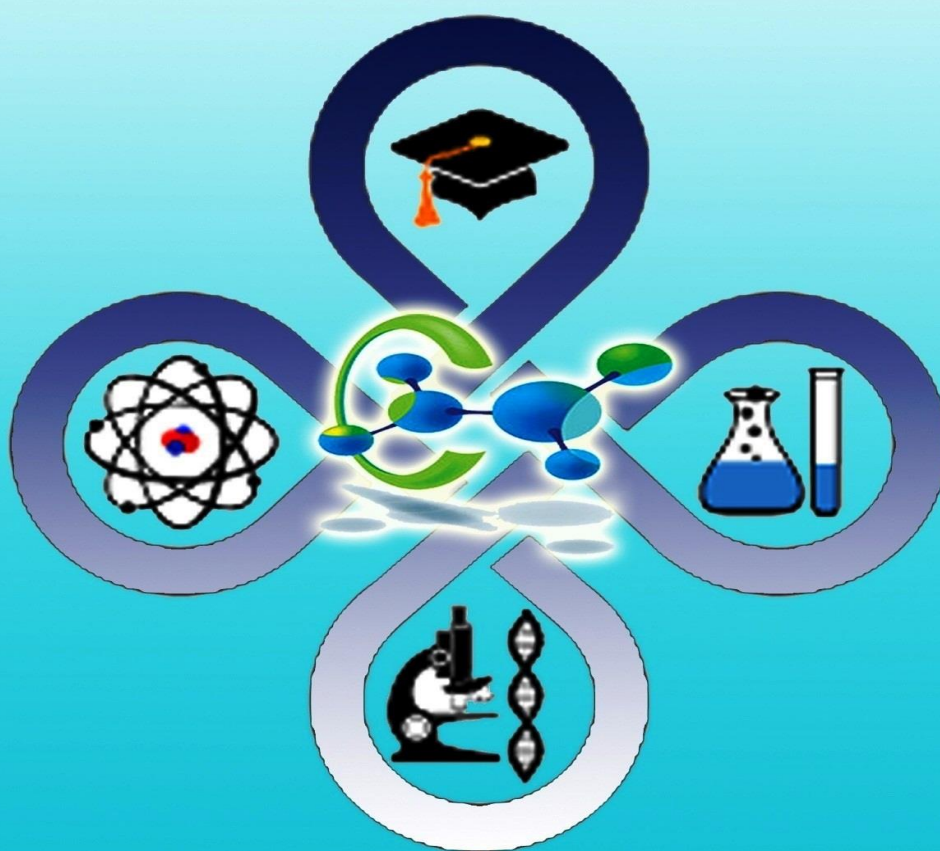




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MUAMMOLARI**

**АКТУАЛЬНЫЕ ВОПРОСЫ СОВРЕМЕННОЙ НАУКИ,
ОБРАЗОВАНИЯ И ВОСПИТАНИЯ**

**ACTUAL PROBLEMS OF MODERN SCIENCE,
EDUCATION AND TRAINING**





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MODERN PROBLEMS OF TECHNICAL SCIENCES

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CREATING OF THE TEST OF DISSOLUTION CAPSULES

«KOASK-30» ON «COBALT-30»

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Abstract:The researches on working out the “Dissolution” test for combining capsules of «Koask -30» have been conducted. According to the result of conducted experiments were selected the following conditions for carrying out the “Dissolution” test: determination of dissolution profile 0,1 M hydrochloric acid solution (within 45 minutes it must be isolated not less than 75% of active substances), medium volume – 1000 ml, speed of rotation basket- 100r/min, temperature regimen $-37\pm 1^{\circ}\text{C}$.

Key words: capsules «Koask -30», speed of rotation basket, quantity determination.

Аннотация: Капсулы «Коаск-30» характеризуются содержанием препаратов кобальт-30 (0,015г), аскорбиновой кислоты (0,03г) и вспомогательных веществ до 0,35г. Капсулы «Коаск-30» рекомендованы в качестве лекарственного средства для лечения вторичной лейкопении, возникающей при химиолучевой терапии злокачественных опухолей, а также при патологии крови и кроветворных органов, сопровождающихся нарушением лейкопоза. Проведены исследования биодоступности препарата в опытах *in vitro*. В результате экспериментальных исследований установлен показатель pH растворяющей среды и скорости вращения корзинки.

Ключевые слова: капсул «Коаск-30», pH растворяющей среды, скорость вращения корзинки, количественное определение.

Annotatsiya: «Koask-30» kapsulasi kobalt-30 (0,015g), askorbin kislotalari (0,03g) va yordamchi moddalardan iborat. In vitro tajribasi asosida kapsulani erish testi kobalt-30 ga nisbatan o`rganildi. Tajriba natijalariga binoan kapsulani erishini aniqlash uchun kajavaning aylanish tezligi daqiqasiga 100 martoba, 1000 ml miqdordagi 0,1 mol/l xlorid kislotalari muhit sifatida ishlatilishi maqsadga muvofiq deb topildi. Muhitga ajralib chiqqan biofaol modda miqdori spektrofotometrik usulida aniqlandi.

Kalit so`zlar: kapsul «Koask-30», pH muhit, kajavaning aylanish tezligi.

Introduction. Today in the Republic special attention is paid to the production of goods of the chemical industry and their introduction in the sectors of the economy. Based on the strategy of development of the Republic of Uzbekistan, aimed at “Further modernization and diversification of the industry by transferring it to a qualitatively new level, aimed at advancing the development of high-tech manufacturing industries, primarily the production of finished products with high added value based on deep processing of local raw materials” , “Mastering the production of fundamentally new types of products and technologies” defines the most important tasks [1]. In this aspect, the development of leading sectors of the national economy, including the chemical

industry. Obtaining new ligands based on a given organic synthesis and using complex compounds of d-metals based on them is an urgent task.

Literature review. At present, the pharmaceutical market of Uzbekistan is one of the fastest growing sectors of the national economy, and the range of anti-anemic drugs is widely represented. However, analysis of price and assortment policy in the market of anti-anemic drugs showed that it is necessary to take measures to develop and introduce domestic substances and dosage forms into production, as well as to diversify domestic production, by developing assortment varieties and introducing import-substituting products. As is known in the Tashkent Pharmaceutical Institute, a targeted synthesis of drugs based on the coordination compounds of bio metals is carried out [2]. Cobalt plays an important role in the endogenous synthesis of vitamin B12 (cyanocobalamin), which is involved in the synthesis of hemoglobin. Its deficiency causes pernicious anemia and is accompanied by a decrease in antitumor immunity [3]. It is recommended as an agent that stimulates leucopoiesis in secondary leukopenia, which occurs during chemo radiation therapy of malignant tumors, and in pathology of blood and blood-forming organs. Ascorbic acid is a powerful antioxidant. Vitamin C strengthens the human immune system, as well as protects it from viruses and bacteria, influences the synthesis of a number of hormones, regulates blood formation and normalizes capillary permeability, participates in the synthesis of collagen protein, regulates metabolism, removes toxins, improves bile secretion, restores outward secretion pancreas and thyroid [4].

Research Methodology. The initial stage of the study of bioavailability is to determine the time of the release of the drug from the dosage form. It is established that the solubility test in the first approximation characterizes the bioavailability of the drug, (since it is an instrumental method for determining the bioavailability of the drug) since in practice there is a very frequent correlation between the dissolution rate and the

absorption rate. Dissolution in vitro experiments is an important instrumental method for studying the biopharmaceutical quality of drugs [5].

Previously, we published a rationale for the composition and technology of the combined capsules "«Koask-30»" and the study of the dissolution of capsules for ascorbic acid [6,7]. In this report, the results of research on the test of the dissolution of capsules "«Koask-30»" in «Cobalt-30».

The purpose of the research: development of the test of «Koask-30» capsules dissolution in «Cobalt-30».

Experimental part: a rotating basket device was used to assess the dissolution of «Koask-30» capsules [8]. This method is relatively prostrate in the application. The rate of release of the active substance is influenced by various factors, such as the auxiliary substances used, the volume and pH of the dissolving medium, the speed of rotation of the basket, etc. To select the optimum pH of the dissolving medium, we used a dissolving medium with different pH values. Neutral medium - purified water (pH 5.8), acidic medium – 0.1 mole/l hydrochloric acid solution (pH 1.2) and alkaline medium – 0.1 n sodium hydroxide solution (pH 7.4) were used as the dissolution medium. In experimental studies, the volume of the dissolving medium was standard — 1000 ml; selection of the basket rotation speed was carried out at 50, 100, 150, and 200 rpm, at a temperature of $37 \pm 1^\circ\text{C}$. 1 capsule was placed in a basket and 10 ml samples were taken every 15 minutes for 60 minutes, which were filtered through a Millipore or Vladipor filter with a pore diameter of 0.45 mcg (MFA-2A-2, TU 6 -05-221-483-79). 5 ml of the filtrate was transferred into a 25 ml measuring flask and 2 ml of 15% sodium citrate solution, 2 ml of 40% sodium acetate solution and 2 ml of 0.2% nitroso-R-salt solution were added. The mixture was heated to boiling, cooled, then 2 ml of concentrated nitric acid was added, the solution was adjusted to 25 ml with water and stirred. The optical density of the colored solutions was determined on a Beckman DU 65 spectrophotometer at 420 ± 2 nm in a cell with an absorbing layer thickness 10 mm -

concerning the reference solution - a mixture obtained similarly, a solution in the absence of «Cobalt-30». The content of «Cobalt-30» is found on the calibration schedule. Solutions to build a calibration graph were prepared from the substance of the drug with a «Cobalt-30» content of at least 99.8%. The calibration graph is constructed in the concentration range of 20-100 mcg«Cobalt-30». The standard solution of the drug contains 100 mg of «Cobalt-30» in 1 ml.

The content of “«Cobalt-30»”, passed into the solution in percent $|X|$, is calculated by the formula:

$$x = \frac{a \cdot 0,020}{b}$$

where a is the amount of «Cobalt-30» in mcg, found on the calibration graph for the measured optical density;

b - content in g of «Cobalt-30» in one capsule (0.015 g)

0.02 - conversion factor.

The results obtained for the release of «Cobalt-30» at the above basket rotation speeds are presented in Figure 1.

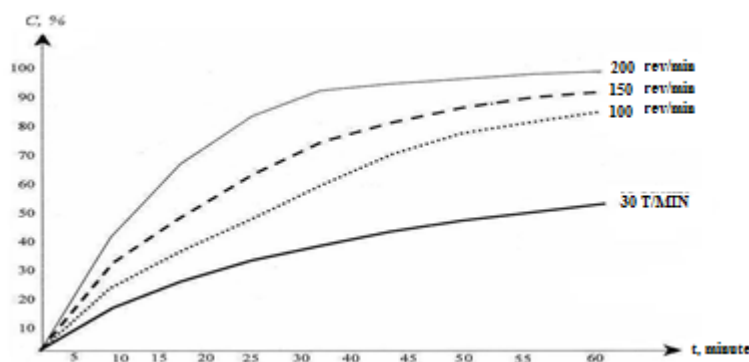


Fig.1. The kinetics of dissolution of capsules at different speeds of rotation of the basket

According to the results of studies conducted at a basket rotation speed of 50 rpm, the release of active substances was the most passive and amounted to 29.45%, 47.82%

and 72.59% for 15, 30 and 45 minutes, respectively. Thus, at a basket rotation speed of 50 rpm, the release of «Cobalt-30» in 45 minutes was 72.59%, which does not meet the requirements of ND. With the rest of the basket rotation speed, the release of «Cobalt-30» from the capsules meets the requirements of ND. For the scientific selection of the optimal basket rotation speed, the anti-log values of the quantitative content of the active substance were calculated except at the basket rotation speed of 50 rpm.

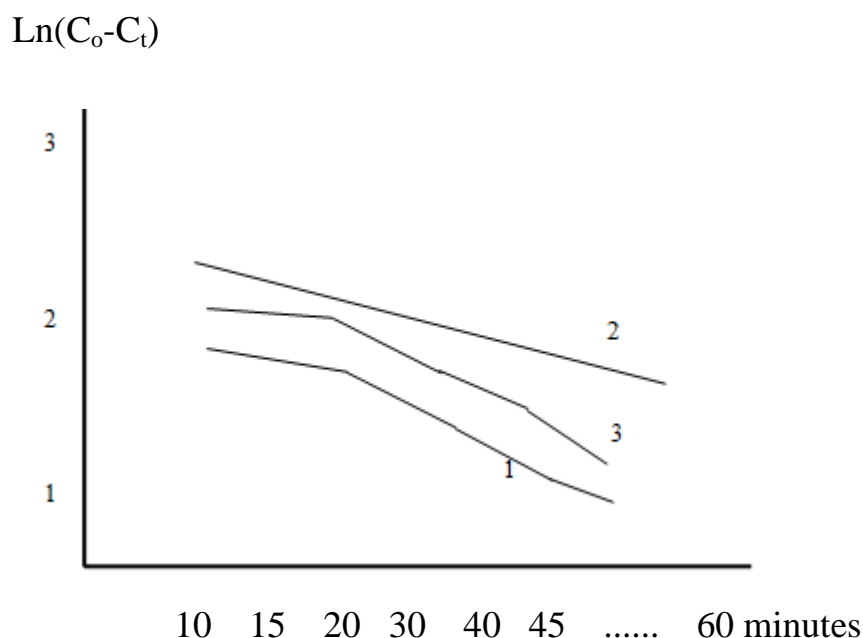


Fig.2 Antilogarithm curve of dissolution of “«Cobalt-30»” from capsules
1-50 rpm; 2-100 rpm; 3-150 rpm;

As can be seen from the figure, the release of the active substances from the capsules can be described by a first-order kinetics equation. It is a straight line with coordinates $[t; \ln (C_0 - C_t)]$. This means that there is a linear relationship between the concentrations of the active ingredients in the solution and the time of dissolution. Such a dependence is observed in the case of mixing the medium with the basket rotating at 100 rpm.

The release of the active substances from the capsules («Cobalt-30») in the acidic medium was noted much more entirely and within 30 minutes was more than 85%. Based on the results of experiments conducted to study the effect of pH on the dissolution rate of the capsules for further research, we recommended the use of an acidic environment –0.1 mole/l hydrochloric acid solution.

The proposed method analyzed five series of capsules «Koask-30». Thus, the “Dissolution” test for «Koask-30» capsules according to «Cobalt-30» has been developed. The influence of various factors on the kinetics of release of the active substance from the dosage form has been studied.

