общении по разным каналам при помощи различных вербальных и невербальных коммуникативных средств [5, с. 274].

Общение с использованием сотовых телефонов через Интернет, самого Интернета получило лингвистическое наименование Интернет-коммуникации.

Интернет-коммуникации – это процесс и способ общения, благодаря которым передача информации происходит по каналам Интернета в различной форме: голос, видео, документы, мгновенные сообщения, файлы [4].

Глобальный уровень развития Internet, информационных, телекоммуникационных технологий определил в XXI веке одно из приоритетных направлений развития России –

информатизацию общества. С появлением и развитием компьютерной техники традиционные инструменты обмена информацией постепенно уступают позиции электронным средствам коммуникации, утрачивая свою актуальность. Компьютеризация различных сфер человеческой деятельности, в том числе коммуникационной и информационной, способствовала появлению рынка интернет-коммуникации услуг и привела к введению таких понятий как «глобальные сети», «дискурс интернет-коммуникации», «информационные технологии», «телекоммуникации», «интернет-коммуникации», «компьютерные технологии», «интернет-коммуникационные услуги». Следовательно, влияние инфо-телекоммуникационных технологий практически на все стороны жизни актуализирует исследования в данном направлении [3].

Сленги в процессе Интернет-коммуникации могут быть различного лексического характера. Это могут быть простые слова различных частей речи: например: имя существительное – кент, имя прилагательное – клёвый, глагол – хайпить, могут использоваться как сленги даже междометия такие, как – вау! Или супер! Можно отметить то, что в роли сленгов могут выступать целые выражения, такие как, например, загрузил новую программу Windows. Компьютерными сленгами могут быть сравнение, метафора, метонимия, синекдоха, перифраз и, особенно, заимствованные слова, чаще английского происхождения и др.

Следовательно, имеются некоторые отличия, имеющие особенность или некие отличия уровня систематизации по способу образования сленгов в процессе Интернет-коммуникации.

Это прежде всего:

1) семантические сдвиги (получить спс от кента в значении «друг выразил мне свое спасибо»);

2) изменение формы: компрессия (инфа (информация), спс (спасибо), или же новая форма общения активно способствует снижению грамотности населения щас, ща (сейчас), каменты (комментарии);

3) заимствования:

во-первых, появляются гибридные слова (английское слово, произносится в русской транскрипции, с прибавлением суффиксов и префиксов – «хайпить», «репостить»);

во-вторых, появляются слова-гибриды заимствованной лексики, например: «gout'ить» (определить маршрут), «upload'ировать» (аплодировать), pickup'нуть (пикапнуть), doom'ать (думать), не DVD меня (не доводи меня)», «name'инг» (имя наречение);

в-третьих, появляются неадаптированные заимствованные слова с незначительными формальными интеграциями: GSM, 3G, Bluetooth, Wi-Fi, GPS, социальные медиа (social media), браузер (browser), плейлисты (playlist), хэштэг (hashtag);

в-четвертых, появляются адаптированные заимствованные слова с орфографическими, фонологическими, морфологическими интеграциями в структуру русского языка: аккунт (account), рейтинг (rating), смартфон (smartphone), социальные сети (social networks), скриншот (screenshot), прескул (preschool), локдаун (lockdown), донэйшн (donation);

в-пятых, появляются слова-кальки: голосовой поиск (voice search), фотокамера 8МП (8 mega pixel photo camera), сенсорный экран (touch screen), пресс выпуск (press release);

в-шестых, появляются слова-гибриды в виде смешения русской и английской частей

слова: Play Маркет (Google Store), Play Книги (Play Books), Play Пресса (Play Newsstand), Play Музыка (Play Music), снимОК (снимок).

Особую значимость в исследованиях способов образования сленгизмов Интернет-коммуникации, **представляет одна из наиболее детальных классификаций, которая принадлежит формальным способам образования.**

1. Словообразовательные средства:

а) **сложение слов:** слитное и через дефис – СДмолча (сиди молча), Fm – радио (Fm – radio);

б) **аффиксальное словообразование** (derivation), результатом которого становятся диминутивы. «Диминутив или деминутив (от лат. dēminutus «уменьшенный»), уменьшительная форма – слово, или форма слова, передающие субъективно-оценочное значение малого объема, размера и т. п., обычно выражаемое посредством уменьшительных аффиксов, напр.: смска, личка, аутичка. Значение уменьшительности также может сопровождаться различными эмоционально-экспрессивными окрасками – ласкательности (уменьшительно-ласкательная форма), напр.: сарафанчик (передача сообщения), половинка (любимый, любимая);

в) **ономатопея** (onomatopoeia), то есть звукоподражание или аудиальная метафора: аукнуть (вызвать в Интернете на беседу);

г) **инициальная аббревиация** (acronyms) «акронимы» - SIM – карта (SIM card).

2. Грамматические средства.

а) отдельные слова

- **существительные:** бакиш (передача денег через Интернет), хайп, каиент, респект, кент, акция, краш (любимый человек) и т.п.; заимствования из английского языка аккуант (account), рейтинг (rating), смартфон (smartphone), скриншот (screenshot), прескул (preschool), локдаун (lockdown), донэйшн (donation);

- **прилагательные:** клевый, суперский, сенсорный, браузерный, акаунтный;

- **глаголы:** гуглить, хайпить, хромает, не тянет, виснет, зависает вместо плохо работает Интернет; английские заимствования перефразированные на русский язык «gout'ить» (определить маршрут), «upload'ировать» (аплодировать), pickup'нуть (пикапнуть), doom'ать (думать);

- **разряды местоимений:** эта, та, она и др.

- **слова, обозначающие слабо выраженную степень свойства либо неполноту действия,** употребляемые не в своем словарном значении, а в качестве сленга, например, хромает, не тянет, виснет, зависает вместо плохо работает Интернет;

- **некоторые глагольные формы с приставкой под-** – (подъехать, подойти, подвезти, подкатить и другие), воспринимаемые некоторыми говорящими (главным образом носителями просторечия) как более вежливые, смягчающие прямое отношение к адресату;

- **аббревиатуры** СС вместо Совершенно Секретно.

- **генерализация значения** (использование лексики большого семантического потенциала, например, личных и указательных местоимений это, это, этот, тот, та, то, существительных широкой семантики это дело, это событие);

- **метафоризация значения** (спрыгнуть в значении «выйти из игры»);

- **минимизация значения** (зависнуть в значении слабая работа компьютера или

интернета);

2 группа – изменения формы слова-табу:

- **звуковая аналогия:** Gad (God/Бог);

- негативная префиксация (**литота**): бла-бла вместо ложь; тум-тум вместо глупый;

Исходя из вышеизложенного, в результате анализа лингвистических исследований в области изучения различных классификаций способов образования Интернет-сленгов, можно сделать вывод о том, что ученые, изучавшие данную проблему, относят свои теоретические изыскания не только к лексическому явлению, но и к определенной речевой стратегии. Таким образом, способы образования сленгизмов Интернет-коммуникаций строятся на стилистическом приеме, и могут реализоваться на различных уровнях языка – фонетическом, словообразовательном, морфологическом, синтаксическом и лексико-семантическом.

Основной проблемой для нашего исследования остается поиск критериев смысла сленга в процессе Интернет-коммуникаций в русском языке, по которым определилась бы возможность более подробно описать слова со значением сленга. В связи со сказанным, следует отметить, что русскоязычное молодое поколение, через свой язык смогло бы возродить и сохранить многие самобытные традиции, обычаи, воззрения, на которых воспитывалось не одно поколение. Уважение друг к другу во время коммуникации становится основополагающим стержнем духовного развития общества, выделяющим те ценности, которые позволяют людям решать взаимовыгодные вопросы независимо от их происхождения, вероисповедания и самоидентификации в той или иной культурной среде. Все это проявляется и выражается посредством языка.

Заключение. Представленные классификации способов образования языковых средств и способов образования сленга в процессе Интернет-коммуникации, в данной магистерской диссертации, опираются на исследования ведущих лингвистов данной области языкознания. Это семантические сдвиги, заимствования, формальные способы образования наименований предметов учебной принадлежности, такие как **аффиксальное словообразование, заимствование и грамматические особенности.** Самый большой пласт составляют наименования сленговой речевой принадлежности, представляют собой заимствованные слова и выражения слова. В грамматическом отношении данной лексики подвергаются такие части речи как существительные, прилагательные, местоимения, глагол и даже междометия.

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Absract

“*Mediasia macrophylla Pimen*” is both a medicinal and spice plant and is popular with the people for its a number of healing properties. The ground top of the alga is a fragrant ingredient in perfumery, a powerful appetite suppressant in medicine. Algal contains substances that have the properties of treating rheumatism, nephritis, eczema, herpes, gastrointestinal, liver and damaged areas.

Keywords: *Mediasia macrophylla*, folk medicine, gives aroma, *Foeniculum vulgare*, nervous (E)-anethol, thymol, carvacrol, essential oil composition

Аннотация.

“*Mediasia macrophylla pimen*” является как лекарственным, так и пряным растением и широко известен своими целебными свойствами. Надземная часть альгора считается ароматизатором в парфюмерии, мощным аппетитным средством в медицине. Алгор содержит вещества, способные лечить ревматизм, нефрит, экзему, герпес, желудочно – кишечный тракт, печень и поврежденные участки.

Ключевые слова: *Mediasia macrophylla*, народная медицина, придает аромат, *Foeniculum vulgare*, нейрон (E)-анетол, тимол, карвакрол, композиция эфирных масел.

INTRODUCTION. *Mediasia* is a perennial plant in the family Apiaceae. The upper parts of the stems are up to 50-80 cm long, have leaves and inflorescences. The stems are rounded, sharply twisted, poorly pubescent, branching in the middle to a wide row. The leaves are thick, short on both sides along the veins, covered with fine hairs, the rhizome leaves are in short bands. The Leaf bands are rounded, with a gray Fine pubescence, the plate is oblong-triangular, divided into two double-pointed three pieces.

In folk medicine, the stem, leaves and flowers of the plant are used. The plant has a positive effect on the nervous system, improves the cardiovascular system, normalizes blood pressure. Unig ground top is used in the food industry, making canned meat and fish. Tea brewed from the leaves of khushtaam as a medicinal remedy raises the mood and refreshes the psyche. Added to meals will prevent rapid nausea.

Place of growth and distribution: grows on rocky slopes, in the middle region foothills of the mountains. It is found in Tashkent, Kashkadarya and Surkhandarya regions. The raw materials of the algoroiti plant should be harvested by the beginning period of flowering and fruiting in the cover.



https://www.google.com/url?sa=i&url=https%3A%2F%2Fplanta-medica.uz%2Fmediasia-macrophylla-regel-et-schmalh-pimenov-mediaziya-krupnolistnaya%2F&psig=AOvVaw1OIH4DKNh0uT3y4IhNSmnl&ust=1729429297204000&source=images&cd=vfe&opi=89978449&ved=0CBcQihxqFwoTCMDJ8b_AmokDFQAAAAAdAAAAABAK

The Assembly must be carried out with a sickle or knife. The raw materials collected in this way are air-dried under the porch or in the shade on air-well-rotating chords, spread on paper or fabric in a thin layer and rolled often. According to TU 88,-13-7:2007, the moisture content should not exceed 13%, the total ash content, not more than 12.8%, the essential oil in absolutely dry raw materials should not be less than 0.3%. Sifted parts with holes with a diameter of 1 mm should not be less than 63.8 %.

The presence of a huge amount of essential oil and complex lipids in plant seeds, leaves and flowers makes it possible to use it as a source of fragrant ether in the food industry. Milk and dairy products with the addition of algae plant keep their composition natural for a long time. Its Leaf and seeds, dried in the shade, are used in salting vegetables. The fact that it retains its pleasant aroma for a long time is the main reason for the increased interest in this spice and medicinal plant.



✓ https://planta-medica.uz/wp-content/uploads/2020/12/mediasia_macrophylla-2.jpg

Table 1.

Biochemical composition of the Apiaceae family in the Samarkand region

Type of Plant organs Essential oils Coumarins Flavonoids Fatty oils (U ; I c O, t Steroids
Phenolcarbolic acids Carbohydrates Vitamins C

- 1) Galagania fragrantissima Supervision. part + + + - - - - -
- 2) Elwendia chaerophylloides is supervised. part +
- 3) E. persica Above.Part of the Fruit + + _ _ + _ - - - -
- 4) Mediasia macrophylla Roots of Nadz.Part of the Fruit + + + +

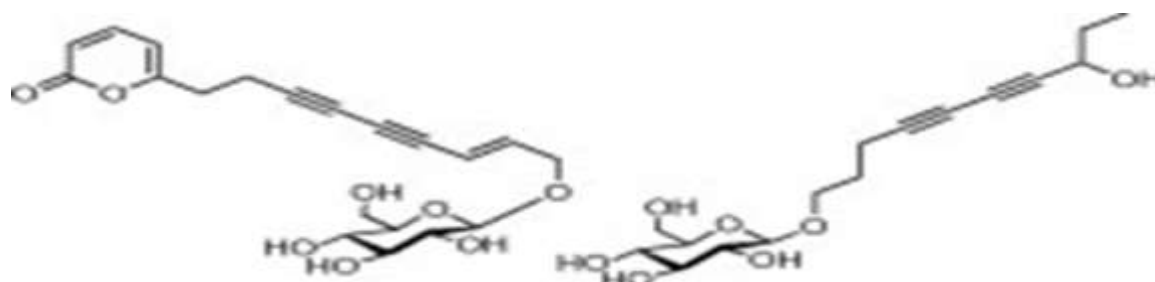
Table 2.

Distribution of spicy - aromatic plants of the Apiaceae family in the Samarkand region.

- 1) Carum carvi L - Cumin ordinary Biennial + - + - -
- 2) Coriandrum sativum L.- Annual Coriander + + + - +
- 3) Echinophora sibthorpiana Guss. -Thornbill Siebthorpe Perennial + + + + +
- 4) Galagania fragrantissima Lipsky -Galagania fragrant Perennial + + + - -
- 5) Mediasia macrophylla (Regel & Schmalh) Pimenov - Mediasia large-leaved Perennial + + +

Thus, the spicy-aromatic plants of the **Apiaceae** family are distributed in 7 species, of which 5 species are perennials, 1 species is biennial and 1 species is annual.

Polyacetylenic glucosides (1–5) were isolated from the MeOH extract of Mediasia macrophylla. Their structures were established by spectroscopic analyses. Compounds 2–4 were the first examples of C10-polyacetylenic glucosides found in the family Umbelliferae, while compound 1 was a unique polyacetylenic glucoside possessing an α -pyrone moiety.



<https://ars.els-cdn.com/content/image/1-s2.0-S0031942209005433-fx1.jpg>

The preventative function of plants for a food was found during this study. It was observed that some plants can prevent meat and milk based foods from spoiling during hot seasons. The aerial part of Mediasia macrophylla is usually added to a milk or lactic product to keep it fresh (Fig. 2). This

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addition gives products a good scent and taste in hot seasons. Boughs of *Juniperus seravshanica* and *Juniperus turkestanica* are used to cook the most popular food, known as Archa kabob (Fig. 3). It is mutton, prepared in a special oven called a tandoor (Tandir – Uzbek name). The heat from a tandoor was traditionally generated by a charcoal or wood fire, burning within the tandoor itself, thus exposing the food to live fire, radiant heat cooking, and hot-air, convection cooking, and smoking by the fat and food juices that drip on to the charcoal. Temperatures in a tandoor can approach 480°C, and it is common for tandoor ovens to remain lit for long periods of time to maintain a high cooking temperature. *Juniperus seravshanica* and *J. turkestanica* make food smell appetizing and taste much more delicious. Furthermore, it allows the dish to be kept approximately for 1 month, which is very convenient in field conditions.



<https://ars.els-cdn.com/content/image/1-s2.0-S2352618115000062-gr2.jpg>

Mediasia macrophilla is usually added to a milk or lactic product to keep it fresh.

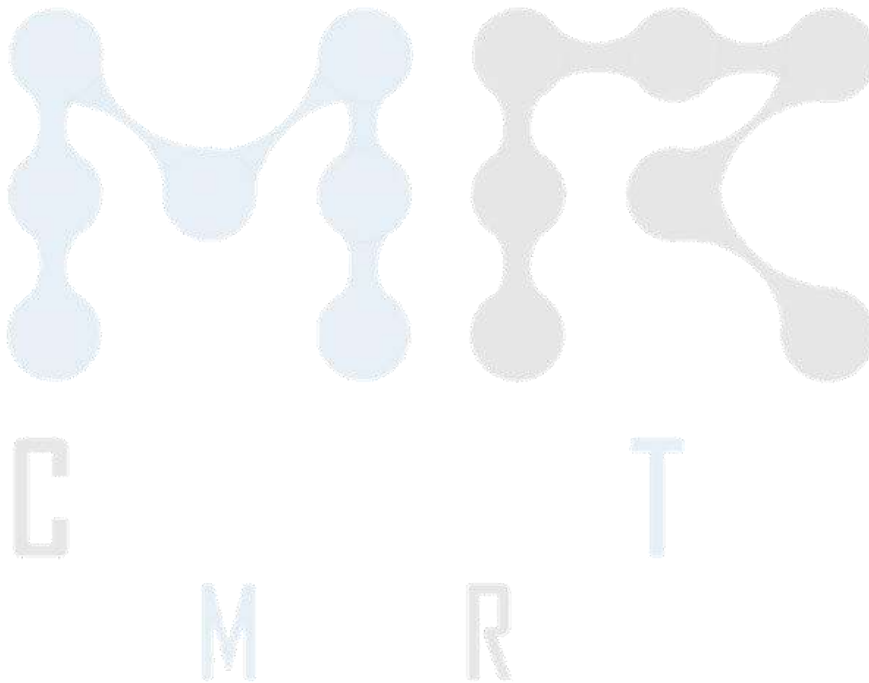


<https://www.google.com/url?sa=i&url=https%3A%2F%2Fm.olx.uz%2Fd%2Fobyavlenie%2Ftandir-gusht->

Conclusion: In folk medicine, a tincture-shaped algot earthen top is used as a herb driver and invigorating agent in the treatment of liver diseases, and is also used as a spice and invigorating agent.

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Эмотивные глаголы на материале произведения Л.Н.Толстого «Война и мир»

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Аннотация: В данном исследовании рассматриваются эмотивные глаголы, используемые в романе Л.Н. Толстого «Война и мир», как важный элемент языковой характеристики персонажей и их эмоционального состояния. Эмотивные глаголы, выражающие чувства, переживания и внутренние конфликты героев, играют ключевую роль в создании психологической глубины произведения. Роман «Война и мир» богат разнообразными эмоциями, которые испытывают персонажи в контексте исторических событий и личных драм. Мы проанализируем примеры использования эмотивных глаголов, таких как «любить», «бояться», «радоваться», «страдать» и другие, чтобы выявить их семантические особенности и функции в тексте. Особое внимание будет уделено тому, как Толстой через эмотивные глаголы передает сложность человеческих чувств, отражая изменения настроений персонажей на протяжении всего романа. Исследование поможет глубже понять не только литературную технику писателя, но и более широкие философские идеи о природе человеческих эмоций в контексте войны и мира. Таким образом, изучение эмотивных глаголов в произведении Толстого позволит осветить важные аспекты его художественного мира и внести вклад в понимание его литературного наследия.

Ключевые слова: чувствовать, любить, страдать, сомневаться, ненавидеть, смеяться, плакать, радоваться, запоминать, надеждовать(ся)

Введение. Глагол - это знаменательная часть речи со значением действия или состояния, выражающая эти значения с помощью категорий вида, залога, времени, лица, наклонения и выполняющая в предложении, в основном, функцию сказуемого. Глагол может называть конкретное действие (читать, строить), движение и перемещение в пространстве (идти, летать), физическое и душевное состояние (болеть, радоваться), деятельность органов чувств (видеть, слышать), изменение состояния (слабеть, худеть).¹

¹ Розенталь, Д.Э

Р64 Современный русский язык / Д.Э. Розенталь, И.Б. Голуб, М.А. Теленкова. – 9-е изд. - М.: Айрис-пресс, 2007. -448с. – 223-224с
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Глагол как одна из сложнейших категорий языковой системы является объектом исследования лексикологии, семасиологии, лексикографии и, конечно, грамматики. Особую группу составляют эмотивные глаголы, отражающие проявление эмоционального отношения человека к явлениям действительности.²

С точки зрения семантики глаголы изучались многими учёными как И.А Ермолаева, В. И. Шаховский, Л. Г. Бабенко. Также классифицировались по разному.

Следовательно, среди тематических групп глаголов особое место занимают глаголы состояния, т.е глаголы эмоционального состояния. Глаголы эмоционального состояния как семантическая группа слов в качестве исходного слова в словообразовательных гнездах имеют слова, принадлежащие к разным частям речи. Исходным словом словообразовательных гнезд глаголов данной семантической группы может быть субстантив. Так, например, глаголы эмоционального состояния бесить, блажить, волновать, грустить, печалить, покоить, скорбеть, стыдить, тосковать являются производными от следующих субстантивов, являющихся вершинами словообразовательных гнезд: бес бесить, блажь блажить, волна волновать, грусть грустить, печаль печалить, покой покоить, скорбь скорбеть, стыд стыдить, тоска тосковать.³ Данное понятие объясняется по разному:

Эмотивность, по мнению В. И. Шаховского, представляет собой языковую категорию, так как эмоции выражаются и проявляются при помощи языка⁴

Анализ различных концепций эмотивности содержится в работе Л. А. Калимуллиной, предлагающей дифференцировать понятия «эмотив» и «эмотивная лексика» в зависимости от того, соотносится ли эмотивная семантика «со строгим понятием или реализуется в коннотативной части значения»⁵

Л. Г. Бабенко называет эмотивным такое значение, в семной структуре которого содержится сема эмотивности; таким образом, все языковые средства, содержащие данную сему, могут быть отнесены к эмотивной лексике.⁶

² Виноградов, В. В. Русский язык. Грамматическое учение о слове / В. В. Виноградов. – М.; Л.: Учпедгиз, 1947. – 784с

³ "Янковская С.А. ГЛАГОЛЫ ЭМОЦИОНАЛЬНОГО СОСТОЯНИЯ В СОСТАВЕ КОМПЛЕКСНЫХ ЕДИНИЦ СИСТЕМЫ СЛОВООБРАЗОВАНИЯ | Альтернант-2013" <https://conf.grsu.by/alternant/index-168.htm>

⁴ Шаховский В. И. Лингвистическая теория эмоций / В. И. Шаховский. – 2-е, исп. и доп. изд. – М. : Гнозис, 2008. – 416 с.

⁵ Калимуллина Л. А. Семантическое поле эмотивности в русском языке: диахронический аспект (с привлечением материала славянских языков) : автореф. дис. ... докт. филол. наук : 10.02.01 / Л. А. Калимуллина. – Уфа, 2006. – 43 с.

⁶ Бабенко Л. Г. Лексические средства обозначения эмоций в русском языке / Л. Г. Бабенко. – Свердловск : Издательство Уральского университета, 1989. – 184 с.

Эмоции могут быть репрезентированы разными языковыми средствами, в том числе глаголом, который называет эмоции как состояние (грустит) и как становление состояния (влюбиться), как отношение (любить) и как воздействие (влюбить), а также как их внешнее проявление (целовать, обнимать).⁷

Эмотивные глаголы классифицируются исследователями на различные лексико-семантические группы: глаголы внешнего проявления отношения⁸ чувственно-эмоциональных переживаний и волевых усилий⁹;

глаголы эмоционального состояния/отношения¹⁰ и др. В то же время глаголы, выражающие различные эмоции и чувства, могут быть объединены в одну лексико-семантическую группу по следующим причинам: 1) они имеют общую категориальную сему «эмоциональное состояние»; 2) принадлежат к одной части речи и имеют типовую сочетаемость; 3) объединены парадигматическими отношениями

По словам К. В. Мочульского, Ф. М. Достоевский был «гениальным изобретателем способов художественного изображения человека – его души, его стремлений, мечтаний и поступков. И едва ли не самое большое место в этом умении занимает прием сценарного воссоздания эмоций персонажа».¹¹

В романе Л.Н. Толстого «Война и мир» выделены

Л.Н. Толстой в своем monumental'ном произведении «Война и мир» не только создает широкий исторический и социальный контекст, но и проникает в глубины человеческой психологии. Эмотивные глаголы, используемые писателем, становятся важным инструментом для передачи эмоционального состояния персонажей и отражения их внутреннего мира. В этом исследовании мы рассмотрим, как Толстой применяет эмотивные глаголы для создания эмоциональной насыщенности текста, выявления конфликтов и отношений между героями.

⁷ Исаева И. А. Градуальная семантика глагола в современном русском языке : дис. ... канд. филол. наук : 10.02.01 / И. А. Исаева. – Саранск, 2011. – 347 с.

⁸ Толковый словарь русских глаголов: идеографическое описание. Английские эквиваленты. Синонимы. Антонимы / Под общ. ред. Л. Г. Бабенко. – М.: Аст-пресс, 1999. – 694 с.

⁹ Системный семантический словарь русского языка. Предикатная лексика / Л. М. Васильев – Уфа : Гилем, 2005. – 466 с.

¹⁰ Богданова Л. И. Зависимость формы актантов от семантических свойств русских глаголов : автореф. дис. ... докт. филол. наук: 10.02.01 / Л. И. Богданова – М., 1998. – 64 с.

¹¹ Мочульский К. В. Гоголь. Соловьев. Достоевский / К. В. Мочульский. – М. : Республика, 1995. – 426 с.

Эмотивные глаголы — это слова, которые выражают чувства и эмоции, такие как радость, печаль, страх или гнев. Они помогают читателю глубже понять переживания персонажей и сопереживать им. В «Войне и мире» эти глаголы играют ключевую роль в описании таких сложных тем, как любовь, война, смерть и судьба.

Исследуя эмотивные глаголы в произведении Толстого, мы можем выделить несколько основных аспектов их использования:

1. Передача чувств персонажей: Как через действия героев передаются их эмоции?
2. Создание атмосферы: Как выбор слов влияет на восприятие сцены?
3. Развитие темы: Как эмоции героев соотносятся с основными темами романа?

В данной работе мы проанализируем использование эмотивных глаголов в контексте ключевых сцен произведения. Это позволит не только углубить понимание литературного мастерства Толстого, но и раскрыть богатство человеческих переживаний в условиях исторического хаоса.

Таким образом, наше исследование будет сосредоточено на том, как Л.Н. Толстой использует эмотивные глаголы для создания ярких образов и передачи сложных эмоциональных состояний своих персонажей в «Войне и мире».

Основная часть: В произведении Л.Н. Толстого «Война и мир» эмотивные глаголы играют важную роль в раскрытии внутреннего мира персонажей и их эмоциональных состояний. Эти глаголы помогают передать чувства, переживания и глубокие размышления героев, что делает текст более выразительным.

Эмотивные глаголы в «Войне и мире»

1. **Чувствовать:** Этот глагол часто используется для описания внутренних переживаний персонажей. Например, Пьер Безукровный чувствует тревогу и неуверенность в своем месте в жизни.

2. **Любить:** Любовь – одна из центральных тем романа. Глагол «любить» помогает передать сложные эмоции между Наташей Ростовой и Пьером, а также другими героями.

3. **Сожалеть:** Персонажи часто испытывают сожаление о своих действиях или потерянных возможностях, что добавляет глубину их характеру и делает их более человечными.

4. **Ненавидеть:** В контексте войны этот глагол подчеркивает антипатию между противниками и внутренние конфликты персонажей, таких как князь Андрей Болконский.

5. **Боясь:** Страх перед войной, потерей близких и будущим пронизывает мысли многих героев, отражая атмосферу неопределенности того времени.

6. Радоваться: Моменты счастья также имеют место в романе, особенно в отношениях между героями, когда они находят утешение друг в друге на фоне хаоса войны.

7. Страдать: Стрдание является ключевым элементом жизни персонажей; они страдают от утрат, разочарований и конфликтов как внутреннего, так и внешнего характера.

8. Надеждить(надеяться): Надежда на мирное будущее или на возвращение к нормальной жизни движет многими героями через трудности войны.

В романе Л.Н. Толстого «Война и мир» эмотивные глаголы играют важную роль в передаче эмоционального состояния персонажей, их внутреннего мира и сложных переживаний в условиях войны и мира. Основная часть анализа может быть структурирована следующим образом:

1. Введение в тему

- Определение эмотивных глаголов.

- Значение эмоциональной выразительности в литературе, особенно в контексте «Войны и мира».

2. Эмотивные глаголы как средство передачи эмоций

- Обсуждение того, как Толстой использует эмотивные глаголы для создания глубокой психологической характеристики героев.

- Примеры: чувства любви, страха, радости, горя.

3. Персонажи и их эмоции

- Пьер Безуклов: его внутренние переживания отражаются через глаголы, описывающие сомнение, стремление к поиску смысла жизни (например: «чувствовать», «искать», «сомневаться»).

- Наташа Ростова: её эмоциональная палитра выражается через любовь и страсть (глаголы: «любить», «восхищаться», «страдать»).

- Андрей Болконский: его гнев и разочарование передаются через такие глаголы, как «злиться», «бурлить», «переживать».

4. Эмоциональные состояния на фоне исторических событий

- Как война влияет на эмоции персонажей: страх перед смертью, чувство патриотизма или утраты.

- Глаголы, описывающие массовые переживания (например: «трепетать», «падать духом»).

5. Символизм и метафоры

- Использование эмотивных глаголов не только для описания чувств, но и для создания образов.

- Как Толстой связывает внутренние переживания с внешними событиями.

6. Заключение

- Подведение итогов о том, как эмотивные глаголы помогают создать многослойное восприятие героев.

- Влияние этих выражений на читателя: формирование глубокого понимания человеческой природы в условиях войны.

Такой подход поможет проанализировать использование эмотивных глаголов в произведении Л.Н. Толстого и понять их значимость для раскрытия тематики романа.

Заключение. Эмотивные глаголы Л.Н. Толстого служат не только для передачи чувств героев, но и создают атмосферу произведения, погружая читателя в сложный мир человеческих эмоций на фоне исторических событий. Они помогают глубже понять мотивы действий персонажей и их развитие на протяжении всего романа «Война и мир». Через эти глаголы Толстой мастерски показывает многообразие человеческих чувств — от любви до ненависти — что делает его произведение вечным и актуальным для любой эпохи. Эмотивные глаголы играют важную роль в произведении Л.Н. Толстого «Война и мир», так как они помогают передать внутренние состояния персонажей, их чувства и переживания. В заключении можно отметить следующее:

1. Глубина эмоций: Толстой мастерски использует эмотивные глаголы для передачи сложных эмоций своих героев, будь то радость, горе, любовь или страх. Эти глаголы помогают создать эмоциональную атмосферу и углубляют понимание переживаний персонажей.

2. Разнообразие чувств: В «Войне и мире» мы видим широкий спектр эмоций — от героизма на поле боя до меланхолии в мирной жизни. Эмотивные глаголы позволяют читателю лучше понять мотивацию действующих лиц и их внутренние конфликты.

3. Связь с историческим контекстом: Эмоции персонажей тесно связаны с историческими событиями, что подчеркивает влияние внешних обстоятельств на внутренний мир человека. Глаголы, описывающие чувства, помогают осмыслить масштабы войны и её воздействие на личность.

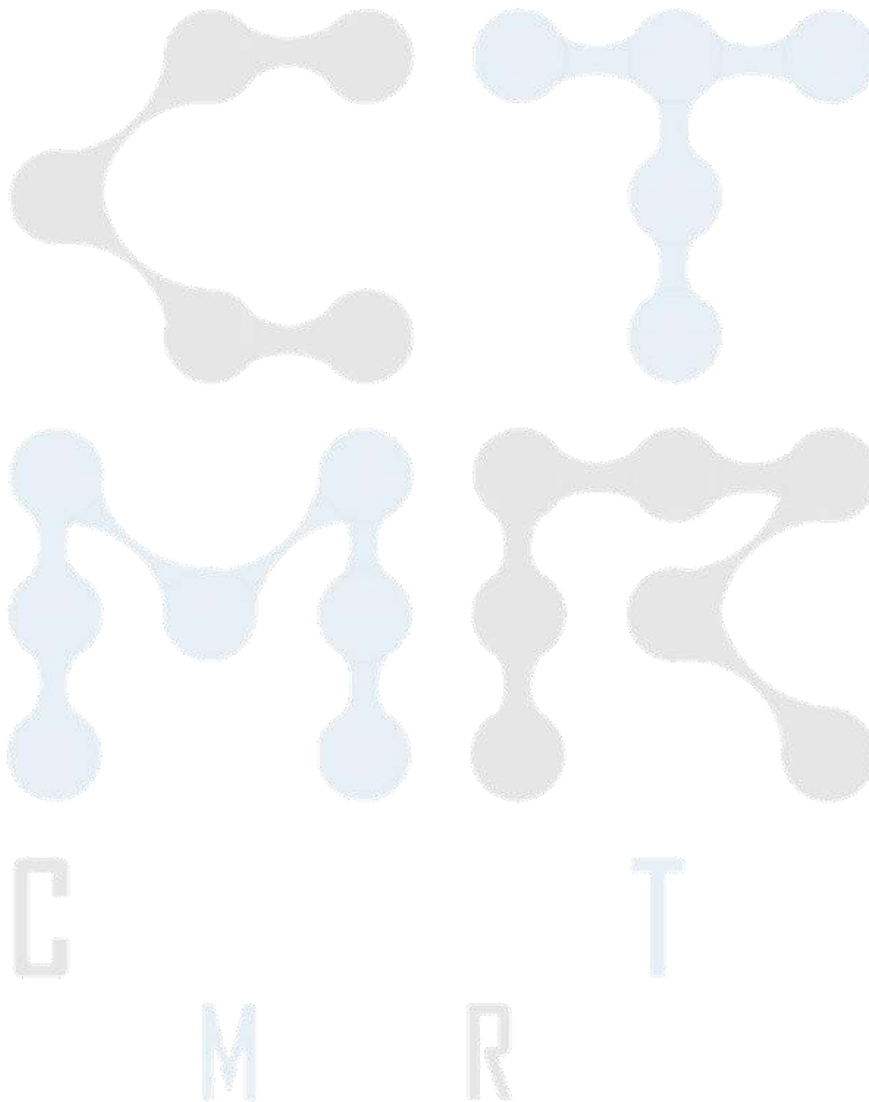
4. Философская глубина: Через эмотивные глаголы Толстой исследует философские вопросы о смысле жизни, страданиях и человеческих отношениях. Это придаёт произведению не только эмоциональную насыщенность, но и глубокий смысл.

Таким образом, эмотивные глаголы в «Войне и мире» не просто обогащают текст, но и служат важным инструментом для раскрытия глубины человеческих чувств и философских размышлений автора о жизни и войне.

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**Frazeologizmlarning tarjima jaroyinidagi milliy madaniy xususiyatlarni aniqlash.
Stendal “Qizil va Qora” romani misolida**

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Annotatsiya: Ushbu tadqiqotda Stendalning “Qizil va Qora” romani misolida frazeologizmlarning tarjima jarayonidagi milliy madaniy xususiyatlari o‘rganiladi. Romaning asosiy temalari va qahramonlari orqali fransuz madaniyatining o‘ziga xosligini aks ettiruvchi frazeologik birikmalar tahlil qilinadi. Tarjima jarayoni milliy madaniyatning tarjimada aks etishi, shuningdek, frazeologizmlarning ma’naviy va tilshunoslik jihatdan ahamiyati ko‘rsatiladi. Stendal asarida ishlatilgan frazeologizm va iboralar fransuz jamiyatining ijtimoiy-siyosiy kontekstini, urf-odatlarini va qadriyatlarini yoritishda muhim rol o‘ynaydi. Tadqiqot shuningdek, tarjimonlar tomonidan frazeologizmlarni qanday qilib moslashtirishlari, ularni qanday qilib mintaqaviy va madaniy kontekstdan ajratmasdan yetkazishlari haqida fikr yuritadi. Natijada, frazeologik birikmalarni o‘z ichiga olgan tarjimalar orqali milliy identitetni saqlab qolish imkoniyatlari ham ko‘rib chiqiladi. Ushbu ish natijalari Stendal asarini chuqurroq tushunishga, shuningdek, tarjima amaliyotidagi madaniy differentsiallarni aniqlashga yordam beradi.

Kalit so‘zlar: madaniyat, an’analar, til, ijtimoiy qatlamlar, simbolizm, tarixiy kontekst, frazeologizm, qizil havo, qora ko‘rinish, emotsional zaryad, ijtimoiy-madaniy terminologiya, tarixiy kontekst, milliy identitet,

Аннотация: В данном исследовании национально-культурные особенности фразеологизмов в процессе перевода изучаются на примере романа Стендаля «Красное и черное». Анализируются фразеологические сочетания, отражающие своеобразие французской культуры через основные темы и характеры ромов. Процесс перевода отражает в переводе национальную культуру, а также духовное и языковое значение фразеологии. Фразеология и выражения, использованные в творчестве Стендаля, играют важную роль в освещении общественно-политического контекста, обычаев и ценностей французского общества. В исследовании также размышляется о том, как фразеология адаптируется переводчиками, как передать ее, не отрывая от регионального и культурного контекста. В результате рассматриваются также возможности сохранения национальной идентичности посредством переводов, содержащих фразеологические сочетания. Результаты этой работы способствуют более глубокому пониманию творчества Стендаля, а также выявлению культурных различий в переводческой практике.