Conclusions. Based on the obtained results, the use of an acidic medium is recommended for the speed of dissolution of the capsules, the volume of the medium is 1000 ml and the speed of rotation of the basket is 100 rpm according to the anti-logarithm schedule.

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DETERMINED MODEL OF OPTIMAL PLANNING AND MANAGEMENT OF THE MAIN PRODUCTION PROCESSES OF OIL EXTRACTION ENTERPRISE

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Аннотация. Ёғ экстракцияси корхонасида жорий йилга ишлаб чиқариш режасини ҳисоблаш масаласи интеграллашган бошқарув тизимининг юқори поғонасига тегишли ҳисобланади. Бу поғонада, қоидага мувофиқ, ишлаб чиқариш жараёнини ҳажмли режасини тузишда жараёни математик расмийлаштириш учун барча технологик операцияларни битта операцияга келтириш усулидан фойдаланишда – дастлабки маълумотларни якуний маълумотларга ўзгартириш бўйича. Бизнинг ишимизда ўзгача фарқли ёндашувдан фойдаланилди. Мос равишда ёғ экстракцияси корхонасидаги кўп босқичли дискрет-узликсиз ишлаб чиқариш жараёни ҳажмли режалаштириш ва бошқарув учун агрегатлаштириш методикаси ёрдамида иккита умумлашган жараён кўринишида тавсифланди - "ПРЕСС" ва "ЭКСТРАКЦИЯ". Ишлаб чиқариш жараёнини режалаштиришни (бошқариш) икки босқичли схема асосида олиб бориш таклиф қилинади – умумлашган жараёнларга мос равишда. Ишлаб чиқариш жараёнини режалаштириш даврида икки босқичли схема кўринишида, оралиқ маҳсулотларни (қора ёғ) ҳам ҳисобга олган ҳолда, математик расмийлаштириш режалаштириш

моделини жараёнга мослигини янада оширади, натижада, режалаштириш ва бошқарувнинг асосланганлиги ва аниқлиги ортади.

Калит сўзлар. Тартибланган модел, оптимал режалаштириш оптимал бошқарув, икки босқичли ишлаб чиқариш жараёни, пахта хом ашёсига дастлабки ишлов бериш, умумлашган жараён.

Аннотация. Задача расчета годового, текущего плана маслоэкстракционного предприятия относится к верхнему уровню иерархии интегрированной системы управления производством. На этой ступени управления, как правило, при формализации процесса объемного планирования производства используется прием сведения множества технологических операций к одной операции - по преобразованию исходных продуктов в конечные. В нашей работе использован несколько отличный подход. В соответствии с ним непрерывный многоступенчатый производственный процесс маслоэкстракционного предприятия для целей объемного планирования и управления методом агрегирования сводится к двум обобщенным операциям - "ПРЕСС" и "ЭКСТРАКЦИЯ". Предлагается управление (планирование) процессом проводить по двухступенчатой схеме - в соответствии с количеством обобщенных операций. Представление производственной системы в плановом периоде по двухстадийной схеме с учетом получения промежуточных продуктов (черное масло) позволяет повысить адекватность модели планирования и, следовательно, повысить обоснованность и точность планирования

Ключевые слова. Детерминированный модель, оптимальное планирование, оптимальное управление, двух стадийный производственный процесс, первичная обработка хлопка, обобщенные операции.

Annotation. The task of calculating the annual, current plan of the oil extraction plant belongs to the top level of the hierarchy of the integrated production management

system. At this stage of management, as a rule, when formalizing the process of volumetric production planning, we use the method of converting a set of technological operations to a single operation — to transform initial products into final ones. In our work, we used a slightly different approach. In accordance with it, the continuous multi-stage production process of an oil extraction plant for the purposes of volumetric planning and management of the aggregation method is reduced to two generalized operations - “PRESS” and “EXTRACTION”. It is proposed to manage (plan) the process according to a two-step scheme - in accordance with the number of generalized operations. The presentation of the production system in the planning period according to a two-stage scheme, taking into account the production of intermediate products (black oil), improves the adequacy of the planning model and, consequently, increases the reasonableness and accuracy of planning.

Keywords. Deterministic model, optimal planning, optimal management, two-stage production process, primary cotton processing, generalized operations.

Introduction. The compilation of the optimal production program of an enterprise is one of the difficult areas of planned calculations, since here a multivariate extreme problem arises, the solution of which is possible only with the use of a special mathematical apparatus and computer.

The development process of the production program of the enterprise is proposed to take into account set. There are three types of plans, namely strategic (in particular, calendar-calendar), tactical and operational. Three types of plans are hierarchically related, since relationships among themselves help in achieving organizational goals. Operational plans are necessary to achieve tactical plans and tactical plans lead to the achievement of strategic plans. The main problems or difficulties of planning are in choosing the type of model for the level of management of the organizational structure of the enterprise hierarchy in the face of uncertainties.

Literature review. Volume-calendar planning involves, in addition to data on the structure of products, their routes and standards, the use of data on production cycles of products when planning. This is especially important for products with a long production cycle, when tasks of advancing start-up become a priority in planning.

The system maintains data on the product range taken into account, expert estimates of product manufacturing cycles, expert estimates of labor intensity by type of work for products and workpieces, data on the throughput of workshops by type of work and other data necessary to solve the tasks of space-scheduling.

For each of the plans, summary schedules of manufacturing products for orders, schedules for launching / releasing products of the item taken into account, schedules of work for the products of the item taken into account in workshops and types of work are calculated and built. The load on workshops with the identification of “bottlenecks” is determined and represented in the form of diagrams. The needs for blanks and materials on the calendar schedule are calculated

The main problem of forming an annual plan is that if the internal and external conditions change, an enterprise can achieve optimal (in the sense of a certain criterion) compliance of the output scheme with the structure of production capacities.

Additional difficulties in planning the production of an oil extraction plant are connected with the need to take into account such random factors as yield and conditions for cotton harvesting, receiving and storing cotton seed in warehouses. The quantitative characteristics of these factors are not subject to an accurate assessment and therefore cannot be unambiguously taken into account when planning and managing.

The task of calculating the annual, current plan of the oil extraction plant belongs to the top level of the hierarchy of the integrated production management system. At this stage of management as a whole for the planned period, the volume of output of final

products and the costs of primary products are determined. Therefore, as a rule, when formalizing the process of volumetric production planning, we use the method of reducing the set of technological operations to a single operation — to transform the initial products into final ones [1–4].

Research methodology. In our work, we used a slightly different approach. In accordance with it, the continuous multi-stage production process of an oil extraction plant for the purposes of volumetric planning and management by the method of aggregation [5, 6] is reduced to two generalized operations - “PRESS” and “EXTRACTION”.

It is proposed to manage (plan) the process according to a two-step scheme - in accordance with the number of generalized operations. The representation of the production system in the planning period using a two-stage scheme, taking into account the production of intermediate products (black oil), improves the adequacy of the planning model and, consequently, increases the reasonableness and accuracy of planning [1,2,6].

On the basis of the static two-stage model of the production process of an oil extraction plant built in [5] and the established law of joint distribution of final (intermediate) products for given process parameters and intensities of using discrete technological modes, the task of volumetric cost planning and production is formulated.

The purpose of volumetric planning of costs and output is to establish the intensities of discrete technological regimes and the intensities of output as a whole (integrally) over the planned period and to evaluate the effectiveness in this interval [5]. As a parameter characterizing the intensity of use of the mode, the indicator of the volume of launch can be used. When building a volume planning model, the following techniques are used to simplify the task of synthesizing the control system [1, 2]:

- 1) simplification (aggregation) of the structure of the production process;
- 2) increase control increments;
- 3) linearization in the formal description of the technology.

When constructing a bulk (static) model, the following assumptions are made:

1. The duration of the planned period (control discrete) is much longer than the duration of the production cycle.
2. The effects associated with the order (schedule) of operations (modes of operations) during the planning period are not taken into account (the allocated time resources of the equipment are adjusted in the form of the expected costs for setting up the equipment during the planning period).
3. Independence (autonomy) of the implementation of discrete technological regimes.
4. Within the planning period, the external and internal conditions of the production system remain approximately unchanged.

The correctness of the statistical description of the process of volumetric planning is determined mainly by the validity of the assumption 4.

At the level of volumetric (current) planning, the discretization step in the general production model is assumed to be equal to the planning period (duration of the operational interval).

The desire to take into account the stochasticity of the technological process when planning the production studied leads to the need to use the model of intrashop planning. For optimal planning, stochastic programming models can be used, allowing to take into account the stochasticity of the control object. However, the non-linearity of the

constraints that determine the range of feasible solutions of an equivalent deterministic model and the higher dimension complicate the search for optimal controls. To simplify the task of synthesis of controls (in accordance with the technique described in), the random variables in the model — the intensity vectors for the output of the intermediate and final product are replaced by their mathematical expectations, which depend linearly on the intensity vectors of the use of technological modes (the considered model for optimizing the material flows of the mill An enterprise is an illustration of a method for solving an average one-step problem of stochastic programming). In this case, the costs and output for each mode linearly depend on the intensities of the modes.

The task of managing the production in question is to determine the intensities of the modes of aggregated operations, under which the maximum possible production efficiency is ensured within the limits imposed on the production constraints system. The latter is evaluated using the performance criterion, which reflects the degree of compliance of the obtained solutions with the main management goal.

We introduce the following notation: - intensity of use of the i -th mode of operation "PRESS" (intensity of costs of the i -th raw material); - the level of available resources (volumes of supplies) of raw materials i ; - a set of indexes i modified raw materials; - intensity of use of the k -th mode of operation "EXTRACTION"; k is the index of modification of the intermediate product; - the set of indices k ; q_{ik} - the yield coefficient of the k -th intermediate product at a unit intensity of mode i ;

p_{kj} - the yield coefficient of the final product j at a unit intensity of mode k ; q_{ij} - the yield coefficient of the final product j at a unit intensity of mode i ; $v_k(0), v_k(T)$ - the volumes of the k -th intermediate product in stocks, respectively, at the beginning ($t = 0$) and end ($t = T$) planning horizon; r_i - the complexity of the processing unit of raw material i on the equipment "grinding" in mode i ; F - working hours of equipment

"PRESS"; I - a set of indexes i of the "PRESS" equipment operation modes; z_{kj} - the time spent by the equipment on the operation "EXTRACTION" per unit of the j th final product obtained from the k th intermediate product; φ - fund of working time equipment "EXTRACTION"; $\underline{b}_j, \bar{b}_j$ - lower and upper boundaries of demand for the j -th final product; J - set of indices j of final products; J_1 - a set of indices j of final products obtained after the first stage of cotton grain processing; J_2 - a set of indices j of final products obtained after the first stage of cotton grain processing; K - many intermediate products k ; J - multiple end products j ; n_{il} - the cost of working time of the l th group of workers at a single intensity of use of mode i of the operation "PRESS"; l - the index of the vocational qualification group of the main production workers-job makers; L_1 - the set of limiting groups l used in the operation "PRESS"; α_l - the expected level of the actual working time fund of the l th group of workers; m_{kl} - the cost of working time of the l th group of workers at a unit intensity of use of the k mode of the operation "EXTRACTION"; β_l - the expected level of the actual working time fund of the l th group of workers; L_2 - many limiting groups l workers used in the operation "EXTRACTION"; $E_j^{(\nu)}$ - ν -th technical and economic indicator of the unit of the final product j ; $Q^{(\nu)}$ - ν -th - volumetric technical and economic indicator of the enterprise; $\lambda_i, \hat{\lambda}_k$ - production (variable) costs at the intensity of the corresponding technological mode i, k ; c_j - wholesale price per item j .

The launch-release plan can be represented as a system of numbers that satisfies certain constraints — equalities and inequalities. A plan is optimal if it turns into a minimum or maximum (depending on the formulation of the problem) a certain function of the desired parameters — the performance criterion.

Thus, the formation of the production program of an oil extraction plant on the basis of an optimization model requires a formalized task:

- control variables;
- optimality criterion (objective function);
- systems of restrictions on the set of allowable values of optimized variables that establish connections between variables with system parameters.

Let us consider successively the structural elements of the optimization model.

The control variables (controls) are: non-negative vector $X = \{x_i\} (i \in I)$ and matrix $Y = \|y_k\| (k \in K)$ the intensities of using discrete technological modes, and the state variables of the system at time t - vector $v(t) = \{v_k(t)\} (k \in K)$ volumes of intermediate products k in stocks (storage units).

Using the results obtained in [6], we have: with fixed matrices $Q = \|q_{ik}\|$ and $P = \|p_{kj}\|$ technological parameters, matrices X and Y the intensities of using the modes of technology; the mathematical expectations of random variables of the intensities of the output of the k -th intermediate product and the intensities of the output of the j -th final product, defined by the expression:

$$W_j = \sum_i q_{ij} x_i + \sum_k p_{kj} y_k.$$

When formalizing management constraints, forecasts of external and internal conditions of the production system should be taken into account. Accounting for external conditions is subject to the following restrictions:

- a) the mathematical expectation of the release of the j -th final product - is limited from above and below by the magnitude of the demand:

$$\underline{b}_j \leq W_j \leq \bar{b}_j, j \in J \quad (1)$$

where \underline{b}_j - the lower limit of the volume of release of product j (state order for output of j); \overline{b}_j - the upper limit of the volume of release of product j (the volume of release of product j with guaranteed consumer demand).

b) expected volumes of output of final products in the planned period - are limited from below to planned targets (target figures):

$$\sum_{j \in J} A_j^{(\nu)} W_j \geq Q^{(\nu)}, \quad \nu = \overline{1, n_\nu}; j = \overline{1, n}. \quad (2)$$

where n_ν - the number of volume targets;

2) the costs of external ingredients (raw materials) for the production of products in the planned period are limited above the limiting volumes of supplies:

$$x_i \leq U_i, \quad i \in I, \quad (3)$$

Values $Q^{(\nu)}$ are set (in the form of control figures) by the organizations that are higher in the organizational and economic hierarchy, based on the needs of the economy in this type of product and the production capabilities of the enterprise.

Internal operating conditions of the production system are taken into account on the basis of its mathematical model. For each k -th intermediate product, a balance ratio is introduced:

$$v_k(T) = v_k(0) + \sum_i x_i q_{ik} - y_k, \quad k \in K, \quad (4)$$

formalizing compliance requirement for node H_k balance storage in general for the planned period between the receipt and consumption of the k -th intermediate product, taking into account stocks at the beginning and end of the planned interval. All storage nodes will be considered one food warehouses of unlimited capacity, indexing them in

accordance with the product modification.

The model description of the functioning of the system, condition (4) is the rule (operator) of the transfer of the system from the initial state defined by the vector $v(0) = \{v_k(0)\}$, $k \in K$, to final state defined by vector $v(T) = \{v_k(T)\}$, $k \in K$. With a fixed rule for converting the initial states, the choice of specific controls $X = \{x_i\}$ and $Y = \|y_k\|$ determines the trajectory of the system in the state space. An additional restriction on management is a restriction on the costs of internal ingredients (technological equipment resources, labor resources).

Restrictions on the limiting resources of the operating time of the process equipment are as follows:

for operation "PRESS"

$$\sum_{i \in I} r_i x_i \leq f \quad (5)$$

for operation "EXTRACTION"

$$\sum_{k \in K} \sum_{j \in J} z_{kj} p_{kj} y_k \leq \varphi. \quad (6)$$

Restrictions on limiting labor resources are of the form:

for operation "PRESS"

$$\sum_{i \in I} n_{il} x_i \leq \alpha_l, \quad l \in L_1 \quad (7)$$

for operation "EXTRACTION"

$$\sum_{k \in K} \sum_{j \in J} m_{kjl} p_{kj} y_k \leq \beta_l, \quad l \in L_2. \quad (8)$$

Conditions (1) - (8) together with the requirement of nonnegativity of control variables

$$x_i \geq 0, i \in I, \quad (9)$$

$$y_k \geq 0, k \in K, \quad (10)$$

define area $G(X, Y)$ allowable controls X, Y .

The solution to the task of planning (control) of the production system is to select the optimal controls. X^* and Y^* , delivering an extremum to a functional (performance criterion) on a set of controls.

Functional $E(X, Y)$ is a formalization of the goal of management, determined by the economic aspects of the functioning of the production system for top-level tasks and formulated in terms of the volume of costs and output.

We formalize a number of private economic criteria of production efficiency.

1. Direct production costs. If we take into account only the cost of production, depending on the choice of management X and Y , then the function can be taken as the minimized target

$$E_1(X, Y) = \sum_{i \in I} \lambda_i x_i + \sum_{k \in K} \sum_{j \in J} \hat{\lambda}_{kj} p_{kj} y_k. \quad (11)$$

2. Mathematical expectation of conditional profit. The target function is an expression

$$E_2(X, Y) = \max \left\{ \sum_{i \in I} \left(\sum_{j \in J} c_j q_{ij} - \lambda_i \right) x_i + \sum_{j \in J} \left(\sum_{k \in K} c_j - \hat{\lambda}_{kj} \right) p_{kj} y_k \right\}, \quad (12)$$

where direct production costs are deducted from the expected volume of sales of final products (it is assumed that the sales volume is determined only by the volume of output during the planned period; final products are sold immediately after their release at fixed prices).

Conclusion. In a number of papers, for example, in [1,2,7,8] the possibility of using various performance indicators is discussed. In our opinion, the choice of a specific structure of the objective function should be determined by the current production situation at the time of planning. In the economic literature, in general, preference is given to the profit indicator for the planning period as the most accurate measure of production efficiency at fixed prices — measures of the social effectiveness of individual ingredients. Criticism of the profit volume as an indicator of the efficiency of the enterprise is associated mainly with the criterion of the pricing system. However, the problem of pricing lies outside the circle of issues addressed in the work. Therefore, all other things being equal, we will still give preference to the efficiency criterion - the minimum production costs for a given release. The system of constraints (1) - (10) and the system of objective functions (11) - (15) make it possible to react quite flexibly to various production situations.

It is obvious that the considered problem of control synthesis (X, Y) $\text{extr}\{E(X, Y) \mid (X, Y) \in G(X, Y)\}$ with linear relatively $G(X, Y)$ target function $E(X, Y)$ and area $G(X, Y)$ allowable (X, Y) , determined by the system of linear constraints (1) - (10), reduced to the LP problem.

The analysis of the LP model is performed by the LINPROG MATLAB software package. As a result of solving the LP problem, we obtain the matrices $X^* = \|x_i^*\|$ and $Y^* = \|y_k\|$ optimal controls. As an optimal plan for output in the planned period, a vector can be adopted $W^* = \{W_j^*\} (j \in J)$ with components W_j^* .

In the new economic conditions, the number of indicators can be reduced. The developed model of optimal planning allows to respond flexibly to possible changes in the structure of planned indicators, specified in the form of target figures by the parent organization.

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PROGRAM OF EVALUATION ON THE ENTERPRISE EXPLOITATION SERVICE PROCESS

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Abstract: This paper analyses about designing methodical recommendations and using them in providing normal indicators during the exploitation of auto transport to improve traffic safety in transport.

Key words: automobile , building, structure, indicator, quantity

Аннотация: Ушбу мақолада ишлаб чиқилган тавсиялар асосан автотранспорт воситаларини эксплуатация даврида меъёрий кўрсаткичларни таъминлашдаги фаолиятини оширишга хизмат қилади.

Калит сўзлар: автомобил, бино, иншоат, кўрсаткич, миқдор.

Аннотация: В этой статье приведена разработка методических рекомендаций и применения их результатов в производство в целях совершенствования во время эксплуатация автомобильного транспорта.

Ключевые слова: автомобиль, здания, сооружения, показатели, количество.

Introduction. Deep transformations, gradual reform and liberalization of all aspects of political and socio-economical life, democratic renewal and modernization of our society are being rapidly developed in our country.

The next priority is further development of production and social infrastructure as an important factor of modernization of the country and increasing employment.

Special attention should be given to this priority, which is the most important issue at the current time and there are several reasons on it.

First, the development of infrastructure will create the necessary conditions for the establishment new enterprises and development the economy as a whole, as well as the opportunities for the development of our country's rich mineral resources.

Secondly, the industrial infrastructure, first of all, the developed system of roads and railways, their effective functioning is an important condition and factor in reducing the total production costs. This, in turn, enhances the competitiveness of the products and the whole economy.

Thirdly, the development of social infrastructure, provision of the population with pure drinking water, energy, the construction of social facilities, and ultimately improvement of living standards.

Fourth, infrastructure development is a labor-intensive industry. This will create new jobs, provide employment to the population, especially young people, and increase the incomes and welfare of the people.

The rapid development of passenger cars worldwide in Uzbekistan, with the need to increase the technical rigidity and culture of driving cars, necessitates the creation of a comprehensive network of technical service zones. Many organizations and enterprises in the country are involved in projects of technical service zones.

However, no technical literature has been developed to cover all aspects of TSS(Technical Service Station) yet. This disadvantage, in turn, has a significant impact on the quality and performance of the work, due to the variety of equipment, despite their generalities. Many car service stations have been designed and used in the global automotive industry.

This article covers the development of new projects of automotive maintenance stations, summarizing their economic and manufacturing processes, taking into account the experience gained in the field of automotive industry.

Research methodology. The main purpose of the article is to summarize the design process for the maintenance areas and make recommendations for their efficient use. It provides a feasibility study of the technologies and their technical performance.

In order to ensure the accelerated development of modern production and social infrastructure, and to create favorable conditions for the consistent and sustainable economic growth, a special program "On Additional Measures for Further Development of Production and Social Infrastructure in 2019" was adopted and its implementation under strict control. [3].

Effective operation of the motor transport enterprise is a combination of the efficient operation of working posts in the production regions and workshops. To this end, technological development needs to be assessed in order to further develop the social infrastructure of motor transport enterprises.

The ATC assesses the annual production program using a variety of methods, depending on the impact level. That is, using cycles, rapid computational and computational methods.

Analysis and results. At the same time, the calculator is calculated based on the aggregate data for calculating the daily production volume of the rolling stock at the enterprise (volume of transportation, total annual transportation):

It is desirable to determine the annual production program for the enterprise α_{ϕ} using the coefficients of automobile, in this α_m with the accounting of technical preparation coefficients

$$\alpha_{\text{н}} = \frac{A_{\text{т}} \cdot \alpha_{\text{т}}}{A_{\text{к}}} \quad (1)$$

In this regard, it is necessary to take into account the annual production volume of the rolling stock in ATC.

Carrying out an assessment of the composition of the vehicles involved in the transport of vehicles by the coefficient of use of cars in scientific terms is as follows::

$$Q_{\text{util}} = Q_{\text{кун}} 361 \cdot \alpha_{\phi} = \frac{T_{\text{н}} \cdot \vartheta_m \cdot \beta \cdot q \cdot \gamma_e}{\mathcal{L}_{\text{кун}} + T_{\text{оп-м}} \cdot \vartheta_m \cdot \beta} \cdot 361 \quad (2)$$

Here is; Q_{year} – daily traffic amount

$T_{\text{н}}$ – time in work

$\vartheta_{\text{т}}$ – technical speed

β – using distance coefficient.

q – nominal load capacity .

$\gamma_{\text{с}}$ – use of cargo handling capacity.

$\mathcal{L}_{\text{кун}}$ – daily walking distance.

$\mathcal{E}_{\text{оп-т}}$ – overloading time.

According to this assessment, annual transportation α_{ϕ} is related to the use of in-house car ratios.

In order to calculate α_{ϕ} the ratio of use of in-house vehicles, it is necessary to α_m - First evaluate the technical readiness ratio according to operating conditions:

$$\alpha_T = \frac{1}{1 + \mathcal{L}_{\text{KVH}} \left(\frac{d}{1000} + \frac{\mathcal{D}_{\text{KT}}}{\mathcal{L}_{\text{KT}}} \right)}; \quad (3)$$

The evaluation process should be based on the total cost of car maintenance and the total annual maintenance;

You should first take into account the annual distance for your product.

$$\varepsilon \mathcal{L} = A_{\text{и}} \cdot \mathcal{L}_{\text{кун й}} \cdot 365 \cdot \alpha_{\text{и}} \quad (4)$$

Here is: $A_{\text{и}}$ – *number of automobiles*

Expression studies were performed on the example of auto-assembling No. 11 at Marjanbulak gold-ore deposit in Gallaaral district.

Particularly in it: the automobiles in enterprises $A_{\text{и}} = 75$

Identified the normal amount of walking distance to full repair $\mathcal{L}_{\text{КТ}} = 520000 \text{ km}$ the amount of heavy conditions $\mathcal{L}_{\text{КТ}} = 385000 \text{ km}$.

1- TS *distance* = 3000км

2- TS *distance* $\mathcal{L}_2 = 10000\text{км}$

Daily walking distance $\mathcal{L}_{\text{к й}} = 210\text{км}$

Comparison dates of automobiles 2-TS and CR $d = 0.315 \text{ days}$ DR=24 days enterprises working day 305.

These information were taken for the exploitation condition from the experimental research center MAHSERVIS in Jizzakh city. For the whole enterprise the account is implemented in this way:

$$N_{\text{к1}} = \frac{EL}{L_{\text{к1}}} = \frac{385000}{385000} = 1; \quad (5)$$

$$N_2 = \frac{L_{\text{КТ}}}{L_2} - N_{\text{КТ}} = \frac{386000}{10000} - 1 = 38.5 - 37 \quad (6)$$

$$N_1 = \frac{L_{\text{к1}}}{L_1} = N_{\text{еп}} - N_2 = \frac{386000}{3000} - 1 - 37 = 90 \quad (7)$$

$$N_{\text{кхк}} = \frac{L_{\text{КТ}}}{L_{\text{кй}}} = \frac{386000}{25000} = 1540 \quad (8)$$

$$D_{7\text{к}} = \frac{L_{\text{КТ}}}{L_{\text{кй}}} = \frac{38600}{250} = 1540 \quad (9)$$

During the cycle standing days in 2-TS, CR ва DR

$$D_T = \frac{L * l_{y_{KT}}}{1000} D_{KT,TE} * N_{X3} = \frac{0.315 * 38600}{1000} + 24 * 1 = 145 \text{ кун} \quad (10)$$

$$\alpha_T = \frac{D_3}{D_3 + D_T} = \frac{1540}{1540 + 141} = 0.91$$

According to the calculation the automobiles in enterprises α_T -Technical preparation coefficient of vehicles in the company is calculated for the exploitation condition for the company as follows :

$$\alpha_T = \frac{1}{1 + L_{K\text{Й}} \left(\frac{d_2 * K_2 + d_{jtk} * K_{jt}}{10000} + \frac{D_{KT}(\eta_y - 1)}{L_{KT} * \eta_{\text{и}}} \right)} \quad (11)$$

Here $d_{2n} d_{mt} * 2 - TS$ ва CR Comparing days

$$d_2 = \frac{D_2 * 1000}{L_2} \text{ day/1000км} \quad (12)$$

$$d_{\text{жт}} = d - d_2 \text{ day /1000км} \quad (13)$$

d-2-TS and in CR normative general comparing days

$$d = d^h * k_y \quad (14)$$

for quarry $d^h = 0.1 \text{ day/1000км}$ coefficient of correction $K_{\text{и}} = 1.26d = 0.5 * 1.26 = 0.63 \text{ к/1000км}$

$$d_2 = \frac{1 * 1000}{10000} = 0.1 \text{ к/1000км}$$

$$d_{\text{жт}} = 0.63 - 0.1 = 0.53 \text{ к/1000км}$$

K_2 The coefficient that takes into account the type of movement is equal

$K_2 = 2.011$ for the Gallaaral quarry.

$K_{\text{жт}}$ – Current repairing works volume that takes into account coefficient

$$K_{\text{жт}} = 0.5$$

According to above mentioned information α_T -technical preparation coefficient is determined.

$$\alpha_{\text{и}} = \frac{1}{1 + 250 \left(\frac{0.1 * 2.05 + 0.53 * 0.5}{1000} + \frac{24(2-1)}{386000} \right)} = 0.88$$

As it is seen from the calculation, $\alpha_{\text{и}} = 0.88$, it is necessary to revise the normative parameters for the enterprise in order to improve the expropriation service at the enterprise.

Depending on the ratio of a_t-technical readiness to use in cars, the ratio of coefficients is determined as follows.

$$\alpha_{\text{и}} = \frac{D_{\text{й}}}{D_{\text{кй}}} * \alpha_{\text{т}} * K_{\text{и}} \quad (14)$$

Here is : $K_{\text{и}}$ - is the coefficient for the reduction due to technical problems with the use of vehicles under the conditions of expropriation. $K_{\text{и}} = \frac{D_{\text{эй}}}{D_{\text{й}} * \alpha_{\text{т}}} \quad (15)$

Here is : $D_{\text{эй}}$ - annual exploitation days.