Ключевые слова: культура, традиции, язык, социальные слои, символика, исторический контекст, фразеология, красный воздух, черный облик, эмоциональный заряд, социокультурная терминология, исторический контекст, национальная идентичность,

Abstract: In this study, the national cultural characteristics of phraseologisms in the translation process are studied on the example of Stendhal's novel “Red and Black”. Phraseological combinations that reflect the uniqueness of French culture through the main themes and characters of Roma are analyzed. The translation process reflects the national culture in the translation, as

well as the spiritual and linguistic importance of phraseology. The phraseology and expressions used in Stendhal's work play an important role in illuminating the socio-political context, customs and values of French society. The study also reflects on how phraseology is adapted by translators, how to convey them without separating them from their regional and cultural context. As a result, the possibilities of preserving national identity through translations containing phraseological combinations are also considered. The results of this work contribute to a deeper understanding of Stendhal's work, as well as to the identification of cultural differences in translation practice.

Key words: culture, traditions, language, social layers, symbolism, historical context, phraseology, red air, black appearance, emotional charge, socio-cultural terminology, historical context, national identity,

Kirish: Frazaeologizmlarning tarjima jarayonidagi milliy madaniy xususiyatlarni aniqlash murakkab va qiziqarli vazifalardan biridir. Bu jarayon til va madaniyat o'rtasidagi o'zaro bog'liqlikni, tilning o'ziga xosligini va xalqning dunyoqarashini aks ettiradi. Stendalning "Qizil va Qora" romani esa fransuz adabiyotining muhim namunalaridan biri bo'lib, unda muallif Fransiyaning ijtimoiy-siyosiy hayoti, inson tabiatining murakkabligi va turli xil madaniy kontekstlar tasvirlangan.

Kirishda frazaeologizm deb ataladigan iboralar yoki ifodalar — bu aniq bir ma'noni anglatadigan, lekin ularning ma'nosi har doim ham so'zlarning to'g'ridan-to'g'ri tarjimasi bilan tushuntirilmaydigan iboralardir. Ular ko'pincha milliy xarakterga ega bo'lib, ular orqali xalqning urf-odatlarini, an'analari va mentaliteti namoyon bo'ladi. Stendalning asarida frazaeologizmlar juda ko'p uchraydi va bu iboralar fransuz xalqining tarixiy tajribasi, urf-odatlarini va madaniyatini aks ettiradi. Masalan, "Qizil" harbiy xizmatni yoki kuch-qudratni anglatish uchun ishlatilsa, "Qora" esa injiqlik, yoqimsizlik yoki hatto o'z-o'zini yo'q qilishni ifodalashi mumkin. Bu ranglarning ramziy ma'nolari fransuz jamiyatining tabiatiga oid ko'plab fikrlarni ochib beradi. Tarjima jarayonida frazaeologizmlarni to'g'ri talqin qilish muhimdir, chunki ularning ma'nosi kontekstga bog'liq. Ba'zi frazaeologizmlar boshqa tillarda to'g'ridan-to'g'ri tarjima qilinmaydi yoki ularning ekvivalentlari mavjud emas. Shuning uchun tarjimon milliy madaniyatni hisobga olishi zarur. Masalan, "Qizil va Qora" romanida ishlatilgan frazaeologik ifodalarni o'rganish orqali biz Stendal tomonidan tasvirlangan zamondagi ijtimoiy munosabatlar, urf-odatlar va inson psixologiyasini chuqurroq tushunishimiz mumkin. Tarjimada bu frazaeologizmlarning ma'nosi saqlanishi lozim bo'lganligi sababli, tarjimon ko'pincha qo'shimcha izohlar berishi yoki alternativ iboralarni tanlashi kerak. Natijada, Stendal asarlarida frazaeologizmning tarjima jarayonidagi milliy madaniy xususiyatlarini aniqlash orqali biz nafaqat adabiyotdagi estetik jihatlarni balki til orqali xalq mentalitetini ham yaxshiroq anglaymiz. Bu jarayon tilshunoslik va madaniyatshunoslik sohalarida muhim tadqiqot mavzusidir. "Qizil va qora" romanida ham boshdan oxir tushkunlik kayfiyati hukmron. Undagi ijobiy obrazning mavjud emasligi birinchidan davr bilan bog'liq bo'lsa, ikkinchidan g'arb psixologiyasi bilan ham aloqasi bor. Julyenning manfaatparastligi ham g'arbdagi ko'zga ko'ringan xususiyat. "Gelve'siy manfaatga inson faoliyatining manbai sifatida qarab, uning uch turini ko'rsatadi:

- 1)shaxsiy yoki individual, xususiy manfaat.
- 2)muayyan ijtimoiy guruh manfaati.
- 3)Jamiyat yoki ijtimoiy manfaatlar.¹

¹ (G'arb falsafasi, Sharq nashryoti, Toshkent 2004, 437-bet).

Asosiy qism: Frazeologizmlarning tarjima jarayonida milliy madaniy xususiyatlarni aniqlash, asar kontekstini va muallifning fikrini to'g'ri yetkazish uchun juda muhimdir. Stendalning "Qizil va Qora" romani orqali bu jarayonni o'rganishda bir necha omillarni hisobga olish kerak.

1. Milliy madaniyat

Frazeologizmlar ko'pincha milliy madaniyatning o'ziga xos xususiyatlarini aks ettiradi. Masalan, fransuz tilidagi frazeologik birliklar Fransiya tarixiy, ijtimoiy va madaniy kontekstidan kelib chiqadi. Tarjima jarayonida ushbu birliklar ma'nosini to'g'ri yetkazish uchun madaniy kontekstni hisobga olish zarur.

2. Tarjima strategiyalari

Frazeologizmlarni tarjima qilishda bir nechta strategiyalar qo'llanilishi mumkin:

- Ekvivalentlik: Agar boshqa tilga o'xshash frazeologizm mavjud bo'lsa, uni ishlatish.
- Izohli tarjima: Agar ekvivalent mavjud bo'lmasa, frazeologizmni tushuntirish.
- Kreativ yondashuv: Yangi frazeologik ifodalar yaratish orqali original ma'noni saqlab qolish.

3. Misol sifatida "Qizil va Qora"

Stendalning romanidagi bir qator frazeologizmlar uning asosiy g'oyasini aks ettiradi. Masalan, "qizil" va "qora" ranglari ijtimoiy sinf va ambitsiyalarni ifodalaydi. Bu ranglar bilan bog'liq frazeologik birliklarni tarjima qilishda ularning simbolik ma'nolarini hisobga olish juda muhimdir.

Misollar:

- "Qizil" — kuch, isyon va ambitsiyani anglatadi.
- "Qora" — zakot, sirli va ba'zan salbiy ma'nolarni bildiradi.

Tarjima jarayonida ushbu ranglarning milli kontekstdagi ahamiyatini tushunish zarur.

Frazeologizmlarning tarjima jarayonidagi milliy madaniy xususiyatlari, asosan, til va madaniyat o'rtasidagi bog'liqlikdan kelib chiqadi. Har bir xalqning o'ziga xos tarixiy, ijtimoiy va madaniy konteksti bo'lganligi sababli, frazeologizmlar ham ko'pincha shu kontekstga bog'liq holda yuzaga keladi. Shuning uchun ularni boshqa tilga tarjima qilishda muayyan qiyinchiliklar paydo bo'lishi mumkin.

Stendalning "Qizil va Qora" romanida frazeologizm va iboralar ko'p uchraydi. Bu romandagi frazeologizmlar fransuz madaniyatining, urf-odatlarini va ijtimoiy hayotining aks etishini namoyish etadi. Masalan:

1. Madaniy kontekst: Roman fransuz jamiyatining 19-asrdagi ijtimoiy-iqtisodiy holatini aks ettiradi. Frazeologizm va iboralarda ushbu davrning urf-odatlarini, an'analari va qadriyatlarini ko'rinadi.

2. Tarjima qiyinchiliklari: Frazeologizmlarni tarjima qilishda ularning ma'nosi va konteksti saqlanishi juda muhimdir. Biroq, ba'zida to'g'ridan-to'g'ri tarjima qilish mumkin emas, chunki frazeologizm har bir tilda o'ziga xos bo'ladi.

3. Milliy identitet: "Qizil va Qora" romanida ifodalangan frazeologizmlar fransuz millatining o'ziga xosligini namoyish etadi. Misol uchun, ba'zi iboralar faqat fransuz tilida yoki madaniyatida ma'noga ega bo'lishi mumkin.

4. Milliy xususiyatlar: Tarjima jarayonida milliy xususiyatlarni aniqlash orqali asl asarning mohiyatini saqlab qolish muhimdir. Bunda lokalizatsiya yoki ekvivalentsiya usullaridan foydalanish zarurati tug'ilishi mumkin.

Umuman olganda, Stendalning “Qizil va Qora” romani misolida frazeologizmining tarjimasini orqali milliy madaniy xususiyatlarni aniqlash mavzusi dolzarb hisoblanadi, chunki bu jarayon ikki xil madaniyat o’rtasidagi muloqotni chuqurlashtirishi mumkin. Tarjimonlar frazeologik birliklarning nozikliklarini tushunib yetishlari zarur, shunda ular asarning asl ruhini saqlab qolishga muvaffaq bo’lishlari mumkin.

Muhokama: Stendalning “Qizil va Qora” romani fransuz adabiyotida muhim o’rin tutadi va unda milliy madaniy xususiyatlar, shuningdek, frazeologizmlar orqali ifodalangan g’oyalar va obrazlar juda kuchli aks etadi. Frazeologizmlarni tarjima qilish jarayonida milliy madaniyatning ahamiyati katta, chunki har bir frazeologizm o’ziga xos ma’no va kontekstga ega bo’ladi.

Milliy madaniy xususiyatlar

1. Tarixiy kontekst: “Qizil va Qora” romani 19-asr Fransiyasining ijtimoiy-siyosiy hayotini aks ettiradi. Bu davrda Fransiya ko’plab ijtimoiy o’zgarishlarni boshdan kechirmoqda, bu esa romandagi frazeologizmlarning ma’nosini tushinishda muhim rol o’ynaydi.

2. Sosyo-kultural aspektlar: Romaning asosiy qahramoni, Juilen Sorel, ijtimoiy hayotdagi turli qatlamlarga kirishga harakat qiladi. Uning bu harakatlari orqali fransuz jamiyatidagi sinf farqlari va shaxsiyatlarining izlanishlari ko’rinadi. Frazeologizmlar ushbu konfliktlar va munosabatlarni aks ettirishi mumkin.

3. Diniy e’tiqod: Romanda diniy elementlar ham muhim o’rin tutadi va ba’zi frazeologizmlar diniy kontekstda ishlatilishi mumkin. Ularning tarjimasini diniy madaniyatni ham hisobga olishni talab qiladi.

Frazeologizmi tarjima qilishdagi muammolar

1. Madaniyatga oid farqlar: Har bir til o’ziga xos frazeologik ifodalar bilan ajralib turadi. Misol uchun, fransuz tilidagi “avoir le cœur sur la main” (qo’lida yurak bor) iborasi generosity yoki saxovatni anglatadi, lekin uni to’g’ri tarjima qilishda boshqa madaniyatlarda ekvivalent topish qiyin bo’lishi mumkin.

2. Konnotatsiyalar: Ba’zi frazeologik ifodalar ma’lum bir madaniyatda chuqur tarix yoki an’anaga ega bo’lishi mumkin, bu esa ularni tarjima qilishda yana bir qiyinchilik tug’diradi.

3. Ijtimoiy qatlamlar: Romaning xarakterlari ijtimoiy qatlamlarga mansub bo’lganligi sababli, ularning so’zlashuv uslubi ham turlicha bo’ladi. Ularning frazeologik ifodalari ularning shaxsiyatini ochib beradi va bu tarjimada saqlanib qolishi zarur.

Milliy Madaniy Xususiyatlarni Aniqlash

1. Tarixiy Kontekst: “Qizil va Qora” romani Fransiyaning XIX asr boshlaridagi ijtimoiy-siyosiy hayotini aks ettiradi. Bu davrda fransuz jamiyatining qatlamlari orasidagi kurashlar, inqiloblar va individualizm kabi mavzular muhim ahamiyatga ega. Roman kontekstida ishlatilgan frazeologizmlar bu tarixiy voqealarning ta’sirini ko’rsatadi.

2. Til Va Adabiyot: Romanda fransuz tilining nozikliklari, shuningdek, adabiyotdagi an’anaviy iboralar ko’p ishlatiladi. Frazeologik birliklar o’z ichiga millatning urf-odatlarini, an’analarini va qoidalarini oladi.

3. Simvolizm: Stendal romanida ranglar (qizil va qora) orqali simvolizmni ishlatadi. Qizil rang — ehtiros, kuch va isyonni bildirsa, qora rang — qayg’u, yo’qotish va o’limni anglatadi. Bu ranglarning ma’nolari bilan bog’liq frazeologizmlarni tarjima qilishda ularning madaniy ma’nolarini hisobga olish zarur. Bu ilmiy qarashlarda ham o’z isbotini topgan. “Gelfetsiyning

e'tirof etishicha, odamlar yashayotgan ijtimoiy muhit ular shaxsining vujudga kelishida hal qiluvchi rol o'ynaydi, kishilar ruhiyatida va axloqidagi tafovutlarni vujudga keltiradi.²

Xulosa va takliflar

Xulosa:

1. Milliy madaniyat va frazaeologizmlar: "Qizil va Qora" romanida fransuz madaniyatining ko'plab elementlari, jumladan, urf-odatlar, tarixiy kontekst va ijtimoiy munosabatlar bilan bog'liq frazaeologik birliklar mavjud. Ular tarjima jarayonida o'ziga xos muammolarni keltirib chiqaradi.

2. Tarjima qiyinchiliklari: Ba'zi frazaeologik ifodalar mahalliy kontekstga bog'liq bo'lganligi sababli ularni to'g'ri tarjima qilish qiyin. Masalan, fransuz tilidagi ba'zi iboralar boshqa madaniyatga o'tkazilganda ularning ma'nosi yo'qolishi yoki noto'g'ri tushunilishi mumkin.

3. Madaniy konnotatsiyalar: Har bir frazaeologizm o'z ichiga ma'lum bir madaniy konnotatsiyani oladi. Tarjima jarayonida bu konnotatsiyalarni saqlab qolish juda muhimdir, chunki ular matnning umumiy ma'nosi va muqaddasligini belgilaydi.

4. Ijodkorlik talab etiladi: Tarjimachilar frazaeologik birliklarni o'zbek tiliga moslashtirishda ijodkorlikka ega bo'lishlari kerak. Ular nafaqat so'zma-so'z tarjima qilish bilan cheklanmasdan, balki madaniy kontekstni ham hisobga olishlari zarur.

Takliflar:

1. Madaniy tadqiqotlar: Tarjima jarayonidan oldin, tarjimonlarga mahalliy madaniyat haqida chuqurroq tadqiqot olib borish tavsiya etiladi. Bu ularga mo'ljallangan auditoriyaning ehtiyojlarini yaxshiroq tushunishga yordam beradi.

2. Yechimlarni rivojlantirish: Frazaeologik ifodalarni muvaffaqiyatli tarjumada yangi yechimlarni ishlab chiqish zarur – masalan, ekvivalent yoki yaqin ma'noli ifodalarni tanlash orqali.

3. Maktab dasturlariga kirish: O'zbekistonda tilshunoslik va tarjima sohalari bilan bog'liq ta'lim dasturlarida milliy madaniyatni hisobga oluvchi yangi kurslarni joriy etish mumkin.

4. Tarjimalarda izoh berish: Tarjimonlarga matnlarda ko'rsatilgan frazaeologizm yoki iboralarning izohini berishga imkon yaratadigan usullarni qo'llash tavsiya etiladi - bu o'quvchilarga ma'lumot berishda yordam beradi.

Ushbu fikrlar Stendalning "Qizil va Qora" romanidagi frazaeologizmlarning tarjimasini orqali milliy madaniy xususiyatlarni aniqlashda foydali bo'ladi hamda kelgusida bunday ishlarni yaxshilash uchun asos bo'lishi mumkin. Frazaeologizmlarni tarjima qilishda milliy madaniy xususiyatlarni aniqlash nafaqat til o'ziga xosligini saqlashda, balki asarning chuqur ma'nosini ham ochishga yordam beradi. Stendal "Qizil va Qora" romanidagi frazeologik birliklar orqali fransuz jamiyatining murakkabligini ko'rsatadi, shuning uchun ularni to'g'ri tarjima qilishda milliy kontekstni e'tiborga olish zarurdir.

² Inson falsafasi, O'zbekiston faylasuflari milliy jamiyati nashriyoti, Toshkent 2007, 300-bet

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TA'LIM TIZIMIDA PSIXOLOGIK XIZMAT KÒRSATISHNING MOHIYATI

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Annotatsiya: Ushbu maqola ta'lim tizimida psixologik xizmatlar ko'rsatishning asosiy jihatlarini o'rganadi. Maktablarda psixologik yordamga bo'lgan talabning ortib borayotgani bunday xizmatlarning o'quvchilarning ruhiy salomatligi, akademik samaradorligi va umumiy farovonligini oshirishda muhim rol o'ynashini ta'kidlaydi. Tadqiqot psixologik xizmatlarning asosiy yo'nalishlarini, jumladan, talabalarning turli xil hissiy, ijtimoiy va kognitiv ehtiyojlarini qondirish uchun mo'ljallangan baholash, maslahat va aralashuv strategiyalarini belgilaydi. Bundan tashqari, u qo'llab-quvvatlovchi ta'lim muhitini yaratishda o'qituvchilar, ota-onalar va psixologlarning hamkorlikdagi rolini ta'kidlaydi. Maqolada, shuningdek, ushbu xizmatlarni amalga oshirishda duch keladigan muammolar muhokama qilinadi va maktablarda psixologik yordamning samaradorligi va qulayligini oshirish bo'yicha tavsiyalar taklif etiladi.

Kalit so'zlar: Psixologik xizmatlar, ta'lim tizimi, ruhiy salomatlik, o'quvchilar farovonligi, maktab psixologlari, maslahat, hissiy qo'llab-quvvatlash, ijtimoiy-emotsional o'rganish, hamkorlikda yordam, ruhiy salomatlik haqida xabardorlik.

Kirish

Ta'lim tizimida psixologik xizmatlar ko'rsatish talabalarning ruhiy salomatligi va hissiy holatini hal qilishning muhim tarkibiy qismiga aylandi. Talabalar ortib borayotgan akademik bosim, ijtimoiy muammolar va shaxsiy muammolarga duch kelganlarida, psixologik xizmatlar ularning umumiy rivojlanishini qo'llab-quvvatlash uchun muhim ekanligini isbotladi. Bunday xizmatlarning asosiy maqsadi talabalarning ham akademik, ham shaxsan rivojlanishi mumkin bo'lgan sog'lom maktab muhitini yaratishdir. Ushbu bo'limda ta'limdagi psixologik xizmatning ahamiyati, taklif etilayotgan xizmatlarning turli turlari va ularni amalga oshirishda yuzaga keladigan muammolar ko'rib chiqiladi. O'quvchilar ko'pincha tashvish, ruhiy tushkunlik va stress kabi psixologik muammolarga duch kelishadi, bu ularning akademik faoliyati va ijtimoiy munosabatlariga salbiy ta'sir ko'rsatishi mumkin. Psixologik xizmatlar jiddiy ruhiy salomatlik muammolarining oldini olishga yordam beradigan erta aralashuvni ta'minlaydi.

Asosiy qism

Maktab psixologlari yoki maslahatchilari bilan ishlash orqali talabalar sog'lom kurashish mexanizmlarini, hissiy tartibga solish ko'nikmalarini va yaxshilangan xatti-harakatlar natijalarini rivojlantirishlari mumkin. Psixologik xizmatlar har bir o'quvchi, qaysi bo'lishidan qat'i nazar, rivojlanish uchun tegishli yordam olishini ta'minlaydi. Tadqiqotlar shuni ko'rsatdiki, ruhiy sog'lig'i yaxshi bo'lgan talabalar akademik jihatdan yaxshi natijalarga erishadilar. Psixologik yordam konsentratsiyani, motivatsiyani va o'rganishga jalb qilishni yaxshilaydi. Maktablarda psixologlar ko'pincha o'quvchilarning kognitiv qobiliyatlarini, hissiy farovonligini va o'rganishdagi qiyinchiliklarni baholash uchun baholash o'tkazadilar. Bu maxsus ta'lim ehtiyojlari yoki nogironligi bo'lgan talabalarni aniqlashga va ularga moslashtirilgan tadbirlarni taqdim etishga yordam beradi. Maslahat xizmatlari talabalarga o'z tashvishlarini ifodalash, hissiy qiyinchiliklarni engish va yo'l-yo'riq olish uchun xavfsiz joy beradi. Terapiya talabalarning ehtiyojlariga qarab individual yoki guruhlarda taklif qilinishi mumkin. Favqulodda vaziyatlarda, masalan, yaqinlaringizning to'satdan yo'qolishi yoki travmatik hodisalar kabi, maktab psixologlari o'quvchilarga his-tuyg'ularini qayta ishlash va barqarorlikni tiklashga yordam berish uchun inqiroz aralashuvini ta'minlaydi. Psixologik xizmatlar

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ko'rsatishda maktab psixologlari birinchi o'rinda turadi. Ularning roli baholashni o'tkazish, aralashuv strategiyalarini ishlab chiqish, o'quvchilarga bevosita maslahat berish va qo'llab-quvvatlovchi ta'lim muhitini yaratish uchun o'qituvchilar, ota-onalar va ma'murlar bilan hamkorlik qilishni o'z ichiga oladi. Ular, shuningdek, alohida ehtiyojli talabalar uchun individual ta'lim rejalarini ishlab chiqishda va ularga zarur turar joy va yordam olishlarini ta'minlashda muhim rol o'ynaydi. Samarali psixologik xizmatlar psixologlar, o'qituvchilar va ota-onalar o'rtasidagi hamkorlikni talab qiladi. O'qituvchilar ko'pincha birinchi bo'lib o'quvchilarning xatti-harakati, o'quv faoliyati yoki hissiy holatidagi o'zgarishlarni sezadilar, bu esa muammolarni erta aniqlash uchun ularning hissasini hal qiladi. Xuddi shunday, ota-onalarning ishtiroki talabaning kelib chiqishini tushunish va uyda doimiy yordam ko'rsatishda muhim ahamiyatga ega. Barcha tomonlar o'rtasidagi muloqot talabalarning ehtiyojlarini qondirish uchun kompleks yondashuvni ta'minlaydi. Ko'pgina ta'lim tizimlari moliyaviy cheklavlarga duch keladi, bu esa maktab psixologlari yoki maslahatchilarining etarli darajada ta'minlanmaganligiga olib keladi. Bu yuqori yuklamalarga va talabalarning individual ehtiyojlarini qondirish samaradorligini pasayishiga olib kelishi mumkin. Ba'zi madaniyatlar yoki jamoalarda talabalarga kerakli xizmatlardan foydalanishga to'sqinlik qiladigan psixologik yordam so'rashga nisbatan stigma mavjud. O'qituvchilar ruhiy salomatlik bilan bog'liq muammolarning belgilarini aniqlash yoki talabalarni qo'llab-quvvatlashda psixologlar bilan samarali ishlash uchun etarli darajada tayyorlanmasligi mumkin. Psixologik xizmatlarning mavjudligi va sifati maktablar va tumanlar o'rtasida katta farq qilishi mumkin, bu esa o'quvchilar uchun turli xil vaziyat hamda holatlarda foydalanishga olib keladi. Hukumatlar va ta'lim muassasalari malakali psixologlar va maslahatchilarni yollash uchun ko'proq resurslar ajratishi va kadrlar bilan etarli darajada ta'minlanishi kerak. O'qituvchilar ruhiy salomatlik muammolarini aniqlash va talabalarni qo'llab-quvvatlash uchun psixologik xizmat ko'rsatuvchi provayderlar bilan ishlash bo'yicha muntazam treningdan o'tishlari kerak. Maktablar stigmani kamaytirish va kerak bo'lganda yordam so'rashga undash uchun ruhiy salomatlik haqida xabardorlik dasturlarini ilgari surishlari kerak. Maktablar o'quvchilarning maktabda ham, uyda ham doimiy yordam olishlarini ta'minlash uchun ota-onalarni psixologik xizmatlar jarayoniga faol jalb qilishlari kerak. Psixologik xizmatlar ta'lim tizimining ajralmas qismi bo'lib, hissiy, ijtimoiy va akademik qiyinchiliklarga duch kelgan talabalarga muhim yordamni taklif qiladi. Ruhiy salomatlikni baholash, maslahat berish orqali ushbu xizmatlar talabalar o'zlarining to'liq potentsiallarini amalga oshirishlari mumkin bo'lgan qulay o'quv muhitini yaratishga yordam beradi. Amalga oshirishdagi qiyinchiliklarga qaramay, psixologlar, o'qituvchilar va ota-onalar o'rtasidagi hamkorlikning kuchayishi, etarli resurslar va treninglar bilan birga, maktablarda psixologik xizmatlarning samaradorligi va foydalanish imkoniyatini sezilarli darajada oshirishi mumkin.

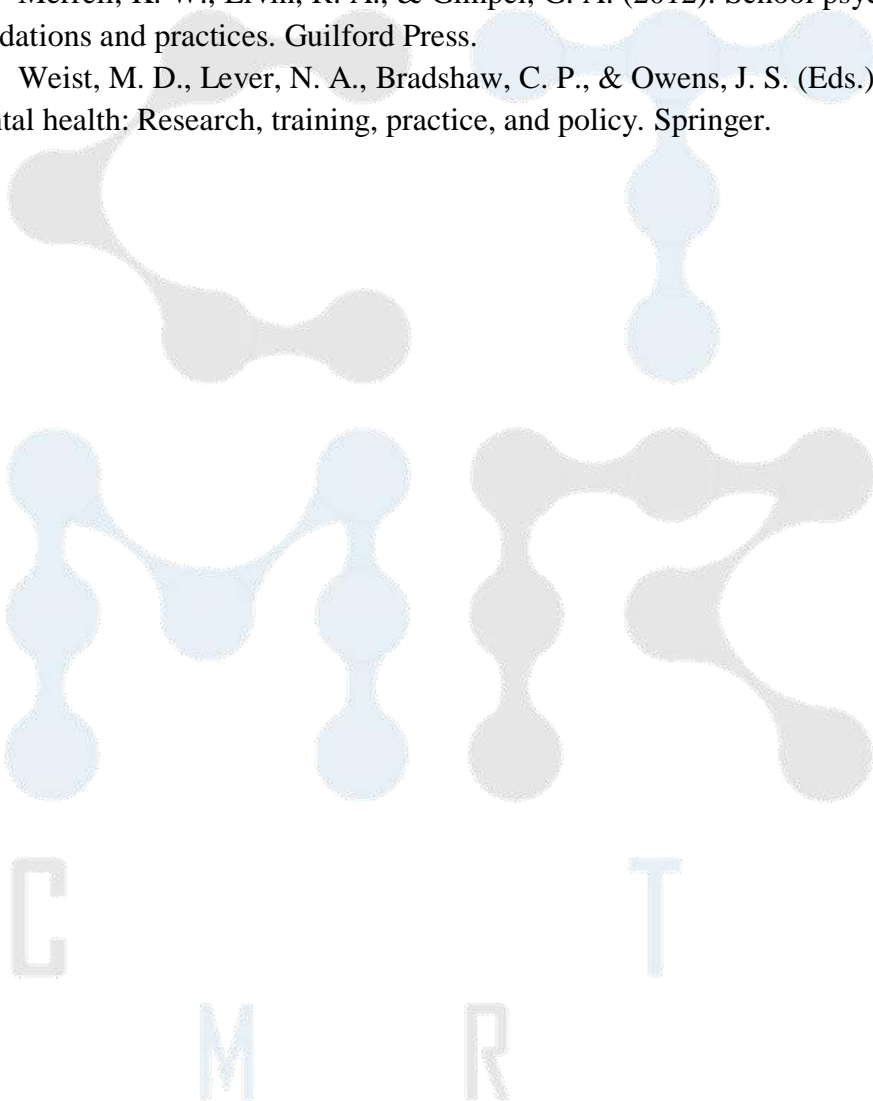
Xulosa qilib aytadigan bo'lsak, ta'lim tizimida psixologik xizmatlar ko'rsatish talabalarning aqliy, hissiy va akademik farovonligini qo'llab-quvvatlashda hal qiluvchi rol o'ynaydi. Ushbu xizmatlar nafaqat talabalarga shaxsiy va ijtimoiy qiyinchiliklarni engishga yordam beradi, balki o'quv natijalarini yaxshilash va umumiy rivojlanishga hissa qo'shadi. Maktab psixologlari o'qituvchilar va ota-onalar bilan hamkorlikda qo'llab-quvvatlovchi va inklyuziv ta'lim muhitini yaratishda muhim ahamiyatga ega. Cheklangan resurslar va ruhiy salomatlik bilan bog'liq stigma kabi muammolarga qaramay, maktablar moliyalashtirishni ko'paytirish, o'qituvchilarni tayyorlash va ruhiy salomatlik haqida xabardorlikni oshirish orqali psixologik xizmatlarning samaradorligini oshirishi mumkin. Psixologik xizmatlarga ustuvor ahamiyat berish orqali ta'lim muassasalari o'quvchilarning sinfda ham, darsdan tashqarida ham muvaffaqiyatga erishishlari uchun zarur bo'lgan har tomonlama yordamni olishlarini ta'minlashi mumkin.

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DERIVATION OF THE WIENER-HOPF INTEGRAL EQUATION

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Abstract. The problem with Bitsadze-Samarskii conditions on the boundary of ellipticity and a segment of the degeneracy line and the displacement condition on pieces of the boundary characteristics of the Gellerstedt equation with a singular coefficient is investigated. The uniqueness of the solution to the problem is proved using the maximum principle, and the existence of the solution is proved using the method of integral equations.

Keywords: singular coefficient, uniqueness of the solution to the problem, Wiener-Hopf equation, equation index.

1. INTRODUCTION

Using the theory of the singular integral equation and the theory of the Wiener-Hopf equation, the obtained system of equations reduced to the second-order Fredholm integral equation, the unique solution of which follows from the uniqueness of the solution to the given problem.

$$\tau_1(x) - \lambda \int_{c_1}^1 \left(\frac{x-c_1}{t-c_1} \right)^{1-2\beta} \left(\frac{1}{t-x} - \frac{a}{1-xt} \right) \tau_1(t) dt = g_1(x), \quad x \in (c_1, 1), \quad (1)$$

$$g_1(x) = \lambda a k^{2\beta} \int_{c_1}^1 \left(\frac{x-c_1}{t-c_1} \right)^{1-2\beta} \frac{\tau_1(t) dt}{x-q(t)} - \lambda b k^{1-2\beta} \int_{c_1}^1 \left(\frac{x-c_1}{t-c_1} \right)^{1-2\beta} \frac{\tau_1(t) dt}{t-q(x)} + L^*[\tau_1] + F_3(x), \quad x \in (c_1, 1). \quad (2)$$

The kernel of the first integral operator from (2) at point $(x, t) = (c_1, c_1)$ (where $q(c_1) = c_1$) has an isolated first-order singularity, so this operator is singled out separately. In (1), we assume that $c_1 \neq 1$; if $c = 1$, then problem *TB* turns into a Tricomi problem with a condition set at all points of characteristics *AC*, and the integral operators of the right-hand side (1) are identically equal to zero. In this case, a well-studied singular integral Tricomi equation is obtained.

2. PRELIMINARIES

Lemma. If $g_1(x)$ satisfies the Hölder condition for $x \in (c_1, 1)$ and $g_1(x) \in L_p(c_1, 1)$, $p > 1$, then the solution to equation (2) in the class of functions H , in which function $(x - c_1)^{2\beta-1} \tau_1(x)$ is limited for $x = 1$ and can be limited for $x = c_1$, is expressed by the following formula:

$$\tau_1(x) = \cos^2(\alpha\pi)g_0(x) + \frac{\sin(2\alpha\pi)}{2\pi} \int_{c_1}^1 \left(\frac{x-c_1}{t-c_1}\right)^{3\alpha} \left(\frac{1-x}{1-t}\right)^{2\alpha} \left(\frac{1-c_1t}{1-c_1x}\right)^\alpha \times \left(\frac{1}{t-x} - \frac{a}{1-xt}\right) g_1(t) dt, \quad x \in (c_1, 1). \quad (3)$$

Now, substituting the expression for $g_1(x)$ from (2) to (3) and separating the singular part of the equation, we obtain

$$\begin{aligned} \tau_1(x) = & \lambda ak^{1-4\beta} \cos^2(\alpha\pi) \int_{c_1}^1 \left(\frac{x-c_1}{t-c_1}\right)^{4\alpha} \frac{\tau_1(t) dt}{x-q(t)} - \\ & - \lambda bk^{4\alpha} \cos^2(\alpha\pi) \int_{c_1}^1 \left(\frac{x-c_1}{t-c_1}\right)^{4\alpha} \frac{\tau_1(t) dt}{t-q(x)} + \\ & + \frac{\lambda bk^{1-4\alpha} \sin(2\alpha\pi)}{2\pi} \int_{c_1}^1 \frac{(x-c_1)^{3\alpha} (1-x)^{2\alpha}}{(s-c_1)^{4\alpha}} A(x,s) \tau_1(s) ds - \\ & - \frac{\lambda bk^{4\alpha} \sin(2\alpha\pi)}{2\pi} \int_{c_1}^1 \frac{(x-c_1)^{3\alpha} (1-x)^{2\alpha}}{(s-c_1)^{4\alpha}} B(x,s) \tau_1(s) ds + \\ & + R_1[\tau_1] + M_1(x), \quad x \in (c_1, 1), \end{aligned} \quad (4)$$

where

$$A(x,s) = \int_{c_1}^1 \frac{(t-c_1)^\alpha}{(1-t)^{2\alpha}} \left(\frac{1}{t-x} - \frac{a^{-1}}{1-xt}\right) \frac{dt}{t-q(s)} \quad (5)$$

$$B(x,s) = \int_{c_1}^1 \frac{(t-c_1)^\alpha}{(1-t)^{2\alpha}} \left(\frac{1}{t-x} - \frac{a^{-1}}{1-xt}\right) \frac{dt}{s-q(t)}; \quad (6)$$

$$\begin{aligned} R_1[\tau_1] = & \cos^2(\alpha\pi) L^*[\tau_1] + \\ & + \frac{\sin(2\alpha\pi)}{2\pi} \int_{c_1}^1 \left(\frac{x-c_1}{t-c_1}\right)^{3\alpha} \left(\frac{1-x}{1-t}\right)^{2\alpha} \left(\frac{1-c_1t}{1-c_1x}\right)^\alpha \left(\frac{1}{t-x} - \frac{a^{-1}}{1-xt}\right) L^*[\tau_1] dt + \\ & + \frac{\lambda ak^{1-4\alpha} \sin(2\alpha\pi)}{2\pi} (x-c_1)^{3\alpha} (1-x)^{2\alpha} \int_{c_1}^1 \frac{\tau_1(s) ds}{(s-c_1)^{4\alpha}} \times \\ & \times \int_{c_1}^1 \frac{(t-c_1)^\alpha}{(1-t)^{2\alpha}} \left(\frac{1}{t-x} - \frac{a^{-1}}{1-xt}\right) \left[\left(\frac{1-c_1t}{1-c_1x}\right)^\alpha - 1\right] \frac{dt}{t-q(s)} - \\ & - \frac{\lambda bk^{4\alpha} \sin(2\alpha\pi)}{2\pi} (x-c_1)^{3\alpha} (1-x)^{2\alpha} \int_{c_1}^1 \frac{\tau_1(s) ds}{(s-c_1)^{4\alpha}} \times \end{aligned}$$

$$\times \int_{c_1}^1 \frac{(t-c_1)^\alpha}{(1-t)^\alpha} \left[\left(\frac{1-c_1 t}{1-c_1 x} \right)^\alpha - 1 \right] \left(\frac{1}{t-x} - \frac{a^{-1}}{1-xt} \right) \frac{dt}{s-q(t)} \quad (7)$$

- is the regular operator,

$$M_1(x) = \cos^2(\alpha\pi)F_3(x) + \frac{\sin(2\alpha\pi)}{2\pi} \int_{c_1}^1 \left(\frac{x-c_1}{t-c_1} \right)^{3\alpha} \left(\frac{1-x}{1-t} \right)^{2\alpha} \left(\frac{1-c_1 t}{1-c_1 x} \right)^\alpha \left(\frac{1}{t-x} - \frac{a^{-1}}{1-xt} \right) F_3(t) dt \quad (8)$$

- is a well-known function.

3. MAIR RESULTS

Theorem. To isolate in the third and fourth integrals (5) and (6), the kernels $\frac{1}{x-q(s)}$ and $\frac{1}{s-q(x)}$, which at points $(x,s)=(c_1,c_1)$ have isolated first-order singularities, we calculate $A(x,s)$ and $B(x,s)$ from (5) and (6).