ATC for specific excretion conditions is calculated as follows:

$$K_{\text{и}} = \frac{D_{\text{эо}}}{D_{\text{и}} * \alpha_{\text{т}}} = \frac{301}{301 * 0.88} = 1.13$$

$$K_{\text{и}} = \frac{301}{301 * 0.91} = 1.10$$

For the real codition of enterprise

$$\alpha_{\text{и}} = \frac{301}{301} * 0.88 * 1.13 = 0.830$$

During cycle for the condition of enterprise

$$\alpha_{\text{и}} = \frac{301}{301} * 0.91 * 1.1 = 0.836$$

In terms of operating environment at the enterprise

$$\alpha_{\text{и}} = \frac{D_{\text{й}}}{D_{\text{к}}} * \alpha_{\text{т}} = \frac{301}{301} * 0.88 = 0.73$$

Conclusion. In conclusion, it should be noted that for the enterprise, the same type of cars $\alpha_{\text{н}} = 0.73$, $\alpha_{\text{н}} = 0.830$, $\alpha_{\text{н}} = 0.836$, can be interpreted as:

- 1) Due to non-conformity of operation requirements of ATCA_н = 75 per day the technical parameters of A_н = 62 correspond to technical parameters, while, A_н = 13, exactly 17% of the vehicle is not technically ready for work;
- 1) Inadequate points of equipment for the lack of conditions for the complete performance of technological processes in the regions and workshops at the enterprise.
- 2) Should improve the exploitation service at the enterprise

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UDK: 004.42

APPLICATION OF COMPUTING MPI CLUSTER BASED ON HPC TECHNOLOGIES IN THE SIGNAL PROCESSING PROBLEMS OF DIGITAL TELECOMMUNICATION SYSTEMS

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Annotation: in this work, studied and developed a computing cluster, consisting of one head node and four computing nodes based on homogeneous computers based on HPC technologies, to implement distributed processing algorithms for two-dimensional signals. As cluster management software are used the Windows HPC Server 2008 R2 operating system and the HPC Pack 2008 software package with cluster operation utilities. As the results of research and computational experiments are given results of performance evaluation of the distributed signal processing algorithms in a computing cluster based on wavelet functions.

Keywords: wavelet function, Daubechies wavelet, a computational cluster, MPI cluster, MPI, HPC technologies, two-dimensional signal, signal processing, computing node, network, algorithm, parallel processing.

Аннотация: ушбу мақолада икки ўлчовли сигналларга тақсимланган ишлов бериш алгоритмларини амалга ошириш учун HPC технологияси таянган бир турли компьютерлар асосидаги битта бошқарув ва тўртта ҳисоблаш узелларидан таркиб топган ҳисоблаш кластери тадқиқ қилинган ва ишлаб чиқилган. Кластерни бошқариш дастурий таъминоти сифатида Windows HPC Server 2008 R2 операцион тизими ва кластер ишини таъминловчи утилиталардан иборат HPC Pack 2008 дастурлар пакетидан фойдаланилган. Тадқиқот ва ҳисоблаш тажрибалари

натижаси сифатида вейвлет-функциялар асосида ҳисоблаш кластерида сигналларга тақсимланган ишлов бериш алгоритмининг ишлаш самарадорлиги баҳолаш натижалари келтирилган.

Калит сўзлар: вейвлет-функция, Добеши вейвлети, ҳисоблаш кластери, MPI-кластер, MPI, HPC технологияси, иккиўлчовли сигнал, сигналларга ишлов бериш, ҳисоблаш узели, тармоқ, алгоритм, параллел ишлов бериш.

Аннотация: в работе исследован и разработан вычислительный кластер, состоящего из одного головного узла и четырех вычислительных узлов на основе однородных компьютеров с использованием технологий HPC для реализации алгоритмов распределенной обработки двумерных сигналов. В качестве программного обеспечения управления кластером использованы операционная система Windows HPC Server 2008 R2 и пакет программ HPC Pack 2008 с утилитами обеспечения работы кластера. В качестве результатов исследования и вычислительных экспериментов приведены результаты по оценке производительности алгоритма распределенной обработки сигналов в вычислительном кластере на основе вейвлет-функций.

Ключевые слова: вейвлет-функция, вейвлет Добеши, вычислительный кластер, MPI-кластер, MPI, HPC технологии, двумерный сигнал, обработка сигналов, вычислительный узел, вычислительная сеть, алгоритм, параллельная обработка.

Introduction. A computing cluster is a collection of distributed computing nodes connected to high-speed communication channels, representing a single computing resource. The main purpose of a computing cluster is to perform a large number of calculations that modern personal computers cannot do. According to the type of architecture, the cluster refers to systems with distributed memory, while each cluster node individually is a system with shared memory. The main characteristic of a

computing cluster is computing performance, which is measured by the number of operations per second [1].

A computing cluster mainly consists of a head node, computing nodes, an access node, and a communication network. The head node is a multiprocessor computer that manages the resources of the computing cluster, organizes job queues, monitors the components of the computing cluster, and a number of other auxiliary functions. As a computing node, a multiprocessor and multi-core computer is used on which user tasks are performed. The user's task can be performed in one computing node, in several computing nodes or in all computing nodes of one segment. An access node is a multiprocessor computer that allows a user to access cluster resources. At this node will be performed preparation of the task for the cluster, work with input data and calculation results. A communication network provides communication between processes of parallel applications on computing nodes using the MPI (Message Passing Interface) protocol [4, 5, 7], as well as access to the data storage system.

MPI-based algorithms and programs are portable between platforms and various MPI implementations without rewriting the source code [6]. Originally MPI was designed for distributed systems, but now supports shared memory systems. In addition, MS MPI [2] supports data transfer with shared memory with less delay.

The implementation of MPI for interacting with shared memory increases the overall efficiency of data exchange between processor cores, especially when the application uses both shared memory and network communication, and reduces the processor load associated with the transfer of messages between the cores. Combined with the new NetworkDirect MS MPI interface and the new network stack, Windows Server 2008 produces a significantly more efficient HPC cluster [2].

Literature review: Parallel programming frameworks such as MPI, OpenMP and OpenCL have been widely used in many scientific domains to implement distributed

applications. While they have the same purpose, these frameworks differ in terms of programmability, performance, and scalability under different applications and cluster types. In the work [10] considered several popular parallel programming frameworks for distributed applications. Analysed memory model, execution model, synchronization model and GPU support. Compared programmability, performance, scalability, and load-balancing capability on homogeneous computing cluster equipped with GPUs. In the work [11] presented an implementation of a heterogeneous programming model which combines OpenCL and MPI. The model is applied to solving a Markov decision process with value iteration method. In the work [12] presented fast-mRMR-MPI, a novel hybrid parallel implementation that uses MPI and OpenMP to accelerate feature selection on distributed-memory clusters. The performance evaluation on two different systems using five representative input datasets shows that fast-mRMR-MPI is significantly faster than fast-mRMR while providing the same results.

Research methodology . A. Creating a Computing Cluster At the initial stage of creating the cluster, you need to decide on the computer that will be the managing node. If the planned hardware environment is homogeneous then you can choose any of the nodes, if the heterogeneous systems then you need to select a separate computer for the control node, based on the installed technologies for cluster management.

For the study, a computing cluster was constructed (Fig. 1), consisting of one head node and four computing nodes. As the head and computing nodes used personal computers with the same configuration, such as Intel Core i5 3.20 GHz processor, 4 GB memory and 500 GB HDD. The computing cluster used computing nodes with the operating system (OS) Windows HPC Server 2008 R2 [2] and the HPC Pack 2008 software package [1]. HPC Pack is a package that contains utilities for maintaining the cluster. To organize a cluster based on Windows HPC Server, you need install the HPC Pack on all nodes, including the head (1 pc.) and computing nodes (4 pcs.), from which you plan to use the cluster. Interactions between a head node and computing nodes and

an access node can be based on three types of networks: enterprise, private and application networks. This computing cluster uses only an enterprise network with a bandwidth of 100 Mbit/s for the interaction of the head node with other nodes.

Enterprise network is the network of the organization in which the main task of users is performed. Private network - a dedicated internal network through which packets related to cluster communications are transmitted between nodes. An application network is a dedicated network with high bandwidth and low latency, used for MPI - communication between nodes [8, 9].

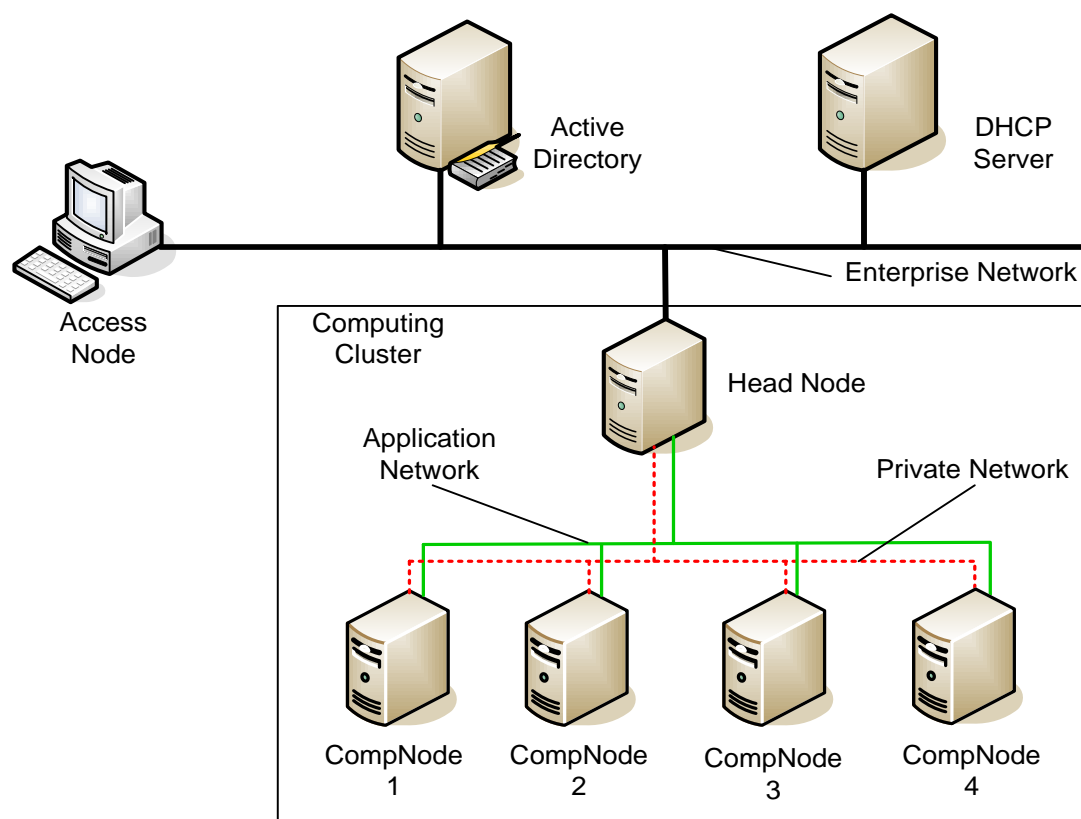


Fig. 1. The structure of the computing cluster.

B. Computing Cluster Deployment

The cluster deployment process consists of the steps of planning the cluster infrastructure, setting up a network environment, setting up the head node, setting up computing nodes, and connecting the nodes into the cluster.

In the planning of cluster infrastructure, to provide convenient access to head and computing nodes, you must create a domain for the cluster using the Active Directory service. Without Active Directory, the cluster cannot work because HPC utilities are uses domain accounts for authentication. After creating a domain, you need to install and configure a DHCP server for the dynamic allocation of IP addresses. The following IP address configuration is used for this cluster:

- Domain Controller: 192.168.1.100
- Head Node: 192.168.1.100 and 192.168.1.111
- Computing Node 1: 192.168.1.101
- Computing Node 2: 192.168.1.102
- Computing Node 3: 192.168.1.103
- Computing Node 3: 192.168.1.104
- Access Node: 192.168.1.110

If the head node has two NICs of the network for the public and private networks, the network environment is configured as follows: connecting the first NIC of the head node to the public network and the second NIC to the private network; renaming the connected first NIC to «Enterprise» and the second NIC to «Private» using the operating system module «Network and Sharing Center».

The head node configuration process includes the following settings and settings of the computing cluster [2]:

- 1) Mount and start the installation of HPC Pack 2008 R2 Express;
- 2) Select “Create a new HPC cluster by creating a Head Node”;



3) Configure the cluster using HPC Manager;

The process of setting up and connecting computing nodes to the cluster considers the settings of the cluster nodes, which consists of the following tasks:

- Connection of computing nodes to the domain, naming as CompNode1, CompNode2, CompNode3 and CompNode4;
- Mount and install Microsoft HPC Pack 2008 R2 Express on compute nodes under the domain administrator account;
- Joining to the cluster with selecting the name of the head node based on the parameter «Join an existing HPC Cluster by creating a new compute node».

After these settings, compute nodes appears on the Nodes Management tab of the HPC manager of the head node. Initially, the Node State has Unknown values and Node Health as Unapproved values. In order to solve this problem, a previously created template must be attached to the compute node. After attaching a template, the state of the node becomes Offline and its Node Health is OK. After that, you can bring the host online using the Bring Online feature. Once a site becomes Online, and it can take part in computing for MPI programs.

C. Using a cluster for implementation of the signal processing algorithm

The general cycle of the user's work with the computing cluster consists of the following steps: remote login to the cluster; copying data between the cluster and the user's computer; editing the source code of programs; the compilation of programs; launch tasks and organization of queue; end of the session.