Proof. The rational part of integral expressions (5) and (6) is decomposed into simple fractions:

$$\begin{aligned} \left(\frac{1}{t-x} - \frac{a^{-1}}{1-xt} \right) \frac{1}{t-q(s)} &= \frac{1}{x-q(s)} \left(\frac{1}{t-x} - \frac{1}{t-q(s)} \right) - \\ &\quad - \frac{a^{-1}}{1-xq(s)} \left(\frac{1}{1-xt} + \frac{1}{t-q(s)} \right) \\ \left(\frac{1}{t-x} - \frac{a^{-1}}{1-xt} \right) \frac{1}{s-q(t)} &= \frac{1}{s-q(x)} \left(\frac{1}{t-x} - \frac{k}{s-q(t)} \right) - \\ &\quad - \frac{a^{-1}}{k+x(s-\rho)} \left(\frac{x}{1-xt} + \frac{k}{s-q(t)} \right). \end{aligned} \quad (9)$$

Considering decompositions (9), the right-hand parts of (5) and (6) are transformed to the following form:

$$A(x,s) = \frac{1}{x-q(s)} (J_1(x) - J_1(s)) - \frac{a^{-1}}{1-xq(s)} (xJ_3(x) + J_2(s)), \quad (10)$$

$$B(x,s) = \frac{1}{s-q(x)} (J_1(x) - kJ_4(s)) - \frac{a^{-1}}{k+x(s-\rho)} (xJ_3(x) + kJ_4(s)), \quad (11)$$

where

$$1. \quad J_1(x) = \int_{c_1}^1 \frac{(t-c_1)^\alpha}{(1-t)^{2\alpha}} \frac{dt}{t-x} = -\pi c t g \alpha \pi \frac{(x-c_1)^\alpha}{(1-x)^{2\alpha}} +$$

$$+ \frac{\Gamma(\alpha)\Gamma(1-2\alpha)}{\Gamma(1-\alpha)} \frac{(1-c_1)^\alpha}{(1-x)^{2\alpha}} F\left(-\alpha, 1-2\alpha, 1-\alpha; \frac{x-c_1}{1-c_1}\right); \quad (12)$$

$$2. \quad J_2(s) = \int_{c_1}^1 \frac{(t-c_1)^\alpha}{(1-t)^{2\alpha}} \frac{dt}{t-q(s)} = \frac{\Gamma(1-2\alpha)\Gamma(1+\alpha)}{\Gamma(2-\alpha)} \frac{(1-c_1)^{1-\alpha}}{1-q(s)} F\left(1-2\alpha, 1, 2-\alpha; \frac{1-c_1}{1-q(s)}\right); \quad (13)$$

$$3. \quad J_3(s) = \int_{c_1}^1 \frac{(t-c_1)^\alpha}{(1-t)^{2\alpha}} \frac{dt}{1-xt} = \frac{\Gamma(1+\alpha)\Gamma(1-2\alpha)}{\Gamma(2-\alpha)} \frac{(1-c_1)^{1-\alpha}}{(1-c_1x)^{1-2\alpha}(1-x)^{2\alpha}} F\left(1-2\alpha, 1-\alpha, 2-\alpha; \frac{(1-c_1)x}{1-c_1x}\right); \quad (14)$$

$$4. \quad J_4(s) = \int_{c_1}^1 \frac{(t-c_1)^\alpha}{(1-t)^{2\alpha}} \frac{dt}{s-q(t)} = \frac{\Gamma(1+\alpha)\Gamma(1-2\alpha)}{\Gamma(2-\alpha)} \frac{(1-c_1)^{1-\alpha}}{s-c_1+k(1-c_1)} F\left(1-2\alpha, 1, 2-\alpha; \frac{k(1-c_1)}{s-c_1+k(1-c_1)}\right). \quad (15)$$

Let us prove formula (12):

$$J_1(x) = \int_{c_1}^1 \frac{(t-c_1)^\alpha}{(1-t)^{2\alpha}} \frac{dt}{t-x} = \lim_{\delta \rightarrow 0} \left[- \int_{c_1}^x \frac{(t-c_1)^\alpha}{(1-t)^{2\alpha}} \frac{dt}{(x-t)^{1-\delta}} + \int_x^1 \frac{(t-c_1)^\alpha}{(1-t)^{2\alpha}} \frac{dt}{(t-x)^{1-\delta}} \right].$$

Here in the first and second integrals, by making the substitution of the variable integration $t = c_1 + (x - c_1)\sigma$ and $t = 1 - (1 - x)\sigma$, then using the integral representation of the hypergeometric Gauss function [1], we have

$$J_1(x) = \lim_{\delta \rightarrow 0} \left[- \frac{\Gamma(1+\alpha)\Gamma(\delta)}{\Gamma(1+\alpha+\delta)} \frac{(x-c_1)^{\alpha+\delta}}{(1-c_1)^{2\alpha}} F\left(1+\alpha, 2\alpha, 1+\alpha+\delta; \frac{x-c_1}{1-c_1}\right) + \frac{\Gamma(1-2\alpha)\Gamma(\delta)}{\Gamma(1-2\alpha+\delta)} \frac{(1-c_1)^\alpha}{(1-x)^{2\alpha-\delta}} F\left(1-2\alpha, -\alpha, 1-2\alpha+\delta; \frac{1-x}{1-c_1}\right) \right]. \quad (16)$$

Now, applying the auto-transformation formulas to the first and second terms of the right-hand part of Eq. (16) [1, p.10] and Bolz [1, p.11] Smirnov M.M. *Equations of mixed type. M.: Higher School. -1985. -304 p.*, we obtain:

$$J_1(x) = \lim_{\delta \rightarrow 0} \left\{ \Gamma(\delta) \left[\frac{\Gamma(-\alpha-\delta)}{\Gamma(-\alpha)} - \frac{\Gamma(1+\alpha)}{\Gamma(1+\alpha+\delta)} \right] \times \right.$$

$$\begin{aligned} & \times \frac{(1-c_1)^{-\delta} (x-c_1)^{\alpha+\delta}}{(1-x)^{2\alpha-\delta}} F\left(\delta, 1-\alpha+\delta, 1+\alpha+\delta; \frac{x-c_1}{1-c_1}\right) + \\ & + \frac{\Gamma(1-2\alpha)\Gamma(\alpha+\delta)}{\Gamma(1-\alpha+\delta)} \frac{(1-c_1)^\alpha}{(1-x)^{2\alpha-\delta}} F\left(1-2\alpha, -\alpha, 1-2\alpha+\delta; \frac{x-c_1}{1-c_1}\right) \}. \end{aligned} \quad (17)$$

In (17) moving to the limit as $\delta \rightarrow 0$, considering equality

$$\lim_{\delta \rightarrow 0} \Gamma(\delta) \left[\frac{\Gamma(-\alpha-\delta)}{\Gamma(-\alpha)} - \frac{\Gamma(1+\alpha)}{\Gamma(1+\alpha+\delta)} \right] = -\pi \operatorname{ctg} \alpha \pi$$

we get formula (12).

To prove formula (13), it is necessary to replace variable integration $t = 1 - (1 - c_1)\sigma$ and then use the integral representation of the hypergeometric function.

When proving formula (14), the replacement of variable integration $t = c_1 + (1 - c_1)\sigma$ done, and then the auto transformation formula is applied to the resulting hypergeometric function. To prove formula (15), the replacement of variable integration $t = c_1 + (1 - c_1)\sigma$ is done, and then the formula is applied to the resulting

hypergeometric function $F(a, b, c; z) = (1-z)^{-b} F\left(c-a, b, c; \frac{z}{z-1}\right)$.

Considering formulas (12) - (15), equalities (5) and (6) are written in the following form:

$$A(x, s) = \frac{1}{x-q(s)} \left[-\pi \operatorname{ctg}(\alpha \pi) \frac{(x-c_1)^\alpha}{(1-x)^{2\alpha}} + A_0(x, s) \right] + A_1(x, s), \quad (18)$$

$$B(x, s) = \frac{1}{s-q(x)} \left[-\pi \operatorname{ctg}(\alpha \pi) \frac{(x-c_1)^\alpha}{(1-x)^{2\alpha}} + B_0(x, s) \right] + B_1(x, s). \quad (19)$$

Here:

$$\begin{aligned} A_0(x, s) &= \frac{\Gamma(\alpha)\Gamma(1-2\alpha)}{\Gamma(1-\alpha)} \frac{(1-c_1)^\alpha}{(1-x)^{2\alpha}} F\left(-\alpha, 1-2\alpha, 1-\alpha; \frac{x-c_1}{1-c_1}\right) - \\ & - \frac{\Gamma(1-2\alpha)\Gamma(1+\alpha)}{\Gamma(2-\alpha)} \frac{(1-c_1)^{1-\alpha}}{1-q(s)} F\left(1-2\alpha, 1, 2-\alpha; \frac{1-c_1}{1-q(s)}\right), \end{aligned} \quad (20)$$

$$A_1(x, s) = -\frac{a}{1-xq(s)} (xJ_3(x) + J_2(s));$$

$$\begin{aligned} B_0(x, s) &= \frac{\Gamma(\alpha)\Gamma(1-2\alpha)}{\Gamma(1-\alpha)} \frac{(1-c_1)^\alpha}{(1-x)^{2\alpha}} F\left(-\alpha, 1-2\alpha, 1-\alpha; \frac{x-c_1}{1-c_1}\right) - \\ & - \frac{k\Gamma(1+\alpha)\Gamma(1-2\alpha)}{\Gamma(2-\alpha)} \frac{(1-c_1)^{1-\alpha}}{s-c_1+k(1-c_1)} F\left(1-2\alpha, 1, 2-\alpha; \frac{k(1-c_1)}{s-c_1+k(1-c_1)}\right), \end{aligned} \quad (21)$$

$$B_1(x, s) = -\frac{a}{k + x(s - \rho)}(xJ_3(x) + kJ_4(s)).$$

Substituting expressions $A(x, s)$ and $B(x, s)$ from (18) and (19) in equality (4), considering identities $\frac{\sin(2\alpha\pi)}{2\pi} \pi \operatorname{ctg}(\alpha\pi) = \cos^2(\alpha\pi)$, we obtain:

$$\begin{aligned} \tau_1(x) - \frac{\lambda \sin(2\alpha\pi)}{2\pi} \int_{c_1}^1 \frac{(x - c_1)^{3\alpha} (1 - x)^{2\alpha}}{(s - c_1)^{4\alpha}} \left[\frac{ak^{1-4\alpha} A_0(x, s)}{x - q(s)} - \frac{bk^{4\alpha} B_0(x, s)}{s - q(s)} + \right. \\ \left. + ak^{1-4\alpha} A_1(x, s) - bk^{4\alpha} B_1(x, s) \right] \tau_1(s) ds = R_1[\tau_1] + M_1(x), \quad x \in (c_1, 1), \end{aligned} \quad (22)$$

where $A_1(x, s)$, $B_1(x, s)$ are the regular kernels.

We will find estimates for $A_0(x, s)$ and $B_0(x, s)$ in the vicinity of points $x = c_1, s = c_1$. For the hyperactive geometric function $F(1 - 2\alpha, 1, 2 - \alpha; z)$ in (20) and (21), applying the Bolts formula, we transform them to the following form:

$$\begin{aligned} A_0(x, s) = \frac{\Gamma(\alpha)\Gamma(1 - 2\alpha)}{\Gamma(1 - \alpha)} \frac{(1 - c_1)^\alpha}{(1 - x)^{2\alpha}} F\left(-\alpha, 1 - 2\alpha, 1 - \alpha; \frac{x - c_1}{1 - c_1}\right) - \\ - \frac{\Gamma(\alpha)\Gamma(1 - 2\alpha)}{\Gamma(1 - \alpha)} \frac{(1 - c_1)^{1-\alpha}}{1 - q(s)} F\left(1 - 2\alpha, 1, 1 - \alpha; \frac{c_1 - q(s)}{1 - q(s)}\right) - \\ - \frac{\Gamma(-\alpha)\Gamma(1 + \alpha)}{\Gamma(1)} \left(\frac{1 - c_1}{1 - q(s)}\right)^{1-\alpha} \left(\frac{c_1 - q(s)}{1 - q(s)}\right)^\alpha F\left(1 + \alpha, 1 - \alpha, 1 + \alpha; \frac{c_1 - q(s)}{1 - q(s)}\right), \end{aligned} \quad (23)$$

$$\begin{aligned} B_0(x, s) = \frac{\Gamma(\alpha)\Gamma(1 - 2\alpha)}{\Gamma(1 - \alpha)} \frac{(1 - c_1)^\alpha}{(1 - x)^{2\alpha}} F\left(-\alpha, 1 - 2\alpha, 1 - \alpha; \frac{x - c_1}{1 - c_1}\right) - \\ - \frac{k\Gamma(-\alpha)\Gamma(1 - 2\alpha)}{\Gamma(1 - \alpha)} F\left(1 - 2\alpha, 1, 1 - \alpha; \frac{s - c_1}{s - c_1 + k(1 - c_1)}\right) - \\ - \frac{k\Gamma(-\alpha)\Gamma(1 + \alpha)}{\Gamma(1)} \frac{(1 - c_1)^{1-\alpha}}{s - c_1 + k(1 - c_1)} \left(\frac{s - c_1}{s - c_1 + k(1 - c_1)}\right)^\alpha \times \\ \times F\left(1 + \alpha, 1 - \alpha, 1 + \alpha; \frac{s - c_1}{s - c_1 + k(1 - c_1)}\right). \end{aligned} \quad (24)$$

In (23) and (24), applying the following formula to the hypergeometric function $F(1, 1 - 2\alpha, 1 - \alpha; z)$

$$F(a, b, c; z) = (1 - z)^{-b} F\left(c - a, b, c; \frac{z}{z - 1}\right),$$

we obtain:

$$A_0(x, s) = \frac{\pi k^\alpha (s - c_1)^\alpha}{\sin(\alpha\pi)(1 - q(s))^{2\alpha}} + (x - q(s))A_2(x, s), \quad (25)$$

$$B_0(x, s) = \frac{\pi k^\alpha (s - c_1)^\alpha}{\sin(\alpha\pi)(s - c_1 + k(1 - c_1))^{2\alpha}} + (s - q(x))B_2(x, s), \quad (26)$$

where

$$A_2(x, s) = \frac{\Gamma(\alpha)\Gamma(1-2\alpha)}{\Gamma(1-\alpha)(1-c_1)^\alpha(x-q(s))} \left[\left(1 - \frac{x-c_1}{1-c_1}\right)^{-2\alpha} F\left(-\alpha, 1-2\alpha, 1-\alpha; \frac{x-c_1}{1-c_1}\right) - \left(1 - \frac{q(s)-c_1}{1-c_1}\right)^{-2\alpha} F\left(-\alpha, 1-2\alpha, 1-\alpha; \frac{q(s)-c_1}{1-c_1}\right) \right], \quad (27)$$

$$B_2(x, s) = \frac{\Gamma(\alpha)\Gamma(1-2\alpha)}{\Gamma(1-\alpha)(1-c_1)^\alpha(s-q(x))} \left[\left(1 - \frac{x-c_1}{1-c_1}\right)^{-2\alpha} F\left(-\alpha, 1-2\alpha, 1-\alpha; \frac{x-c_1}{1-c_1}\right) - \left(1 - \frac{c_1-s}{k(1-c_1)}\right)^{-2\alpha} F\left(-\alpha, 1-2\alpha, 1-\alpha; \frac{c_1-s}{k(1-c_1)}\right) \right]. \quad (28)$$

Now from (27) and (28), considering the following identities

$$\frac{x-c_1}{1-c_1} - \frac{q(s)-c_1}{1-c_1} = \frac{x-q(s)}{1-c_1}, \quad \frac{x-c_1}{1-c_1} - \frac{c_1-s}{k(1-c_1)} = \frac{s-q(x)}{k(1-c_1)},$$

by virtue of the Lagrange formula: $f(b) - f(a) = f'(c)(b - a)$, it is easy to make sure that in the vicinity of points $(x, s) = (c_1, c_1)$ functions $A_2(x, s) = O(1)$, $B_2(x, s) = O(1)$ are limited.

Considering the representations (25) and (26), equation (22) is transformed to the following form:

$$\tau_1(x) = \lambda \cos(\alpha\pi) \int_{c_1}^1 \left(\frac{x-c_1}{s-c_1}\right)^{3\alpha} \left(\frac{ak^{1-3\alpha}}{x-q(s)} - \frac{bk^{3\alpha}}{s-q(x)}\right) \tau_1(s) ds + R_2[\tau_1] + M_1(x), \quad x \in (c_1, 1), \quad (29)$$

where

$$R_2[\tau_1] = R_1[\tau_1] + \frac{\lambda \sin(2\alpha\pi)}{2\pi} \int_{c_1}^1 \frac{(x-c_1)^{3\alpha} (1-x)^{2\alpha}}{(s-c_1)^{4\alpha}} \times \left[ak^{1-4\alpha} (A_1(x, s) + A_2(x, s)) - bk^{4\alpha} (B_1(x, s) + B_2(x, s)) \right] \times$$

$$\begin{aligned} & \times \tau_1(x) ds + \lambda \cos(\alpha\pi) \int_{c_1}^1 \left(\frac{x-c_1}{s-c_1} \right)^{3\alpha} \left\{ ak^{1-3\alpha} \left[\left(\frac{1-x}{1-q(s)} \right)^{2\alpha} - 1 \right] \times \right. \\ & \left. \times \frac{1}{x-q(s)} - bk^{5\alpha} \left[\left(\frac{1-x}{s-c_1+k(1-c_1)} \right)^{2\alpha} - \left(\frac{1}{k} \right)^{2\alpha} \right] \frac{1}{x-q(x)} \right\} \tau_1(s) ds \end{aligned} \quad (30)$$

- is the regular kernel.

By swapping variables ([2] *Mirsaburov M., Ruziev M. On a boundary value problem for a class of mixed-type equations in an unbounded domain. //Differential equations. 2011: -vol. 47. - No. 1. pp. 112-119*) $x = c_1 + (1 - c_1)e^{-y}$, $s = c_1 + (1 - c_1)e^{-t}$ in equation (29) and using the notation $\rho(y) = \tau_1[c_1 + (1 - c_1)e^{-y}]e^{-y}$, we obtain the Wiener-Hopf equation [3] *Gakhov F.D., Chersky Yu.I. Convolution type equations. // Main editorial office of the Physics and Mathematics Lit., Moscow 1978. -p.269., [4] Eleev V.A. On some boundary value problems for a degenerate second-order hyperbolic equation. // Differential equations. -1976. -vol. 12. -No. 1. -pp. 46-58.*

$$\rho(y) = \int_0^{\infty} K(y-t)\rho(t)dt + R_2[\rho] + M_2(y), \quad (31)$$

where $R_2(\rho) = e^{(3\alpha-1/2)y} R_1[\tau_1]$ - is the regular operator, $M_2(y) = e^{(3\alpha-1/2)y} M_1(c_1 + (1 - c_1)e^{-y})$ - is a well-known function,

$$K(x) = \lambda \cos(\alpha\pi) \left[\frac{ak^{1-3\alpha}}{ke^{x/2} + e^{-x/2}} - \frac{bk^{3\alpha}}{e^{x/2} + ke^{-x/2}} \right].$$

Kernel $K(x)$ of equation (31) is continuously differentiable and has the exponential order of decreasing at infinity. Note that by virtue of condition, $\beta_0 > (1 - m)/3$ the value of $(3\alpha - 1/2)$ is negative, then operator $R_2[\rho]$ and function $M_2(y)$ also have the exponential order of decreasing at infinity. Fredholm's theorems [5] *Salakhitdinov M.S. Mathematics physics the equations. Toshkent: Fan. -2002. -b.448.* for integral equations of the convolution type are fulfilled only for one partial case, namely when the index of these equations is zero.

The index of equation (31) is the index of expression $1 - K^{\wedge}(x)$ [6, p. 56] *Volkodavov V.F. On the uniqueness of the solution of the TN problem for one equation of mixed type. // Volga Mathematical collection of the Kuibyshev State Pedagogical Institute. -1970.- No. 1. -pp. 55-65,* taken with the opposite sign: Now using the following formula

$$\int_{-\infty}^{+\infty} \frac{e^{-ixt} dt}{ke^{t/2} + e^{-t/2}} = \frac{\pi e^{ix \ln k}}{\sqrt{k} \operatorname{ch}(\pi x)},$$

we have

$$K^{\wedge}(x) = \frac{\lambda \cos(\alpha\pi)(ak^{1-3\alpha} e^{ix \ln k} - bk^{3\alpha} e^{-ix \ln k})}{\sqrt{k} ch(\pi x)}. \quad (32)$$

$$\left| \frac{\lambda \cos(\alpha\pi)(ak^{1-3\alpha} + bk^{3\alpha})}{\sqrt{k}} \right| < 1 \quad (33)$$

From the representation (32), by virtue of (33), it follows that $|\operatorname{Re} K^{\wedge}(x)| < 1$; it is also obvious that $\operatorname{Re} K^{\wedge}(x) = O(1/ch(\pi x))$ for large enough $|x|$.

Hence, we conclude that

$$\operatorname{Ind}(1 - K^{\wedge}(x)) = \frac{1}{2\pi} \left[\operatorname{arctg} \frac{\operatorname{Im}(1 - K^{\wedge}(x))}{\operatorname{Re}(1 - K^{\wedge}(x))} \right]_{-\infty}^{+\infty} = 0,$$

that is, changing the argument of expression $1 - K^{\wedge}(x)$ on the real axis, represented in complete revolutions, *Volkodavov V.F. On the uniqueness of the solution of the TN problem for one equation of mixed type. // Volga Mathematical collection of the Kuibyshev State Pedagogical Institute. -1970.- No. 1. -pp. 55-65.* Hence, the uniqueness of the solution to the problem implies the unambiguous solvability of equation (31), and, therefore, of problem *TB*.

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STAGE EXPRESSION OF FAIRY TALES IN THE SCHOOL PROGRAM
IN THEATERS OF YOUNG AUDIENCES

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Annotation: *This article highlights the great contribution and attention paid to the spiritual education of children by the plays staged by the Theater of Young Audiences, especially for children.*

Key words: *Theater, play, dramaturgy, upbringing, education, art, children, perfection, spirituality.*

At a time when computer graphics are attracting young people like iron rods, it is necessary to prove that the importance of theater in the education of young people is incomparable not only in words, but in practice, that is, by staging performances of various genres on stage. It is necessary to show them in practice that it is possible to give them the right education by showing live performances of theater art, along with various admonitions. Already, our great grandfather, one of the modern scholars, Mahmudhoja Behbudi, speaking about the role of theater in the education of young people, said, "...developed nations call theaters a school of manners and an example for adults. They say that theaters are one of the first reasons for development. It is said that the good and bad habits of the theater are spent and judged..." - he was absolutely right when he admitted and proved it in practice. [1, 50] These intellectual views about the artistic and educational importance of theater art for the society have not lost their significance even today.

The creators of the theater of young viewers, working towards high goals, plan to present the best works of art in school programs for our children through modern interpretations. Speaking about the formation of the repertoire of two theaters of young audiences in the republic, the theoretical views that "repertoire should be created according to the age group of the audience", which was emphasized several times by the fans of the stage, has become a necessity today. Today, our research theaters have performances for every age group. But they are not implemented in a specific system in cooperation with the school. The proof is that among the children who visit the theater, you can meet an audience belonging to three or four age groups at the same time in one play. This is one of the biggest shortcomings in the theater of young audiences. So, first of all, let's study the list of fairy tales, epics, stories, short stories, novels, dramaturgy included in the school program class by class, what were they like before and how are they now? we are looking for an answer to the question.

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In terms of repertoire, theaters for young audiences often turn to fairy tales. In this case, fairy tales are suitable for young audiences in terms of their simplicity, interesting content, and the ability to shape the audience's worldview. Famous foreign writers such as Hans Christian Andersen, Brothers Grimm, Tolstoy, Pushkin, Charles Perrault are the authors of fairy tales, which are received with great interest by children all over the world, and which are deeply rooted in the hearts of not only children but also older viewers. Also, in the theater, examples of folk oral works, which are considered as national works, and tales of Anvar Obidjon are used more.

Christian Andersen from Denmark is one of the famous writers of the children's world with several of his works. One of the peculiarities of his tales is that most of his characters are chosen from the animal world. Because the love of young children for the animal world and their fate is boundless. Andersen's works are included in the 4th grade reading book in the school curriculum. His fairy tales "The Snow Queen" and "Irkit Ordakcha" have been successfully performed several times on the stage of children's theaters of our country.

Andersen's unique work "The Little Duck" is one of our children's favorite fairy tales. Based on this, the play "My Duck" from the stage of the Republican Theater of Young Audiences was staged in 2013 by the ballet master, director Malika Iskanderova, and this performance is one of the successful performances of the theater. This performance covered the events related to the duckling who was born, was laughed at and humiliated by his friends. This topic is very important in children's education. The reason is that it acts as an impetus for educating and forming feelings such as respect and honor among classmates for students who are just studying in the elementary grades of the school. Because if 30 students study in one class, they are gathered in one group, receiving education based on 30 different worldviews. In such a situation, it is appropriate to show performances that praise each other's feelings of respect through school and theater cooperation.

The great French poet and critic Charles Perrault is known throughout the world as the founder of the fairy tale. 12 of his fairy tales have been translated into Uzbek. Among them, the most famous fairy tales are "Little Red Riding Hood", "Puss in Boots", "The Master and the Creature", "Cinderella". These fairy tales are included in the extracurricular activities plan for 4th graders in the school program. A remarkable feature of the author's work is that his fairy tales are completely different from others in terms of content and form. No matter which author's fairy tale you look at, you will immediately notice that all of them have special aspects that children will enjoy. For example, the great Russian writer S. Turgenev says the following about his works : "Regardless of the somewhat subtle, old farang grace, Perrault's fairy tales have their honorable place in world children's literature. They are cheerful, interesting, sincere,

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uncomplicated with excessive advice and author's demands. In them, the creator perceives the soft lines of folk poetry, in them there is a mixture of incomprehensible strangeness and simplicity, which is a distinguishing feature of the fabric of a true fairy tale. [4, 25]

at the Republican Theater of Young Audiences , you will see that every scene is staged with children's interests in mind. The team of actors, properly selected by the stage director Shuhrat Ibragimov, the live dialogue with the audience was not only interesting for the children, but also helped them to focus more appropriately. As the curtain rises, your attention is drawn to the beautifully decorated decor. In this interpretation of the director, the play has many aspects that are different from the fairy tale. For example, in this performance, the viewer is faced with a combination of scenes taken from different fairy tales that he has seen before. The director made good use of the given conditions in the work and described the adventures of the cat and its owner Marquis with a unique skill. Also, while in search of the wizard's palace, the cartoon mainly talks with millers and farmers, in this performance, the audience meets a forest fairy with the appearance of a grumpy old woman and an Elf storyteller. As a result, the development of events is depicted in a wider and more interesting way than in the cartoon. The fact that the fairy of the forest helps the heroes of the play who are looking for a miracle "for a mouthful of sweet words" helps children to understand how powerful the word is. The simplicity and innocence of the elf storyteller increases the audience's laughter.

The richness of the actor's words and boldness made the children's show even more enjoyable. Live communication with children during the play makes them even more interested in the events of the play, and the excitement that arose from the audience's pleasure proves that a desire to help the heroes of goodness arose in their hearts. Especially in the scene where the cat and the magician meet, the excitement of the children, their concern for the cat and helping to find the magician is definitely a happy event. It can be seen from these feelings that our young audience is learning to distinguish between negative and positive characters in the play.

In the fairy tale "Puss in Boots" the little boy Marquis is embodied as the main character, but in the play it turns out that the main character is a cat. This proves that the director has his own point of view and that the idea of the play is to instill love for animals in children's hearts. At this point, it is necessary to dwell on the importance of stage decoration. Because, when the stage curtain opens, the equipment on it awakens the first artistic image of the performance in the minds of children. It is the decoration of the fairy tale performance, its variety, artistry and ease of performance, as well as its symbolic solution that can surprise children, that are noteworthy. The children's favorite actors who contributed to the impressive performance of the play played their roles with

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gusto. In particular, Puss in Boots - Askar Hikmatov, Marquis - Khudoyorkhan Ahmadkhanov, King - Sherzod Bozorov, Malika - Zaynur Nigmatova, Fairy of the Forest - Zebiniso Kadirova, Fairy Tale Elf - Barot Hasanov, Magician - Iskandar Elmurodov performed their roles well.

The fairy tale "Puss in Boots" was staged several times in the Karakalpak Young Audience Theater. First, in 1997, it was brought to the stage under the name "Puss in Boots" by the director Tereniyozov. The theater team of 2023 revived this play and presented it to the audience with a new interpretation. The inquisitive director O. Bekturgenev managed to stage it in a more interesting way.

Charles Perrault's fairy tale "The Master and the Creature" tells the story of an enchanted prince in a large castle in the forest and his servants who have become objects. Accidentally entering the castle, Bell is imprisoned in an enchanted palace by the Creature. Befriending the objects, Bell gradually grows to love the Creature and realizes that he is not really evil. But Gaston, who is in love with Bell, is determined to destroy the Creature and breaks into the palace and attacks the Creature. As in every fairy tale where good triumphs over evil, in this one the Creature is freed from the spell and transformed into a handsome prince thanks to Belle's love.

The creators of the Karakalpak Theater of Young Audiences skillfully use the conditions given in the fairy tale to successfully stage the play. The performance will be successfully staged by director O. Bekturgenev in 2021 and will be included in the theater repertoire. It was played by the following talented actors: Inkar Sarsenbaeva, Alima Rametullaeva, Pazil Tolegenov, Dalibay Baynazarov, Jumabay Berdibekov, Bahadir Japarov, Rasul Tlemisov, Islam Begjanov, Aybek Khojamuratov, Pazilbek Kelimbetov, Navruz Aymuratov, Gulchekhra Japarova, Gulayim Seytimova, Azima Otepbergenova, Sultan Kallibekov, Amangul. Khalmuratova, Tumaris Jaksimuratova, Timur Yerejepov, Aziz Parakhatov, Bakhadir Bishekov, Gulnaz Jaymanova, Nazira Nigmatullaeva, Mekhriban Yusupova, Dilafruz Muratbaeva performed. Bellini House is revealed when the stage curtains open. He goes on stage singing with a book in his hand. This shows the main character's love for the book. While the girls on the public stage are busy having fun, the fact that Bell spends time reading a book can't help but have a positive effect on the audience. Young viewers have long imitated the positive actions of the main character and want to have a good character like him. This trait in Bell is unfortunately left behind at the beginning of the play. Based on the director's approach, the didactic function of the performance would have increased if the book was used as a tool in the subsequent plots, that is, in the formation of the relationship between Mahluq and Bell. But this fairy-tale performance has become a favorite show of Karakalpak youth. It is important because it teaches children to look for positive qualities in all events.

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In "Cinderella" by the famous storyteller, the events are interpreted in a way familiar to all of us. According to tradition, he is disliked by his stepmother and sisters, but loved by all creatures. Cinderella is beautiful, polite, sweet, kind to everyone, and her virtue and hard work will lead to a happy life at the end of the fairy tale. This, in turn, serves as a lesson for our innocent children. It is a positive phenomenon that the creative team of the theater paid attention to effective artistic means in the play "Cinderella" staged at the Republican Theater of Young Audiences. On the stage, colorful lights and light effects help to enrich each scene and make the young audience travel directly to the magical fairy-tale world. It is no exaggeration to say that the songs performed by the heroes of the fairy tale turned the show into a musical. The singing of the actors and the dances based on the essence of each scene helped to make the fairy tale more interesting and the performances more expressive.

As soon as the curtains open, Cinderella appears busy with her household chores. The surroundings are decorated with flowers. The flowers come alive when Cinderella interacts with them, surprising the children. Mostly in the cartoon or feature film versions of this tale, the father has died. In this play, the father is embodied as a humble and kind person. Cinderella's eagerness to go to the ball at the palace and her father bringing her nuts are similar to scenes from the film. Another feature of the play is that while the films focus on revealing the character of the prince as one of the main characters, in this play you will see the prince directly in the ball scene. Because the court officials and the king took part in the main events in the play. Therefore, the fact that the prince did not go in search of his love, but ordered his servants, it can be seen that his character is embodied in a manly and somewhat subtle way. In the movies, the prince is portrayed as a brave person who can solve everything independently. It is a good thing that the director searched for his own interpretation and found its expression.

The famous fairy tale was staged by Malika Iskanderova, an experienced director and choreographer. It should be mentioned here that - "many plots of the performance, actors' costumes, some parts of the decoration are taken from the Russian children's theater play of the same name" [6,1] can be found on the Internet. A fun show for children, unfortunately, such imitations will undoubtedly lead to a negative change in the work of the theater team. Characters who sang and danced: Cinderella-Asal Akhralhadjaeva, Father-Abduvahid Sarikov, Salahiddin Mominov, Stepmother-Nargiza Rustamova, Anna-Shahnoza Sultonova, Mariyanna-Dilnavoz Ahmedova, Feya-Shohida Usmonova, Apprentice magician-Barot Hasanov, Askar Khikmatov, King-Ulug'bek Rustamov, Shahzoda-Bahodir Ahmedov, Hudayorkhan Ahmadkhanov, Padetrui-Bakhtiyor Turgunov, Shavkat Israilov, courtiers-Zebiniso Kadirova, Nafosat Pozilova, Nargiza Raimova, Muslimunkul Yunusov were embodied.

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Among the representatives of our national dramaturgy, the creators of the theater of the young audience turn to the works of Anvar Obidjon and Polat Momin, along with Uzbek folk tales. The manifestation of our national values on the stage of the theater will create a foundation for the realization of identity in the heart of the young audience. In particular, the reflection of noble qualities such as respect for elders and respect for children, which are ingrained in the blood of the Uzbek people, in these fairy-tale plays becomes a didactic-aesthetic tool for children.

Schoolchildren get acquainted with Anvar Obidjon's works from the first grade textbook. His works are often found in elementary school classrooms. In 1993, the play "Topsang hai hai" by the director Amon Sharipov based on the work of Anvar Obidjon was staged at the Republican Theater of Young Audiences. Experienced director Amon Sharipov is remembered by his colleagues as he staged many fairy tales in the theater. He not only staged a play, but is also the author of a number of fairy-tale plays on the theater stage. After a break of several years, in 2007, the experienced director Alexander Kudryatsev brought another of his works to the stage of this theater. In the performance "Alamazon and his footman", the director masterfully presented his skills to the audience. "Uzbek folk writer Anvar Obidjon has a wonderful fairy tale called "Alamazon and his footman". Our theater staged that fairy tale and presented it to the young audience. [2,32] The play tells about the interesting adventures of Alamazon and his close friend Eshmat. Although two friends have different dreams, one cares about doing good to people, and the other Eshmat is a fun-loving boy, they work towards the same goal. When Alamazon finds the treasure, he intends to build a stadium for the school. The scenery of the performance is prepared according to the development of events. Among the actors, Alamazon-H. Halimov, Eshmat-Sh. Bozorov, Shilpiq-A. Kadirov, Tirtiq-D. Abdulazizova, Otin bibi-F. Umarova, Malika-N. The Pozilovas participated. "Anvar Obidjon tried to reveal the fact that some children are acting like children through Iskirt the first and his associates. With this work, he wants these characters to draw conclusions and change their negative aspects. Through the image of Almazan, he represented children who always strive for goodness and try to help others. We think that a child who watches this play will follow the example of the characters on the stage and try to change his character." [3,14] In 2011, stage director G. Mardonov presented the play "Meshpolvan" based on his work. Since then, for almost 15 years, theater creators have not considered the stage solution of his works. After all, Anvar Obidjon's works are taking place in the hearts of children through the school program.

Polat Momin's works are included in the 1st grade "Reading Book" textbook of the school program. [5,127] His work "Qovoqvoy and his New Year's Adventure" was first staged in 2003 by experienced director Olimjon Salimov at the Republican Theater

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of Young Audiences. In 2014, the young director Shuhrat Ibragimov brought it back to the stage.

Uzbek folk tales are not alien to our children. It is gratifying that most of them can tell these tales from memory. The fairy tale "Emerald and Precious" has been staged in the Republic Theater of Young Audiences for almost half a century. In 1992, director H. Karimov brought it to the theater stage under the name "Mysterious Box" based on the production of Ibrahim Ahmedov and Obid Tolipov. After a long hiatus, the work staged by B. Pozilov in 2009 is still taking place in the theater repertoire.

Teams of two theaters of youth audiences in our Republic, which work day and night to raise the morale of our youth, bring world and national fairy tales to the stage and present them to young audiences in their own interpretations. At a time when various interpretations of famous fairy tales in the form of cartoons are presented to the public by world artists, it is one of the most difficult tasks to bring these works to the stage of the theater and win the love of children, but the fact that the creative team of the theater was able to achieve its goal is worthy of praise. But the main problem is that 90% of fairy tales are about love. In terms of age group, fairy tales are shown for 6-, 7-, 8-, and even 9-year-old viewers. At a time when there are a number of psychological problems plaguing young viewers of this age today, the question of whether our theaters are not forming yet another inappropriate subject in their minds remains unanswered.

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Key words: *Theater, play, dramaturgy, upbringing, education, art, children, perfection, spirituality.*

At a time when computer graphics are attracting young people like iron rods, it is necessary to prove that the importance of theater in the education of young people is incomparable not only in words, but in practice, that is, by staging performances of various genres on stage. It is necessary to show them in practice that it is possible to give them the right education by showing live performances of theater art, along with various admonitions. Already, our great grandfather, one of the modern scholars, Mahmudhoja Behbudi, speaking about the role of theater in the education of young people, said, "...developed nations call theaters a school of manners and an example for adults. They say that theaters are one of the first reasons for development. It is said that the good and bad habits of the theater are spent and judged..." - he was absolutely right when he admitted and proved it in practice. [1, 50] These intellectual views about the artistic and educational importance of theater art for the society have not lost their significance even today.

The creators of the theater of young viewers, working towards high goals, plan to present the best works of art in school programs for our children through modern interpretations. Speaking about the formation of the repertoire of two theaters of young audiences in the republic, the theoretical views that "repertoire should be created according to the age group of the audience", which was emphasized several times by the fans of the stage, has become a necessity today. Today, our research theaters have performances for every age group. But they are not implemented in a specific system in cooperation with the school. The proof is that among the children who visit the theater, you can meet an audience belonging to three or four age groups at the same time in one play. This is one of the biggest shortcomings in the theater of young audiences. So, first of all, let's study the list of fairy tales, epics, stories, short stories, novels, dramaturgy included in the school program class by class, what were they like before and how are they now? we are looking for an answer to the question.

In terms of repertoire, theaters for young audiences often turn to fairy tales. In this case, fairy tales are suitable for young audiences in terms of their simplicity, interesting content, and the ability to shape the audience's worldview. Famous foreign writers such as Hans Christian Andersen, Brothers Grimm, Tolstoy, Pushkin, Charles Perrault are the authors of fairy tales, which are received with great interest by children all over the world, and which are deeply rooted in the hearts of not only children but also older viewers. Also, in the theater, examples of folk oral works, which are considered as national works, and tales of Anvar Obidjon are used more.

Christian Andersen from Denmark is one of the famous writers of the children's world with several of his works. One of the peculiarities of his tales is that most of his characters are chosen from the animal world. Because the love of young children for the animal world and their fate is boundless. Andersen's works are included in the 4th grade reading book in the school curriculum. His fairy tales "The Snow Queen" and "Irkut Ordakcha" have been successfully performed several times on the stage of children's theaters of our country.

Andersen's unique work "The Little Duck" is one of our children's favorite fairy tales. Based on this, the play "My Duck" from the stage of the Republican Theater of Young Audiences was staged in 2013 by the ballet master, director Malika Iskanderova, and this performance is one of the successful performances of the theater. This performance covered the events related to the duckling who was born, was laughed at and humiliated by his friends. This topic is very important in children's education. The reason is that it acts as an impetus for educating and forming feelings such as respect and honor

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among classmates for students who are just studying in the elementary grades of the school. Because if 30 students study in one class, they are gathered in one group, receiving education based on 30 different worldviews. In such a situation, it is appropriate to show performances that praise each other's feelings of respect through school and theater cooperation.

The great French poet and critic Charles Perrault is known throughout the world as the founder of the fairy tale. 12 of his fairy tales have been translated into Uzbek. Among them, the most famous fairy tales are "Little Red Riding Hood", "Puss in Boots", "The Master and the Creature", "Cinderella". These fairy tales are included in the extracurricular activities plan for 4th graders in the school program. A remarkable feature of the author's work is that his fairy tales are completely different from others in terms of content and form. No matter which author's fairy tale you look at, you will immediately notice that all of them have special aspects that children will enjoy. For example, the great Russian writer S. Turgenev says the following about his works : "Regardless of the somewhat subtle, old farang grace, Perrault's fairy tales have their honorable place in world children's literature. They are cheerful, interesting, sincere, uncomplicated with excessive advice and author's demands. In them, the creator perceives the soft lines of folk poetry, in them there is a mixture of incomprehensible strangeness and simplicity, which is a distinguishing feature of the fabric of a true fairy tale. [4, 25]

at the Republican Theater of Young Audiences , you will see that every scene is staged with children's interests in mind. The team of actors, properly selected by the stage director Shuhrat Ibragimov, the live dialogue with the audience was not only interesting for the children, but also helped them to focus more appropriately. As the curtain rises, your attention is drawn to the beautifully decorated decor. In this interpretation of the director, the play has many aspects that are different from the fairy tale. For example, in this performance, the viewer is faced with a combination of scenes taken from different fairy tales that he has seen before. The director made good use of the given conditions in the work and described the adventures of the cat and its owner Marquis with a unique skill. Also, while in search of the wizard's palace, the cartoon mainly talks with millers and farmers, in this performance, the audience meets a forest fairy with the appearance of a grumpy old woman and an Elf storyteller. As a result, the development of events is depicted in a wider and more interesting way than in the cartoon. The fact that the fairy of the forest helps the heroes of the play who are looking for a miracle "for a mouthful of sweet words" helps children to understand how powerful the word is. The simplicity and innocence of the elf storyteller increases the audience's laughter.

The richness of the actor's words and boldness made the children's show even more enjoyable. Live communication with children during the play makes them even more interested in the events of the play, and the excitement that arose from the audience's pleasure proves that a desire to help the heroes of goodness arose in their hearts. Especially in the scene where the cat and the magician meet, the excitement of the children, their concern for the cat and helping to find the magician is definitely a happy event. It can be seen from these feelings that our young audience is learning to distinguish between negative and positive characters in the play.

In the fairy tale "Puss in Boots" the little boy Marquis is embodied as the main character, but in the play it turns out that the main character is a cat. This proves that the director has his own point of view and that the idea of the play is to instill love for animals in children's hearts. At this point, it is necessary to dwell on the importance of stage decoration. Because, when the stage curtain opens, the equipment on it awakens the first artistic image of the performance in the minds of children. It is the decoration of the fairy tale performance, its variety, artistry and ease of performance, as well as its symbolic solution that can surprise children, that are noteworthy. The children's favorite actors who

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contributed to the impressive performance of the play played their roles with gusto. In particular, Puss in Boots - Askar Hikmatov, Marquis - Khudoyorkhan Ahmadkhanov, King - Sherzod Bozorov, Malika - Zaynur Nigmatova, Fairy of the Forest - Zebiniso Kadirova, Fairy Tale Elf - Barot Hasanov, Magician - Iskandar Elmurodov performed their roles well.

The fairy tale "Puss in Boots" was staged several times in the Karakalpak Young Audience Theater. First, in 1997, it was brought to the stage under the name "Puss in Boots" by the director Tereniyoov. The theater team of 2023 revived this play and presented it to the audience with a new interpretation. The inquisitive director O. Bekturgenev managed to stage it in a more interesting way.

Charles Perrault's fairy tale "The Master and the Creature" tells the story of an enchanted prince in a large castle in the forest and his servants who have become objects. Accidentally entering the castle, Bell is imprisoned in an enchanted palace by the Creature. Befriending the objects, Bell gradually grows to love the Creature and realizes that he is not really evil. But Gaston, who is in love with Bell, is determined to destroy the Creature and breaks into the palace and attacks the Creature. As in every fairy tale where good triumphs over evil, in this one the Creature is freed from the spell and transformed into a handsome prince thanks to Belle's love.

The creators of the Karakalpak Theater of Young Audiences skillfully use the conditions given in the fairy tale to successfully stage the play. The performance will be successfully staged by director O. Bekturgenev in 2021 and will be included in the theater repertoire. It was played by the following talented actors: Inkar Sarsenbaeva, Alima Rametullaeva, Pazil Tolegenov, Dalibay Baynazarov, Jumabay Berdibekov, Bahadir Japarov, Rasul Tlemisov, Islam Begjanov, Aybek Khojamuratov, Pazilbek Kelimbetov, Navruz Aymuratov, Gulchekhra Japarova, Gulayim Seytimova, Azima Otepbergenova, Sultan Kallibekov, Amangul. Khalmuratova, Tumaris Jaksimuratova, Timur Yerejepov, Aziz Parakhatov, Bakhadir Bishekov, Gulnaz Jaymanova, Nazira Nigmatullaeva, Mekhriban Yusupova, Dilafruz Muratbaeva performed. Bellini House is revealed when the stage curtains open. He goes on stage singing with a book in his hand. This shows the main character's love for the book. While the girls on the public stage are busy having fun, the fact that Bell spends time reading a book can't help but have a positive effect on the audience. Young viewers have long imitated the positive actions of the main character and want to have a good character like him. This trait in Bell is unfortunately left behind at the beginning of the play. Based on the director's approach, the didactic function of the performance would have increased if the book was used as a tool in the subsequent plots, that is, in the formation of the relationship between Mahluq and Bell. But this fairy-tale performance has become a favorite show of Karakalpak youth. It is important because it teaches children to look for positive qualities in all events.

In "Cinderella" by the famous storyteller, the events are interpreted in a way familiar to all of us. According to tradition, he is disliked by his stepmother and sisters, but loved by all creatures. Cinderella is beautiful, polite, sweet, kind to everyone, and her virtue and hard work will lead to a happy life at the end of the fairy tale. This, in turn, serves as a lesson for our innocent children. It is a positive phenomenon that the creative team of the theater paid attention to effective artistic means in the play "Cinderella" staged at the Republican Theater of Young Audiences. On the stage, colorful lights and light effects help to enrich each scene and make the young audience travel directly to the magical fairy-tale world. It is no exaggeration to say that the songs performed by the heroes of the fairy tale turned the show into a musical. The singing of the actors and the dances based on the essence of each scene helped to make the fairy tale more interesting and the performances more expressive.

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As soon as the curtains open, Cinderella appears busy with her household chores. The surroundings are decorated with flowers. The flowers come alive when Cinderella interacts with them, surprising the children. Mostly in the cartoon or feature film versions of this tale, the father has died. In this play, the father is embodied as a humble and kind person. Cinderella's eagerness to go to the ball at the palace and her father bringing her nuts are similar to scenes from the film. Another feature of the play is that while the films focus on revealing the character of the prince as one of the main characters, in this play you will see the prince directly in the ball scene. Because the court officials and the king took part in the main events in the play. Therefore, the fact that the prince did not go in search of his love, but ordered his servants, it can be seen that his character is embodied in a manly and somewhat subtle way. In the movies, the prince is portrayed as a brave person who can solve everything independently. It is a good thing that the director searched for his own interpretation and found its expression.

The famous fairy tale was staged by Malika Iskanderova, an experienced director and choreographer. It should be mentioned here that - "many plots of the performance, actors' costumes, some parts of the decoration are taken from the Russian children's theater play of the same name" [6,1] can be found on the Internet. A fun show for children, unfortunately, such imitations will undoubtedly lead to a negative change in the work of the theater team. Characters who sang and danced: Cinderella-Asal Akhralhadjaeva, Father-Abduvahid Sarikov, Salahiddin Mominov, Stepmother-Nargiza Rustamova, Anna-Shahnoza Sultonova, Mariyanna-Dilnavoz Ahmedova, Feya-Shohida Usmonova, Apprentice magician-Barot Hasanov, Askar Khikmatov, King-Ulug'bek Rustamov, Shahzoda-Bahodir Ahmedov, Hudayorkhan Ahmadkhanov, Padetrui-Bakhtiyor Turgunov, Shavkat Israilov, courtiers-Zebiniso Kadirova, Nafosat Pozilova, Nargiza Raimova, Muslimunkul Yunusov were embodied.

Among the representatives of our national dramaturgy, the creators of the theater of the young audience turn to the works of Anvar Obidjon and Polat Momin, along with Uzbek folk tales. The manifestation of our national values on the stage of the theater will create a foundation for the realization of identity in the heart of the young audience. In particular, the reflection of noble qualities such as respect for elders and respect for children, which are ingrained in the blood of the Uzbek people, in these fairy-tale plays becomes a didactic-aesthetic tool for children.

Schoolchildren get acquainted with Anvar Obidjon's works from the first grade textbook. His works are often found in elementary school classrooms. In 1993, the play "Topsang hai hai" by the director Amon Sharipov based on the work of Anvar Obidjon was staged at the Republican Theater of Young Audiences. Experienced director Amon Sharipov is remembered by his colleagues as he staged many fairy tales in the theater. He not only staged a play, but is also the author of a number of fairy-tale plays on the theater stage. After a break of several years, in 2007, the experienced director Alexander Kudryatsev brought another of his works to the stage of this theater. In the performance "Alamazon and his footman", the director masterfully presented his skills to the audience. "Uzbek folk writer Anvar Obidjon has a wonderful fairy tale called "Alamazon and his footman". Our theater staged that fairy tale and presented it to the young audience. [2,32] The play tells about the interesting adventures of Alamazon and his close friend Eshmat. Although two friends have different dreams, one cares about doing good to people, and the other Eshmat is a fun-loving boy, they work towards the same goal. When Alamazon finds the treasure, he intends to build a stadium for the school. The scenery of the performance is prepared according to the development of events. Among the actors, Alamazon-H. Halimov, Eshmat-Sh. Bozorov, Shilpiq-A. Kadirov, Tirtiq-D. Abdulazizova, Otin bibi-F. Umarova, Malika-N. The Pozilovas participated. "Anvar Obidjon tried to reveal the fact that some children are

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acting like children through Iskirt the first and his associates. With this work, he wants these characters to draw conclusions and change their negative aspects. Through the image of Almazan, he represented children who always strive for goodness and try to help others. We think that a child who watches this play will follow the example of the characters on the stage and try to change his character." [3,14] In 2011, stage director G. Mardonov presented the play "Meshpolvan" based on his work. Since then, for almost 15 years, theater creators have not considered the stage solution of his works. After all, Anvar Obidjon's works are taking place in the hearts of children through the school program.

Polat Momin's works are included in the 1st grade "Reading Book" textbook of the school program. [5,127] His work "Qovoqvoy and his New Year's Adventure" was first staged in 2003 by experienced director Olimjon Salimov at the Republican Theater of Young Audiences. In 2014, the young director Shuhrat Ibragimov brought it back to the stage.

Uzbek folk tales are not alien to our children. It is gratifying that most of them can tell these tales from memory. The fairy tale "Emerald and Precious" has been staged in the Republic Theater of Young Audiences for almost half a century. In 1992, director H. Karimov brought it to the theater stage under the name "Mysterious Box" based on the production of Ibrahim Ahmedov and Obid Tolipov. After a long hiatus, the work staged by B. Pozilov in 2009 is still taking place in the theater repertoire.

Teams of two theaters of youth audiences in our Republic, which work day and night to raise the morale of our youth, bring world and national fairy tales to the stage and present them to young audiences in their own interpretations. At a time when various interpretations of famous fairy tales in the form of cartoons are presented to the public by world artists, it is one of the most difficult tasks to bring these works to the stage of the theater and win the love of children, but the fact that the creative team of the theater was able to achieve its goal is worthy of praise. . But the main problem is that 90% of fairy tales are about love. In terms of age group, fairy tales are shown for 6-, 7-, 8-, and even 9-year-old viewers. At a time when there are a number of psychological problems plaguing young viewers of this age today, the question of whether our theaters are not forming yet another inappropriate subject in their minds remains unanswered.

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IMPORTANT ASPECTS OF THE PERIOD OF FATTENING OF LIVESTOCK AND MAIN ASPECTS OF PAYING ATTENTION TO THEM.

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Annotation: The period of livestock fattening and the main aspects of paying attention to them play an important role in the process of raising and effectively feeding and managing livestock in agriculture. During this period, aspects related to the health of livestock, improvement of breeding quality and technologies of their care should be taken into account. In the process of fattening, factors such as preservation and development of genetic resources of animals, as well as methods of prevention and treatment of diseases, communication and fodder, water supply are important. In this article, we will talk about the main aspects that need to be paid attention to in the process of fattening livestock, what needs to be done to increase their economic efficiency and sustainable development.

Key words: breeding, fattening, Kluwer - Strauch method, cattle breeding, Frowein method, measuring the live weight of cattle, building a barn.

Enter. The main goal of cattle fattening is to achieve the highest efficiency. To benefit from fattening, cattle should be treated and vaccinated against parasites, body weight should be checked regularly, groups should be separated and fed according to body weight, and feed should be fed with high energy and protein (protein) feed. Regular fattening of livestock with feed available on the farm is not always effective. This way of fattening can remain only in the form of labor cost and profit from feed for the cattle breeder.

The main part. A livestock farmer should consider the following aspects before starting fattening for economic efficiency and profit:

Family members who take care of livestock must undergo annual medical examinations and receive vaccinations against infectious diseases (to prevent the disease from being transmitted from animals to humans).

The main condition for the care of livestock is their timely and continuous feeding (during the period of care in the nursery, cattle are fed with feed prepared in the summer). One of the second important conditions is necessary hygienic care. This is of great importance in maintaining the live weight of the animal.

When raising cattle, first of all, attention should be paid to the purpose for which the cattle are raised. If it is raised for milk, its diet should include chopped blue grass, hay, beets, and high-quality concentrate feed. If the cattle are being fed in the ration, there must be a large amount of concentrate (bran, fodder, meal, etc.) in their diet. Livestock should be in a state of low movement.

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Cattle storage rooms, i.e. barns, should be spacious, light and have frames for air exchange. The barn must be well maintained, the walls and manger must be disinfected with lime, and all holes must be closed. The manger should be well ventilated, urine can flow. If possible, it is necessary to clean and store the goods every day, if not, when they are dirty. For this purpose, a scraper is used.

It is necessary to follow the rules when building a farm. The length of the pen for cows should not be less than 170-200 cm, and the width should not be less than 140-160 cm. The manger will be lower - cattle should be fed with their neck bent, but not stretched. The manger should be made oval, preferably not rectangular, that is, the width of the top is eighty centimeters and the bottom is not less than fifty centimeters. It should not be large enough to accommodate one-time feeding, and it is better to be in front of the water of the cattle being fed.

Cattle for fattening should be selected based on their breed, age, body weight, body structure and breed. That is, it is necessary to buy cattle that are best suited for fattening.

Sufficient coarse and concentrated feeds must be stocked and these feeds must be of good quality and properly stored.

Livestock feed should be given on the basis of norms and rations, feed with high energy and protein. It is necessary for the breeder to create balanced rations in feeding.

Before feeding, livestock should be weighed, divided into groups based on body weight and fed according to body weight.

During the fattening period, the live weight of livestock is measured once a month on a scale or, if it is not possible to weigh on a scale, the oblique length of the body and chest circumference, behind the shoulder bones are measured with a tape measure. is increased. The live weight of older cattle is also determined by the Kluwer-Strauch method. For this, measurements of chest circumference and oblique length of the body are taken.

Then the live weight is determined using specially developed tables.

Then the live weight is determined with the help of specially developed tables. The numbers given in the table are set for cattle of medium fatness. Therefore, depending on whether the cattle are fat or thin, their weight is increased by 5-10% using the table. The weight of cattle with moderate to low obesity is reduced by 5-10%.

Determination of live weight of cattle. The live weight of young cattle is determined by the Frowein method. In this method, the measurements of the breast circumference and oblique length of the body of cattle are taken, and the live weight is found using the indicators in special tables (Table 1).

Determining the live weight of cattle by the Kluwer - Strauch method

Chest circumference behind the shoulder	Slant length of the body, sm														
	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95

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blades, sm																		
25	1	64																
30	1	80	87															
35	1	96	03	13														
40	1	16	23	31	41													
45	1	32	40	50	59	69												
50	1	47	56	66	77	86	96											
55	1	64	74	85	95	96	17	28										
60	1	82	90	01	13	24	34	47	50									
65	1		10	23	34	47	58	70	81	94								
70	1			42	55	68	80	98	04	17	31							
75	1				74	90	03	17	29	43	57	70						
80	1					14	28	43	52	71	86	00	15					
85	1						49	64	78	94	08	24	40	52				
90	1							92	06	22	38	55	72	85	02			
95	1								31	49	66	82	00	15	29	48		
00	2									80	97	14	34	49	67	84		
05	2										26	44	62	80	90	17		
10	2											78	99	16	36	54		

When feeding livestock, it is necessary to calculate when to run out of feed, or in terms of time, or best of all, based on the body weight of the animal. In other words, shortening the period of feeding should not prolong the period of fattening.

Conclusion. Livestock fattening, that is, their improvement and development, is an important part of agriculture. This process is important not only for improving livestock productivity, but also for ensuring food security, economic development and improving the social welfare of rural areas. In addition, to increase the knowledge of the villagers on livestock breeding, to introduce them to modern technologies, to implement the programs adopted by the state for the development of livestock breeding, to provide subsidies and other support, to introduce innovative technologies in the process of animal fattening, for example, it is important to improve the results by using genetic modification or new diets.

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Semantic lexical opportunities of imitative units in Uzbek languages

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Annotation: This article entails imitative expressions to sound and state in national linguistic view of the world, agglutinative languages, particularly, wide usage of imitations in Uzbek, additionally, almost non-existence of imitations as an independent part of speech expressing imitation to sound and state with nouns, adjectives or verbs, derivation of imitation with the above words.

Keywords and expressions: imitation, descriptive word, descriptive expression, onomatopoeia, descriptive means, noun, verb, grammar form, imitation to sound and state, agglutination.

The versatility of the phonetic structure of language is undoubtedly evident in its ability to express all the sounds in existence in terms of the ability of the speaker to hear and listen. In this sense, the phonetic structure of the Uzbek language is distinguished by its polyfunctionality and wide coverage, which is observed in the expression of descriptive and imitative meaning of polyphony. Indeed, unlike other lexical categories that exist in a language, words that mean image and imitation are unlikely and even impossible to assimilate from other languages. The formation of descriptive words depends on how the representative of the language perceives reality in his mind, how he hears sounds, how he expresses it in the vowel sounds present in his language. The lexical units that emerge as a result of these organic processes form a specific and literally national and unique layer of each language. In this sense, it is impossible not to emphasize the predominance of the Uzbek language, which belongs to the group of agglutinative languages. This is because, unlike other languages, including English, Uzbek can cover almost all the sounds that occur in nature. This, in turn, makes the words that imitate sound and action, the image of the situation, more natural.

It also completely dispels the stereotype that images and imitations are mainly used in children's poetry, and clearly proves that they are a means of substantive artistic imagery.

Another peculiarity of imitation words is their multiplicity of meanings:

- 1) the soup boiled in a flash - tears dripped from his eyes;
- 2) The sea glows in the sunlight - the market is very busy, people are quiet.

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In the examples we can see that a descriptive expression can also be used in different grammatical systems and, at the same time, serve to express different meanings. Of course, in this polysemy it is expedient to proceed from the context of reality, that is, from the general context of the text or speech, which is descriptively expressed in the understanding of the relevant meaning.

Descriptive expressions can be used in a variety of syntactic functions in speech. In particular, we have seen in the examples above that a descriptive expression can serve as a cut or a case. At the same time, the units of expression of the image are also used in the function of determiner, representing a single sign that illuminates its essence, rather than the characteristic character of the word in the possessive or complementary function that comes with it. At this point, it can be said that descriptive expression determinants in some sense create a small synecdoche. That is, it takes only one property from the general characteristic, and thus points to the whole quality. For example: Outside, the cold wind blows, and the shirt shines in the sunlight. The units of figurative expression can also come as a mediator and an indirect complement: He now seeks to return the ready-made laughter if he is not shot from within, and says to his friend, "Stop, my dear, stop now," and straightens his breath; Mavlono Turobi entered (Oybek, "Navoi"). Sheikh Bahlul, a servant waiting for his master, light a candle as a reminder of the horse's voice (Oybek, Navoi). For example: The mother did not care about her son's whining. The old man's head ached from the constant noise. Saida had suddenly forgotten the key.

The descriptive word serves to express the mode of action in the section to which it is attached when performing the function of the case, and reveals the essence of semantic confusion, giving information about the speed at which the action took place. For example: You cry, you sing like a girl without clothes on Eid, you sigh with your hand on your cigarette (Oybek, Navoi). It was as if the nightingale often drank tea, swallowed, and every sound that sounded like melted cast iron into Saidi's heart (A. Qahhor, Sarob).

Hence, the units of descriptive expression can perform not only the motivation in the sentence, but also an independent syntactic function, in which case the syntactic function of the units is changed by the use of adverbs. In all applications, either "image + imitation" or "imitation + image" has one of the most complex semantic meanings. In this case, the components of the complex essence conditionally represent the general formula of "basic meaning + adjoining meaning."

Semantic and grammatical opportunities of descriptive and imitative units in Uzbek language

The difference between imitation units and other lexemes in a language is that they reflect all the phonetic opportunities of the language, at a glance, sounds that do not occur together in the word structure may be innumerable in the example of imitation words. This, of course, is due to the fact that in the process of formation of imitation words, a person first observes the environment and forms words based on the phonetic potential of his language in the expression of certain sounds in it. In this sense, imitation words in the Uzbek language are distinguished by their maximum closeness to the sound of nature. Linguists analyze sound imitation words into several groups of their own. Depending on the object being imitated, such expressions include imitation of the sounds of living beings (humans and animals), imitations of the sounds of inanimate objects, as well as imitations of various sounds produced by movement or vibration. Initially, linguists AN Kononov and A. Gulomov included descriptive expressions as well as imitative words, but later these two units of expression were

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classified under the category of descriptive words. However, linguists have reconsidered this theory and concluded that urges and imitations differ significantly from each other, and it is expedient to explain this conclusion as follows: “semantically, urges make the speaker feel more expresses excitement, command, call, and request. Some of their groups also represent attitudes to place and time, but this meaning is also emotional.” Descriptive words represent the sounds and actions of people and other objects as sounds or images of action. Emotions, commands, please, are not typical for descriptive words.

Indeed, categorizing imitation words as motivations was ignoring the fact that they were syntactic functional units, while completely denying their polyfunctional and polysemantic nature.

Linguists directly explain the imitation words in the modern Uzbek literary language as follows: “imitation words are formed on the basis of imitation of different sounds in existence, their repetition: tars-turs, qars-kurs, chars-churs, gumbur- like humming, chiy-chiy”.

One of the characteristic features of imitative units in Uzbek, as well as in many other languages, is that they often consist of a single syllable and are often used in a repetitive or double form. In this case, the use of repetition or double case not only emphasizes the action performed, but also in a sense refers to its style, ie the speed of execution: “In descriptive words, the repetitive form, in addition to amplifying sound or movement, , also indicates that the action is more than one, continuous. In repetition, repetition increases the emotion and strengthens the emotion.”

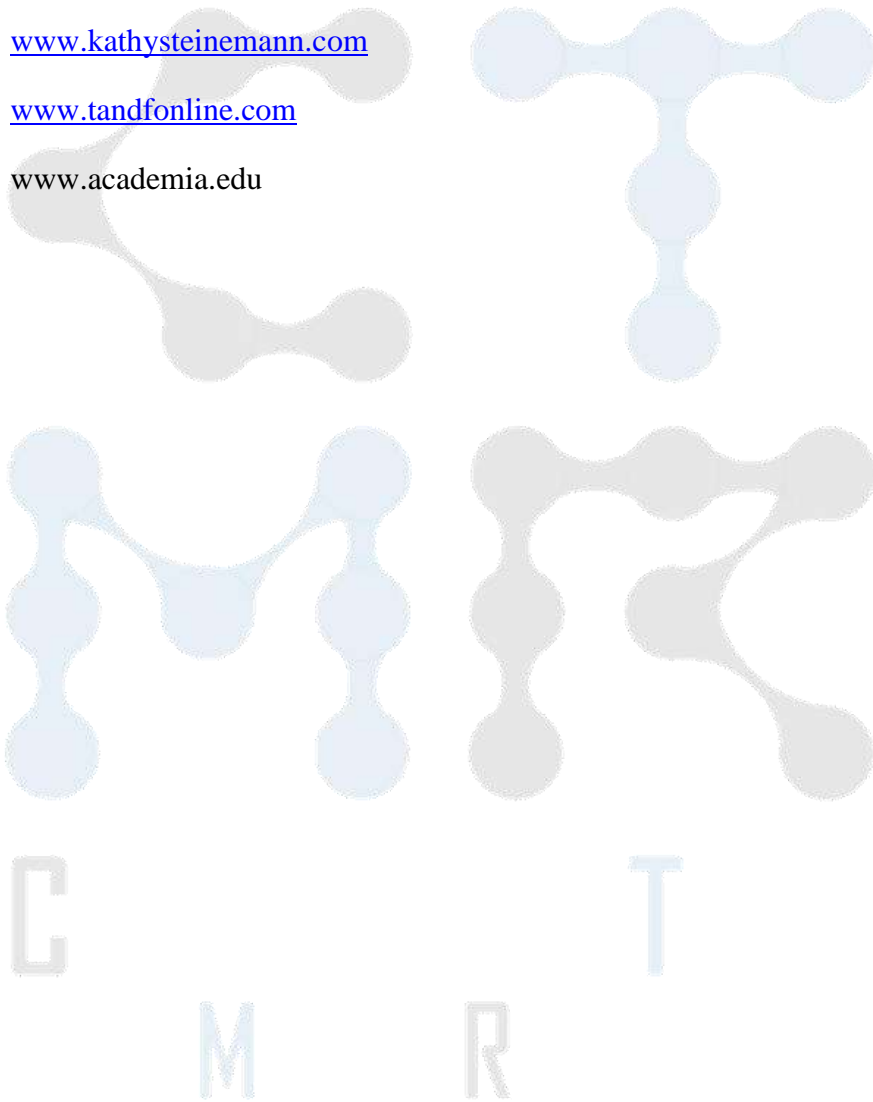
Despite its polyfunctional and polysemantic nature, the use of imitation words in Uzbek is limited. The use of imitation units is mainly limited to riddles, proverbs, sayings, and examples of folklore. Although it can be an unparalleled means of imagery in fiction, imitations are relatively rare in works of art. And, in our opinion, there are two main reasons for this: First, although the phonetics of most sounds, the articulation of the speakers has almost no difficulty in pronouncing any combination of sounds and sounds, it is impossible to pronounce all the sounds in the Uzbek language in high similarity with the original. If it is possible to ideally imitate a sound, then the word becomes an imitation, not an imitation. "Imitations, of course, must be distinguished from imitation," he said. The immaturity of words in language is not entirely consistent with the sounds of nature, the fact that this complex of sounds is not the same as the sounds of nature, the sound of something in nature is imitated differently in different languages confirms. The phenomenon of imitating the sound of something different - through different sound complexes - is not unique to different languages, but can be seen in languages belonging to the same family, and even in different dialects of the same language.

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SOME ISSUES OF DEVELOPING SPEAKING SKILLS OF STUDENTS IN THE CREDIT MODULE SYSTEM

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ABSTRACT: The article illustrates some issues of teaching in the Credit module system and its advantages and disadvantages in teaching students at Universities in the Uzbekistan. Moreover, the article shows some methods of developing speaking skills

KEY WORDS: credit module system, speaking skills, advantages and disadvantages of using credit module system in Teaching in Uzbekistan

INTRODUCTION

We can say that studying the concept of language and speech and conducting scientific research about the differences and similarities between them is not one of the new issues today. Because language and speech is a matter related to people themselves. Each nation has its own language, which is expressed through speech. Through language, it is possible to show how rich the culture of each nation and people is. For these reasons, the issue of language teaching is one of the most pressing issues. However, in today's fast-paced environment of rapidly changing educational systems, it can be seen that there are several issues that need to be explored. The credit module system was a new stage of the educational process for our state educational standards. Therefore, it is necessary to recognize that this educational system has a direct impact on the educational process.

MATERIALS AND METHODS

Several materials and internet sites have been used to write this little research article in order to illustrate some issues of teaching speaking in credit module system (as an example of teaching English). It is known that online language teaching is very difficult, because practical lessons play an important role in it, and independent learning is a very difficult issue. The introduction of the measure of credit accumulation not only gave the student great freedom, but also provided an opportunity to independently plan the academic process in order to become a competitive specialist in the field of his choice in the future. At the same time, it also led to improvements in the assessment system and educational technology.

Based on the decision of the Court of Ministers of the Republic of Uzbekistan dated December 31, 2020 "On measures to improve the system related to the organization of educational processes in higher education institutions" "Death in higher education institutions regulation on the procedure for introducing the credit-module system into the educational process" was approved. In this Regulation, the basic concepts of the credit-module system have been given. According to him:

GPA (Grade Point Average) is the average value of the student's points for the program, which is calculated using the following formula:

$$GPA = K_1U_1 + K_2U_2 + K_3U_3 \dots + K_nU_n$$
 : is equal to $K_1 + K_2 + K_3 \dots + K_n$.

It is as the followings:

K — amount of credits allocated to each subject/module;

U is the student's grade for each subject/module;

A credit is a unit of measurement of the educational load mastered by a student in a specific subject according to the results of education. Loans can be expressed in whole, fractional numbers according to the rule;

Accumulation of credit - accumulation of credit units provided as a result of mastering educational elements and achieving other achievements;

A student's personal educational trajectory is a direction (route) chosen by the student and which gives him the opportunity to accumulate knowledge in a sequence and acquire the desired set of competencies.

Study load - all types of educational activities by the student - lecture, practical training, seminar, laboratory work, course project (work), practice and independent work are necessary to achieve the expected learning results and the volume of hours.

RESEARCH AND DISCUSSIONS

Credit system learning systems can be very effective in developing learning processes to provide flexible and adaptive learning to students. These systems provide students with the opportunity to customize their own learning based on evolving techniques and the latest information. Methods of developing speaking skills can be as follows:

Creative Lessons and Practical Exercises: Students can develop their speaking skills by providing creative lessons and practical exercises in credit-module systems. Creative activities give students the opportunity to solve problems, express valid ideas, and repeat ideas.

Interactive Learning Tools: Students develop their speaking skills through lectures, online tutorials, video lessons, and interactive tutorials. These tools allow students to express themselves and think.

Group Work and Discussion: Encouraging students to think with each other through group work and discussion methods can be very effective in developing their negotiation and speaking skills.

Portfolios and Presentations: Prepare portfolios and organize presentations to help students improve their speaking skills. This method is useful for students to express themselves, process information and communicate their ideas to others.

Practical Projects and Accountability: Students develop their speaking skills by encouraging them to participate in real-life tools, working on projects, rehearsing new ideas and presenting themselves to others.

Management and Monitoring: Credit module systems create new opportunities for students to manage and monitor themselves. This helps to develop personal learning according to the interests and requirements of each of the students.

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Credit-module systems create opportunities for students to improve their learning and are very effective in developing their speaking skills. These systems allow students to develop themselves and express themselves.

CONCLUSION

In conclusion, I would like to mention some advantages and disadvantages of the credit module system. A unique feature of the credit module system is that students learn independent learning and independent development. One of the key advantages is flexibility. The credit module system allows students to choose courses according to their interests, pace of learning, and individual capabilities. They can also select courses from different disciplines, which provides a more well-rounded education.

Moreover, students have the opportunity to learn at their own pace. They can progress through modules at a speed that suits their learning style and understanding, allowing for better comprehension and retention of knowledge. As well as Students can tailor their coursework to align with their career goals or specific areas of interest, fostering a sense of ownership in their education. The credit system often allows for easier credit transfer between institutions, both nationally and internationally. This flexibility can be beneficial for students who might need to change schools or pursue study abroad opportunities. At last, not least, the modular structure encourages skill enhancement. Students can focus on specific skills or subjects they find challenging, dedicating more time and effort to improve in those areas.

Nevertheless, there are still some disadvantages in this learning system which are waiting being solved, they are Implementing and managing the credit system requires complex administrative processes. The coordination of various modules, credit evaluation, and transfer can be challenging for educational institutions. As students have the freedom to choose their courses, there's a risk of fragmented knowledge. Some may opt for courses that interest them but might not necessarily contribute to a holistic education. The next issue is that the flexibility can also lead to an increased workload and stress for students who take on too many credits simultaneously or struggle with managing their time effectively. The Credit Module System offers significant advantages in terms of flexibility and personalized learning experiences. However, its effective implementation requires careful planning, guidance, and oversight to mitigate potential drawbacks and ensure a balanced and quality education for students.

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VOLUME-4, ISSUE-10 USAGE OF TIME EXPRESSIONS

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Annotation: Time expressions are phrases or idioms that convey specific meanings related to the concept of time. They can enhance communication by adding depth and context to discussions about schedules, deadlines, or the passage of time. Here are some notable time expressions, along with their meanings and usage.

Key words: Time, expressions, frequency, specific time

Introduction: Time expressions play a crucial role in our daily communication, helping us convey the complexities of how we perceive and manage time. These expressions encompass a wide range of phrases and idioms that reflect our experiences, emotions, and cultural attitudes toward time. From indicating urgency to expressing the passage of time, they enrich our language and enhance our ability to connect with others. Understanding time expressions is essential not only for effective communication but also for navigating various aspects of life, such as work, relationships, and personal goals. They allow us to articulate the significance of moments, prioritize our actions, and recognize the implications of our choices. By exploring these expressions, we gain insight into the shared human experience of time and its impact on our lives. Time expressions are essential components of language that help us communicate our experiences and perceptions of time. They encompass a variety of phrases and idioms that convey specific meanings related to the passage of time, schedules, deadlines, and the significance of timely actions. By utilizing these expressions, speakers can articulate feelings about urgency, anticipation, and the relativity of time, enhancing their communication with emotional depth and clarity.

Main part: These expressions often reflect cultural attitudes toward time and can vary significantly across different languages and societies. Understanding time expressions allows us to navigate conversations more effectively, as they provide insight into how individuals prioritize their time and experiences. Whether it's expressing a sense of urgency, reflecting on the inevitability of change, or emphasizing the importance of punctuality, time expressions enrich our language and foster deeper connections in our interactions. Time expressions are phrases and idioms that convey our relationship with time, shaping how we perceive and discuss it in everyday life. They help us articulate

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concepts like urgency, deadlines, and the passage of moments, reflecting our cultural attitudes and experiences. From the fleeting nature of time captured in "time flies" to the notion of prioritization in "make time for," these expressions enrich our language, adding depth and nuance to our conversations. By understanding and using time expressions, we can communicate more effectively about our schedules, responsibilities, and the importance we place on various activities, ultimately enhancing our interactions in both personal and professional contexts. Time expressions are vital components of language that help us navigate our understanding of time and its significance in our daily lives. They encompass a variety of phrases, idioms, and terms that articulate the passage of time, deadlines, and the importance of timing in various contexts. By using time expressions, we can convey urgency, anticipation, and the need for prioritization in a concise and impactful way. These expressions not only enhance communication but also reflect cultural attitudes toward time management and productivity. Whether discussing personal schedules, professional commitments, or the broader concept of time itself, these phrases allow us to express complex ideas with clarity and nuance. As we explore different time expressions, we gain insight into how language shapes our perception of time and its role in our lives.