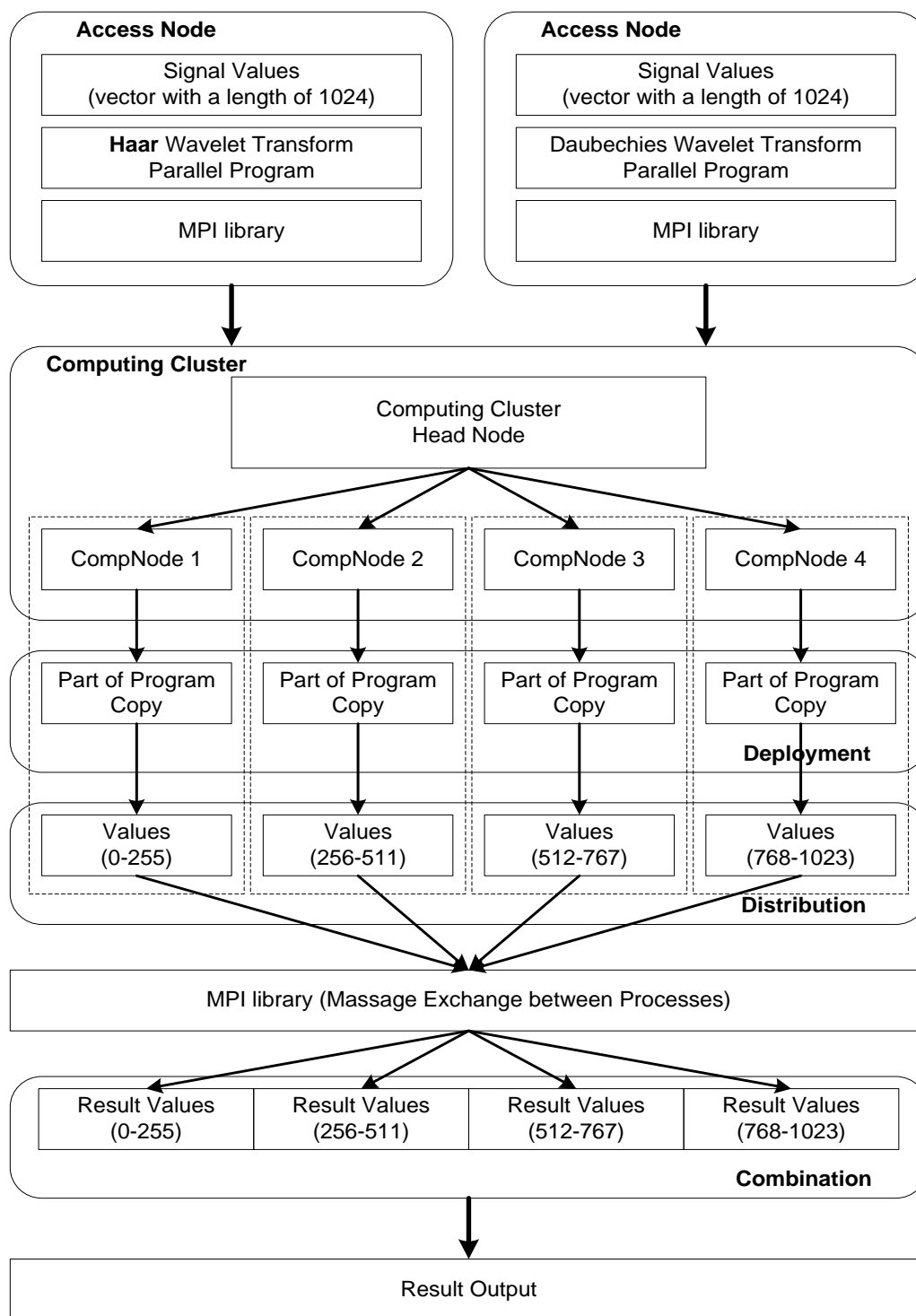


Fig. 2. A model of the organization of signal processing on a computing cluster

The implementation of the wavelet transform algorithm for images based on the Daubechies wavelet in a distributed computing cluster is based on the “model of the organization of signal processing on a computing cluster” developed in the framework

of this study (Fig. 2). The process of parallel image processing in a computing cluster occurs in the following order: 1) Program Initialization: - debugging and copying the program to a shared folder on the head node of the computing cluster; 2) Program Deployment: - deployment and launch of the program on computing nodes; 3) Data distribution: - distribution of vector data by 256 values for each process running in computing nodes; 4) Data Computation: - reception and calculation of values of a part of a vector in computational nodes and send back of results; 5) Combining the results: - receiving the results to the main process in the same manner as they were distributed; 6) The output of results: presentation of processing results to the user.

To implement and evaluate the acceleration of the parallel wavelet transform algorithm for images based on the Daubechies wavelet [3] in multiprocessor systems, studies were conducted on debugging the application for one MPI process on the local computer and several MPI processes on the local computer, as well as debugging several MPI processes in the cluster.

Experimental results. In experiments to evaluate the performance of a computing cluster based on the distributed image processing algorithm using the Daubechies wavelet, video frames were used as an image with a resolution of 256x256, 512x512, 768x768, 1024x1024 and 2048x1048.

In fig. 3 presented the results of image processing of video frames with the duration of 1 minute, that is, $24 \times 60 = 1440$ image frames, based on the proposed algorithm in a distributed MPI cluster. In this case, the distribution of the image data array is carried out entirely between MPI processes, since the cluster consists of computers with an individual processor and memory. The results show that when image processing of a video frames with the size of 1024x1024 and more, the use of a computing cluster is more efficient, and the processing time of an MPI cluster is 1.4

times less than parallel algorithm based on local MPI processes, and 3.3 times less than a sequential algorithm based on local computer.

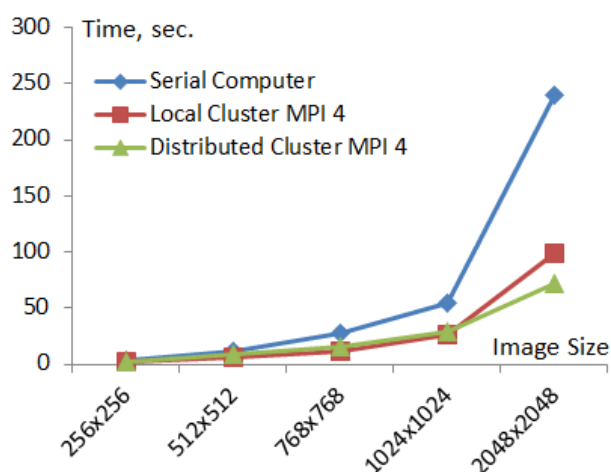


Fig. 3. The processing time of the video frames in the distributed cluster

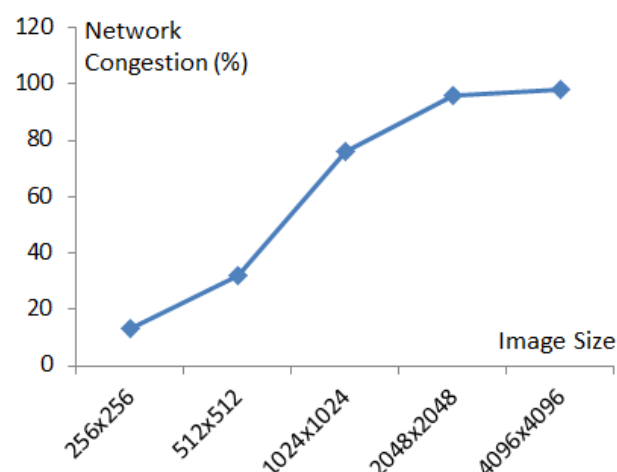


Fig. 4. Network Usage in a Distributed Cluster

Since the computing cluster is built on a local network with a bandwidth of 100 Mbps, its parameters and congestion are important in speeding up the computations. In fig. 4 presented the results of the network usage with the cluster. As you can see from the figure, with the increasing the image size, the network congestion also increases, because in this case, an entire array of image data is allocated for each cluster processes. Starting the exchange of images with the resolution of 2048x2048 and more, the network congestion is achieved at 96-98%.

Conclusion. In the results of research and computational experiments, a computing cluster consisting of one head node and four computing nodes based on HPC technologies, interconnected by a local network with a bandwidth of 100 Mbit / s, was

developed. This computing cluster serves to implement the distributed image processing algorithm using wavelet functions based on MPI parallel programming technology.

Network bandwidth also affects the overall performance of the cluster, as this network connects all computing nodes and the head node of a distributed cluster. The experimental results show that with increasing the size of the distributed images, the network congestion also increases since the network bandwidth is shared between the computing nodes of the cluster. When distributing the images with resolutions of 2048x2048 or more, network congestion is achieved at 96-98%.

The results of studies and experiments on parallelizing computations on a computing cluster show that using a computing cluster is more efficient when processing images from the video frames with the size of 1024x1024 or more. The processing time of an MPI cluster is 1.4 times faster than a parallel algorithm based on local MPI processes and 3.3 times faster than a sequential algorithm based on an individual computer.

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ACTUAL PROBLEMS OF NATURAL SCIENCES

UDC: 579.26

MICROBIOCENOSIS OF PESTICIDE CONTAMINATED SOILS OF KARAKALPAKSTAN

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Abstract: The article discusses the features of microbiocenosis in pesticide-contaminated soils of Karakalpakstan. The results of studies in the region show that soil pollution with pesticides and salinization changes the ratio between individual groups of soil microorganisms and leads to a depletion of the species composition and the dominance of the most adapted to pesticides, salinization of microorganisms. Reduced biodiversity with a predominance of certain groups of soil microorganisms indicates low environmental sustainability.

Keywords: pesticides, microorganisms, halophiles, halophyte substrate, agrocenosis.

Аннотация. Мақолада Қорақалпоғистон ҳудудида пестицидлар билан зарарланган тупроқлардаги микробиоценозларнинг ўзига хос хусусиятлари кўриб чиқилган. Минтақада олиб борилган тадқиқот натижалари шуни кўрсатадики тупроқларнинг пестицидлар билан зарарланиши ва шўрланиши тупроқ микроорганизмларининг айрим гуруҳлари орасидаги ўз оро нисбатининг ўзгаришига, түр таркибининг бирлашишига, пестицидларга ва шўрланишга мослашган турларнинг доминат бўлишига олиб келади. Тупроқда белгили бир гуруҳ микроорганизмларининг устинлик қилиши билан биологик хилма хилликнинг қисқариши пас даражадаги экологик барқарорликни кўрсатади.

Калит сўзлар: пестицидлар, микроорганизмлар, галофиллар, галофит субстрати, агроценоз.

Аннотация: В статье рассматриваются особенности микробиоценоза в загрязненных пестицидами почвах Каракалпакстана. Результаты проведенных исследований в регионе показывают, что загрязнение почв пестицидами и засоление изменяет соотношение между отдельными группами почвенных микроорганизмов и приводит к обеднению видового состава и доминированию наиболее приспособленных к пестицидам и засолению микроорганизмов. Сокращение биоразнообразия с преобладанием определенных групп микроорганизмов почв указывает на низкую экологическую устойчивость.

Ключевые слова: пестициды, микроорганизмы, галофилы, галофитный субстрат, агроценоз.

Introduction. The formation of the microbial community of the soil depends on many factors, including the presence of pesticides. An important indicator of the ecological situation of the environment is the diversity of microorganisms. The microorganisms that inhabit the soil are very numerous and belong to various systematic groups. A clearer pattern of the distribution of microorganisms is manifested when comparing their quantitative content in various soil substrates. The study of the microbial composition of soils contaminated with pesticides is of considerable scientific interest both for controlling environmental pollution and for isolating microorganisms resistant to high concentrations of xenobiotics.

Literature review. “Health” of the soil is determined by the presence in it of certain groups of microorganisms that carry out the most important functions of the synthesis and degradation of organic substances, nitrogen fixation, humification, cycling of nutrients, etc. [1,3]. A strong anthropogenic load actively affects the soil microbiocenosis, as a result of which the most sensitive links fall out, and the natural balance between individual microflora groups is disturbed. In turn, this changes the intensity of the individual stages of the nutrient cycle, which leads to soil degradation,

humus mineralization and disruption of the ecological functions of the soil [10,11]. As reasonably noted by G.L.Tyshkevich [13], the negative consequences associated with pesticides are mainly due to the destruction of biogeocenoses, in which the very existence and abundance of individual species of living organisms are closely related.

As is known, the level of potential soil fertility is determined by the microbiological and enzymatic activity of the arable layer. The microbial community, which mainly determines the biochemical properties of the soil, is a set of co-living organisms of different species that make up a certain ecotrophic unity. Of all the biotic components of the ecosystem, the microbial community is most sensitive to environmental changes that occur during the agricultural development of ecosystems [8,9].

Many researchers [5,8,12] have shown that depending on the dose of xenobiotics, as a result of which species diversity decreases, the coefficient of dominance of certain types of microorganisms increases, dominant species and groups of microorganisms change, their abundance and activity of microbiological processes change. Even short-term exposure to pesticides, which caused a strong suppression of soil bacteria, leads to long-term consequences, manifested in a change in the water balance of the soil, a decrease in the intensity of nitrogen fixation processes. As a result, a chain of interconnected processes will be launched that will deprive the soil of fertility [4].

Materials and methods. In the course of the study, the quantitative and qualitative composition of the microflora of the soils of the model site, which was located on the territory of the Republic of Karakalpakstan, was studied: the soils of the former pesticide storage area, nearby cultivated fields (soil under cotton and rice) and the saline site. Soil samples were taken in the spring from the arable layer, due to the fact that toxicants are concentrated mainly in the upper layers of the soil, which contain the most numerous microflora. All soil samples were taken according to the "envelope" method in compliance with aseptic rules. Quantification of individual physiological groups of

microorganisms was carried out by the generally accepted method of serial dilutions followed by seeding on various elective nutrient media to identify the taxonomic affiliation of bacteria and expressed in CFU (colony forming units) /g of absolutely dry soil. At the same time, ammonifying, denitrifying, nitrifying, nitrogen-fixing, sulfate-reducing, spore bacteria and actinomycetes were taken into account, since these microorganisms participate in soil-forming processes and provide self-cleaning ability of the soil. Microbiological analyzes were performed according to the methods adopted in soil microbiology [2,6,7]. Meat-peptone agar was used as the main medium for maintaining and cultivating bacteria. During the majority of tests, bacteria were cultured in an incubator at 30°C.

Results and its discussion. The quantitative characteristics of the main groups of microorganisms indicate that the soils of the studied territories are richly populated by various groups of microorganisms, despite the extreme condition of the region.

In the soils of the model site, among the main taxonomic groups of microorganisms, there is a clear advantage of ammonifying, spore-forming bacteria and actinomycetes, and a low content of nitrifying and nitrogen-fixing bacteria. Experimental data showed that, unlike other experimental plots, the number of microorganisms dominated under the rice culture, which is associated with greater moisture and an excess of undecomposed organic matter. Soils with a high level of pollution and salinization were characterized by a decrease in the total number of all physiological groups of microorganisms, in which depletion of their species composition was also noted.

Among the studied physiological groups of microorganisms in soils under rice crops, the main ones were ammonifying bacteria. In the soil under cotton, ammonifying bacteria were also dominant in number, which was associated with the additional intake of fresh organic matter into the arable layer of the soil. The smallest number of ammonifiers was found in the soils of contaminated and saline areas.