Time expressions are linguistic tools that help convey when actions occur, their duration, frequency, and the order of events. They are integral to effective communication, enabling us to organize our thoughts chronologically and understand others' intentions and actions more clearly. These are phrases or words used to indicate specific points in time, durations, and frequencies of events. They serve a crucial role in both spoken and written language, aiding clarity and providing necessary context for the listener or reader. The importance of time expressions can be summarized as follows:

- 1. Clarity:** They help clarify when something happens, reducing ambiguity in communication.
- 2. Context:** Time expressions provide essential context that can change the meaning of a statement.
- 3. Organization:** They help organize information logically, making narratives easier to follow.

Time expressions can be categorized into several types, each serving a distinct purpose.

1. Specific Times

Specific time expressions refer to precise moments in time. They help schedule events and identify particular occasions.

Examples:

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- Clock Times: "at 2 PM," "at midnight."
- Days: "on Monday," "on Christmas Day."
- Years: "in 2021," "in the 1990s."

2. Duration

Duration expressions indicate how long an action lasts, providing insight into the length of time something continues.

Examples:

- Fixed Durations: "for two hours," "for a week."
- Starting Points: "since 2010," "since last Friday."
- Time Periods: "during the summer," "throughout the year."

3. Frequency

Frequency expressions describe how often an action occurs. They are key in discussing habits, routines, and repeated actions.

Examples:

- Regular Frequencies: "every day," "once a week," "twice a month."
- Infrequent Occurrences: "seldom," "rarely," "occasionally."

4. Sequence

Sequence expressions clarify the order in which events occur. They are particularly useful in storytelling and instructional contexts.

Examples:

- Order Indicators: "first," "next," "then," "after that."
- Concluding Statements: "finally," "lastly."

Conclusion: Time expressions serve as valuable tools for effective communication, enriching language with cultural nuances and emotional undertones. Understanding these expressions can help individuals navigate discussions about time, urgency, and priorities more effectively. Time expressions are a vital aspect of language that enable effective communication. By understanding and mastering

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different types of time expressions—specific times, durations, frequencies, sequences, and approximations—individuals can convey information more clearly and accurately.

Moreover, recognizing the cultural nuances and variations in the use of time expressions enhances cross-cultural communication. Whether in everyday conversations, professional settings, or academic writing, time expressions play a crucial role in providing clarity and context, facilitating better understanding among individuals.

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Presupposition as a means of linking pragmalinguistic features of language units

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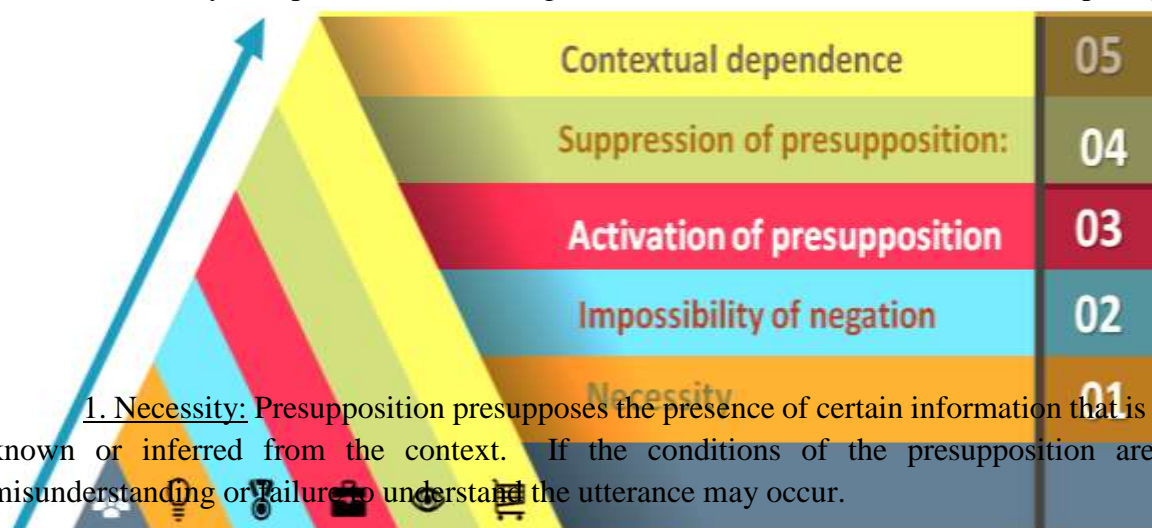
Annotation: The main goal of the work is to reveal from a stylistic perspective the ontological characteristics of presupposition as a property of the text and to establish the functions of text presupposition. Presupposition is a multidimensional phenomenon. It is connected not only with the content side of linguistic units, but also with the pragmatic side - with communicants, their ideas, and worldview. The pragmatic side of the presupposition - the connection with the subject of speech - predetermines its stylistic meaning. The factor of familiarity/unknown of the presupposition to the reader is the basis of various ways of conveying information in the text that have a stylistic effect.

Keywords: Presupposition, statement, semantic component, pragmalinguistic, cognitive aspects

Linguistics at the present stage of development is characterized by the transfer of the main focus of its attention from a systematic description of language means at the formal level to consideration of the functioning of these means in real speech communication, in the communication process. This caused a revision of the status of units in the language system, a revision of the functions that they acquire in real linguistic communication. The main unit of communicative description is not a word, phrase or combination of sentences, but the finished product of speech activity - a text.

Presupposition is an important aspect of any communication. As the preliminary knowledge of communicants, it acts as a factor that predetermines the success of the process of linguistic communication - it is a condition for achieving understanding. Consideration of presupposition at the text level showed that it is an integral property of the text, its structural and semantic category. The category of presupposition reflects the ability of a text to program the specific meaning of its units, as well as to contain prerequisites that determine the disclosure of textual information. This property of the text is determined, on the one hand, by the structure of the text itself, and on the other, by the nature of the communication system of which it is a part.

Presupposition is a concept in pragmalinguistics that refers to the intended information or inference made by the speaker when making an utterance. Here are some features of presupposition:



1. Necessity: Presupposition presupposes the presence of certain information that is considered known or inferred from the context. If the conditions of the presupposition are not met, misunderstanding or failure to understand the utterance may occur.

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2. Impossibility of negation: Presupposition cannot be directly negated within the utterance itself; it persists even with negative forms of expression. For example, the phrase “He forgot his keys again” suggests that he has forgotten his keys before.

3. Activation of presupposition: An utterance can activate a presupposition and make it explicit to the listener. This can happen through the use of certain lexical units, constructions or intonation features.

4. Suppression of presupposition: The speaker may attempt to suppress or change the activation of presupposition, for example, through the use of negations or other communication strategies.

5. Contextual dependence: Presupposition often depends on the context and knowledge of the participants in the communication. Different people may make different assumptions when interpreting statements based on their individual knowledge and experience.

One of the goals of pragmalinguistics is to study these and other features of presupposition to understand how they influence communication and language interpretation.

The study of a text is carried out in terms of developing problems associated with revealing its communicative nature: identifying factors that contribute to the text fulfilling its main function - the function of speech influence. The problem of adequate perception of the text, understanding its meaning as a condition for the text to fulfill its main task becomes central. The purpose of this study is to consider one of the factors that determine the process of understanding a text – textual presuppositions. Currently, the phenomenon of presupposition is the focus of attention of linguists. It is considered in connection with the study of the communicative side of various linguistic units. This phenomenon was used when considering the semantics of the word when describing its syntagmatic connections

and paradigmatic relations, when studying functional types of sentences structure of a simple and complex sentence, as well as a number of other issues.

Keen interest in the phenomenon of presupposition in linguistics, the question of the status of presupposition has not yet received a clear solution; there is also no consensus among scientists regarding which phenomena should be attributed to this concept; the concept of presupposition itself does not have a single definition. Secondly, the study of presupposition was carried out mainly at the level of sentences, utterances, and combinations of sentences within complex and complex sentences. While the significance of the problems of textual communication in modern linguistics poses the task of studying presupposition in the text to linguists. The need to consider this problem is noted by many scientists, however, such a study has not been conducted to date. This paper attempts to consider presupposition at the textual level. Its study is carried out on the material of fiction from a certain perspective - stylistic.

The concept of presupposition and the special type of relations between propositions associated with it were defined for the first time in logic. The formulation of this problem in logic is associated with the consideration of the conditions of truth/falsity of judgments, as well as with the question of determining the truth of those judgments whose subject does not have a referent in objective reality: whether such a judgment will be true or false.

The concept of presupposition was introduced into logic by G. Frege G. Frege distinguished between two types of meaning in a judgment: statement and presupposition (asserted meaning and presupposed meaning).[1] The content of the presupposition is that the name (proper or common noun) has a referent. In this case, presupposition is considered as a condition of reference of a name (the existence of a person or object in reality), which predetermines the truth of the judgment. According

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to G. Frege, compliance with the presuppositions of a judgment determines its truth. P. Strawson applied the concept of presupposition when considering the conditions of truth of those judgments whose name does not have a referent. They proposed the following solution to this problem: a judgment can be considered neither true nor false, if its presupposition is false, such a judgment loses the quality of being true or false.[2]

Initially, the concept of presupposition became widespread in the so-called extensional semantics (extensional semantics), where presupposition is defined only within the framework of the theory of reference. Extensional semantics is primarily interested in the conditions of truth/falsity of a sentence, therefore within the framework of this theory, as well as in logic, presupposition is used to determine the truth of a sentence. In order for a sentence to be true, it is necessary to meet the requirement that each nominative group included in this sentence has a referent, that is, a necessary condition that determines the truth value of a sentence is the existence of the subject of speech in reality. Presuppositions that determine the conditions of reference of a name (the existence of an object in reality) are called existential, or existential.

The external factor responsible for the action of the presupposition in the text is the situational nature of speech - the meaning of any communicative unit is determined in relation to a specific situation. The text as a unit of communication reveals its content relative to the external context in which it is used. On the other hand, the meaning of individual parts of the text is determined by the content of the work itself, the internal context. The significance of a textual presupposition lies in the fact that it acts as a mechanism that correlates the content of a text with the type or type of context that defines it, both external and internal.

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Abstract: Stress and intonation are critical components of phonetics that significantly influence the meaning and emotional tone of spoken language. This article explores the definitions, functions, and examples of stress and intonation in English. It highlights how stress patterns can change meanings and how intonation affects the speaker's intention. Additionally, the article discusses the importance of these elements in language learning and communication.

Keywords: *Stress, Intonation, Phonetics, Prosody, Linguistics*

INTRODUCTION

Stress and intonation are two vital aspects of phonetics that contribute to the rhythm and melody of speech. Understanding these elements is essential for effective communication, as they can alter the meaning of words and sentences. This article delves into the intricacies of stress and intonation, providing insights into their roles in phonetics and language learning.

WHAT IS STRESS?

Stress refers to the emphasis placed on certain syllables within words or on specific words within sentences. In English, stressed syllables are typically louder, longer, and pronounced with a higher pitch compared to unstressed syllables.

TYPES OF STRESS

1. **Word Stress:** The emphasis on a particular syllable within a word.

- *Example:* In the word "*photograph*," the stress is on the second syllable: PHO-to-graph – BrE /'fəʊtəgrɑ:f/ or AmE /'foʊtəgræf/.

2. **Sentence Stress:** The emphasis on certain words in a sentence to convey meaning.

- *Example:* In the sentence "*I didn't say she stole my money*," stressing different words changes the implication:

- "I **didn't** say she stole my money" (implying someone else said it).

- "I didn't **say** she stole my money" (implying you meant something else).

FUNCTIONS OF STRESS

- **Distinguishing Meaning:** Stress can change the meaning of a word. For example, "*record*" can be a noun (RE-cord) BrE /'rekɔ:d/ or AmE /'rekə:d/ or a verb (re-CORD) BrE /rɪ'kɔ:d/ or AmE /rɪ'kɔ:rd/ depending on which syllable is stressed.

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- **Emphasis and Focus:** Stress helps to highlight important information in speech, guiding listeners on what to pay attention to.

WHAT IS INTONATION?

Intonation refers to the variation in pitch while speaking. It plays a crucial role in expressing emotions, attitudes, and intentions.

TYPES OF INTONATION PATTERNS

1. **Rising Intonation:** Typically used in yes-no questions.

- *Example:* "Are you coming?"

2. **Falling Intonation:** Commonly used in statements and commands.

- *Example:* "I will go to the store."

3. **Fall-Rise Intonation:** Used to indicate uncertainty or to soften a statement.

- *Example:* "I might come to the party."

FUNCTIONS OF INTONATION

- **Expressing Emotion:** Intonation helps convey feelings such as excitement, surprise, or doubt.

- **Indicating Questions vs. Statements:** Intonation patterns differentiate between types of sentences.

STRESS AND INTONATION IN COMMUNICATION

Effective communication relies heavily on the correct use of stress and intonation. Misplacing stress or using the wrong intonation can lead to misunderstandings.

LANGUAGE LEARNING IMPLICATIONS

For language learners, mastering stress and intonation is essential for fluency. Incorrect stress or intonation can hinder comprehension and result in communication breakdowns.

PRACTICAL EXAMPLES

1. **Stress Example:**

- Consider the phrase "*I didn't steal the money.*" Depending on which word is stressed, the meaning changes:

- "I **didn't** steal the money." (implying someone else did).

- "I didn't steal **the** money." (implying perhaps other money was stolen).

2. **Intonation Example:**

- The question "*You're coming?*" with rising intonation implies uncertainty, while with falling intonation, it confirms the expectation.

CONCLUSION

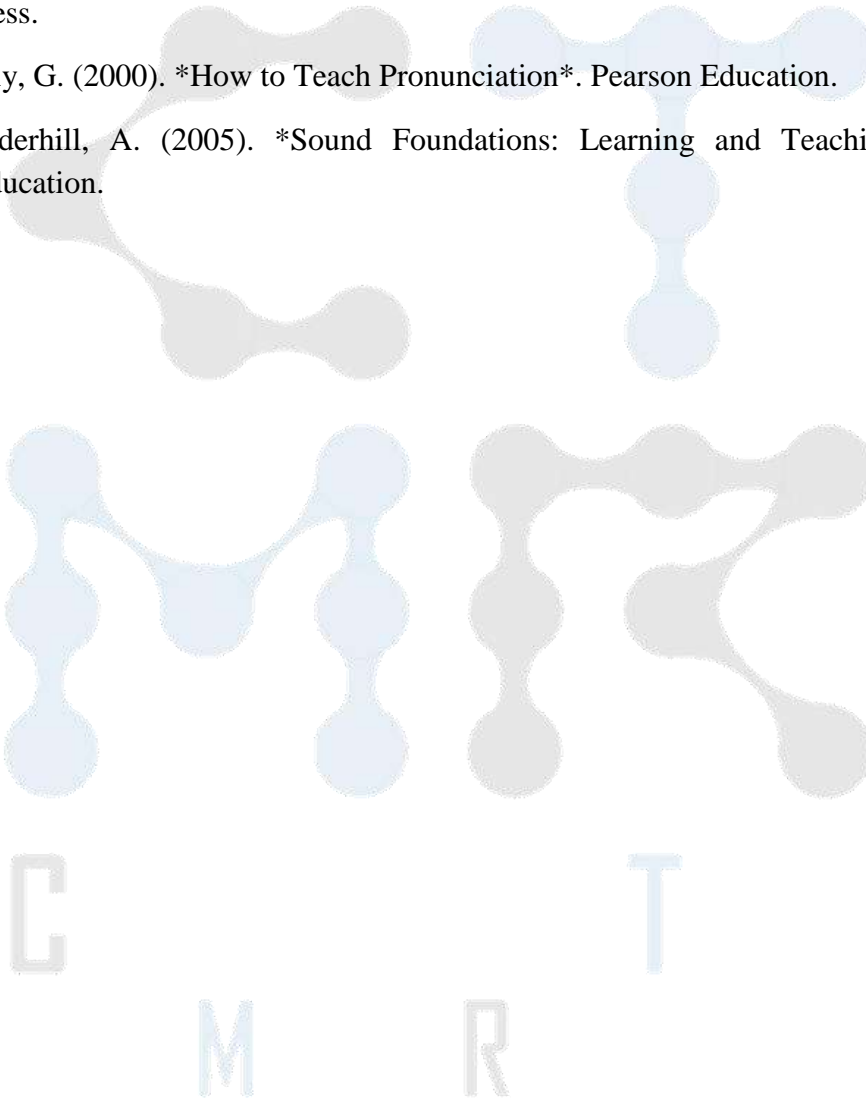
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Understanding stress and intonation is crucial for effective communication in English. These phonetic elements not only shape the rhythm and melody of speech but also influence meaning and emotional expression. For language learners, focusing on these aspects can enhance fluency and comprehension.

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CULTURE PABLIK RILEYSHNZ – PR (PUBLIC RELATIONS) AND ADVERTISING

Annotation

This article examines the dynamics of the non-existence of public relations-PR (public relations) as a science. The role of public opinion in establishing the activities of organizations is indicated. The functions of public relations – PR are covered, such as the study of public opinion and its observation, monitoring of public movement, ensuring two-way interest between the organization and the public.

Key words: public opinion, public relations, intergovernmental relations, social life, industrial relations, Financial relations, International relations, consumer relations, statistics and research, mass media, etc.

Аннотация

В этой статье рассматривается динамика существования паблик рилейшнз – **PR** (связи с общественностью) как науки. Указывается на рол общественного мнения в установлении деятельности организаций. Охватываются функции паблик рилейшнз – **PR**, такие как изучение общественного мнения и его наблюдение, наблюдение за общественным движением, обеспечение двустороннего интереса между организацией и общественностей.

Ключевие слова: общественное мнение, связи с общественностью, межправительственные отношения, социальная жизнь, производственные отношения, финансовые отношения, международные отношения, отношения с потребителями, статистика и исследования, СМИ и т.д.

The term “Public Relations” (Public Relations – PR, PR) taken from the English language means “Public Relations”, “Public Relations”, “Public Relations”. This expression was first used by the third president of the USA, Thomas Jefferson. He mentioned this term for the first time in 1807 in his “Seventh Address to Congress”. The purpose of this was to raise the relations of the government with the public to the level of the state, to establish scientific and organizational aspects.

One of the founders of PR, Edward Bernays, defined the essence of this phrase as “action in the public interest”. So, it becomes clear that “the emergence of public relations in the United States is a direct product of political processes”. A century later, the history of PR, which became a reality as a separate science, originates from the events of that time. The following words of Thomas Jefferson, who became famous as a democrat, became a slogan for a number of newspapers that chose the path of democracy: “If I am told to have government and no newspapers, or newspapers and no government – choose one. I would say without hesitation that there should be newspapers even if there is no government”.

This opinion should not be interpreted unilaterally. It is possible that Thomas Jefferson envisioned increasing the position and responsibility of newspapers, which could play an important role in strengthening public relations. It can be seen that the democratic leader expressed for a specific purpose that the public relations of the government or any organization cannot be imagined without

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the press and mass media. In fact, "the social nature of the press, from the point of view of its main functions, is clearly visible in its other characteristic - the representative of public opinion," writes Mukhtar Khudoykulov, professor of the Faculty of Journalism of UzMU. reflecting his spiritual life and acting as an active factor in the mutual influence of social existence and social consciousness, he acts on the basis of public opinion in this regard" [1].

Studying the opinion of the public is an important criterion in relations with it. In practice, the term "function" refers to tasks that perform this activity. According to V. Korolko, public relations, in general, performs 3 main functions:

1. Studying public opinion and monitoring it. Through PR, it is possible to study the opinion of the public and to influence it effectively. If the public opinion is not studied in time, then the positive goal will not be achieved.

2. Monitoring public behavior. Therefore, it is important not only to study the opinion of the public, but also to monitor its actions. Pierman should find out how he behaves in this or that public action. As new situations arise, as social moods change, it is necessary to know in advance how the public behaves, in which direction the opinion of the publicist is changing. Accuracy plays an important role in the work of a public relations officer.

3. Ensuring mutual benefit between the organization and the public. It is necessary to develop cooperation with the public by ensuring not one-sided, but two-way interests. In this case, the cooperation will have a double benefit.

These three main functions are very important for a PR manager to develop public relations.

PR serves to establish public relations of organizations in society. As Sam Black writes, it focuses on the following ten main goals. That is:

1. Public opinion;
2. Public relations;
3. Intergovernmental relations;
4. Social life;
5. Industrial relations;
6. Financial relations;
7. International relations;
8. Relations with consumers;
9. Statistics and research;
10. Mass media[2].

The organization can establish relations with the external environment in different directions. Management of external communication flows of the organization is often aimed at coordination of public opinion about the organization, its reputation and formed image. In this regard, many things are important for the cultural manager - the work of establishing relations between the organization and the public. This type of relationship is directly addressed by the public relations service, or in other words, PR (public relations).

Public relations or PR is an activity that does not have a literal translation of the name into Uzbek, but its most common synonym is "public relations". Currently, the art of managing the communication process is being implemented in the field of public relations, which is increasingly considered a type of marketing. Public relations (PR) is a field of communicative activity aimed at "organizing a communicative space in a mode favorable to the object of PR." It is understood as "a management function that establishes and maintains mutually beneficial relations" [3].

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The communicative space in which PR activities are carried out can be fully included in the media sphere. With the help of mass media channels, messages are sent to a mass audience, which includes guests and competitors of cultural institutions, as well as other interested layers of society (authorities, artists, creators, representatives of art and culture, etc.). PR activities are an integral part of the management system of any organization, including non-profit ones, because:

- ✓ the market (including the leisure market) is saturated with goods and services;
- ✓ the needs of listeners, consumer requirements are increasingly differentiated;
- ✓ competition between firms working with similar consumers is growing.

In this regard, the importance of non-price competitive factors that create positive images, strengthen the organization's reputation and increase its popularity is increasingly important. These include communication process management technologies (advertising, branding, PR technologies, etc.). The external environment is the main vector on which all the efforts of PR technologists or managers for the development of the organization are directed. Nevertheless, all elements of the external and internal spheres somehow affect the work of the organization, which means that activities in different directions are necessary [3].

The main principles of activity in the field of PR are as follows: openness, clarity and timeliness of information; abandoning the subjective position; forming a certain opinion in society. Public relations as an organized activity can serve various purposes, especially in politics, which is most popular in Uzbekistan. In this regard, we consider a number of PR areas that can be most useful for cultural institutions.

1. Positioning is related to creating and maintaining the image or appearance of a cultural institution, cultural and art institute, cultural region, etc. Dislocations that are understandable to the audience and consumers. Otherwise, this object may not be different from others like it. In the positioning process, – answers must be given why the service (or organization, cultural and tourism region) exists, for which audience it is intended, why someone might be interested in buying it.

2. The goal is to form or permanently maintain the necessary opinions and ideas among consumers about a certain object (for example, a cultural event, cultural service, cultural institution), this region or this cultural service. depends. The main goal of a manager responsible for public relations is to achieve a high public reputation of a cultural institution, a certain creative person or a cultural region.

One of the great features of PR, as well as some other communication technologies, is that it is not about creating new messages, but about creating communicative contexts. Therefore, the purpose of PR activities also indirectly affects the mass audience, which is carried out through the symbolic processing of messages.

The tasks of PR activities in the field of culture include:

- ❖ study of public opinion about the cultural institution (creative community, etc.);
- ❖ interactions with mass media (sending press releases, etc.);
- ❖ organization of presentations and other events that shape public opinion about the cultural institution;
- ❖ implementation of measures aimed at strengthening social relations with partners and administrations;

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❖ participation in the process of forming the circle of friends of the cultural institution, boards of trustees and other structures that increase the reputation of the institution and form a positive image.

At the same time, in order to form a certain point of view among the target audience (for example, in relation to a certain theater), the specialist must take into account all the cultural characteristics (values, ideals, taste), psychological, socio-economic factors of this type of audience. and certain messages should be transmitted at a more convenient time and place. In addition, public relations activities, as a rule, are closely related to the mass media institution, so its success depends to a large extent on knowing how various media (print, television, radio, Internet) work [4].

Among the work vectors in the field of PR, the following can be noted:

- ✚ press relations, interviews, joint visits to the organization, round talks, etc.;
- ✚ preparation of press releases, letters to the editor;
- ✚ conducting press conferences, receptions and business meetings;
- ✚ participation in the creation or organization of photographs, advertisements, documentary films;
- ✚ finding positive associations based on the phenomenon of feelings, emotions;
- ✚ presentations, open doors, receptions, cultural services, exhibitions, souvenirs, holidays, etc.) to "attract" and permanently retain a potential consumer;
- ✚ organization of expositions at exhibitions and fairs (place, staff, catalog, booklet, etc.).

Much in the field of culture, where human services are performed, depends on the employees who, consciously or unconsciously, form a general opinion about the cultural institution. Therefore, in communication management, great attention is paid to the personal interaction of employees with visitors. Employees, in fact, play a key role in PR activities (for example, if they respond to the attitude of going, the consumer says that he should not visit because he has not visited this establishment). One of the tasks of managing cultural institutions is to ensure that employees understand the importance of public relations to the achievement of the goals of the organization as a whole. The rest of the PR-advertising activity only fills the general opinion about the cultural institution.

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“Земледельческая обрядность узбеков Ферганской долины”

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In the late XIX - early XX century in the traditional agricultural ritual of the population of the Ferghana Valley, relics of ancient beliefs continued to be preserved, which in present form and in worn-out forms are still present today. In this article, local manifestations and local features of numerous of beliefs, customs and rituals of the population of the valley were illuminated that is inherent in other historical and cultural areas of the Fergana Valley.

The local Ferghana version of the rites of worship of the Bobo-Dehkan and Khizr-Buva cults, the rituals of invocation of rain and etc. should be noted among them. The sedentary population of the Ferghana Valley was engaged mainly in irrigated agriculture, and the semi-settled population - cattle breeding and rain-fed agriculture in the late XIX - early XX century. During the study period the farmers of the valley, relying on practical experience passing from generation to generation, cultivated different types of crops in their farms, and also created new varieties that corresponded to local climatic conditions.

In the Ferghana Valley was unequally set a complex of practical knowledge and methods for cultivating soil, seeding seeds and growing crops that is somewhat different from other regions of Central Asia. Farmers of this historical and ethnographic region, creating an irrigation system, erecting hydraulic engineering structures, in irrigated agriculture used methods and skills that had ancient historical roots in general. Based on centuries -old experience, these techniques were distinguished by simplicity and reliability. Particular attention was paid to the study of local features of the rituals associated with the lunisolar calendar and the movement of the heavenly bodies.

Keywords: “Shokh moylar”. “Bobo-Dekhkana”, “Khyzr-buva”, “Er Khubbi”, “suv khotin”, “khayri khudoyi”, “yatu”.

Как известно, на протяжении веков в земледелии Центральной Азии накоплен огромный массив знаний, опыта, навыков, методов и скрупулезных фенологических наблюдений.¹ В

¹ Гулямов Я.Г. История орошения Хорезма с древнейших времен до наших дней... – С. 122; Заднепровский Ю.А. Древнеземледельческая культура Ферганы... – С. 78-83; Мухаммаджонов А. Қуйи Зарафшон воҳасининг суғорилиш тарихи. – Тошкент, 1972. – Б. 376; Андрианов Б.В. Земледелие наших предков. – М., 1978. – С. 90; Антонова Е.В.

основе всего формировались своеобразные земледельческие традиции и обрядность. Следует отметить, что важное значение в данных традициях имеют религиозно-мифологические верования и ритуалы. В целом, земледельческие обряды и обычаи есть часть уникальных явлений народного мышления. Узбекский народ издревле соблюдая обрядность, создал целый комплекс соответствующих правил, заклинаний, причитаний, примет и символов².

Беспомощность земледельцев перед капризами природы; потеря выращенного непосильным трудом урожая, вследствие стихийных бедствий; страх перед неизвестными невидимыми силами природы и поиски мер избавления от несчастий легли в основу совершения целого ряда магических обрядов, связанных с земледелием. Корни этих обрядов уходят вглубь веков и связаны с древними анимистическими верованиями. Земледельческая обрядность формировалась на основе веры в магическую силу различных аграрных культов. Именно поэтому большинство обычаев и обрядов земледельцев восходят к доисламским верованиям обожествления природных явлений и поклонения божествам неба и земли. Среди своеобразных местных традиций агрокультуры важное практическое значение имеет обряд «шох мойлар» – ритуальное смазывание жиром рогов быка при первой вспашке полей. Вывод первого коша в поле связан с надеждами на удачный сезон сева, будущий богатый урожай и на плодородие в целом³. Именно поэтому в этнографии других народов мира ритуал первого вывода пары быков (кош) в поле и сева зерна исследован в специальной этнографической литературе⁴. В кишлаке Каптархона Ферганского района в прежние времена в день вывода первого коша в поле земледельцы надевали новую одежду и стремились провести этот день в радости и за изобильным дастарханом⁵. По обычаю первый кош сопровождал один из самых уважаемых старейшин кишлака.

У народов Средней Азии, в том числе и у населения Ферганской долины существует культ Бобо-Дехкана – первого земледельца, научившего людей возделывать и засеять землю. Связанный с этим культом целый комплекс обычаев и обрядов, в том числе сопровождавших сев, выращивание и уборку урожая пронизан поклонением пиру – покровителю земледельцев⁶.

Очерки культуры древних земледельцев Передней и Средней Азии. Опыт реконструкции мировосприятия. – М., 1984. – С. 262; Анарбаев А.А., Максудов Ф.А. Древний Маргилан. Из истории земледельческой и городской культуры Ферганы. – Ташкент: Фан, 2007; Ўзбекистон ҳудудида деҳқончилик маданиятининг тарихий илдилари ва замонавий жараёнлар. – Тошкент, 2006. – Б. 13-14.

² Аширов А. “Авесто” ва деҳқончилик анъаналари хусусида айрим мулоҳазалар // *O'zbekistonda ijtimoiy fanlar*. – Тошкент, 2005. – №. 1-2. – Б. 212.

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⁴ Чурсин Г. Праздник выхода плуга у горских народов Дагестана // *Известия Кавказского историко-археологического института*. – Тифлис, 1927. Т. 5. – С. 124-156; Чибирев Л.А. Народный земледельческий календарь осетин. – Цхинвали, 1976. – С. 12-34; Календарь и календарные обряды народов Дагестана. – Махачкала, 1987. – С. 8-17; Хаджиева Т.Х. Эстетическая и утилитарно-магическая функция календарных песен балкарцев и карачаевцев (весенне-летний цикл) / *Календарно-обрядовая поэзия Северного Кавказа*. – Махачкала, 1988. – С. 60-78; Жўраев М. Ўзбек халқ аграр маросимлари тизимида “шоҳ мойлар” ёки “биринчи қўш” удуми ... – Б. 83-90.

⁵ Полевые записи. Кишлак Каптархона Ферганского района Ферганской области. 2003 год.

⁶ Здесь следует отметить, что в разных местностях Средней Азии в отношении этого культа кроме термина «Бобо-Дехкан» распространены мифические имена «Ходжа Абдулло дехкон» и «Ходжаи Хидыр». Об этом см.: Мухиддинов И. Обряды и обычаи, связанные с земледелием у памирских таджиков Вахана и Ишкашима в ХIХ – начале ХХ в. // *СЭ*. – М., 1973. – № 3. – С. 9; Рахмонов Ф.Ш. Қашқадарё воҳаси аҳолисининг зироатчиликка оид

В представлениях местных земледельцев Бобо-Дехкан – труженик, вознаграждающий добросовестный честный труд богатым урожаем⁷.

В этом контексте следует отметить, что похожий культ покровителя земледельцев существует и в других странах, в том числе в Индии, Индокитае, Африке, Северной и Южной Америке⁸.

У населения Ферганской долины наряду с культом Бобо-Дехкана популярен и культ Хызр-бува⁹. В представлениях населения Ферганской долины, как и у других народов Средней Азии, Хызр является святым, исполняющим благие желания, протягивающим руку помощи, указывающим путь заблудившимся, облегчающим затруднительное положение¹⁰. Удачливых, успешных людей население долины называло «Хизрназар», «Хизр суйган одам» (букв. «человек, на которого упал взор Хызра», т.е. любимый Хызром). Хызр фигурирует во множестве притч и верований. Обрядность, связанная с покровителями земледельцев Бобо-Дехканом и Хызр-бува, приобрела исламский характер, т.е. их обожествление еще более упрочило в народе статус этих мифических образов.

Ранней весной до начала пахотных работ у населения долины было принято проводить «худойи» (угощение с богоугодной целью), приносить в жертву какую-либо живность, совершать обряд «ис чикариш» (приносить жертву злым духам в виде горячей пищи). Этот обряд совершался вблизи мечетей или мазаров под руководством аксакалов. В прежние времена с каждой семьи собирали пшеницу и другие продукты, позднее еще и определенную денежную сумму, на которую покупалась живность для жертвоприношения. После коллективного принятия пищи мулла махалли читал молитву из Корана и старейшины, произнося слова поминовения духам предков, просили у Аллаха, чтобы наступающий год был благополучным, урожайным и изобильным¹¹. Кроме того, в долине совершался обряд «дарвешона» по тому же типу, что и «худойи»¹².

урф-одатлари ва маросимлари (XIX асринг охири – XX аср бошлари): Тарих фан. ном. ... дисс. – Тошкент, 2002. – Б. 40-51.

⁷ Бартольд В.В. Ислам. – ПГ., 1918. – С. 115-116; Сухарева О.А. Ислам в Узбекистане. – Ташкент, 1960. – С. 28; Его же. К вопросу о генезисе профессиональных культов у таджиков и узбеков // Труды АН ТаджССР. – Душанбе, 1960. Т. 120. – С. 197-207; Мурадов О. Следы анимистических представлений у таджиков средней части долины Зерафшана // Известия АН ТаджССР. Отд. общ. наук. 1976. – №3 (85). – С. 98-101.

⁸ Токарев С.А. Ранние формы религии и их развитие. – М.: Наука, 1964. – С. 383.

⁹ Полевые записи. Мархаматский, Ферганский, Кувинский, Касансайский районы. 2002 год.

¹⁰ Мурадов О. Следы анимистических представлений у таджиков средней части долины Зерафшана... – С. 98-99; Поярков Ф. Из области киргизских верований // Этнографическое обозрение. – М., 1991. Кн. 11. – С. 28-29.

¹¹ Аширов А.А., Саримсоқов А. Фарғона водийси ўзбекларининг деҳқончилик билан боғлиқ маросимлари ва урф-одатлари / Ўзбекистон худудида деҳқончилик маданиятининг тарихий илдизлари... – Б. 98-100.

¹² По нашему мнению, проведение населением долины этих обрядов до начала пахотных работ несколько отличается от их первоначального вида. По свидетельству источников, эти оба обряда проводились не только в долине, но и в других земледельческих оазисах после завершения посевных работ или в случае засухи. К.Шаниязов отмечал, что такие «худойи» совершались в засушливые годы, население кишлака приносило в жертву теленка или барана, приготовленной едой одаривались бедные семьи, путники и приезжие, которые взамен этого просили у Аллаха послать дождь. Земледельцы верили, что если такие люди обратятся к Аллаху, он примет их мольбы в первую очередь. Обряд «дарвешона» поначалу был несколько иным и в основном совершался в засуху. По обычаю, два-три уважаемых члена общины собирали по домам жителей различные продукты или деньги, а затем раздавали беднейшим семействам, чтобы те обратились с мольбой к Аллаху. По утверждению К.Шаниязова, слово «дарвешона» означает подавание странствующим дервишам. Некоторые из вышеназванных обрядов в отдельных

Хороший урожай, как правило, зависит от благоприятных погодных условий, поэтому засуха воспринималась земледельцами как бедствие. Нам известно, что во всех регионах Средней Азии, основанных на поливном земледелии, особое значение имело почитание воды и дождя. В Средней Азии наряду с культом богини плодородия Анахиты существовал культ «Эр Хубби» или «Хубби» – покровителя водной стихии. Сведения об этом культе встречаются у многих авторов¹³. Поклонение культу Эр Хубби больше сохранился в Сохском районе долины. Земледельцы Соха ранней весной перед тем, как пустить воду в арыки, совершали жертвоприношение культу Эр Хубби на берегу реки. Здесь Эр Хубби был известен как «йигит Хубби»¹⁴. Следует упомянуть, что в верховье реки расположено место поклонения «йигит али пирим», где местные жители совершают жертвоприношения. По утверждению отдельных авторов, это место паломничества связано с именем Хазрата Али¹⁵. Во многих источниках содержатся сведения, что поклонение культукам водных стихий имеется у многих народов мира¹⁶.

Как известно, земледельцы долины в засушливые годы совершали обряды, связанные с призывом дождя. Среди таких мероприятий необходимо отметить проведение «хайри худойи». Эти худойи отличались от привычных угощений тем, что количество участвующих в этом обряде аксакалов должно было быть 7 или 17 человек. По этому случаю можно высказать два предположения. Во-первых, считается, что цифра 7 обладает магическими свойствами и, во-вторых, среди населения долины до сих пор бытует убеждение, что молитва хотя бы одного из 7 человек обязательно будет принята богом. Весьма вероятно, что при проведении этого обряда люди придерживались подобного мнения. В отдельных кишлаках Ферганского района наряду с проведением «хайри худойи» по краям посевных площадей подвешивали лягушек, так как бытовало поверье, что лягушки призывают дождь. Как ни странно, но в долине до сих пор население верит в то, что в день свадьбы человека, убившего лягушку, обязательно пойдет дождь.

У многих народов мира существуют верования, в которых прослеживается связь образа лягушки с осадками¹⁷.

районах долины проводились на личные средства глав состоятельных семейств или других лиц. Подробнее об этом см.: Шаниязов К.Ш. Узбеки-карлуки. – Ташкент, 1964. – С. 51; Джаханов У. Указ. соч. – Б. 111-112.

¹³ Фуломов Я.Ф. Хоразмнинг суғорилиш тарихи. – Тошкент, 1959. – Б. 33; Муҳаммаджонов А. Хўжауббон қудуғи муқаддасми? // Фан ва турмуш. – Тошкент, 1986. – № 9. – Б. 6-7.

¹⁴ Джаҳонов У. Указ. соч. – Б. 125-126.

¹⁵ Так, Р.Я. Рассудова приводит сведения о нескольких подобных местах поклонения в Ферганской долине. По её мнению, эти «святые места» непосредственно связаны с системами орошения и занимают важное место в изучении истории поливного земледелия. Подробнее об этом см.: Рассудова Р.Я. Культурные объекты Ферганы как источник по истории орошаемого земледелия // СЭ. – М., 1985. – № 4. – С. 96-104.

¹⁶ Басилов В.Н. Культ святых в исламе. – М., 1970. – С. 26-27.

¹⁷ Например, по убеждению древних китайцев, если лягушка состарится, прожив очень долго, то приобретает силу, чтобы съест злых духов, вызывающих засуху. Если такую «чудотворную» лягушку высушить в тени в пятый месяц, то якобы сразу пойдет дождь. Тибетцы верили в прекращение дождя, если закопать лягушку в ямку и воткнуть сверху палку. Лакцы и даргинцы, проживающие в Дагестане имеют свое древнее поверье: чтобы прекратить несвоевременный дождь, женщина, у которой живы «три матери», т.е. мать, бабушка и прабабушка, якобы должна сшить «штаны» для лягушки из куска зеленой ткани. Если лягушку в зеленом наряде повесить на край водосточной трубы или столбик веранды и произнести «пусть прекратится дождь, пусть выйдет солнце», то дождь перестанет лить. Подробнее об этом см.: Евсюков В.В. Мифология Китайского неолита. – Новосибирск, 1989. – С. 94-95; Халилов Х.М. Историческая общность национального своеобразия обрядовой поэзии народов Дагестана и

В северных районах Ферганской долины совершались обряды призыва дождя, называемые «суст хотин»* или «сув хотин»¹⁸. В древности этот обряд был достаточно широко распространен в Зарафшанском и Кашкадарьинском оазисах¹⁹. Присущая долине особенность этого ритуала заключалась в том, что его совершали старые женщины. Этот обряд они чаще называли «яда қилиш». По моему мнению, это название произошло в результате путаницы с обрядом «яда тоши» (гадальные камни из внутренностей животных, по которым гадали «вызывая дождь» или желая повлиять на погоду предки тюркоязычных народов). Называя обряды, связанные с вызыванием дождя, следует признать, что не только в Ферганской долине, но и в других земледельческих оазисах Средней Азии совершались обряды прекращения дождя. В некоторых районах долины в этих целях применяли несколько странный способ. Так, в Мархаматском районе Андижанской области и Кувинском районе Ферганской области жители желая прекращения дождя считали имена когда-либо живших или проживающих в кишлаке лысых (плешивых) или безбородых людей нечётными числами (т.е. 1, 3, 5, 7 и т.д.). Они верили, что по достижении числа 41 дождь прекратится²⁰. При этом количество лысых составит число 21.

Из вышеотмечанного следует, что в Ферганской долине существовал целый ряд обрядов и обычаев, связанных с севом, выращиванием и уборкой урожая. Эта обрядность стала воплощением мышления и мировоззрения, веками формировавшимися многими поколениями населения долины. Земледельческая обрядность Ферганской долины конца XIX – начала XX в. отличалась своеобразными особенностями. Эти обычаи и обряды являются одной из уникальных граней земледельческой культуры. Комплекс традиций, обычаев и обрядов, сложившийся в процессе развития земледельческой культуры, полностью отвечал потребностям земледельцев и занимал важное место в их общественной жизни.

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* Суст хотин – этн. ист. женщина Суст (богиня небесных вод, покровительница дождя у предков среднеазиатских народов в доисламский период).

¹⁸ Джаханов У. Указ. соч. – Б. 118.

¹⁹ Шаниязов К. К этнической истории узбекского народа. – Ташкент, 1974. – С. 174-175.

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**ПРАВСТВЕННЫЕ ОСНОВЫ НАШЕГО ПОВЕДЕНИЯ – КАК НАЦИОНАЛЬНАЯ
ЦЕННОСТЬ УЗБЕКСКОГО НАРОДА**

Государственный институт

Искусств и культуры Узбекистана

Доцент кафедры “Общественно-гуманитарных наук”

Арисланбаева З.Е.

Конвенция об охране всемирного культурного и духовного наследия, принятая Генеральной конференцией Организаций Объединенных Наций по вопросам образования, науки и культуры в 1972 году, уже тогда начала констатировать тот факт, что культурному и природному наследию все более угрожает разрушение, вызываемое не только традиционными причинами повреждений, но и эволюцией социальной и экономической жизни, которая усугубляет их и делает еще более опасными, вредоносными и разрушительными.

В современном обществе мы стали свидетелями пагубного обеднения достояния образцов культурной ценности, а также повреждения и исчезновения как окружающей природной среды, так и других культурных ценностей негативно влияющие на жизнедеятельность современного человека. То есть сталкиваемся с такими вопросами как недостаточность объема средств: экономических, научных и технических ресурсов, находящихся на территории той или иной страны, где находится ценность, которая подлежит защите. И тут встает вопрос об охране культурного наследия на национальном уровне. Какая первоочередная задача стоит перед нами, чтобы вернуть наше здоровье, здоровый окружающий природный мир, откуда люди могли бы черпать полезные природные дары и уже с большим уважением относились к природным законам и т.д.

Сегодня, конечно же проводятся различные международные конференции и конгрессы, а также с заинтересованными странами и народами заключаются соответствующие международные конвенции, по сохранению, прогрессу и распространению знаний в этой области, по охране всеобщего наследия человечества.

Изучение и сохранение культурного наследия являются необходимым условием предупреждения процесса разрушения и уничтожения своего национального богатства. Освоение исторического наследия способствует сохранению духовных основ народа, в противном случае подлинная культура может уступить свое место ложным ценностям. Именно культура помогает поддерживать чувство идентичности и принадлежности, что может способствовать общему благополучию, самоуважению и устойчивости цивилизации. Культурное наследие складывается из наиважнейших факторов жизнедеятельности современного человека: формирования и развития интеллектуально-духовной, нравственной и творческой личности.

Конечно же здоровье – бесценный божий дар: здоровые люди оптимистичны, энергичны, стремятся выполнять полезные дела, дарить радость окружающим. Но не следует забывать, что каждый человек сам является хозяином своего здоровья, так как на 50% наше состояние зависит от нас самих: от образа жизни, питания, режима дня, наличия вредных привычек и т.д. Будущему поколению необходимо будет научиться беречь свое здоровье с самых ранних лет.

А это означает, что на плечи старшего поколения ложится большая ответственность за будущее своих детей. Оставить наследие — это акт ответственности. Хорошие мужчины и женщины не просто оставляют после себя хорошие или плохие воспоминания (наследие) для других. Лучший способ оставить наследие – это жить им, день за днем, так как любая хорошая

новость в том, что многое из этого создания наследия может произойти в наших крошечных ежедневных действиях.

Хорошая жизнь для людей – это жизнь добродетеля. И поэтому в наших интересах быть добродетельными. Дело не в том, что добродетели ведут к хорошей жизни (например, если добры, выбудете вознаграждены), а скорее всего в том, что добродетельная жизнь – это хорошая и красивая жизнь, так как осуществление наших рациональных способностей и добродетели – это ее собственная награда, считают многие ученые прошлого.

Культурное наследие может послужить примером для будущих поколений, сохраняя воспоминания и обучая ценным жизненным урокам. Это также может быть источником гордости и мотивации, вдохновляя других стремиться к величию, независимо от обстоятельств. Лучший способ прожить свое наследие — быть примером.

Как выработать в сознании молодежи, научиться ценить местное наследие? Нам известно, что культурное наследие может принести значительную пользу местным сообществам за счет расширения экономических возможностей, укрепления социальной сплоченности и содействия экологической устойчивости. К примеру,....

Вовлечение местного населения в инициативы по культурному наследию не только сохраняет их традиции, но и расширяет их экономические и социальные возможности.

К примеру, известный энциклопедист, знакомый всем как второй [1]. «добродетельного города» направляет внимание на традиции общения узбекского народа, имеющие положительное влияние на окружающих. Конечно же, восточным людям изначально была присуща основа нравственного, уважительного отношения как к природной среде, так и к друг другу. По нему, добродетельный город подобен совершенному, здоровому телу, все органы которого помогают друг другу с тем, чтобы сохранить жизнь живого существа и сделать ее наиболее полной [1].

Противопоставляя добродетельному невежественному город, он «невежественным, безнравственным и заблудшим» считает город обмана, где жители считают зажиточность и богатство не средством, а целью всей жизни [2].

Идя вслед за Платоном, он руководствуется этическими установками Аристотеля. Его круг познания очень широк: от религии, математики и философии, до музыки и политики. Ученое наследие аль-Фараби около 200 научных трудов и охватывающих разные отрасли знаний. В своих исследованиях, он приходит к выводу, что цель человеческой деятельности – это счастье, которое возможно лишь при помощи разумного познания. И жители «добродетельного города» объединяются, чтобы помочь друг другу достичь истинного счастья [3].

И сегодня идеи аль-Фараби, ставшие неотъемлемой частью сокровищницы мировой цивилизации продолжают будоражить мыслящее сознание, втягивая в орбиту нравственных поисков истины, путей достижения счастья, построения справедливого общества и совершенствования человека.

Философско-религиозно-этический термин «добродетель» обозначает положительное нравственное свойство характера отдельного человека, определяемое его волей и поступками; постоянное деятельное направление воли к исполнению нравственного закона (заповедей) и является антонимом к слову «грех» и «порок». Он считает, что человек не может достичь всех идеалов в одиночку, без помощи других людей. [4].

Что составляет основу главных добродетелей по Фараби? Это сложная и глубокая

этическая система Аристотеля: благоразумие, справедливость, умеренность и мужество. К ним Фараби позже добавляет еще 7 добродетелей. Это: (благоразумие, мужество, справедливость, умеренность, вера, надежда и любовь):

- Целомудрие (лат. Castitas)
- Умеренность (лат. Temperantia)
- Любовь (лат. Caritas)
- Усердие (лат. Industria)
- Терпение (лат. Patientia)
- Доброта (лат. Humanitas)
- Смирение (лат. Humilitas)

Фараби также считал, что мусульманину изначально присуща 5-добродетелей. Это: человечность, долг, вежливость, знание и верность слову.

Абу Нарс аль-Фараби, как и аль-Кинди, охватил много областей знания и стал первым в истории ислама, который создал единую философскую систему. Имя Фараби прочно вошло в историю мировой науки и культуры. Его труды оказали большое влияние на европейское Возрождение, став связующим мостом для сближения культур и философии Запада и Востока.

Целью сохранения культурного наследия каждого народа является сохранение культурных практик, ритуалов, обрядов, традиции и языков, чтобы поддерживать связь со своими корнями, укреплять чувство достоинства, которая в свою очередь способствует формированию позитивной и стабильной структуры в обществе.

Если сказать попроще это может означать: Культурное наследие — часть материальной и духовной культуры, созданная прошлыми поколениями и передающаяся будущим как нечто ценное и почитаемое.

В объект культурного наследия входят историко-культурные и природные комплексы, архитектурные ансамбли и сооружения, предприятия, организации и учреждения культуры, а также объекты, представляющие собой материальные, интеллектуальные и художественные ценности эталонного значения.

Важность сохранения культурного наследия заключается в том, что оно может дать возможность развить осознание самого себя, поможет понять и объяснить нам почему мы такие, какие мы есть, а не другие. Наследие должно быть основано на удивительном опыте, который вы получили в общении с людьми, в отношениях, которые вы выстроили, на том, как вы повлияли на жизни тех, кто для вас наиболее важен, оставив след в их сознании и жизни. Наследие является краеугольным камнем нашей культуры, которое играет важную роль в нашей политике, обществе, бизнесе и мировоззрении. Изучение и сохранение культурного наследия, являются необходимым условием предупреждения процесса разрушения и уничтожения национального богатства нашей страны. Освоение исторического наследия может способствовать сохранению духовности народа. В противном случае подлинная культура может уступить место ложным ценностям.

Приоритет духовно-нравственных ценностей является характерной особенностью индивидуального и общественного сознания граждан Узбекистана, которые гордятся великими предками своего народа, его научным и историческим наследием, гостеприимством и

трудолюбием.

Так как культурное наследие является отражением общества, и его сохранение жизненно важно для поддержания культурного разнообразия, укрепления чувства принадлежности и передачи знаний будущим поколениям. Культурное наследие играет решающую роль в жизни и истории, влияя на ценности, убеждения и чувство принадлежности.

Таким образом, культурное наследие может воспитать и принести уникальные плоды в формировании человека как личности, и его базовые национальные ценности. Приобщая молодёжь к наследию своего народа, мы воспитываем в них духовно-нравственные чувства, а оно неотделимо от воспитания чувства национальной гордости и ценности.

Использованная литература:

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ТЕНДЕНЦИИ СОЦИАЛЬНО-КУЛЬТУРНОГО РАЗВИТИЯ УЗБЕКИСТАНА В 1950-1980 ГОДЫ И ИХ ПОСЛЕДСТВИЯ

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В социально-политической и культурно-духовной истории Узбекистана вторая половина XX века занимает особое место. Она характеризуется тем что советский строй с его плано-директивной экономикой, с одной стороны достиг своего апогея и централизации государственной власти, а с другой –особенно в 80 годы углубился общественно-политический и экономический кризис.

Узбекистан превратился в относительно развитую аграрно-индустриальную республику 80 годы XX столетия, с полным решением вопроса о грамотности, гендерным равноправием и т.д. Однако политика центра, направленная на превращение Узбекистана в источник сырья и район интенсивного хлопководства, привела к застойным явлениям в сфере экономики. Однобокое развитие экономики, идеологический и административный диктат также отразился в социо-культурном развитии республики.

В эпоху т.н. «застоя» либерализация государственной культурной политики постепенно, стала ослабевать, а представители научной и творческой интеллигенции вновь начали подвергаться преследованиям и гонениям. К середине 1980-х годов административно-командная система была не в состоянии отвечать реалиям современной эпохи. Стала ощущаться настоятельная необходимость обновления всех аспектов жизни общества, его экономических основ, политического устройства, социальной и духовной сферы¹.

В кризисе социально-политической и духовно-нравственной системы, формировавшейся на протяжении нескольких десятилетий, немаловажную роль сыграла порочная национальная политика в рамках СССР, проводившаяся Центром по отношению к республикам в 80 годы XX столетия. Небезызвестно, что данная политика была заложена в самой идее советизации национальных окраин, в том числе и Узбекистана, тотальной интернационализации всей социально-экономической, общественно-политической и культурно-духовной жизни, принудительного навязывания восточным нациям и народностям европейского мышления и быта, ценностей и отношений.

Можно привести достаточно много сравнительно аналитических данных, которые при сопоставлении свидетельствовали бы, с одной стороны, о манипулировании статистическими материалами и несоответствии их исторической действительности, а с другой – о намеренной и целенаправленной политике тоталитарного режима по введению в заблуждение общественного мнения.

При монополизме центрального управления саморазвитие осуществлялось путем жесткого регулирования в строго определенное русло с ограничительными и усеченными правами и функциями. Как в свое время особо отмечали отечественные специалисты, «при такой ситуации каждая нация или народность была обречена на положение вассала, закрепощенного правовыми нормами, политическими стереотипами, нравственными догматами. Что касается внутринациональных закономерностей и тенденций саморазвития, то они, по сути дела, загонялись вглубь, а возникающие и выплескиваемые на поверхность общественной жизни острые и болезненные противоречия между интернациональным и

¹ См.: История Узбекистана (1917-1991). Ташкент, 2002. С. 240-250.

национальным тщательно маскировались и представлялись общественному мнению как вечно нетипичное и несущественное, как издержки и последствия феодально-патриархальных отношений, что не расцвет нации, а постепенное их угасание и исчезновение как самобытных и неповторимых общностей, выхолащивание подлинного национального духа определяли их перспективу и будущее»².

Так, если в 1930-е годы русскому языку за десять лет обучения отводилось в общей совокупности 400-500 часов, то в 1980-е годы в национальной школе за десятилетний период обучения уже планировалось, согласно программе, 1600-1850 часов, что составляло в среднем от 14 до 17 процентов бюджета учебного времени в средней школе³. В целом, в Узбекистане, начиная с 1-го класса и кончая институтом, для детей коренной национальности отводилось для изучения русского языка и литературы 3670 часов, тогда как родному языку – лишь 1675 часов⁴. Такое положение имело место и в других учебных образовательных и профессиональных учреждениях и заведениях. Например, в 1991 г. в вузах республики из общего числа студентов 39,5% занимались по всем предметам на узбекском, а 47,7% – на русском языке, хотя в студенческой среде доля узбеков достигала 63,5%, а русских - 15,8%⁵.

26 мая 1983 г. Центральным Комитетом КПСС и Советом Министров СССР было принято совместное постановление №473 «О дополнительных мерах по улучшению изучения русского языка в общеобразовательных школах и других учебных заведениях союзных республик»⁶, в котором говорилось о росте значения русского языка, «добровольно» принятого советскими людьми в качестве средства, межнационального общения⁷. Данное постановление обязывало уже на республиканском уровне осуществить дополнительные меры по повышению эффективности изучения русского языка в учебных заведениях с нерусским языком обучения.

В том числе данное постановление как «руководство к исполнению» отразилось и в деятельности печатных организаций республики, согласно которому было принято решение коллегии Государственного комитета УзССР по делам издательств, полиграфии и книжной торговли от 12 августа 1983 г., где в одном из пунктов отмечалось: «...Обеспечить неуклонное увеличение выпуска художественных иллюстрированных книг для детей дошкольного и младшего школьного возраста на русском языке в серии «Я учу русский язык», практиковать издание книг для этой категории читателей с параллельными текстами на русском и национальных языках»⁸.

В связи с насаждением так называемой советской культуры и ростом «популярности» русского языка постепенно сокращалось число научных трудов, издаваемых на узбекском языке. Если в 1960 г. на узбекском языке было издано 1060 названий книг, то в 1987 г. их число снизилось до 936 названий. В 1980 г. в республике издавалось 83 журнала, 48 из них - на русском языке. В 1985 г. более 80% научных трудов было издано на русском языке, 16% - на иностранных и только 4% - на узбекском. В библиотеках и книжных магазинах также было мало художественной литературы на узбекском языке⁹.

²Там же. С. 92.

³Там же. С. 95-96.

⁴Атамуратов С. Национальное самосознание и интернациональное воспитание. Ташкент, 1991. С. 99-100.

⁵Шермухамедов С.Ш. На языке единства. Ташкент, 1991. С. 43.

⁶НАРУз.Ф.2536, оп.1, ед. хр. 3266, л. 10.

⁷Там же. Л.11.

⁸Там же. Л. 13.

⁹История Узбекистана (1917-1991)... С. 241

Между тем, за период 1980-1989 г. численность узбеков увеличилась на 3,6 млн. чел., тогда как число проживающих в республике русских оставалось в пределах 1,6 млн. чел. По нашим подсчетам, здесь складывалась парадоксальная ситуация, когда на одного представителя русской национальности число изданий на русском языке выросло с 7 до 12 экземпляров, в то время как на узбекском языке этот показатель увеличился только с 2,1 до 2,4 изданий на одного жителя коренной национальности¹⁰. Из общего числа научных изданий, например, Институтом истории АН Узбекистана за 1981–1987 гг. доля публикаций на узбекском языке составляла лишь 8%¹¹.

Знание русского языка выступало своеобразным критерием профессиональной зрелости и подготовленности национальных кадров, уровня развитости и цивилизованности нации, ее социальной и интеллектуальной дееспособности, тогда как узбекскому языку придавалась роль средства общения на бытовом уровне, а сфера его употребления и использования не распространялась далее обыденных межличностных отношений.

Политика в области формирования исторического сознания использовалась для атрофирования в памяти народа тысячелетнего периода пути своего развития. Например, в советское время в учебных программах для общеобразовательных школ с 5 – по 10-е классы на изучение истории СССР отводилось 374 ч., всеобщей истории – 612 ч., тогда как на изучение истории Узбекской ССР – всего лишь 50 ч. из общего количества часов по истории СССР. Причем, распределялись они следующим образом: 7-й класс – 8 ч., 8-й класс – 3 ч., 9-й класс – 7 ч., 10-й класс – 6 ч. Остальные 16 ч. были запланированы в учебных программах как факультативные¹².

Разрушению подвергались многие объекты истории: согласно подсчетам специалистов в начале XX века количество памятников зодчества превышало 40 000, из которых ныне сохранилось лишь около 10 000¹³. До октября (год?) в Самарканде имелось 150 мечетей и медресе, в Ташкенте – 300, Бухаре – 430, Андижане – 387 и т.д., которые были не только очагами ислама, но и истории культуры народа. Многие из них в годы советской власти подверглись уничтожению. В 1989 г., например, в Наманганской области действовало лишь 3, в Ферганской – 4, а в Кашкадарьинской, Сурхандарьинской, Сырдарьинской и Хорезмской областях и того меньше мечетей.

В целом национальная политика советского руководства на протяжении длительного исторического периода была направлена на достижение социальной однородности ради формирования в многонациональном государстве единой общности – советского народа. Прежде всего, это делалось путём принудительного отказа наций и народностей от самобытности мышления, этнической психологии и самосознания, т. е. от существующих в реальности и реализуемых ими в образе жизни традиций и обычаев, активного внедрения в их среду и систему отношений непривычных и не всегда приемлемых для этнического миропонимания новых форм, например, советского типа или имеющих под собою чисто русскую основу¹⁴.

¹⁰ Народное хозяйство СССР в 1990 г. М., 1991. С. 237, 238.

¹¹ Атамуратов С. Национальное самосознание и интернациональное воспитание. Ташкент, 1991. С. 65.

¹² Правовое государство – независимость, нация, экономика. ... С. 99.

¹³ Рахматуллаев Ш.М., Абриев Р.Б. Ўзбекистонда тарихий-меъморий обидаларни сақлаш ва таъмирлаш соҳасининг ривожланиши: асосий йўналишлар ва натижалар // Тошкент ислом университети илмий-таҳлилий ахбороти. 2012. № 4. С. 45.

¹⁴ Правовое государство - независимость, нация, экономика. ... С. 102.

Противоречивость социо-культурного развития в тесной связи с позитивными переменами обозначили некоторые изменения и в духовной жизни советского общества. В частности, произошел количественный скачок в развитии культурной сети, в массах усилилось стремление к усвоению духовных ценностей, повысился общеобразовательный уровень населения. Так, в 1950 г. в школах была внедрена семилетняя, а в 1958 г. - восьмилетняя общая обязательная система образования, в 1970 г. - общее полное среднее образование (10 классов). В 1980 г. в Узбекистане функционировало 9445 средних школ, 222 средних специальных учебных заведения и 43 вуза. В них работало 36228 научных работников (из них более 1/3-доктора и кандидаты наук)¹⁵.

Показательно и то, что в то время в республике более одного миллиона человек трудились в сферах умственного труда (инженерно-технический персонал, врачи, средний медперсонал, преподаватели средних, средних специальных и высших школ, управление среднего и высшего звена, работники партийных органов и органов исполнительной власти). Учащиеся школ и студенты составляли 4,5-5 миллионов человек¹⁶.

Политика гласности предусматривала «смягчение» цензуры над СМИ (под надзором сверху), публикацию ряда ранее запрещенных книг, документов. В определенной степени было ограничено контроль цензуры в отношении издательского дела, производства фильмов, театральных представлений, были продемонстрированы ранее снятые, но запрещенные к показу (поставленные «на полку») фильмы. С развитием гласности общество обрело большую форму свободы слова. В итоге, несмотря на все усилия, предпринятые партаппаратом, с её предотвращением не удалось справиться. Многие публикации, книги, кино- и документальные фильмы на ранее запрещенные темы (например, о сталинизме и репрессиях), связанные с восстановлением исторической правды, способствовали переосмыслению истории и современности, отказу от исторических и социальных стереотипов, поиску новых ориентиров и перспектив развития страны. К сожалению, «перестройка» носила половинчатый характер. В результате застойные явления продолжали иметь место в экономической, литературной и духовно-просветительской сферах. В Узбекистане дело осложнялось надуманной компанией «Борьба с хлопковой мафией», сопровождаемой засылкой из Центра так называемых «десантов честности», огульным обвинением узбекского народа в массовой коррупции и приписок в хлопковом производстве. При этом ни И.Б. Усмонходжаев, ни Р.Н. Нишанов, стоявшие во главе республики, исходя из карьерных интересов, не стремились отстоять честь и достоинство узбекского народа¹⁷.

С приходом к руководству Узбекистана Ислама Каримова ситуация стала меняться. Так, став первым Президентом Узбекистана И.А. Каримов, предпринял энергичные усилия не только по стабилизации социально-экономической и культурно-духовной обстановки в республике, активизации издательского дела, предоставлению свободы слова, поддержке национальной интеллигенции.

Таким образом, ретроспективный анализ социо-культурного развития Узбекистана в с середины до 90-х годов XX столетия, выявил довольно сложную культурно-духовную картину, обусловленную: историческим наследием, дуальным характером социальных и духовных процессов, однобокой направленности ее модернизации, преобладанием в ней идеологического

¹⁵НАРУз. Ф. 2653, оп. №1, ед. хр. 4921, л. 153.

¹⁶Там же.

¹⁷История Узбекистана (1917-1991)... С. 251-252.

фактора. Основная проблема заключалась в несоответствии всё нарастающей потребности национальной составляющей и интернационализацией культурно-духовной сферы, плюс несбалансированным развитием социальной инфраструктуры. Осуществленная союзным руководством культурная и национальная политика, накладываемая на тяжелейшее социально-экономическое положение населения республики, обусловила дестабилизацию социально-политической и межнациональной обстановки к концу 1980-х годов.

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QUALITY LEVEL OF ART EDUCATION

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A student of the 3rd stage of the field of study "Production in the field of art"

Abstract: The quality phase of art education aims to improve quality and ensure effective teaching in the art education process. At this stage, pedagogical methods, curricula, materials and student evaluation systems are analyzed. By improving the quality of art education, it is aimed to develop students' creativity, aesthetic sense and interest in art. In this process, it is important to share experience, introduce innovative methods and train qualified teachers.

Key words: Art education, quality, pedagogical methods, educational programs, assessment system, creativity, aesthetic development, innovative methods, exchange of experience, qualified teachers.

It is known that in 2005, the third qualitative stage of the "National Personnel Training Program" began in our country. Based on this law, a perspective plan for the development of the quality of art education until 2010 was drawn up in our institute. In it, the organization of educational work at the level of the requirements of the quality stage of the "National Personnel Training Program", inculcating the idea of national independence in students, improving educational standards and programs, providing educational subjects with literature, to speed up the publication of study guides and textbooks, to use new tools of spiritual and educational work, to further strengthen disciplinary work related to student participation in classes, to ensure the high efficiency of personnel training at the institute's graduate school, professor- huge tasks were defined, such as to further increase the scientific and creative potential of teachers, to consistently carry out the policy of rejuvenating the teaching staff by supporting talented young people. Fulfillment of such tasks created the basis for further improvement of the basic concept of the continuous education system in the field of art.

Since the development of art education is inextricably linked with spiritual and educational education, the ultimate goal is to carry them out in harmony.

At the heart of the spiritual and educational work carried out at the institute are the tasks of forming a mature generation loyal to the idea of national independence, bringing up young people with independent and free thinking, strong will, complete faith, loyal to their country, and loving to their people.

At the heart of these efforts, firstly, to build the educational system of the institute – education, scientific research and spiritual-educational work on the basis of the advice given by our honorable President when he visited our institute, as well as the relevant work of the head of our country deep study of his works; secondly, to widely involve all the leading professors and teachers of the institute in conveying the essence of the special subject "The idea of national independence: basic concepts and principles" to the minds of every student through the tools of their fields; In order to increase the efficiency of the "Spiritual Day" events, to carry out spiritual and educational activities in a comprehensive manner throughout the day, to educate them in the spirit of patriotism, self-sacrifice, to organize excursions to museums, historical and independence-era monuments in the capital and regions, concerts, take to theaters; fourthly, the high potential of the institute, the great contributions of professors and teachers to strengthening the independence of our country with their selfless work and achievements, and educating our people, especially the young generation, in the spirit of national

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and universal values through their personal examples, and the creativity of the leaders who have been awarded high titles by our government. wide promotion of activities; in addition to these, spiritual and educational events held at various levels, pageants, contests, competitions organized at the level of the republic, region, city, celebration of historical and holiday dates, debates and discussions on current topics with the relations of the republic and region appearances on television and radio, articles published in the periodical press form the basis of these activities.

As a result of the work carried out based on the above factors, the moral level of the students of the institute is improving. In this process, attention to moral values has increased, special attention is being paid to the fight against vices, their prevention, and warning students about the possible dire consequences. For this purpose, comprehensive measures are being implemented in cooperation with law enforcement, health, religious authorities and other relevant organizations. With their participation, practical conferences, meetings, and roundtable discussions have been organized. Also, students are taken en masse to films, plays, staged shows created on current topics. Therefore, opportunities for students and young people to meaningfully spend their free time from studying have increased. More than 10 different clubs, clubs, and sports sections operate in the institute. All material and household conditions have been created for them in the student accommodation. As it is impossible to imagine education without training, it is possible to achieve a comprehensively mature and well-rounded generation by harmonizing education and training in the institute, and by comprehensive systematization.

During the following years, serious changes are taking place in the educational and methodological process of the State Art Institute of Uzbekistan. All educational and methodological normative documents of bachelor's and master's degrees of higher education will be reworked based on global requirements.

Improving the educational process, students' mastery of subjects, requires careful teaching of specialized subjects. The educational, creative and scientific works prepared by the students of the specialized departments are developed due to their careful mastering of the secrets of the field.

Professors and teachers of the departments of the institute are actively involved in the preparation of model curricula and educational literature for secondary special, vocational colleges and academic lyceums in the field of art. The program and educational literature were prepared and submitted to the Higher Education Coordination Council of the Ministry of Higher Education for discussion.

Teaching of professors based on modern information and pedagogical technologies is under control. A lot of information related to educational-methodical, scientific-creative, organizational-structural areas implemented in the institute was prepared, presented to the information technology center of the Ministry of Higher and Secondary Special Education, and posted on the website of the institute.

In order to bring the educational process closer to practice, the National Academic Drama Theater of Uzbekistan, the Opera and Ballet Theater named after Alisher Navoi, Drama Theater named after Abror Hidoyatov, Theaters of Youth and Young Audiences, Theaters of the Republic A close connection was established with puppet theater, "Ilhom" theater and other theaters in the republic. In addition to watching the works staged in them, our students also participate in the creation of such performances. This, in turn, serves to increase their skills.

The management of the institute plans to train art managers in order to prepare personnel who will respond to the conditions of the market economy.

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It will be possible to continuously improve the scientific and creative potential of professors and teachers. If in 1997 the scientific potential of professors and teachers of the institute was 29-30 percent, by now this indicator has exceeded 52 percent. In order to further increase the effectiveness of education, along with inviting highly qualified specialists from abroad, measures are also being taken to increase the scientific and creative potential of young teachers working at the institute through post-graduate studies and organization. In addition, the most talented masters who studied at the institute are being recruited to work in the departments, preparing the ground for the rejuvenation of the teaching staff.

Professors and teachers of the institute are conducting scientific research on art subjects on the basis of state grants. Currently, four topics have been submitted to the competition of innovation projects.

Complex studies are being conducted in the theoretical departments of the institute. As a result of the research carried out at the institute, textbooks and training manuals were created. For example: the teaching manual "Acting skills" by professors Jora Mahmudov and the multimedia "Stage battle" by Arsen Ismailov were duly awarded by taking pride of place in the Republican competition "The best training manual and textbook of the year". Active work is being done on the creation of multimedia and e-books. Two books prepared by the teachers of the institute were recognized as the best textbooks of the year.

In order to further improve the scientific potential, the materials of professor-teacher and student conferences, which are traditionally held every year, have been published. Since 2006, such materials have been published in the form of "Yilnoma". During these years, our professors and teachers participated in many national and international scientific-theoretical and creative-practical conferences, and their lectures were published as articles in foreign publications.

Since 2001, the newspaper "Kaldirgoch" has been regularly published in the institute in order to use the publishing works of students. Students of the Department of Art Studies and Journalism have been cooperating with a number of prestigious and popular newspapers of the republic.

In order to improve the scientific and creative qualifications of professors and teachers, they are sent to study at prestigious higher education institutions, professional development and retraining institutes in the republic and abroad, and "master-classes" of visiting experts from abroad are organized. In particular, the cooperation established with the Goethe Institute in Tashkent is giving good results in this regard. Noting that "Master-class" lessons have an important role for students in mastering specialized subjects, it is necessary to pay more attention to this aspect. The relations of professors and teachers of the institute with the countries of Independent Cooperation countries, which were temporarily interrupted, are being restored. In particular, the issue of establishing cooperation with the Moscow Academy of Arts and the National Academy of Arts of Kazakhstan was resolved. Recently, a group of students of the National Art Academy of Kazakhstan visited our institute. In the future, it is planned that the students of our institute will also conduct their internships in Almaty.

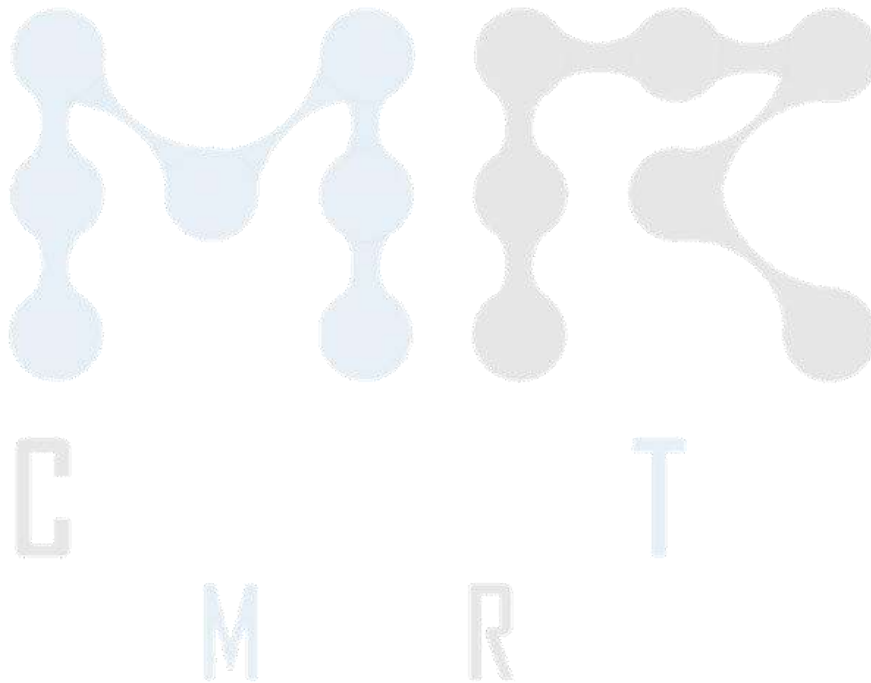
So, the political, socio-economic, and legal reforms carried out in our republic during the period of independence are reflected in all normative documents of art education and are implemented in the practice of the educational system of the institute. There is no doubt that the works carried out in order to further improve the quality of art education in the institute will make it possible to set more ambitious tasks in this field in the future and to fulfill them with dignity, and for this, ample opportunities are being mobilized.

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**НЕКОТОРЫЕ АСПЕКТЫ ИНКЛЮЗИВНОЙ КОМПЕТЕНЦИИ У
СТУДЕНТОВ НАПРАВЛЕНИЯ «СПЕЦИАЛЬНАЯ ПЕДАГОГИКА
(сурдопереводчик)**

**Студент 2 курса направления подготовки “Специальная педагогика”
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Аннотация: В статье рассмотрены инклюзивной компетенции у студентов, обучающихся по направлению "Специальная педагогика (сурдопереводчик)", которые помогут будущим сурдопедагогам осваивать не только профессиональные навыки, но и личностные качества, необходимые для работы в инклюзивной среде. Кроме этого раскрыты подходы к формированию инклюзивной компетенции, которая позволит определить, какие практические навыки, знания и черты характера необходимо развивать у студентов для их успешной профессиональной реализации.

Ключевые слова: инклюзивная, компетенция, студенты, специальная педагогика, сурдопереводчик, реализации.

Abstract: The article examines the inclusive competence of students studying in the special education (sign language interpreter) program, which will help future teachers of the deaf to master not only professional skills, but also personal qualities necessary for working in an inclusive environment. In addition, approaches to the formation of inclusive competence are disclosed, which will determine what practical skills, knowledge and character traits need to be developed in students for their successful professional implementation.

Keywords: inclusive, competence, students, special education, sign language interpreter, implementation.