Following the ammonification step, nitrogen conversion is carried out by nitrifying bacteria. Nitrifiers are involved in the oxidation of ammonia formed during the decomposition of organic nitrogen-containing compounds. Assessment of the number of nitrifying bacteria showed that in all experimental plots their number was low compared with other groups of microorganisms. A relatively high content of nitrifying bacteria was noted in the cotton and rice fields - 7 and 11×10^3 CFU / g of soil, respectively. It is likely that the low number of nitrifying agents is explained by their sensitivity to various kinds of strong influences (pesticides, salinity, dryness) in comparison with other saprophytic microorganisms.

The ecological well-being of the soil is determined by the presence of nitrogen-fixing bacteria. Nitrogen bacteria absorb molecular nitrogen, providing this element to themselves and all other organisms, and play a leading role in the balance of nitrogen in agroecosystems. Studies have established that the maximum growth of azotobacter on lumps is noted in soils under crops of rice and cotton (80-90%), which can be explained by the intake of a large number of available organic compounds. In saline and pesticide-contaminated areas, the amount of azotobacter was insignificant, and growth was detected in approximately 10% and 20% of soil lumps, respectively. The inhibition of the reproduction of this physiological group in the soils of the model site is probably due to the negative influence of factors such as increased salinity, alkalinity, lack of oxygen, the presence of pesticides and a deficiency of organic substances.

It is known that sulfate reducers are a physiological group of bacteria that reduces sulfate to hydrogen sulfide under anaerobic conditions. Sulphate-reducing bacteria develop especially intensely in the aquatic environment with difficult access of oxygen, and play an important role in the process of soda formation in the soil. As a result of studying the soils of the model site, it was found that the number of sulfate-reducing bacteria varied very widely depending on the place of soil sampling. The largest number of sulfate reducers was detected in the soils of the rice field up to $7,3 \times 10^6$ CFU / g, their

abundance in halophyte substrate is slightly behind. A low number of sulfate reducers was found in the cotton field, while sulfate reducing bacteria were completely absent in the soil from the burial site of pesticides, which is probably due to the inhibitory role of pesticides on their growth and development. A significant development of sulfate reducers in soils under the rice culture and halophyte plot may indicate the creation of conditions for the development of anaerobic microorganisms that destroy sodium sulfate, and the presence of a sufficient amount of nitrogen and iron.

We also revealed that cultivated soils are distinguished by a variety of bacilli. This indicates that the studied soils are rich in hard-to-decompose organic substances. Most of all, spore bacteria were found in soils under rice crops, the amount of which was $3,0 \times 10^6$ CFU / g and slightly lower than their numbers in the cotton field soils, the number of which was $1,7 \times 10^6$ CFU / g. Spore bacteria are less developed in halophyte and highly pesticide-contaminated areas and are found in a minimal amount, that is, 2 orders of magnitude lower. In highly saline and pesticide-contaminated soils, the species composition of the bacilli was depleted, and monoculture often grew, which suggests that the soil microflora of these areas is under stressful conditions.

Denitrification under the influence of microbes is the reduction of nitrates with the formation of molecular nitrogen as the final product. This process is carried out by denitrifying bacteria. The largest number of denitrifying bacteria ($2,4 \times 10^4$ CFU / g) was observed in the rice field soils; the minimum number ($1,3 \times 10^3$ CFU / g) was recorded in soil samples from the contaminated area. In the soils under cotton and halophyte, their numbers coincide. This may indicate a more significant effect of zonal factors on denitrifying microorganisms, namely, moisture deficiency and low humus content.

Actinomycetes, possessing a rich enzymatic apparatus, are able to mineralize sparingly soluble organic substances, especially they tend to destroy the most stable chemical compounds. Actinomycetes are also most active in soils with a neutral and slightly alkaline reaction and are relatively resistant to moisture deficiency and are

widely distributed in dry soils, which is confirmed by the results of our studies. In the model plot, a high content of actinomycetes occurs in cultivated fields. The quantitative values of the number of actinomycetes in the soils under rice and cotton crops were of the same order of magnitude ($2,5 \times 10^6$ and $2,8 \times 10^6$ CFU / g, respectively). Somewhat in smaller quantities they were found in saline and contaminated soils, $1,3 \times 10^6$ and $0,5 \times 10^6$ CFU / g, respectively.

It is known that the quantitative and qualitative composition of microorganisms living in the soil is significantly affected by the content of water-soluble salts in the soil. An increase in salinity has led to a decrease in the number of microorganisms. Especially the degree of salinity strongly influenced the development of nitrogen fixers.

The data presented show that ammonifying microorganisms dominate in the rice field, the percentage of spore bacteria is higher; the optimal condition turned out to be also for the nitrogen tank, sulfate-reducing and nitrifying bacteria. Judging by the number of microorganisms that are actively involved in the destruction of organic substances in the soil, it can be observed that the mineralization process occurs more intensively in soils under the rice culture. The greatest number and variety of microbial forms was also noted in soils under cotton. According to the quantitative composition of actinomycetes, azotobacter, and spore bacteria, the soils of the rice field do not significantly differ from cotton agroecosystem.

CONCLUSION

The studies carried out to determine the number of microbes in the soil containing various pesticides allow us to conclude that the analysis of the microbial landscape in the arable layer of the soil of the studied agroecosystem revealed a noticeable number and variety, the presence of all the main microorganisms involved in the cycle of substances. Soil pollution with pesticides and salinization change the ratio between separate groups of soil microorganisms, which leads not only to a decrease in the number of microorganism cells, but also to a depletion of the species composition and the

dominance of the most adapted to pesticides and salinization of microorganisms. Changes in the ecological structure of microflora can serve as an indicator of environmental pollution.

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**MATHEMATICAL ANALYSIS OF RESULTS OF RESEARCH ON STUDYING
INFLUENCE OF WHEAT FEEDING IN THE PHASE OF EMBRYONAL
DEVELOPMENT THROUGH LEAVES BY THE METHODS OF
B.A.DOSPEKHOV**

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Abstract: Based on the results of field experiments in 2015-2017 on winter soft wheat varieties, the yield error was 0.64-0.98 kg / ha (HCP05 factor A), and the yield error on application of the urea norm was 0.45- 0.69 kg / ha (HCP05 factor B), which allows us to consider the conducted research reliable.

The result determined by mathematical analysis according to the method of B. A. Dospekhov [4], the minimum difference was up to 0.98 kg / ha, which allows the introduction of large-scale practical farming with urea solutions physical 40 kg / ha per 300 l / ha of water in the beginning phase embryonic development of varieties of winter soft wheat Yaksart and Gazgan through the leaves.

Keywords: winter wheat, Yaksart, Gazgan, carbamid, embryonic development, mathematical analysis.

Annotatsiya: 2015-2017 yillarda o'tkazilgan dala tajribalari natijalari bo'yicha kuzgi yumshoq bug'doy navlari hosildorligi bo'yicha xatoliklar (EKF₀₅ A faktor) 0,64-0,98 s/ga bo'lib, karbamid qo'llash me'yorlari ta'siridagi xatoliklari (EKF₀₅ B faktor)

0,45-0,69 s/ga tashkil etgani holda o'tkazilgan dala tajribalari natijalarining ishonchlilik darajasi yuqori ekanligi aniqlandi.

Kuzgi yumshoq bug'doyning YAKsart va G'ozg'on navlarining embrional rivojlanishi fazasi boshlanganda barglari orqali fizik holda karbamidning 40 kg/ga me'yori 300 l/ga suvda eritilib qo'llanilishi samarali tadbir bo'lib, B.A.Dospexov usulida [4] matematik tahlillar natijalarida aniqlangan eng kichik farq 0,98 s/ga dan oshmaganligi ushbu ilmiy-amaliy echimning dehqonchilik amaliyotida keng maydonlarda qo'llash imkoniyatini oshiradi.

Kalit so'zlar: Kuzgi yumshoq bug'doy, YAKsart, G'ozg'on, Karbamid, Embrional rivojlanish, Matematik tahlil.

Аннотация: По результатам полевых опытов проведенных в 2015-2017 годы на сортах озимой мягкой пшеницы ошибка по урожайности составляла 0,64-0,98 ц/га (HCp_{05} фактор А), а по применению нормы карбамида ошибки по урожайности составляла 0,45-0,69 ц/га (HCp_{05} фактор В) что позволяют считать достоверными проведенного исследования.

Результат определенная при математического анализа по методике Б.А.Доспехова [4] минимальная разница составляла до 0,98 ц/га что позволяют внедрению на больших площадях практическое земледелие подкормка растворами карбамида физические 40 кг/га на 300 л/га воды в фазе начале эмбрионального развития сортов озимой мягкой пшеницы Яксарта и Газгана через листья.

Ключевая слова: Озимая пшеница, Яксарт, Газган, Карбомид, Эмбриональная развития, Математическая анализ.

Introduction. The growth of the world population, various soil and climatic changes, a decrease in the area under crops of grain crops led to a decrease in the weight of grain production have been contributing to rise prices in the world market.

In the wheat-producing countries of the world, much attention is paid to the study of determining the optimal timing and norms for feeding wheat through leaves in different periods for the production of high-quality winter wheat. Because top dressing of wheat through leaves contributes along with increased yields and improves grain quality.

In the Decree of the President of the Republic of Uzbekistan dated February 7, 2017 under the number PF-4947 "On the Development Strategy of the Republic of Uzbekistan" as important strategic tasks is "3.3 .. continuous development of agricultural production, further strengthening of food security of the country, expanding the production of environmentally friendly products, optimization of sown areas, the introduction of modern resource-saving agricultural technologies. " Therefore, it is important to carry out scientific research on feeding urea solution through winter wheat leaves, determine the norm of urea solution, develop a high-quality exported grain crop and increase the competitiveness of winter wheat in the world market.

This work largely serves to accomplish the tasks set in the decree of the President of the Republic of Uzbekistan dated January 16, 2018 No. PU-5303 "On measures to ensure the food security of the country", dated April 16, 2018 No. No. PU-5418 "On measures for radical improvement of the state system of management of agriculture and water management", as well as the tasks mentioned in other regulatory documents.

In this regard, it is of particular interest to consider scientific research carried out in various soil and climatic conditions [2, 5, 6, 7, 8, 9].

These scientific and practical solutions using the topdressing of wheat through the leaves improve the quality of wheat grains. In this regard, it is of certain interest to study the effect of urea through wheat leaves in the southern regions of Uzbekistan.

To determine the reliability of the obtained data on the yield of varieties of winter soft wheat, there was a need for mathematical processing [11]. In this regard, the processing of the data obtained by studying the influence of fertilizing urea solutions in the phase of embryonic development of varieties of winter common wheat according to the method of B. A. Dospekhov [4] is an urgent issue.

Research methodology. Field experiments were carried out in 2015-2017 at the Saidmamat Polvon Saidov farm on varieties of winter soft wheat Yaksart and Gazgan.

Research work is two-factor: factor-A varieties of winter soft wheat, factor-B norms, fertilizing urea solutions.

Urea solutions physically 30, 40, 50 kg / ha dissolved in 300 l / ha of water were used in the embryonic development phase of winter common wheat varieties. In the control variant of the experiment, the urea solution was not taken.

The experiments were carried out in one tier of fourfold repetition. Plot area 180m², accounting plots 100 m².

The experiments were carried out against the background of the recommended norms and the ratio of mineral fertilizers for feeding varieties of winter soft wheat (N₁₈₀P₉₀K₆₀) [3].

If the difference is as small as possible between the weight and actual results that are determined during the calculation process, the study is considered reliable [10].

Errors of field experiments arise mainly in the process of conducting field experiments, in measurements and in weighing processes [12].

Other errors in field experiments are related to the diversity of soil fertility. In the process of application of agrotechnological measures and economic and organizational processes, errors in field experiments are also made.

Therefore, to recommend the results of field experiments, the reliability of the difference between the control and experimental versions of the experiment is necessary.

Because the difference between the control and experimental options determine the reliability of scientific research to field experiments, the reliability of the study increases [4, 10].

Experimental part. With the integration of research and practical agriculture, the creation of mathematical research models plays a big role.

Mathematical analysis in crop production is mainly carried out according to yield data.

Quantitative indicators of yield are determined by counting the quantitative volume of the crop that determines the present result. When comparing the quantitative result with the present results, the differences determined by the experiment are accurate [4].

Our studies also found the smallest difference between the present difference and the difference with the repetition of field experiments. Those the difference was up to 1 kg/ha with an allowable error of up to 6% (table).

When feeding varieties of winter soft wheat Yaksart and Gazgan with urea solutions, mathematical analysis was carried out according to yield data according to the method of B.A. Dospekhov [4].

Table

The effect of urea on the yield of winter soft wheat varieties adopted in the embryonic development phase

№	Indicator Experience Options	Productivity, t / ha				Difference compared to control +-
		2015	2016	2017	average	
Variety Yaksart						
1	Carbamide free (st)	45,5	44,9	45,1	45,2	0
2	Carbamide 30 kg/ga	47,9	47,1	48,2	47,7	+2,5
3	Carbamide 40 kg/ga	48,6	48,6	48,9	48,7	+3,5
4	Carbamide 50 kg/ga	47,8	48,1	48,2	48,0	+2,8
Variety Gazgan						
1	Carbamide free (st)	47,2	47,0	47,3	47,2	0
2	Carbamide 30 kg/ga	49,3	49,1	48,9	49,1	+1,9
3	Carbamide	50,4	50,0	51,0	50,5	+3,3

	40 kg/ga					
4	Carbamide 50 kg/ga	50,1	48,5	50,3	49,6	+2,4
HCP ₀₅ =t/ha Factor A (variety)		0,74	0,98	0,64		
HCP ₀₅ =t/ha Factor B (Carbamide)		0,54	0,69	0,45		
HCP ₀₅ =t/ha Factor A (variety and carbamide)		0,38	0,49	0,32		

Field experiments were carried out on a two-factor system where factor A are varieties of winter soft wheat Yaksart and Gazgan, factor B are physical urea solutions of 30, 40, 50 kg/ha. In this case, the yield of Yaksart variety of winter soft wheat was 47.7-48.0 kg/ha depending on the urea norm, for Gazgan variety the yield of grain of winter soft wheat was 47.2-49.6 kg/ha, where it exceeded the background of urea, where urea 40 kg / ha was physically taken.

The additional grain yield for the Yaksart variety with the action of 40 kg/ha of urea was 2.5–3.5 kg/ha and for the Gazgan variety 1.9–3.3 kg/ha in comparison with the control variants of the experiment where the urea solution was not taken.

The yield results by the action of the urea solution are positive, which was determined by the result of mathematical processing and allows the introduction of agricultural practice.

The results of mathematical analysis allow us to recommend farming where the errors made are lower than the 6% error.

Mathematical analysis was carried out using the smallest differences of up to 0.5 kg/ha (HCP_{05}) according to the yield data of winter soft wheat varieties Yaksart and Gazgan.

According to factor A B, the smallest difference was 0.32-0.49 c/ha, which confirms the reliability of the studies carried out on top dressing varieties of winter common wheat Yaksart and Gazgan.

Thus, the mathematical processing of the research results on the influence of urea solutions of physically 30, 40, 50 kg/ha of water dissolved in 300 l/ha by the method of B. A. Dospekhov [4] allows us to consider the reliability of the research results.

Conclusion. According to the results of field experiments carried out in 2015-2017 on winter soft wheat varieties, the yield error was 0.64-0.98 kg/ha (HCP_{05} factor A), and the yield error was 0.45-0 for the application of the urea norm. 69 c / ha (HCP_{05} factor B), which allows us to consider the conducted research reliable.

The result determined by mathematical analysis according to the method of B. A. Dospekhov [4], the minimum difference was up to 0.98 kg / ha, which allows the introduction of large-scale practical farming with urea solutions physical 40 kg/ha per 300 l/ha of water in the beginning phase embryonic development of varieties of winter soft wheat Yaksart and Gazgan through the leaves.

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**ROLE OF MULCHING AGROTECHNOLOGY IN DEVELOPING WATER
SAVING AGRICULTURE AND OPPORTUNITIES OF GARDENING
WITHOUT WATERING IN NAMANGAN REGION ADYRES**

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Annotatsiya: maqolada suv taqchil bo'lgan hududlarning qishloq xo'jaligi sohasida ko'p foydalaniladigan mulchalash agrotexnikasi, uning suvni tejashdagi ahamiyati yoritilgan. Shuningdek, mulchalashdan foydalanib Namangan viloyati adirlarida sug'ormasdan bog' yaratish imkoniyatlari bo'yicha olib borilgan tajriba natijalari bayon qilingan.

Kalit so'zlar: mulching, tuproq namligi, adir mintaqasi, sug'ormasdan bog' yaratish, suvtejamkor qishloq xo'jaligi.

Abstract: the article discusses mulching agro technology which is frequently used in water rare areas and the role of water saving. Besides that experiment results of opportunities of gardening by mulching in Namangan region hills are presented.

Key words: mulching, soil moisture, hills, gardening without watering, water saving agriculture.

Аннотация: в статье рассматривается агротехника мульчирование, которая часто используется в сфере сельского хозяйства в регионах с проблемой воды и его роль в экономии воды. А также, представлены результаты эксперимента по возможностям разбивки сада в холмистых местностях Наманганской области, пользуясь мульчированием

Ключевые слова: мульчирование, влажность почвы, адырная зона, разбивка сада без полива, сельское хозяйство с экономией воды.

Introduction. One of the important agro technological measure to be taken to preserve soil moisture in agriculture is called mulching [8]. (Mulching English

word, which “mulch” means covering, that covering the surface of soil with mulch paper or not compact materials such as rice or wheat straws, wood shavings, fertilizer humus and others completely or in rows. Mulching is used, especially, water rare, cold weather with few sunny day continent as well as in countries where day and night temperature is high. Because as mulching prevents from useless evaporation, consequently soil moisture is used for a long time for plant growing.

Literature review. People has been using mulching to prevent their plants due to uncomfortable weather or harvest productivity decrease. Mulching has been carried out in different regions with various ways and their results are not the same respectively.

For instance, people in Sogd Province, Asht district utilized stone as mulching in highlands near the river. Because it can be seen the moisture under a big stone in sunny days of summer. Gathering stone around the tree makes effective condition for the tree growing [9].

Local fertilizer (manure), rice or wheat straws, wood shavings, hay and cane have been used in Namangan region hills as mulching and is still being used in some areas the region. Sapling trunks are surrounded by one of the above mentioned mulching items 1- 1,5 meters radius from sapling and 10-15 sm in depth. Besides that, means of mulching are scattered between the rows and cultivated so that rodents cannot harm in winter [2].

Current research results shows that some gardeners in some regions of Uzbekistan use different ways instead of above-mentioned methods. Plants seeds which are not lost green grass condition are sowed thickly under fruit trees in autumn or early spring. Consequently that grass will grow and cover the ground. The grass absorbs the majority of the sunbeams, along with it protects from high temperature and over evaporating soil moisture thanks to shadows of surface of the

ground leaves. In addition to this, drops of dew may serve as a way of increasing soil moisture. Water less evaporates in the field which is covered with plants in comparison with it is not. For instance the amount of evaporation in 10 cm part of the soil less than 1,1-1,6% in Zarafshan valley grounds covered with plants in comparison with open ground.[10].Moreover grass due to raining protects effectively from becoming a crust, water and wind erosion. This certainly leads to affect the growth of the fruit trees positively and upgrade the productivity.

.At the end of the 90th years of the XX century cotton sowing of Andijan technology is realized in huge fields. [8] By this way, polyethylene is put on the garden-bed, sowed cotton seeds in per holed by the help of special adjustment which is fixed with sowing-machine. Polyethylene is removed after budding.

Using polyethylene as mulching material in near Tashkent and Dushanbe cities is worthy pointing out the experiment which was done by N.Lukin. He did an experiment on the peanut and apple tree. He covered the sapling trunk with polyethylene. He covered soil in 3 – 5 cm to prevent from increasing soil temperature under polyethylene greenhouse effect. According to results mulched peanut saplings grew 2,5 faster than not mulched ones. Likewise, mulched apple trees harvest is more than 10 – 15 5% than not mulched trees.

The next experiments were performed on vegetables. In 1986 although the weather was hot and dry, tomatoes was harvested 250 centner from per hectare. It is fact that its crop turned to be small, but its taste was nice. it is fact that size of the fruit was smaller, however its taste was sweet [9].

Research methodology. It was conducted a gardening experiment by considering to use save soil moisture peculiarities of mulching agrotechnics in Namangan region hills. The first experiment began by separating enough ground (0.05 hectare) and cultivating in autumn, 2013. The reason is cultivated ground

gathers absorbs more moisture. [1] Brooklet was dug through each of those planted sapling trunk in 80 – 100 cm radius and 25 – 35 cm in depth.

As soon as planting saplings their trunks, at the edge of the dug brook let of the planted sapling trunk was covered with polyethylene, with another word, mulching is done. Its surface was covered with soil 3- 5 cm not to increase degree of soil, that to protect from greenhouse effect.

By this was the main part of the work is completed. In the next step phenological observation is done until the end of vegetation of the saplings”. In mid-autumn, that is, at the end of vegetation, polyethylene which was covered around the saplings was removed and then carried out hoeing to reserve water from atmospheric precipitation in winter and spring [7].

Analysis and results. According to experiment results, vegetation of mulched saplings is the same with watered saplings. Blossoming, being in leaf, having branches and growing happened in both type of the saplings. Leaf dropping began 10 -15 days earlier. During vegetation apricot trees grew 35 – 40 cm in average, apple trees grew 25 – 30 cm, peach tree 30 cm. [6, 7]. Not drying of not watered saplings and Having positive vegetation period shows that there is possibility of gardening without watering.

0,05 hectare, new experiment field was made near the area where the first experiment was held in 2014 and 5 bushes of apricot - trees, cherry – trees, quince – trees saplings were planted on March 19. Every sapling covered with Polyethelene, according to above mentioned technology.

Phenological observation was done on growing and developing of saplings from the date of planted until the end of vegetation [3,4,5].

According to results vegetation period of saplings passed well without being watered. The first blossom and complete blossoming, coming into leaf, at the end of vegetation period leaf shedding periods happened in the same period with watered trees vegetation. The pace of growing of experiment planted trees in 2014 is higher than the

trees planted in 2013. Five apricot – trees had 100 flower buds, but they did not have fruit. Some saplings grew even 100 cm within a year.

The paces of saplings in the experiment garden grew differently depends on tree types in newly cultivated garden in 2014. Growth of peach – trees and quince – trees was better other trees. The least results were observed in cherry – trees, apple – trees and apricot – trees. It was observed that some of those trees dried up.

According to research results, growing of removed saplings in autumn trees and replanting them in spring was ineffective. Plum – tree, apple – tree and apricot – tree had the same result due to that condition. On the contrary, replanting peach and quince – trees in spring happened to grow better.

Conclusion and recommendation. Plasmolysis on sapling leaves occurred in hot and sunny days of summer. But deplasmolysis process was observed in the afternoon the leaves turned to recover. No matter the precipitation is low, the condition of saplings is good and this result showed a possibility to do gardening on the hills without watering. In addition to this, it showed to develop this technology because of experiment saplings had few brunches, low growth rate, few numbers of flowers, losing of their fruit before they were raped and their weakness for cold weather in weather.

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**ACTIVITY AND FUNCTIONAL DIVERSITY OF MICROBIAL
COMMUNITIES IN LONG-TERM HYDROCARBON CONTAMINATED SOILS
(PAHs)**

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Annotatsiya: Tuproq mikroorganizmlarining tuproqning polisiklik aromatik uglevodorodlar (PAU) bilan ifloslanishiga reaksiyasi baholandi. Angren shahridagi elektr energiya stantsiyasi va Farg'ona moy tozalash zavodida atrofida tarqalgan ifloslangan 8 ta tuproq va suv namunasining mikrobiologiyasi o'rganildi. PAU bilan ifloslangan tuproqlar hudud tomonlari (sharq, g'arbiy, janub va shimolda) va shamol yo'nalishiga qarab tuproq namunalari olindi. Ifloslangan tuproq va suvdagi 7 turdagi

(*moy kislotali bakteriyalar, mikromitsetlar, azotsiz muhitda o'suvchi oligonitrofil mikroorganizmlar, ammonifikator bakteriyalar, aktinomitsitlar, selyuloza parchalovchi aerob va anaerob bakteriyalar*) mikroorganizmlarning asosiy fiziologik guruhlari baholandi.

Kalit so'zlar: aromatic uglevodorodlar, tuproq ifloslanishi, moy kislotali bakteriyalar, mikromitsetlar, azotsiz muhitda o'suvchi oligonitrofil mikroorganizmlar, ammonifikator bakteriyalar, aktinomitsitlar, selyuloza parchalovchi aerob va anaerob bakteriyalar.

Аннотация: Восемь вариантов образцов почвы и воды, загрязнённых ПАУ, были взяты на электростанции и на заводах по очистке нефти в Фергане, Ангрене, Ташкенте. Загрязнённые ПАУ образцы собирались по сторонам света (восток, запад, юг и север), В зависимости от ветровых и почвенных условий. Микробиологические показатели были оценены по основным агрономические важным группам (*аммонификаторы, актиномицеты, маслянокислые микроорганизмы, микромицеты, олиготрофные м/о, растущие в безазотистых условиях, целлюлозоразлагающие аэробы и анаэробы*) в почве и воде.

Ключевые слова: полициклические ароматические углеводороды, загрязнение почвы, маслянокислые бактерии, олиготрофные микроорганизмы растущие в безазотистых условиях, аммонификаторы, актиномицеты, целлюлозоразлагающие аэробные и анаэробные микроорганизмы.

Abstract. The reaction of soil microorganisms to the contamination of soil with PAHs was evaluated. Eight variations of soil and water contaminated with PAHs taken in Power Plant Station and Fergana Oil Purification Plant in Angren, Tashkent, Uzbekistan. Contaminated soils with PAH are taken in the Station by direction (east, west, south and north) and windy conditions of soil. Soil microbial properties were evaluated on the basis of seven principal physic group amount of microorganisms (*ammoniators,*

actinomycetes, fatty acid bacteria, micromycetes, oligotrophic microorganisms that grow non-nitrogen condition, cellulolytic aerobes and anaerobes) on soil and water.

Keywords: polycyclic aromatic hydrocarbons, benzopyrene, soil pollution, fatty acid bacteria, micromycetes, oligotrophic microorganisms that grow non-nitrogen condition, ammoniators, actinomycetes, cellulolytic aerobes and anaerobes.

Introduction

Technogenic, industrial processes cause emissions of pollutants into the environment, including polycyclic aromatic hydrocarbons. Polycyclic aromatic hydrocarbons are toxic, carcinogenic, and hydrophobic with an organic substance and combined with soil organic matter and they are very resistant to decomposition [37, 8, 31, 29, 24]. Such substances are the most contaminant of the environment, especially the soil [1, 17, 6], sediments [4] and sewage sludge [33].

Absorption of polycyclic aromatic hydrocarbons into soil organic and inorganic colloids reduces the bioavailability of organic compounds for microorganisms. Accumulation of polycyclic aromatic hydrocarbons worsens the activity of soil microorganisms [39, 21, 10, 38]. On the other hand, microbial degradation of these compounds occurs. Microbial degradation of PAHs depends on various environmental conditions, such as nutrients, number and kind of the microorganisms, nature as well as chemical property of the PAH being degraded [3, 16, 1, 11, 9, 7, 26, 25, 27, 5].

The microorganism's ability to utilize hydrocarbons as a carbon source makes it ideal for remediation of PAH contaminated soils. Other bacterial genus capable of degrading aromatic hydrocarbons include *Pseudomonas*, *Achromobacter*, *Bacillus*, *Arthrobacter*, and *Phanerocheate* [19]. Microbes, being in intimate contact with the soil microenvironment, are ideal monitors of soil pollution. Due to general sensitivity to low concentration of pollutants and rapid response to soil perturbation the microbes were considered to be very suitable for soil ecological evaluations [30, 22, 35, 20]. They rapidly degrade under normal soil conditions and do not accumulate in soil [23]. PAHs

present in soil may undergo dissipation by means of volatilization, biodegradation, chemical degradation, leaching, and uptake by plants [18, 36, 15]. Due to the highly hydrophobic nature of PAHs, the behavior of these compounds in soil is related primarily to their sorption by lipophilic organic soil material [18, 36, 34, 28, 32, 2] although other soil properties can also be of some importance.

The aim of the present study was to investigate the reaction of soil microorganisms to the contamination of soil with PAHs. The effects of soil properties and time of contamination were evaluated.

In the metabolism of nature, microorganisms are the main link in soil formation. The activity of microorganisms in soil fertility is invaluable. Specifically, the types of microorganisms are formed according to each soil type, specific climatic conditions, vegetation cover and physical and chemical properties.

Therefore, studies were conducted to study the microbial association of irrigated and non-irrigated dark brown soils around the Angren Thermal Power Station and the Oil Refinery.