Современное общество активно переходит к инклюзивной модели образования, которая направлена на создание доступной среды, где все учащиеся, независимо от их физических и ментальных особенностей, могут успешно обучаться и развиваться. Одной из приоритетных групп, требующих особой поддержки в образовательном процессе, являются люди с нарушениями слуха, для которых коммуникация с внешним миром часто бывает затруднена. Специалисты в области специальной педагогики, в частности сурдопереводчики, играют важную роль в организации инклюзивного образования для таких учащихся. Сурдопедагоги не только помогают глухим и слабослышащим студентам участвовать в образовательном процессе, но и способствуют их социальной адаптации. Поэтому актуальность исследования формирования инклюзивной компетенции у будущих специалистов-сурдопереводчиков обусловлена необходимостью подготовки таких специалистов, которые смогут эффективно поддерживать инклюзивные ценности и учитывать потребности каждого ученика.

Инклюзивная компетенция включает в себя не только языковые навыки, но и способность работать в команде, умение разрешать конфликты, готовность к непрерывному самообразованию. Эти навыки необходимы для успешной профессиональной деятельности в сфере сурдоперевода. Работа сурдопереводчика способствует интеграции людей с

нарушением слуха в общество, помогает им получить доступ к образованию, культуре и информации. Это повышает их качество жизни и способствует формированию более инклюзивного общества.

Внедрение инклюзивной компетенции в образовательные программы подготовки сурдопереводчиков позволило соответствовать требованиям профессиональных стандартов и повысить качество предоставляемых услуг. Выпускники, обладающие инклюзивной компетенцией, будут более востребованы на рынке труда и смогут успешно реализовать свой потенциал в профессиональной деятельности. Исследование аспектов формирования инклюзивной компетенции позволит расширить научные знания в данной области и разработать эффективные методики обучения.

Инклюзивная компетенция — это набор знаний, умений, навыков и личностных качеств, которые позволяют человеку успешно взаимодействовать с людьми с ограниченными возможностями здоровья в рамках инклюзивного образования. Она включает понимание особенностей различных нарушений, умение находить общий язык с людьми с инвалидностью, готовность к сотрудничеству и взаимодействию. Структура инклюзивной компетенции может включать следующие элементы:

а) знаниевые компоненты, такие как понимание принципов инклюзивного образования и законодательства в этой сфере, знание особенностей различных нарушений здоровья и способов их учёта в образовательном процессе, ознакомление с методиками и технологиями инклюзивного обучения.

б) деятельностные компоненты, такие как умение применять знания и навыки на практике, взаимодействуя с людьми с разными возможностями здоровья, способность разрабатывать и реализовывать инклюзивные программы и проекты, готовность к решению возникающих проблем и конфликтов в инклюзивном образовательном процессе.

в). Личностные качества, такие как толерантность и уважение к разнообразию, открытость и готовность к общению с людьми с различными нарушениями, эмпатия и умение слушать других, гибкость и адаптивность к изменяющимся условиям.

Инклюзивная компетентность позволяет специалистам успешно работать в условиях инклюзивного образования, обеспечивая равные возможности для всех участников образовательного процесса. Она способствует созданию благоприятной образовательной среды, где каждый человек может реализовать свой потенциал.

Сурдопереводчик должен свободно владеть жестовым языком, чтобы обеспечить полноценное общение между людьми с нарушениями слуха и остальными участниками коммуникации. Важно понимать особенности восприятия речи людьми с разными нарушениями слуха, чтобы адаптировать свою работу под их потребности. Современные технологии, такие как видео- и аудиооборудование, позволяют улучшить качество перевода и упростить коммуникацию. Кроме этого работа с людьми, имеющими нарушения слуха, требует эмпатии, терпения и умения находить общий язык. Каждый человек с нарушением слуха уникален, поэтому важно учитывать его потребности и особенности при организации перевода. Люди с нарушениями слуха могут испытывать трудности в общении, поэтому сурдопереводчику важно сохранять спокойствие и терпение. Общение с ними может быть эмоционально насыщенным, поэтому сурдопереводчик должен быть готов поддержать собеседника и помочь ему справиться с эмоциями. Важно следить за выражением лица, мимикой и жестами, чтобы правильно понять смысл высказывания и передать его на

жестовом языке. В зависимости от ситуации могут потребоваться различные методы и подходы к переводу, поэтому сурдопереводчик должен уметь адаптироваться к условиям общения.

Поэтому подготовка сурдопереводчиков должна включать изучение не только жестового языка, но и особенностей работы с людьми, имеющими различные нарушения слуха. Это позволит обеспечить эффективное общение и интеграцию людей с нарушением слуха в общество.

В нашей трактовке инклюзивная компетенция — это способность специалиста работать с людьми, имеющими разные образовательные и физические потребности, используя методы, направленные на обеспечение равного участия всех учащихся в образовательном процессе. Основными составляющими инклюзивной компетенции которой являются умение понимать и принимать различия в потребностях, а также поддерживать психологический комфорт учащихся, способность адаптировать материалы, учебные планы и методы преподавания под индивидуальные особенности и потребности каждого студента, владение способами коммуникации, включая жестовый язык и альтернативные формы общения, что особенно важно для работы с людьми с нарушениями слуха, уважение к правам и достоинству каждого учащегося, что позволяет специалисту строить доверительные отношения с людьми с особыми потребностями и их семьями.

Инклюзивное образование представляет собой систему, в которой создаются условия для включения всех учащихся в образовательный процесс. Оно направлено на устранение барьеров, препятствующих участию в учебе и социальном взаимодействии. Инклюзивная модель обеспечивает доступность образования для всех категорий учащихся, включая тех, кто имеет физические, ментальные или сенсорные особенности; равные возможности для получения знаний и навыков, что способствует повышению качества жизни людей с ограниченными возможностями; инклюзивное образование позволяет учащимся с особыми потребностями взаимодействовать со сверстниками, развивая навыки общения и адаптации к социальным условиям. В рамках этой модели сурдопедагоги играют важную роль в преодолении барьеров между людьми с нарушениями слуха и остальным обществом, делая образовательный процесс комфортным и доступным для всех.

Формирование инклюзивной компетенции у сурдопереводчиков крайне важно, так как они работают с глухими и слабослышащими людьми, способствуя их успешному обучению и социальной адаптации. Инклюзивная компетенция позволяет будущим специалистам эффективно работать в инклюзивной среде: подготовленные сурдопедагоги лучше понимают, как адаптировать учебный процесс под потребности учащихся с нарушениями слуха, укреплять социальные связи между учениками с особыми потребностями и их сверстниками, что способствует развитию инклюзивного общества, развивать профессиональную устойчивость: специалисты, обладающие инклюзивной компетенцией, лучше готовы справляться с трудностями, возникающими в процессе работы с разнообразными категориями учащихся, и адаптироваться к изменяющимся образовательным условиям.

Таким образом, инклюзивная компетенция становится не только профессиональным требованием для сурдопедагогов, но и важной частью их личностного развития, помогая им быть более гибкими, понимающими и готовыми к вызовам инклюзивной среды. Инклюзивной компетенцией студентов направления подготовки «Специальная педагогика

(сурдопереводчик)» обусловлена современными тенденциями инклюзивного образования, растущей потребностью в сурдопереводчиках и необходимостью повышения качества подготовки специалистов в данной области.

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Semantic-paradigmatic analysis of medical terminology

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Abstract:

This article explores the semantic-paradigmatic analysis of medical terminology, focusing on the relationships and structures that underpin medical language. By examining the paradigmatic relationships between terms, this study aims to elucidate the complexity of medical vocabulary and its implications for clinical communication. Findings suggest that understanding these relationships can improve clinical decision-making and patient comprehension.

Keywords: Semantic analysis, medical terminology, paradigmatic relationships, clinical communication, healthcare terminology.

Introduction:

Medical terminology is essential for effective communication in healthcare, serving as a precise language that conveys complex information. However, the multifaceted nature of medical terms can lead to misunderstandings among healthcare professionals and between providers and patients. A semantic- paradigmatic analysis—focusing on the relationships and meanings of terms within a given context—provides insight into these complexities. This article aims to investigate the paradigmatic structures of medical terminology, emphasizing their relevance for improving clarity in clinical settings. By employing semantic- paradigmatic analysis, healthcare professionals can enhance their understanding of medical language, leading to improved communication, education, and patient care. This approach not only clarifies complex terminology but also fosters a more cohesive understanding of medical concepts, ultimately benefiting both practitioners and patients. One effective method for this analysis is semantic- paradigmatic analysis, which explores the meanings of terms and their relationships within the medical lexicon.

Key concepts:

Semantics: This aspect focuses on the meaning of medical terms. Understanding semantics is essential for clarity in diagnosis and treatment. For instance, distinguishing between "acute" and "chronic" not only defines the duration of a condition but also implies different management strategies.

Paradigms: In linguistic terms, a paradigm is a group of related words that share a common context. In medicine, this can include terms that describe similar conditions or categories. For example, "antibiotic," "antiviral," and "antifungal" form a paradigm related to antimicrobial agents, helping healthcare providers understand their roles in treatment.

Contextual Relationships: Medical terms often acquire specific meanings based on their usage in clinical practice. Analyzing these contextual relationships helps clarify the connotations and implications of terms in different scenarios.

Interrelationships: This involves examining how medical terms relate to one another, including synonyms, antonyms, and hierarchical structures.

Understanding these relationships enhances comprehension and aids in the accurate application of terminology in practice.

Methods:

A qualitative analysis was conducted, incorporating data from various medical dictionaries, terminologies, and databases such as the Unified Medical Language System (UMLS) and SNOMED CT. Key terms were selected based on their frequency and importance in clinical practice. The analysis focused on the following aspects:

1. **Paradigmatic Relationships:** Examining synonyms, antonyms, and related terms within the medical lexicon.
2. **Semantic Fields:** Identifying groups of terms that share a common semantic theme (e.g., cardiology, oncology).
3. **Contextual Usage:** Analyzing how terms function within clinical narratives, such as patient records and diagnostic reports.

Semantic fields consist of terms that share a common theme or relate to a specific domain of knowledge. In medicine, these fields can encompass various specialties and concepts. Examples include:

1. Anatomy:

Terms: Heart, lung, liver, kidney, artery, vein.

Context: Understanding these terms in relation to human anatomy aids in diagnosing and discussing organ functions and diseases.

2. Pathology:

Terms: Inflammation, infection, necrosis, neoplasm, metastasis.

Context: These terms describe disease processes and conditions, allowing healthcare professionals to communicate effectively about patient diagnoses and treatment plans.

3. Pharmacology:

Terms: Antibiotics, analgesics, antihypertensives, anticoagulants.

Context: Knowledge of drug classes and their uses is essential for prescribing and managing medications, improving patient safety. Diagnostic Procedures:

Terms: MRI, CT scan, biopsy, ultrasound, X-ray.

Context: Familiarity with these terms helps clinicians discuss diagnostic options and interpret results effectively.

4. Clinical Symptoms:

Terms: Pain, fatigue, fever, nausea, dizziness.

Context: Understanding symptoms within their semantic field aids in patient assessment and clinical evaluation.

Results:

The analysis revealed several significant findings:

Synonymy and Polysemy: Polysemy occurs when a single term possesses multiple related meanings. In the medical field, this can lead to confusion if the specific meaning is not clear from context. Examples include:

1. **"Tumor":** This term can refer to a benign growth or a malignant neoplasm. The context in which it is used is crucial for interpretation.
2. **"Vaccine":** While primarily referring to a substance used to stimulate an immune response, it can also denote the process of vaccination itself.

Homonymy refers to terms that are pronounced or spelled the same but have different meanings. This can create ambiguity in medical communication.

Examples include:

1. **"Bark":** In a medical context, this could refer to the outer covering of a tree or an informal term for the sound made by a dog, potentially leading to misunderstandings if used metaphorically in clinical notes.
2. **"Lead":** This term may refer to the heavy metal (Pb), which is toxic, or it could denote guiding a patient in treatment, such as "lead a patient through therapy."

Many medical terms exhibit synonymy, where different terms refer to the same concept (e.g., "myocardial infarction" vs. "heart attack"). Conversely, polysemous terms can have multiple meanings depending on context (e.g., "stroke" can refer to both a medical condition and a type of therapy).

Semantic Fields: Terms within specific fields showed strong interrelations, such as terms related to cardiovascular diseases that are often grouped together (e.g., "hypertension," "arrhythmia," "atherosclerosis"). Understanding these fields helps clinicians to navigate and apply terminology more effectively.

1. **Clinical Context:** The contextual analysis demonstrated that the meaning of medical terms often shifts based on their usage in clinical documentation
2. For instance, "diagnosis" may imply different processes depending on whether it is used in a general practice or specialist setting.

Discussion:

The findings highlight the complexity inherent in medical terminology and the importance of semantic-paradigmatic analysis in enhancing understanding.

Recognizing synonyms and related terms allows healthcare professionals to communicate more effectively, particularly in multidisciplinary teams where terminology may vary. Furthermore, a deeper understanding of semantic fields can improve diagnostic accuracy and patient education.

However, challenges remain in standardizing terminology across diverse clinical settings. The variability of usage can lead to confusion, especially in interdisciplinary communications. Future research should focus on developing standardized frameworks that incorporate semantic-paradigmatic principles to enhance clarity and consistency in medical communication.

Conclusion

The semantic-paradigmatic analysis of medical terminology offers invaluable insights into the intricate structure and interrelationships that underpin medical language. By delving into the meanings of terms and their contextual usage, we can unravel the complexities that often lead to misunderstandings in clinical settings. This approach not only clarifies individual terms but also highlights how they function together within paradigms, enhancing the overall coherence of medical discourse.

Improving our understanding of these relationships is pivotal for fostering effective communication among healthcare professionals. Clear communication is essential for accurate diagnosis, treatment planning, and interdisciplinary collaboration.

When healthcare providers share a common understanding of terminology, it minimizes the risk of errors, enhances patient safety, and facilitates more efficient healthcare delivery.

Furthermore, this analysis plays a crucial role in patient education. By utilizing clear and consistent language, healthcare providers can improve patients' comprehension of their conditions, treatment options, and care processes. This not only empowers patients to take an active role in their healthcare but also helps to build trust and rapport between patients and providers, ultimately leading to better adherence to treatment plans and improved health outcomes.

As the medical field continues to evolve—especially with the advent of telemedicine, electronic health records, and interdisciplinary care teams—a focus on semantic clarity becomes increasingly essential. The diverse backgrounds of healthcare professionals, combined with the rapid expansion of medical knowledge, can exacerbate potential communication barriers. Thus, standardizing terminology and promoting a shared understanding across disciplines will be critical for effective collaboration and coordinated patient care.

In conclusion, embracing semantic-paradigmatic analysis within medical terminology not only enhances the clarity and effectiveness of communication but also serves as a foundation for improved patient outcomes. As we advance in healthcare practices, prioritizing semantic clarity will be vital in bridging the gaps in understanding and fostering a more integrated and patient-centered approach to care. By investing in training and resources that emphasize the importance of this analysis, the healthcare community can ensure that all stakeholders—providers, patients, and caregivers—are equipped to navigate the complexities of medical language confidently and competently.

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Научный стиль современного русского языка Заключение.

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Аннотация: Научный стиль современного русского языка характеризуется высокой степенью формальности, логичностью и точностью. Он используется для передачи научной информации и знаний в различных областях, таких как естественные и гуманитарные науки. Основные черты научного стиля включают:

1. Терминологичность: Использование специальной терминологии, что позволяет точно передавать концепции и идеи.
2. Логическая структура: Тексты организованы в четкой последовательности, включая введение, основную часть и заключение.
3. Объективность: Предпочтение безличных конструкций, что помогает избежать субъективных оценок и эмоций.
4. Статистические данные и факты: Широкое использование эмпирических данных, графиков и таблиц для подтверждения выводов.
5. Сжатость и лаконичность: Изложение мыслей в ясной и краткой форме без избыточных словесных украшений.
6. Цитирование источников: Принятие норм академического цитирования для подтверждения достоверности представленных данных. Научный стиль играет важную роль в распространении знаний, обеспечивая их доступность для исследователей, студентов и широкой аудитории.

Ключевые слова: объективность, логичность, точность, стандартная лексика, формальность, аргументированность, краткость,

Введение.

Научный стиль является одним из основных функциональных стилей современного русского языка. Он используется в научной и учебной деятельности, а также в профессиональной сфере для передачи знаний, результатов исследований и обмена информацией между специалистами. Научный стиль характеризуется четкостью, логичностью, объективностью и формальностью.

Основной целью научного стиля является донесение информации до читателя с максимальной ясностью и точностью. Это достигается за счет использования специализированной терминологии, строгости в построении предложений и логической последовательности изложения материала. Научные тексты часто включают исследовательские статьи, диссертации, монографии, учебники и другие виды публикаций.

Научный стиль имеет свои особенности, которые отличают его от других функциональных стилей языка. Во-первых, это высокий уровень абстракции и обобщения. Во-вторых, отсутствие эмоциональной окраски и субъективных оценок делает текст более объективным. В-третьих, использование сложносочиненных и сложноподчиненных предложений позволяет глубже раскрыть тему исследования.

Современный русский язык в научном стиле также подвержен изменениям под воздействием новых научных открытий и технологических новшеств. Это накладывает отпечаток на лексику и грамматику научных текстов, что требует от авторов постоянного обновления знаний и навыков.

Таким образом, изучение особенностей научного стиля современного русского языка является важным аспектом как для ученых и исследователей, так и для студентов и аспирантов, стремящихся к успешному овладению навыками написания научных текстов. В дальнейших разделах работы будут рассмотрены ключевые характеристики научного стиля, его структура и функции в контексте современного общества.

Научный стиль современного русского языка представляет собой одну из основных функциональных разновидностей речи, предназначенную для передачи научной информации и знаний. Он играет ключевую роль в развитии науки и образования, обеспечивая точность, ясность и однозначность выражения мыслей.

Введение в научный стиль включает в себя несколько аспектов:

1. Определение научного стиля: Научный стиль отличается от других стилей (художественного, публицистического и др.) своей целью – передать объективные знания, факты и выводы на основе эмпирических данных и логического анализа. Он ориентирован на профессиональную аудиторию и предполагает высокий уровень абстракции.

2. Характерные черты: Научный стиль характеризуется использованием специфической терминологии, строгой логической структурой изложения, а также отсутствием эмоциональной окраски. Важным аспектом является четкость формулировок и последовательность аргументации.

3. Структура научного текста: Научные работы обычно имеют четкую структуру, состоящую из введения, основной части (где излагаются теоретические основы, методы исследования и результаты), заключения и списка литературы. Это способствует систематизации информации и облегчает восприятие читателями.

4. Функции научного стиля: Основная функция – информирование о результатах исследований, обмен знаниями между учеными и специалистами в данной области. Также важным аспектом является создание базы для дальнейших исследований.

5. Актуальность изучения: В условиях быстрого развития науки важно не только понимать принципы научного стиля, но и развивать навыки его применения для эффективной коммуникации в профессиональной среде.

Таким образом, изучение научного стиля современного русского языка является необходимым для успешной деятельности как ученых, так и студентов, стремящихся к глубокому пониманию предмета своей исследовательской деятельности.

Основная часть: Научный стиль современного русского языка характеризуется определенными особенностями, которые отличают его от других стилей. Основная часть научного стиля включает в себя следующие ключевые аспекты:

1. Лексические особенности

Научный стиль использует специализированную лексику, термины и понятия, относящиеся к определенной области знаний. Это позволяет точно передавать информацию и избегать двусмысленностей. Важно использовать унифицированные термины, принятые в данной научной дисциплине.

2. Синтаксические конструкции

Синтаксис научного текста обычно строится на сложносочиненных и сложноподчиненных предложениях. Это способствует более глубокому раскрытию темы и логическому связыванию идей. Часто используются пассивные конструкции, что делает акцент на действии или результате, а не на субъекте.

3. Структура текста

Научные работы имеют четкую структуру, которая включает введение, основную часть и заключение. Во введении формулируется цель и задачи исследования, а также обоснование выбора темы. Основная часть делится на главы и параграфы, где последовательно излагаются материалы исследования, методы и результаты. Заключение подводит итоги и предлагает рекомендации.

4. Объективность и нейтральность

Научный стиль стремится к объективности: авторы должны избегать личных суждений и эмоциональной окраски текста. Это достигается использованием безличных конструкций и формального языка.

5. Аргументация

В научном тексте важна логическая аргументация представленных идей. Все утверждения должны быть подтверждены данными исследований или ссылками на авторитетные источники.

6. Цитирование

В научных работах необходимо правильно оформлять цитаты и ссылки на использованные источники информации. Это не только подтверждает достоверность данных, но и демонстрирует знание литературы по теме.

Примеры использования

При написании научной статьи исследователь может начать с общей проблемы в области науки (введение), затем описать методику проведения экспериментов (основная часть), представить результаты (анализ данных) и закончить выводами о значении полученных результатов (заключение).

Таким образом, научный стиль современного русского языка является важным инструментом для передачи знаний в академической среде, обеспечивая ясность, точность и объективность информации.

Заключение. Заключение в научном стиле современного русского языка играет важную роль в структурировании научного текста. Оно подводит итоги исследования, обобщает основные выводы и акцентирует внимание на значимости полученных результатов.

Основные характеристики заключения:

1. Сжатость и ясность: Заключение должно быть кратким, но информативным. Важно избегать избыточных деталей и сосредоточиться на ключевых моментах.

2. Обобщение результатов: Здесь следует подчеркнуть основные выводы исследования, их значимость и возможные применения. Это может быть как теоретическое обобщение, так и практические рекомендации.

3. Перспективы дальнейших исследований: В заключении часто указываются направления для будущих исследований, что открывает новые горизонты для научной работы.

4. Логическая завершенность: Текст должен логически завершать всю работу, связывая введение, основные части и выводы в единое целое.

5. Официальный стиль: Использование формального языка без разговорных выражений и эмоциональных окрашиваний сохраняет серьезность научного изложения.

Таким образом, заключение является неотъемлемой частью научного текста, которое позволяет читателю четко понять результат проведенного исследования и его значение в рамках выбранной темы.

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Energetik ichimliklarni qo'llashda kalamushlarning oshqozon-ichak traktining morfologik ko'rinishlari

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Annotatsiya: Ushbu tadqiqot energetik ichimliklarning kalamushlarning oshqozon-ichak traktining morfologik ko'rinishlariga ta'sirini o'rganishga qaratilgan. Energetik ichimliklar, odatda, kofein, taurinsiz va vitaminlar kabi faol komponentlarni o'z ichiga oladi va insonlar orasida ularni iste'mol qilishning ortishi bilan birga, hayvonlar uchun ham bu ichimliklarning ta'siri muhim ahamiyat kasb etadi. Tadqiqot jarayoni davomida kalamushlarga turli dozadagi energetik ichimliklar berilib, ularning oshqozon-ichak traktining morfologik tuzilishi va funksional holati kuzatildi. Morfologik tahlil natijalari shuni ko'rsatdiki, yuqori dozalarda energetik ichimliklarni iste'mol qilish kalamushlarning oshqozon-ichak trakti mukozasida o'zgarishlarga olib keldi. Ushbu o'zgarishlarga mukozaning qalinlashuvi, shilliq qavatining yallig'lanishi va mikroflora balansining buzilishi kiradi. Natijalar shuni ko'rsatdiki, energetik ichimliklar kalamushlarning oshqozon-ichak traktiga salbiy ta'sir ko'rsatishi mumkin va uzoq muddatli iste'mol natijasida jiddiy morfologik o'zgarishlarga olib kelishi mumkin. Ushbu tadqiqot natijalari kelajakda energetik ichimliklarni iste'mol qilish xavflarini baholashda yordam berishi va hayvonlar sog'lig'ini saqlash bo'yicha tavsiyalar ishlab chiqishda foydalanilishi mumkin.

Kalit so'zlar: energetik ichimliklar, kalamushlar, oshqozon-ichak trakti, morfologiya, yallig'lanish.

Аннотация: Целью данного исследования является изучение влияния энергетических напитков на морфологические особенности желудочно-кишечного тракта крыс. Энергетические напитки, как правило, не содержат кофеина и таурина и содержат активные ингредиенты, такие как витамины, и по мере увеличения их потребления среди людей их влияние на животных также становится важным. В ходе исследования крысам давали разные дозы энергетических напитков и наблюдали за морфологической структурой и функциональным состоянием их желудочно-кишечного тракта. Результаты морфологического анализа показали, что употребление высоких доз энергетических напитков вызывало изменения слизистой оболочки желудочно-кишечного тракта крыс. К этим изменениям относятся утолщение слизистой оболочки, воспаление слизистой оболочки и нарушение баланса микрофлоры. Результаты показали, что энергетические напитки могут оказывать негативное воздействие на желудочно-кишечный тракт крыс и вызывать серьезные морфологические изменения в результате длительного употребления. Результаты этого исследования могут помочь в будущей оценке риска потребления энергетических напитков и использоваться при разработке рекомендаций по здоровью животных.

Ключевые слова: энергетические напитки, крысы, желудочно-кишечный тракт, морфология, воспаление.

Abstract: This study aims to study the effect of energy drinks on the morphological features of the gastrointestinal tract of rats. Energy drinks are generally caffeine-free, taurine-free, and contain active ingredients such as vitamins, and as their consumption increases among humans, their effects on animals are also becoming important. During the research process, rats were given different doses of energy drinks, and the morphological structure and functional state of their gastrointestinal tract was observed. The results of the morphological analysis showed that consumption of high doses of energy drinks caused changes in the mucosa of the gastrointestinal tract of rats. These changes include thickening of the mucous membrane, inflammation of the mucous membrane and disturbance of microflora balance. The results showed that energy drinks can have a negative effect on the gastrointestinal tract of rats and can cause serious morphological changes as a result of long-term consumption. The results of this study may help in the future risk assessment of energy drink consumption and be used in the development of animal health recommendations.

Key words: energy drinks, rats, gastrointestinal tract, morphology, inflammation.

Kirish: Energetik ichimliklar, odatda, kofein, taurin, vitaminlar va boshqa qo'shimchalar bilan boyitilgan suyuqliklardir. Ularning inson organizmiga ta'siri keng o'rganilgan bo'lsa-da, hayvonlar, xususan kalamushlarda ham bu ichimliklarning ta'siri o'rganilmoqda.

Kalamushlar oshqozon-ichak traktining morfologik ko'rinishlari energetik ichimliklarni iste'mol qilgandan so'ng qanday o'zgarishini o'rganish uchun muhimdir. Bu tadqiqotlar orqali quyidagi jihatlarga e'tibor qaratish mumkin:

1. Oshqozon va ichak tuzilishi: Energetik ichimliklarning tarkibidagi moddalar oshqozon va ichakning tuzilishiga qanday ta'sir ko'rsatishini aniqlash zarur. Masalan, oshqozon devorining qalinligi yoki ichaklarning villuslari (kichik ip shaklidagi tuzilmalar) o'zgarishi mumkin.

2. Morfologik o'zgarishlar: Energetik ichimliklarni iste'mol qilishdan keyin kalamushlarning oshqozon-ichak traktida yuzaga keladigan morfologik o'zgarishlarni aniqlash muhimdir. Bunga mukozal qatlamning holati, qondagi qon tomirlari soni va ularning rivojlanishi kiradi.

3. Patologik holatlar: Energetik ichimliklarga doimo murojaat qilish kalamushlarda patologik holatlarning rivojlanishiga olib kelishi mumkinmi? Muntazam ravishda iste'mol qilinadigan moddalar ovqat hazm qilish tizimida yallig'lanish yoki boshqa kasalliklarga sabab bo'lishi mumkin.

4. Fiziologik javoblar: Kalamushlarning energiya almashinuvi, ovqat hazm qilish jarayonlari va umumiy sog'liq holatini qanday ta'sir qilishi ham tadqiqot obyekti bo'lishi kerak.

Ushbu jihatlarni hisobga olib, energetik ichimliklarni kalamushlarda iste'mol qilish jarayonida oshqozon-ichak traktining morfologik ko'rinishini chuqur tahlil qilish imkonini beradi. Bu esa nafaqat hayvon anatomiyasi va fiziologiyasi bo'yicha bilimlarni kengaytiradi, balki inson sog'lig'i uchun ham muhim istiqbollarni ochib beradi.

Energetik ichimliklar va kalamushlarning oshqozon-ichak traktining morfologik ko'rinishlari

Energetik ichimliklar zamonaviy hayot tarzining ajralmas qismi bo'lib, ular ko'plab insonlar uchun energiya manbai sifatida xizmat qiladi. Ushbu ichimliklar odatda kofein, taurine, vitaminlar va boshqa qo'shimchalar bilan boyitilgan bo'lib, ularning iste'moli inson organizmiga turli

ta'sirlarni ko'rsatishi mumkin. Biroq, bu ichimliklarning hayvonlar, xususan kalamushlar organizmiga qanday ta'sir qilishi haqida kam ma'lumot mavjud. Ushbu esseyda kalamushlarning oshqozon-ichak traktining morfologik o'zgarishlari energetik ichimliklarni iste'mol qilish natijasida qanday o'zgarishini ko'rib chiqamiz.

Energetik ichimliklarning tarkibi

Energetik ichimliklar asosan kofein, taurine va B vitaminlari kabi moddalarni o'z ichiga oladi. Kofein markaziy nerv sistemasi stimulant sifatida tanilgan bo'lib, u kuchli energiya beruvchi ta'sirga ega. Taurine esa yurak faoliyatini yaxshilash va mushak faoliyatini qo'llab-quvvatlash uchun muhim hisoblanadi. B vitaminlari esa metabolizmni tezlashtirishda rol o'ynaydi.

Kalamushlarning oshqozon-ichak trakti

Kalamushlarning oshqozon-ichak trakti (OIT) murakkab morfologik tuzilishga ega bo'lib, ovqat hazm qilish jarayonida muhim rol o'ynaydi. Unga og'iz bo'shlig'i, oshqozon, ingichka va qalin ichak kiradi. OITning normal ishlashi organizmning umumiy sog'lig'i uchun juda muhimdir.

Energetik ichimliklarning ta'siri

Energetik ichimliklarni iste'mol qilish kalamushlarning OITidagi bir qator morfologik o'zgarishlarga olib kelishi mumkin:

1. Oshqozon mukozasi: Kofein va boshqa kimyoviy moddalarning yuqori konsentratsiyasi oshqozon mukozasida yallig'lanishga olib kelishi mumkin. Bu yallig'lanish oshqozonda yaralar paydo bo'lishi yoki mukozaning noqulayligini keltirib chiqarishi mumkin.

2. Ichak florasi: Energetik ichimliklarni muntazam ravishda iste'mol qilish bakterial flora ga salbiy ta'sir ko'rsatishi mumkin. Bu esa oziqlanishning yomonlashishi va ovqat hazm qilish jarayonining buzilishiga olib keladi.

3. Qorin og'rig'i va dispepsiya: Kofeinning yuqori darajasi qorin og'rig'i yoki dispepsiya (oshqozon faoliyatining buzilishi) kabi simptomlarga sabab bo'lishi mumkin.

4. Metabolizm: Energetik ichimliklar metabolizmni tezlashtirishga yordam beradi, bu esa kalamushlarda ovqat hazm qilish jarayonini tezlashtirishi mumkin.

Asosiy qism: Energetik ichimliklarni qo'llash va ularning kalamushlarning oshqozon-ichak traktining morfologik ko'rinishlariga ta'siri mavzusi bugungi kunda juda dolzarb hisoblanadi. Energetik ichimliklar, odatda, kofein, taurin, vitaminlar va boshqa psixoaktiv moddalarni o'z ichiga oladi. Ular energiya darajasini oshirish, charchoqni kamaytirish va diqqatni kuchaytirish maqsadida iste'mol qilinadi. Biroq, ularning uzoq muddatli ta'siri va organizmda qanday o'zgarishlarga sabab bo'lishi hali ham to'liq o'rganilmagan.

Kalamushlar (*Mus musculus*) biologik tadqiqotlarda keng qo'llaniladi, chunki ularning organizmlari inson organizmiga o'xshash ko'plab xususiyatlarga ega. Energetik ichimliklarni iste'mol qilishdan so'ng kalamushlarning oshqozon-ichak traktida yuz beradigan morfologik o'zgarishlarni o'rganish orqali bu ichimliklarning salomatlikka ta'sirini baholash mumkin.

Ushbu tadqiqotning dolzarbligini quyidagi jihatlar bilan izohlash mumkin:

1. Salomatlikka ta'siri: Energetik ichimliklar inson salomatligiga qanday ta'sir qilishi haqida ma'lumot olish uchun kalamushlarda tajriba o'tkazish orqali yangi bilimlar olish mumkin.

2. Morfologik o'zgarishlar: Oshqozon-ichak traktining morfologiyasi (masalan, shilliq qavatining holati, organlarda strukturalar) energiya ichimliklarini iste'mol qilishdan qanday o'zgarishini tushunishga yordam beradi.

3. Psixologik va fiziologik reaksiyalar: Energetik ichimliklarning nerv tizimi va metabolizmga bo'lgan ta'siri ham muhimdir; bu jihatdan kalamushlardan foydalanish yangi ma'lumotlarga olib kelishi mumkin.

4. Tibbiy xulosalar: Olingan natijalar orqali potentsial xavflar va salbiy ta'sirlar haqida tibbiy xulosalar chiqarish imkoniyatiga ega bo'lamiz.

Shu sababli, energetik ichimliklarni qo'llashning kalamushlarning oshqozon-ichak traktidagi morfologik ko'rinishiga bo'lgan ta'sirini o'rganish ilmiy tadqiqot uchun muhim ahamiyatga ega. Bu nafaqat asosiy fanlar doirasida balki tibbiyot va farmatsevtika sohasida ham dolzarb masala hisoblanadi.

Muhokama: lmiy nazariyalar va tadqiqotlar

1. Oshqozon-ichak traktining morfologik o'zgarishlari:

- Energetik ichimliklarning tarkibidagi yuqori miqdordagi kofein va boshqa kimyoviy moddalarning kalamushlar oshqozon-ichak traktiga ta'siri o'rganilgan. Tadqiqotlarda bu moddalarning oshqozon shilliq qavatining strukturasi va funksiyalariga ta'siri ko'rsatiladi.

- Kofeyning oshqozon sekretsiyasini oshirishi va ichak peristaltikasiga ta'siri natijasida gastrointestinaal tizimda turli xil morfologik o'zgarishlar yuz berishi mumkin.

2. Gistologik tahlil:

- Energetik ichimliklarni iste'mol qilgan kalamushlarning oshqozon shilliq qavati va ichak mukozasining gistologik tahlili amalga oshirilishi mumkin. Bu tahlil orqali hujayralar strukturasi o'zgarishlar, yallig'lanish jarayonlari va oziqlanish buzilishlarini aniqlash mumkin.

3. Metabolizmning o'zgarishi:

- Energetik ichimliklarning metabolizmga ta'siri ham muhimdir. Kofein va taurine kabi moddalar energiya almashinuvi jarayonlarini tezlashtiradi, bu esa turli organlarda mikrostrukturalar o'zgarishlariga olib kelishi mumkin.

4. Yallig'lanish jarayonlari:

- Ba'zi tadqiqotlar energetik ichimliklarning yallig'lanishga qarshi ta'sirini yoki aksincha yallig'lanishni kuchaytirishini ko'rsatishi mumkin. Bu holat kalamushlardagi oshqozon-ichak traktining morfologiyasiga ham ta'sir qilishi ehtimoldan holi emas.

5. Davolash usullari:

- Agar energetik ichimliklardan foydalanish natijasida salbiy morfologik o'zgarishlar kuzatilsa, u holda bunday holatni bartaraf etish uchun turli xil davolash usullari (masalan, dietani o'zgartirish yoki farmakologik vositalarni qo'llash) tadqiq qilinadi.

Xulosa va takliflar. Energetik ichimliklarning kalamushlarning oshqozon-ichak traktiga ta'siri haqida o'rganish davom etmoqda. Ushbu tadqiqotlar nafaqat hayvonot olamini tushunishga yordam beradi balki inson sog'lomligi uchun ham muhim ahamiyatga ega bo'lishi mumkin.

Energetik ichimliklarni iste'mol qilishdan oldin uning salbiy oqibatlarini hisobga olish zarurdir; ayniqsa uning uzoq muddatli ta'siri haqida ko'p ma'lumot yo'qligini inobatga olgan holda ehtiyotkorlik bilan munosabatda bo'lish lozimdir.

Xulosa:

1. Oshqozon-ichak traktining o'zgarishlari: Energetik ichimliklarni iste'mol qilishdan so'ng kalamushlarning oshqozon-ichak traktida morfologik o'zgarishlar yuz berishi mumkin. Bu o'zgarishlarga oshqozon shilliq qavatining qalinlashuvi yoki yo'talishi, ichaklarning peristaltikasida o'zgarishlar kiritishi kabilar kiradi.

2. Kofein ta'siri: Kofein oshqozon-ichak traktidagi ta'siri ko'plab tadqiqotlarda namoyon bo'lgan. U oshqozon sekretsiyasini oshirishi, shuningdek, ichak harakatini tezlashtirishi mumkin.

3. Toksiklik va zararli ta'sirlar: Energetik ichimliklarni uzoq muddat iste'mol qilish kalamushlarda toksik reaksiyalarni keltirib chiqarishi mumkin. Bu esa jigar va buyrak faoliyatiga salbiy ta'sir ko'rsatadi.

4. Oziqlanish holati: Energetik ichimliklarni iste'mol qilayotgan kalamushlarda oziqlanish holati hamda metabolizm jarayonlari o'zgarishi mumkin. Buni aniqlash uchun murakkab laboratoriya tekshiruvi talab etiladi.

Takliflar:

1. Qo'shtirilgan tadqiqotlar: Energetik ichimliklarning turli dozalarda foydalanilishi bo'yicha qo'shtirilgan tadqiqotlar olib borilishi zarur. Bu orqali ularning uzun muddatli iste'molidan kelib chiqadigan morfologik o'zgarishlarni batafsil tahlil qilish mumkin.

2. Klinik kuzatishlar: Kalamushlardagi morfologik o'zgarishlarni tahlil qilish uchun klinik kuzatish tizimini yaratish lozim. Bu yondashuv energiya ichimliklarini inson salomatligiga bo'lgan ta'sirini tushunishga yordam beradi.

3. Zararni kamaytiruvchi strategiyalar: Energetik ichimliklardan foydalanishni ma'lum bir darajada cheklash yoki ularga muqobil variantlarni taklif etishni ko'rib chiqish kerak.

4. Ta'lim va xabardorlik: Odamlarga energetik ichimliklardan foydalanishda ehtiyotkor bo'lishi kerakligini tushuntirish uchun ta'lim dasturlarini amalga oshirish muhimdir.

Ushbu xulosalar va takliflar asosida keyingi tadqiqotlarda energetik ichimliklarning kalamushlardagi oshqozon-ichak trakti morfologiyasiga qanday ta'sir ko'rsatishini chuqurroq o'rganishga yordam beradi deb umid qilaman.

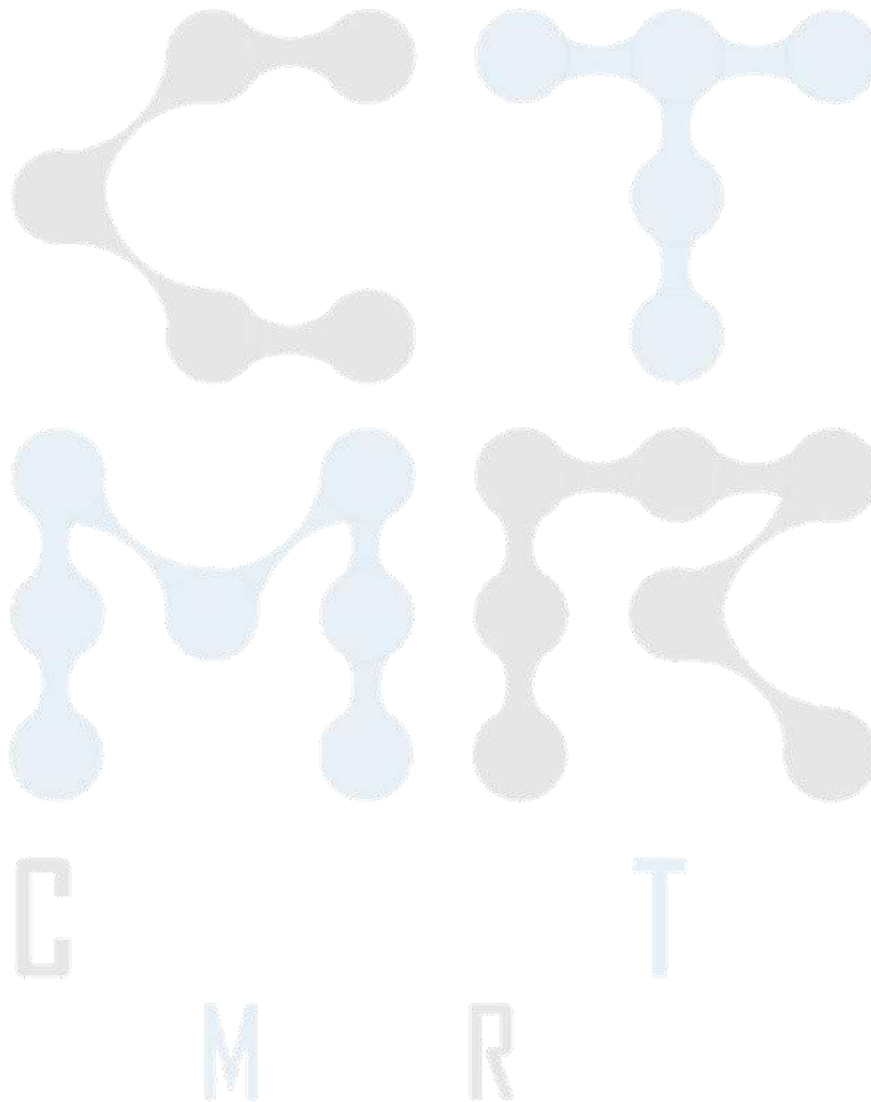
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"METHODS OF TREATING STROKE SEQUELAE THROUGH MICROSURGERY"

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Abstract

Stroke is a leading cause of long-term disability, often leaving patients with significant neurological sequelae. Traditional treatments aim to stabilize patients but often fail to reverse damage. Microsurgical techniques provide targeted, minimally invasive interventions that can potentially address persistent deficits. This review discusses the efficacy, safety, and mechanisms of microsurgical techniques in treating stroke sequelae, focusing on advances in endovascular and reconstructive procedures. Current evidence supports their role in select patients, suggesting that microsurgery, in combination with pharmacotherapy and rehabilitation, could improve outcomes for stroke survivors.

Keywords: Stroke, Microsurgery, Neurovascular Complications, Surgical Interventions, Stroke Sequelae, Neuroplasticity, Ischemic Stroke, Hemorrhagic Stroke

Introduction

Stroke is one of the primary causes of adult disability worldwide, with ischemic and hemorrhagic types leading to extensive brain damage. Stroke-induced neurological sequelae, such as motor, cognitive, and sensory impairments, persist in up to half of stroke survivors. Traditional approaches primarily focus on pharmacological treatment, rehabilitation, and lifestyle management to prevent recurrent strokes and reduce symptom severity. However, these treatments often fall short of reversing damage in cases with significant residual deficits.

Microsurgical techniques have gained attention as a means to restore damaged neurovascular structures and enhance neuroplasticity, the brain's ability to reorganize itself by forming new neural connections. The objectives of this article are to examine current microsurgical methods in treating stroke sequelae, evaluate their effectiveness and risk profiles, and discuss the potential integration of these procedures into multidisciplinary treatment plans for improved patient outcomes.

Methods

This review is based on a systematic analysis of clinical studies, case reports, and meta-analyses published between 2013 and 2023. Database searches were conducted in PubMed, MEDLINE, and Cochrane Library, focusing on studies that examine the outcomes of microsurgical interventions in patients with stroke sequelae. The primary methods explored include:

Cerebral Bypass Surgery: This technique involves creating an alternative blood flow route to restore perfusion to ischemic brain areas.

Endarterectomy: Applied primarily to reduce stroke risk by removing plaque buildup in major arteries, particularly in the carotid artery.

Endovascular Thrombectomy: A minimally invasive method used in acute ischemic stroke to retrieve clots and improve blood flow.

Aneurysm Clipping and Coiling: Used mainly in hemorrhagic stroke or when an aneurysm is detected post-stroke, helping prevent future bleeding events.

Outcome measures were categorized by improvements in functional independence, neurological scores, and quality of life assessments. Safety outcomes, including perioperative and postoperative complications, were also examined.

Results

The review found that each microsurgical technique offers unique benefits and challenges depending on the type and severity of stroke sequelae.

1. Cerebral Bypass Surgery

Studies indicate that bypass surgery can significantly improve cerebral blood flow in patients with chronic ischemic stroke, particularly in patients with moyamoya disease and intracranial stenosis. Clinical improvements in cognitive and motor functions were observed, though these procedures are typically limited to patients without severe systemic health conditions due to the risks of infection, hemorrhage, and stroke recurrence during surgery (Xu & Wang, 2017).

2. Endarterectomy

This procedure, often performed on the carotid arteries, is most effective in preventing recurrent strokes rather than reversing stroke sequelae. Clinical trials indicate a marked reduction in the risk of stroke recurrence, with long-term benefits observed in patients with significant arterial occlusion (Powers et al., 2018). However, the procedure holds risks of immediate stroke if plaque dislodgement occurs.

3. Endovascular Thrombectomy

Thrombectomy has become a standard intervention for acute ischemic stroke, with studies demonstrating reduced disability rates when performed within 24 hours of stroke onset (Goyal et al., 2016). Its minimally invasive nature and ability to restore blood flow rapidly make it suitable for patients who are ineligible for conventional surgeries.

4. Aneurysm Clipping and Coiling

Used primarily for hemorrhagic stroke, aneurysm clipping and coiling provide a preventive approach to stabilize damaged vessels. Although not directly treating existing sequelae, this intervention reduces future risks and, in some cases, can help minimize ongoing neurological deficits by preventing further hemorrhage (Ding et al., 2015).

Discussion

The findings from these studies highlight the importance of tailored treatment plans for stroke patients. While microsurgical interventions are not universally applicable, they present crucial options for patients with significant vascular abnormalities or who are at high risk of recurrent strokes. One of the main challenges in microsurgery for stroke sequelae lies in patient selection, as the risks associated with these procedures may outweigh benefits for certain demographics, such as elderly patients or those with multiple comorbidities.

The precision of these techniques, bolstered by advancements in neuroimaging, enhances their feasibility and safety. Emerging technologies, such as robotic-assisted microsurgery and real-time imaging, are anticipated to further improve procedural outcomes. Combining microsurgery with pharmacological and rehabilitation-based approaches appears promising for fostering neural recovery, leveraging the brain's natural neuroplasticity to optimize function post-stroke.

Conclusion

Microsurgical interventions offer a promising avenue for treating stroke sequelae in select patients, particularly those with refractory cases unresponsive to traditional treatments. While the risk-benefit ratio must be carefully considered, advancements in microsurgical tools and techniques have made these procedures safer and more effective. Further research should focus on optimizing patient selection criteria, integrating multimodal treatments, and developing enhanced imaging techniques to guide these interventions. As a part of a multidisciplinary approach, microsurgery has the potential to significantly enhance recovery outcomes and reduce long-term disability for stroke survivors.

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Abstract: In this article, air-droplet infections are studied on the example of leprosy and actinomycosis causative agents, their description and detailed information about the diseases they cause, diagnosis of these diseases, and treatment measures are provided.

Key words: Leprosy (leprosy), Steele-Nielsen, diffecoloxidase, lepromatosis, actinomycosis, Saburo medium,

The causative agent of leprosy

Leprosy is a chronic infectious disease that affects the whole body, especially the skin, nervous system and internal organs. The causative agent of the disease is acid-resistant leprosy mycobacterium (*Mycobacterium leprae* Hansen).

Morphology. Leprosy mycobacteria are straight or slightly curved rods, 1–8 μm long, 0.2–0.5 μm wide, and one end may be thicker than the other. They penetrate into the cell, form tight spherical nodules and are located in close contact with each other. In damaged tissue, leprosy bacilli are spherical, filamentous, nodular and other forms are found. Mycobacteria contain 9.7–18.7% lipids and up to 2.25% phosphatides, so they are stained red by the special Steel-Nielsen method. In addition, they are resistant to acid because they contain a lot of oil pigments, various waxes and leprosin mycolic acids. Spores and capsules do not form, inactive.

Growth. Leprosy bacilli do not grow in the same nutrient medium as the causative agent of tuberculosis. The test material was grown by injecting it under the feet of white mice. Storrs (1974) was able to develop a method for growing mycobacterium leprosy in the nine-banded armadillo (*Dasypus novemcinctus*). After 15 months, mycobacteria multiply in the armadilla organism in various forms, mainly in the cell cytoplasm.

Methods have now been developed to infect bronenos (in Texas and Louisiana) and mangaboy monkeys. Fermentative property. It was found that there are diffecoloxidase, peroxidase, stetochromoxidase, dihydrogenase, and other enzymes involved in the reproduction of leprosy mycobacteria.

Pathogenesis of the disease in humans.

3 clinical types of leprosy are distinguished:

1. Lepromatous type is very severe, epidemiologically dangerous. A lot of lepromas appear on the patient's face, wrist, calf and other parts, they can merge with each other and form large infiltrates.

Later, lepromas are punctured and non-healing wounds appear in their place. Sensibility is lost in the foci of the disease, hair and feathers in this area fall out, especially eyebrows and eyelashes fall out. In this type of leprosy, the mucous membranes of the nose, mouth, and eyes are also damaged.

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Fingers and toes are mutilated and fall off, infiltrating corneal lesions sometimes make patients completely blind.

2. The tuberculoid type of leprosy (in the form of a skin tubercle) is relatively harmless and passes easily. In patients suffering from this type of leprosy, the lepromin allergic reaction is positive, due to the lack of elements of the rash, it is more difficult to find mycobacterium leprosy.

3. In undifferentiated, i.e., unclear type of leprosy, the resistance of the macroorganism is different, often stronger. When the material from the damaged area is examined bacterioscopically, mycobacteria are not always found. They have a negative or weakly positive allergy test.

The disease is chronic. Children aged 8-14 are very susceptible to leprosy, and they are infected mainly from their sick parents. The disease occurs 3 times more often among men than among women.

Immunity. Immunity in leprosy is poorly understood, its mechanism is similar to tuberculosis immunity and is cellular. Genetic factors also play a role in the disease of patients with leprosy; for example, people with haplotype HLA-DR2-DQW1 are more likely to have lepromatous leprosy, and people with HLA-DR2 or HLA-DR3 are more likely to have tuberculoid leprosy.

Laboratory diagnosis. If mycobacterium leprosy is not found in the laboratory examination, the doctor makes a diagnosis based on the clinical symptoms of the disease. However, the diagnosis made through laboratory examination is more accurate and reliable.

In the lepromatous type of leprosy, more mycobacteria are found than in other types of the disease. The preparation is prepared from smears taken from the upper respiratory tract, for example, the nasal mucosa. For this, the nasal cavity is thoroughly cleaned, and the patient can do it himself. Then, swabs are taken from the inner wall of the nose with sticks wrapped in gauze tampons prepared in advance and applied to the glass of several items with the same thickness. Examination of smears prepared from the fluid of the affected skin tissue gives good results for the detection of leprosy mycobacteria. First, the skin of this area is cleaned with alcohol or ether, thoroughly wiped, firstly, aseptic technique is followed, and secondly, some acid-resistant saprophytic microorganisms are cleaned from mycobacteria. Then, while pinching the intended skin level with the fingers, a sterile sharp surgical knife (scalpel) is cut 5 mm long and 2-3 mm deep. By scraping the separated liquid with a scalpel, several smears are made on the glass of the object. Tissue fluid is obtained from lepromas in the area of the eyebrow, forehead, auricle, back and buttocks. Smears are painted by the Steele-Nielsen method. But mycobacteria of leprosy are acid-resistant compared to mycobacteria of tuberculosis, and care should be taken when decolorizing the drug.

In stained smears, leprosy mycobacteria are red or pink in color, in groups, and sometimes singly, they are slightly elongated and parallel to each other. 1 ml of liquid to be tested for leprosy bacilli should contain at least 10,000-100,000 mycobacteria. This requires examining 60-100 fields of view in one swipe. Finding 1-2 mycobacteria does not confirm the diagnosis. The number of mycobacteria in the field of view is determined according to Hort's scheme as follows: 0 - no mycobacteria; + suspicious, there are 1-2 mycobacteria in the visual field; ++ there is a lot of mycobacteria in the field of vision; +++ there is a lot of mycobacteria in the field of vision. To distinguish leprosy from tuberculosis, the pathological material is infected with a guinea pig in a 0.85% sodium chloride solution. If the patient has tuberculosis, then the guinea pig quickly develops tuberculosis and dies, or vice versa, guinea pigs do not get leprosy. When 0.1 ml of lepromin is injected between the skin of the patient's wrist, after 48-72 hours this area becomes red and swollen, the Mistuda reaction is considered positive. KBR, BilGA reactions are used to detect antibodies formed in the patient's blood. Treatment and prevention. To treat the patient, dapson, rifampistin, lampren,

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oflaxastin, minosticline, in addition, cortisone, prednisolone and other corticosteroid drugs are used to reduce sensitivity.

Pathogenic actinomycetes

Morphology. Actinomycetes consist of branching, rod-shaped, cocci-like, thin, filamentous mycelia that are easily divided into parts. Grammusbate, without septa, forming spores. (Fig. 73).

Growth. Actinomycetes are facultative anaerobes, and 35-37°C is a favorable temperature for their growth. After 24 hours, small colonies form on the surface of the solid medium, and after 7-14 days, large polymorphous, smooth or rough, grayish-yellow, soft, uniform white, duchoba-like colonies are formed. Colonies can be inside or outside the nutrient medium. Colonies are purple, brown, red, green and other colors. Actinomycetes form aerial mycelia in solid nutrient environments (Saburo medium). They are divided into cylindrical and round pieces. Spores are formed at the tips of myceliums, which give color to the colonies.

Pathogenicity to animals. Actinomycetes cause chronic diseases in sheep, goats, cattle, pigs, horses, dogs, rabbits and other animals. In this disease, the animal's skin, neck, lungs, tongue, lips, and in some cases, bones and udder are injured.

Pathogenesis of the disease in humans. Actinomycetes are found in a variety of places, including mountainous terrain, valleys, warm seas, water or underwater mud. It is also abundant in soils rich in organic matter.

Actinomycosis affects 3 times more men aged 20 to 30 than women.

Actinomycetes are similar to propionate bacteria, mycobacterium tuberculosis, and corynebacteria, but differ from them in terms of their development.

The source of the disease is sheep, goats and cattle, wild animals, dogs, pigs, horses, rabbits, as well as soil, plants, air, even infected wheat ears, etc. Actinomycosis occurs as a result of endogenous entry of actinomycetes from the gastrointestinal system into various organs. *A. israilii* is often present in the oral cavity of a healthy person and causes endogenous infection when the body's reactivity decreases. Actinomycosis also occurs exogenously. For example: when a person chews the ear or stalk of cereal plants, the actinomycetes in it cause the disease. When actinomycetes enter the body from the external environment, exogenous infection develops.

The occurrence of the disease is influenced by dental caries, "stones", gum disease, caecum and others. In addition, injuries to the mucous membranes of the skin, surgery, and bone fractures play a major role in the development of actinomycosis.

Actinomycetes, having entered the body, spread through connective tissues under the skin, spaces between muscles, blood and lymph. As a result, inflammation develops, a large, hard swelling similar to phlegmon appears, an infiltrate occurs, this swelling becomes necrotic and softens, and pus begins to leak out or into the body. In the pus, "druze" consisting of a set of actinomycetes are formed.

Immunity. A patient who has experienced the disease does not develop a strong, stable, long-lasting immunity, so a person can get sick again. Agglutinin, prestipitin, and complement-binding antibodies are formed in the blood of a recovered person and animal, but they cannot protect the macroorganism from re-infection. During the course of the disease, an allergic condition occurs in the macroorganism, so the skin-allergic test with actinolizate is positive in 87.5% of cases.

Laboratory diagnosis. 1. In actinomycosis, a smear is prepared from the pus from the wound, it is examined under a microscope in its native state with or without staining, and the presence of drusen is determined. 2. Pus is cultured on sugar broth (pH 6.8), blood, serum, meat-peptone agar, Saburo's medium under aerobic and anaerobic conditions, and a pure culture is isolated and identified according

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to cultural, biochemical characteristics and sensitivity to streptomycin, chloramphenicol . 3. KBR is placed with the patient's serum to detect antibodies in it. 4. A skin-allergic test is performed with extracts of actinomycetes.

Treatment and prevention. In the special treatment of this disease, actinolysates, polyvalent actinomycete vaccine prepared from 6-8 strains are used. Antibiotics, sulfanilamide and iodine drugs are given that act on actinomycete and additional microorganisms. In some cases, the patient is treated with surgery and X-ray. Penicillin, tetrastichlin, erythromycin and clindomistin give good results.

To prevent the disease, it is necessary to strictly observe personal hygiene, protect the skin and mucous membranes from various injuries, and protect the throat, oral cavity, and teeth from diseases. There is no special prevention against this disease.

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When we evaluate the words in the vocabulary of the Karakalpak language from the point of view of meaning, the group of words whose meanings are close to each other occupies a certain place. Synonyms, of course, differ from each other in terms of the refinement of the additional meaning, emotional and expressive coloring, scope of application and other properties, which show that such properties present in them show that synonyms have very great stylistic possibilities. Since synonyms can indicate the most powerful, even imperceptible, subtle features of objects and events, subjective attitudes towards these features, and others, they are undoubtedly considered figurative means of language. In conducting the research work, one can cite the works of E. Berdimuratov,[1] M. Kalenderov.[2] In particular, M. Kalenderov's work "Qaraqalpaq tiliniñ sinonimleriniñ qısqasha sózligi" (A Brief Dictionary of Synonyms of the Karakalpak Language) provides information about the characteristics of synonyms.

In this article, we will focus on the synonyms in the epic "Yusuf-Ziliha" based on the above works. Synonyms also occupy a special place in the epic "Yusuf-Ziliha." For example: “**Ájel** jetken kúni men hám ólmesem,” (I’ll die when my death day comes)(330-bet); – “**Áy**, Yusip, **ólim** jaqın keldi, aqirettiñ házirigin kóre ber”, - dedi (It says that Yusup, death knocks your door, be prepared)(p.329); Yusipke shorı hikmat, tágdırde **qaza** kúdiret (p. 303). In the given examples, you can see several synonymous lines from the words “ájel”, “ólim” “qaza”.

In the epic "Yusuf-Ziliha," one can see the skillful use of synonyms in the form of the world, the world, and the world: - "Bolarsañ **álemge** sultan, qıarsañ taxt ústinde jáwlan” (If you are the sultan of the world, if you are the ruler of the throne, you will be on the throne) (p. 294). – "Áy, ustalar, mağan saray salıń, múyeshleri tamamı tilla, lalı, yaquttan bolsın, ishine meniñ menen Yusiptiñ súwretin salıńlar, diywaldıń tórt tárepinde de bir-birewge qol salısqı, qushaqlasıp, súyisip turğan bolayıq, **jer júzinde** kóz kórip, qulaq esitpegen naǵışlar salınsın, onı kórip Yusip mağan biyıqtıyar kewil qoyar, – dedi” (Hey, masters, build a palace for me, let the corners be all gold, lilac, ruby, insert the image of me and Yusuf inside, let's hold hands, embrace, and kiss on all four sides of the wall, let's have unprecedented ornaments on the earth, seeing it, Yusip will be very kind to me, he said) (p. 308). “Al sulıwlıqqa kelgende **dúnyada** onıñ menen básekige adam bolmadı”(As for beauty, there was no one in the world who could compete with it) (p.293) ; “Ziliyxa jeti jasına kelgende **jáhán** patshaları aytırdı, biraq hesh kimdi qabil etpedi” (When Ziliha a was seven years old, the kings of the world asked her to speak, but she did not accept anyone) (p.304). Such synonymous lines are skillfully used in the language of the epic. He did not repeat the words in one form, but used their synonyms and lines to enhance the poetry of the poem's language.

In the language of the epic, it is given in the form of a rare body that represents a person's body. For example: “Endi Ráwıl aǵası Yusiptiñ ayaǵınan súyrep, sheńgelden-sheńgelge awnatıp urdı, múbárek júzlerin, ayaq-qol, **bedenlerin** tilkimtilkim etip, tula-boyın qıp-qızıl qanǵa boyadı” (Now Raul dragged his brother Yusip's foot and beat him from head to foot, painting his blessed face, limbs, and body in red blood) (p. 297); “Onıñ hár túgi **denesine** nayzaday qadalıp turatuǵın edi” (Each of its hair was stuck to its body like a spear) (p. 293). “Azamatdur jur **kewline tiymese**, Sırın jaqsı bilse,jaman bilme. Aǵalarım, meniñ **zeynime tiymeń**, Atam menen mağan qıyanet etpeń” (If a man

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doesn't feel good, if he knows the secret well, if he doesn't know it badly. Brothers, don't touch me, don't betray me with my Father) (p. 294). In these examples, the words "kewline tiymew" and "ziynine tiymew" have become synonymous. Because if we take these words, their form is different, but their meanings are close to each other.

It can be seen that in the language of the epic there are various synonyms that denote the unit of time. In this case, time, period, interval, epoch, era: "Onıń patshalıq etken **dáwirinde** qoy ústinde torǵay jumalaǵan abadan zaman boldı" (During his reign, there was a prosperous period when the sheep wore a goat). (p. 329); "Sol **waqıtta** japtan bir aydarha payda bolıp, minárday qáwmeti qozǵalıp, awzın ashıp, qıshqırıp, aybat sheger edi" (At that moment, a dragon appeared, the body of the minaret moved, opened its mouth, shouted, and shouted) (p. 306). "Álqıssa, kárwan jigit sózlerdi esitip, jolǵa ráwana boldı, neshe **mezgil** jol júrip, Qanangá jetti" (Finally, the caravan heard the words of hope and set out, sometimes traveling for a while, reaching Canaan) (p. 316); "Álqıssa, Yaqıp Yusipti bárshe ullańnan aǵla kórip, bir **zaman** janınan ayırmaq birge bolatuǵın edi" (In fact, Jacob saw Joseph with his brothers and sisters, and for a while he was with them without separating them) (p. 293); "Neshshe **máhálden** soń huwshına kelip, sharshap úyine qaytıp kele berdi" (After a while, he came to his senses and returned home tired) (p. 296). "Ustalar buyırıqtı qabıl etip, bir neshe **máwlette** Ziliyxanıń aytqanınan da zıyatraq etip pitkerdi" (The masters accepted the order and in a few minutes finished even more than Ziliikha had said) (p. 308).

In the given examples, to express the measure of time, not only with one word, but also with their synonyms, various tenses were used, indicating time. In addition, synonymous words are very effectively used in the language of the epic. "– Áy, názálimler, mennen bul isti **dáme** etpeńler, eger bul isti qılar bolsam, tek Ziliyxá menen qılǵan bolar edim" (- Oh, my children, don't tell me this, if I did it, I would do it only with Ziliha) (p. 314) – "Seni óltiremiz, bizlerden **úmit** etpe, – dedi" "We'll kill you, don't count on us," he said. (p. 297)

Yaqıp says that I'll count you for God,
Don't be late to pray,
I have given you all to one God
Come and see me soon.

In the above example, the words "Haq" and "Alla" have the same meaning as "quday" that's why they come with similar meanings. In the epic "Yusuf-Ziliha" synonyms are used not to repeat the thought with one word, but to connect each word with its most harmonious words, to strengthen it, to express it figuratively, by using its synonymous lines. Some words can be synonymous with one another in any semantic context. Both alone and within the context, their synonymous relationship is clearly felt.

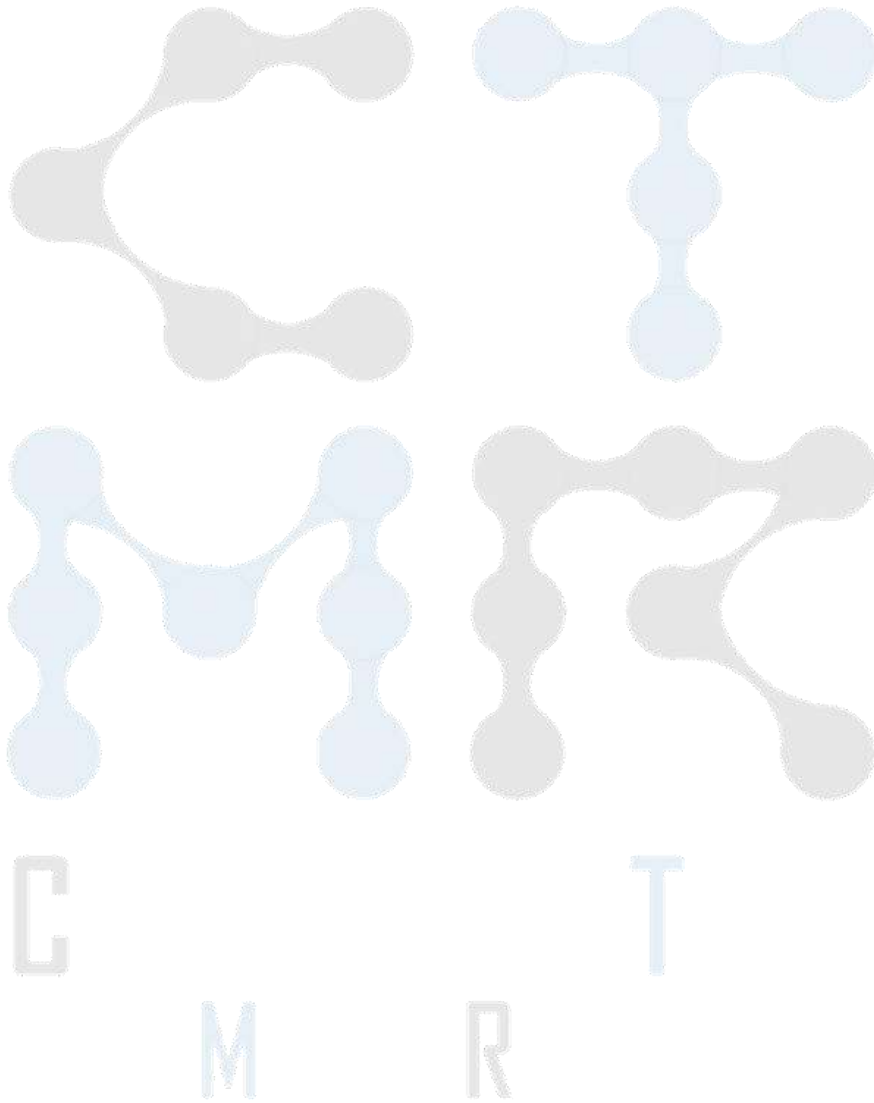
Synonymous lines used in the epic "Yusuf-Ziliha" served as the main reason for using them instead of replacing them with synonymous words in revealing the actions and psychology of the heroes. However, in the epic, compared to other epic, animation is more productive and performs one of the main functions of animation both in depicting characters, revealing their character, and creating conflict. In this respect, animation is more often used than hyperbole.

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SCIENTIFIC-THEORETICAL FOUNDATIONS OF LEARNING THE RULES OF
COMPOSITION AND DEPICTION IN PAINTING

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Abstract. This article deals with the issues of composition in the works of famous artists, the requirements for composition and description in painting, the methods of composition, the materials used, and the methodology of creating different images for students in composition classes in higher education.

Keywords: Image, integrity, color, detail, contrast, idea, rhythm, artist, fragment.

The use of rules of composition in visual arts was formed from the time of the primitive community system. Primitive man expressed his concepts and ideas in the first ancient images.

When the people of the primitive period observe life with much intelligence, we see that they have a rather loosely developed sense of composition. This can be seen in the ancient images made by them in the rocks and caves. Images of various animals, scenes of hunting, herds are examples of creations of our ancient ancestors.

Our famous artists and heroes who made a great contribution to the development of the spiritual and cultural life of our country in the works of the President of the Republic of Uzbekistan Shavkat Mirziyoyev entitled "We will build our great future together with our brave and noble people" mentioning their names, he expressed the following thoughts: "The late masters of art such as Chingiz Ahmarov, Malik Nabiyeu, Urol Tansikboev, Rahim Ahmedov, Ravshan Mirtojiyev, people's artists of Uzbekistan, made a great contribution to the development of the portrait genre in Uzbek fine art. added. It is worth talking about the works of our famous artists Javlon Umarbekov, Bahadir Jalolov, Vladimir Burmakin, Ilhom Jabbarov, Akmal Ikromjonov, famous folk craftsman Artik Faizullayev.¹"

The basic laws of composition are objective in nature and apply to all types and genres of art. A student who knows the basic laws of composition can make a general-creative analysis of any artistic work. The following are the main laws of composition: the law of integrity, the law of contrasts, the law of typicality (creation of novelty), the law of subordinating all means of composition to the ideological content.

The Law of Integrity. This law is a view that unites all elements (unsur) and parts into a single whole, it is manifested everywhere in nature and society and appears as a dialectical law. According to this first law of composition - the law of integrity, the work of art is perceived as a whole, an indivisible whole.

The essence of this law can be revealed by analyzing its main features and characteristics. The main sign of the law of integrity is the indivisibility (unity) of the composition - it is understood that it is never perceived as several, even if it consists of small parts. Indivisibility finds its place in the composition through the constructive idea that can unite all the components of the future work into a whole.

Also, the law of integrity is manifested in the logical and emotional construction of the content, the psychological state of the characters in the image, the differences in the pose (stance) and movements of the figures, and the relationship. Among the works with a successful compositional

¹ Sh.Mirziyoyev.Buyuk kelajagimizni mard va olijanob xalqimiz bilan birga quramiz.T. O'zbekiston 2017.

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solution based on this law, I.E. Repin's "Unexpected", P.P. Ben'kov's "Friends", B. Jalolov's "The Birth of Dance", J. Umarbekov's "I am a Man" can be included.

Law of contrasts. There is a contradiction as an objective law in the life of nature and society. A sharp difference in the composition and quality of objects is understood as oppositional relations. In nature, color contrasts (red and green), tonal contrasts (lightness and darkness), shape contrasts (thin and thick), size contrasts (large and small) and others can be given as an example.

Until the 19th century, in portrait art, figures were depicted as light spots on a dark background. Caravaggio. "The lute player". In the 19th century, paintings with a dark silhouette on a light background appeared. For example, V.A. Serov's "Girl and Peach", "Stranger Woman" by I.N. Kramskoy, "Life Everywhere" by N.A. Yaroshenko are built on the contrast of the situation.

The law of typicality. One of the important laws related to the truthful depiction of life and the creation of an artistic image is typicality. By analyzing the appearances of existence, the artist reflects its essence, expresses its natural signs in the form of concrete artistic images. Typicality in the characters and the situation in which the event takes place is one of the signs of this law.

In the process of creating a work of art, the artist, knowing the laws of composition, develops, generalizes and typifies the driving personality of the work, as a result, the expressiveness and expressiveness of artistic images is brought to the highest level.

The following works correspond to the law of typicality: Leonardo da Vinci "Mona Lisa", Caravaggio "The Lutenist", I.E. Repin "The Priest", A. Abdullaev "Nazarali Niyazov", R. Choriev "The Bride", J. Umarbekov "Spiritual Painter" and others .

Typical images of representatives of different classes and classes were created in these works. These images are not concrete individuals in the work, but as a generalized collective image, they reveal the character of their age and time before the eyes of the viewer. Or the portraits of P.P. Benkov's "Hero's Mother" and N. Kashina's "Circle Girl" portray typical images. In the work "Portrait of Nazarali Niyazov" by artist A. Abdullaev, he created a generalized image of a typical Uzbek farmer with the image of an ordinary waterman. The law of subordinating all rules and means of composition to the ideological content. This law imposes on the artist the obligation to create a work that can be perceived as a whole, is expressive, and has a high ideological content. That is, it requires a composition built on the basis of the ideological content, and not on the basis of a dry scheme expressed in the form of all the details and parts of the work.

Rules of composition. The rules of composition consist of: rhythm, meaningful-compositional center, symmetry and asymmetry, showing the main thing in the background.

Rhythm. If symmetry provides a peaceful balance of elements, then rhythm implies movement, which does not stop, continues to infinity. Rhythm is the periodic repetition of a large or small event in life and art. It is the alternation of some similar element, symbolic situation, conditions, in a certain interval. Rhythm exists primarily in nature as a miraculous compositional beginning. expressed in contrasts (volume contrasts in sculpture).

By applying the law of contrasts, the rhythm becomes the components of the work and unites them.

Repetition of certain details or elements in the composition leads the viewer to observe and feel the content and its growth. This feature of the rhythm determines the interaction of the composition with the law of vitality, by which the artist is not limited to showing the external actions, but reveals the internal actions.

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Content-composition center. A certain part of the picture that sufficiently and clearly expresses the ideological content of the composition, the main one, is called a meaningful-compositional center. The compositional center is distinguished by its size, lighting and other means in accordance with the basic laws of composition. First of all, the compositional center must attract the attention of the audience.

The center of composition occupies a special place not only in painting, but also in sculpture, graphics, decorative arts and architecture.

The composition must be built taking into account the characteristics of human vision. The organization of the content-compositional center is connected with the same point of view, and only then, with a brighter expression, the main thing in the content of the artistic work becomes visible. For this reason, one of the main requirements of the composition is the correct placement of the meaningful-compositional center, which embodies the constructive idea of the content. It stands out from the public by being placed in the general background.

Symmetry. Symmetry in art in general, especially in fine art, takes its basis from real existence. Characteristic for the symmetrical organization of the composition is its balance in terms of volume components, color, color and even shapes. Asymmetry. Asymmetry is the opposite of symmetry in terms of structure. If the composition looks asymmetrical, then it is not symmetrical or vice versa. In an asymmetric composition, the balance is brought closer to each other by spatial breaks between the objects or completely separated. The balance is created by contrasting large and small, hunger and saturation contrast, bright and dull colors. Examples of such compositions are K.P. Bryullov's "The Last Day of Pompeii", A.A. Deineka's "Sports Girls" and many other works.

Parallelism in composition. It is known that the edges of the picture plane must end with the frame. The image is also connected with various parallel and non-parallel lines to match and not match the ideological content of the picture. The parallelism increases the effectiveness of other oblique or curved lines in the image.

In conclusion, we can say that worldview plays a very important role for an artist. The creative work created based on the rules of composition is perfect in every way and attracts the viewer. In order for the worldview to be high and full, the artist is not only informed by his knowledge, attitudes to life and society, his dreams, but also by his feeling of the world, which forms the true content of artistic creation.

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