Material and Methods

The experiments were conducted on irrigated and non-irrigated soils of the contaminated soils of Angren Thermal Power Station and Fergana Oil Purification Plant (lat. 41.004897; lon. 70.122799) of the eastern of Tashkent region (fig.1). Soil samples were taken 0-30 sm of soil layer by ISO 10381-8 [13] and air-dried by ISO 16720 [14]. The following soils and water were selected:

1st soil sample – coal layers are taken from waste water from west of Angren Thermal Power Station (lat. 41°00'09,03"; lon. 70°06'36,11"). 700 meter far from Thermal Power Station and 1500 meter far from Oil Purification Plant.

2nd soil sample – soil is taken as rectification. Corn is planted (lat. 41°00'09,10"; lon. 70°06'36,15"). 700 meter far from west of the Station and 1500 meter far from the Plant.

3rd soil sample – soil layers are taken from southern west from Angren The Station (lat. $41^{\circ}01'12,03''$; lon. $70^{\circ}07'27,61''$). 1000 meter far from The Station and 700 meter far from the Plant.

4th soil sample – soil layers are taken from northern east of Angren Thermal Power Station (lat. $41^{\circ}01'27,49''$; lon. $70^{\circ}13'53,84''$). 1000 meter far from The Station and 700 meter far from Oil Purification Plant.

5th soil sample – soil layers are taken from west of Angren Thermal Power Station (lat. $41^{\circ}00'09,03''$; lon. $70^{\circ}06'36,11''$). 700 meter far from The Station and 1500 meter far from the Plant.

6th soil sample – soil layers are taken from waste water from Angren Thermal Power Station (lat. $41^{\circ}00'09,03''$; lon. $70^{\circ}06'36,11''$). 700 meter far from Station and 1500 meter far from the Plant.

7th soil sample – soil layers are taken from waste water from Angren Thermal Power Station (lat. $41^{\circ}00'09,03''$; lon. $70^{\circ}06'36,11''$). 700 meter far from Station and 1500 meter far from the Plant.

8th soil sample – soil layers are taken from waste water from Angren Thermal Power Station (lat. $41^{\circ}00'09,03''$; lon. $70^{\circ}06'36,11''$). 700 meter far from The Station and 1500 meter far from the Plant.



Fig.1 Angren Thermal Power Station and Fergana Oil Purification Plant**source: [12]**

The climate of Angren is moderate. The hot season lasts for a year, from May to September, with an average daily high temperature above 77°F. The hottest day of the year is July, with an average high of 87°F and low of 64°F. The cold season lasts for a year, from November to March, with an average daily high temperature below 46°F. The coldest day of the year is January 14, with an average low of 24°F and high of 36°F. *Rain alone* is the most common for 12 months, from January 22 to January 8. The highest chance of a day with *rain alone* is 20% on March 31.

The *windier* part of the year lasts for 6.0 months, from April 4 to October 2, with average wind speeds of more than 6.1 miles per hour. The *windiest* day of the year is July 11, with an average hourly wind speed of 7.5 miles per hour. The wind is most often from the west for 8.9 months, from February 14 to November 12, with a peak percentage of 59% on July 18. The wind is most often from the east for 3.1 months, from November 12 to February 14, with a peak percentage of 43% on January 1 [12].

In microbiological analysis of soil samples, generally accepted methods of soil microbiology were used [40, 41].

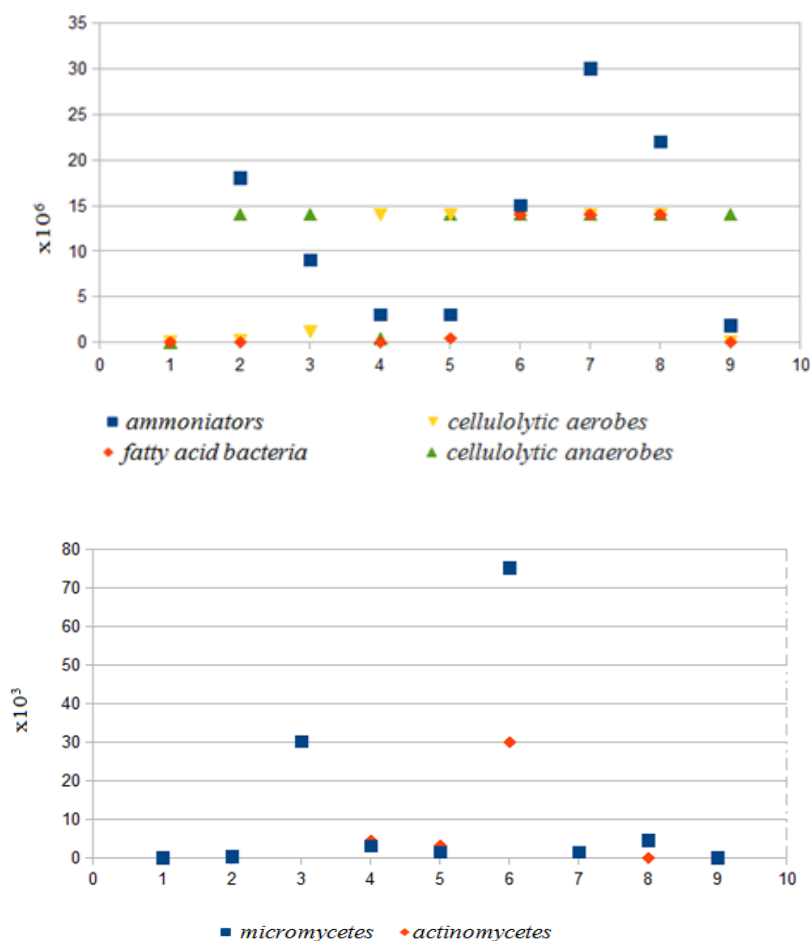
Soil samples were taken from the depths of 0-30 cm to study the amount of some physiological groups in dark-brown soils contaminated with polycyclic aromatic hydrocarbons. Microorganisms in water and soil, including *ammoniators* - GPA nutrient condition, *oligotrophic microorganisms* – Eshbi nutrient, *micromycetes* and *actinomycetes* - in Chapeka solid nutrients, as well as *fatty acid bacteria* in Vinogradsky nutrient condition, *cellulolytic aerobes and anaerobes* in Getchinson liquid nutrient condition were planted and analyzed.

A suspension was prepared from the soil samples taken for microbiological analysis. To do so, weighs 10 grams of soil sample and mixed in 90 ml of sterile water and rinsed for 5 minutes, then using a pipette 1 ml suspension and 9 ml of sterilized tube solution. This process was continued sequentially, diluted to 1: 100,000 and repeated. 1

ml of Liquid Liquid was sown in specially strict electro-nutrient environments in three liters, ie ammoniators in meat peptonic feeding environment, oligonitrophy in the pesticidal medium, oligonitrophy in the acidic feeding environment, actinomycetes in the Chapeco feeding environment and microparticles "liquefaction". The amount of bacteria found in liquid food was processed on the basis of the McCredit table.

RESULTS

Oligonitrophil microorganisms play an important role in the transformation of nitrogen and carbon into the soil. This group of microorganisms breaks down the carbon portion of the most important organic matter. It was found that the amount of oligonitrophil bacteria in contaminated dark soils is 1.5×10^4 SBP (fig.2).



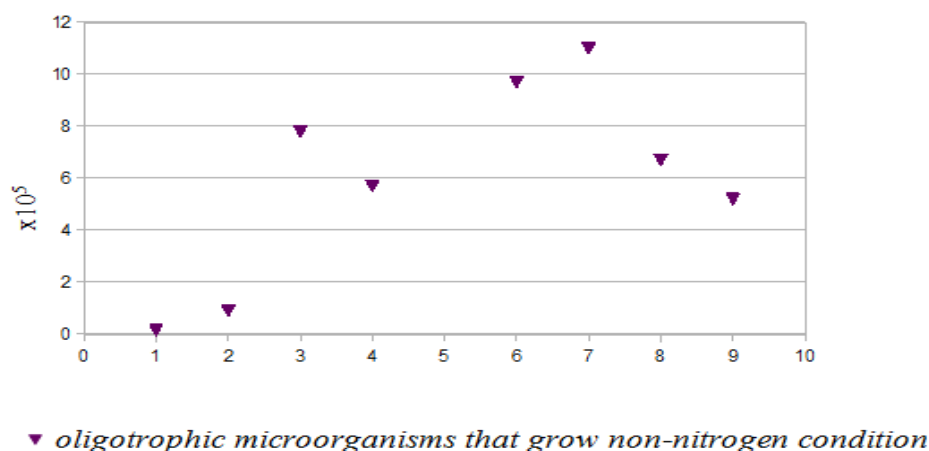


Figure 2. Quantity of microorganisms on irrigated and non-irrigated soils of the contaminated soils of Angren Thermal Power Station and Fergana Oil Purification

Actinomycetes and micromycetes play an important role in enhancing soil fertility and facilitating the absorption of some of the most difficult compounds in the soil. Microbiological analyzes showed that the amount of ammonia bacteria in samples 2, 6, 7, and 8 was $1.5-3.0 \times 10^7$ cells / g, and in 1, 3, 4, 5, and 9 cells, respectively, $1.5-3.0 \times 10^6$ cells. / g.

The number of oligonitrophil microorganisms that grow in nitrogenous environments is 1.1×10^6 cells / g in 7 soil samples, $4.8-9.7 \times 10^5$ cells / g in samples 3, 4, 5, 6, 8 and 9, and $1.5-9.0 \times 10^4$ cells / g were detected.

Micromycetes are high in samples 6 and 3, $7.5-3.0 \times 10^4$ cells / g, 4-4, 5, 7 and 8, $1.5-4.5 \times 10^3$ cells / g, and 2×3.02102 cells / g in 2 samples. samples 1 and 9, but they were not.

It was found that actinomycetes were also high in 6 samples, which was 3.0×10^4 cells / g. $1.5, 4.5 \times 10^3$ cells / g in soil samples 3, 4, 5, and 7, while 9 water samples contained 1.5×10^2 cells / g, whereas in samples 1, 2, and 8, they were not seen at all.

The highest levels of fatty acid bacteria in samples 6, 7, and 8 were 1.4×10^7 cells / g, 3 samples were in one order, two procedures in 5 samples, three sequences in samples 4 and 9, and 9.0×10^2 cells / g in at least 2 samples.

As a result of the analysis, the amount of aerobic cellulose in samples 4, 5, 6, 7 and 8 was 1.4×10^7 cells / g, one order was lower in 3 samples, two in two samples, and three in 9 samples. The highest levels of cellulose anaerobes were observed in samples 2, 3, 5, 6, 7, 8 and 9, with the highest decrease of 1.4×10^7 cells / g, and in 4 samples two doses. It was found that aerobic and anaerobic bacteria with fatty acid, cellulose-producing bacteria were not present in 1 sample.

Conclusion

In summary, as a result of studying the microbes of these soil samples, some samples show that the number of microorganisms in the main physiological group is normal on irrigated and non-irrigated soils of the contaminated soils of Angren Thermal Power Station and Fergana Oil Purification.

Soils highly contaminated by hydrocarbons displayed different microbiological properties. In particular the higher/the lower the pollutant content, the smaller/the greater are the activities of some enzymes related to nutrient cycling and the viable bacterial cell numbers. The different microbiological properties of the soils probably reflect the different bacterial diversity as assessed. Studies showed that: PAH induce perturbations in the microbial communities in terms of density and metabolism; indigenous bacteria seem to have a high capacity of PAH degradation, depending on the physicochemical properties and the availability of substances present.

Ammoniators were an arrangement than oligonitrophic microorganisms and three times higher than micromycetes. Studying the microbes in the study of soils showed that the biological processes in them were active.

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BIOGEOTECHNOLOGICAL SIGNIFICANCE OF THE CENTRAL KYZYLKUM DESERT'S FLORA

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Annotatsiya: Markaziy Qizilqum nodir va rangli metallar rudalariga boy bo'lgan sanoat ahamiyatiga ega hudud hisoblanadi. Bu yerda uchraydigan o'simliklarning biogeotexnologik xususiyatini o'rganish sanoatlashgan hududlarni bioremediatsiya qilishda muhim ahamiyatga ega.

Kalit so'zlar: Sanoatlashgan hudud, fitoekstraktsiya, bioremediatsiya, og'ir metallar, introdutsent o'simliklar, fitoremediatsiya, ksenobiotiklar, giperakkumulyatsiya.

Аннотация: Центральный Кызылкум является областью промышленного значения, богатой цветными и редкоземельными металлами. Изучение биogeотехнологических характеристик растений данного региона важно для биоремедиации промышленных зон.

Ключевые слова: Промышленная зона, фитоэкстракция, биоремедиация, тяжелые металлы, растения-интродуценты, ксенобиотики, гипераккумуляция.

Abstract: The Central Kyzylkum desert is an industrial area which is rich in rare and non-ferrous metals. The study of biogeotechnological characteristics of plants in the region is vital for the bioremediation of industrial zones.

Keywords: industrial zone, fitoextraction, bioremediation, heavy metals, introduct plants, xenobiotic, hyperaccumulation.

Introduction. For the time being, the top priority problem the world community facing is environmental sustainability and biodiversity conservation as the future and development of mankind depends on it. Today, there is an environmental danger for all

humankind everywhere. With the development of mankind, the anthropogenic impact on nature is increasing, and this, in turn, leads to an aggravation of environmental problems.

One of the global environmental problems on earth is soil pollution. Anthropogenic effects daily damage the soil with various organic and inorganic wastes. Heavy inorganic compounds contain heavy metals that are extremely dangerous for the environment. [1].

Excessive extraction of heavy metals into the ecosystem as a result of anthropogenic impact leads to the destruction of the vital functions of many living organisms. Heavy metals include metallic and metalloid fibers with atoms above 50% [2]. Such heavy metals are most common in the soils of mining regions.

Thailand has a great experience and a long history in the mining industry, in particular in Thailand there are large reserves of gold, silver, potassium, coal, dolomite, gypsum, intended for quarry mining.

In the information provided by the scientists Nakbanpote, W., Prasad, M.N.V. and others highlighted topical issues of the sustainable use of land contaminated with metals, phytobiome and mycobiome approaches to the recovery of mine waste and scientific approaches to long-term monitoring of mine waste [3].

Literature review. The main sources of heavy metals in the environment are man-made and anthropogenic activities. Phytoremediation is the process of using plants to clean a polluted environment. Provided that the phytoremediation process is applied, economically significant plants with a short life cycle are a motivating factor for local residents. In this context, many ornamental plants were evaluated for their use and potential according to phytoremediation.

Many scientists, among them Nakbanpote, W., Prasad, M.N.V. and others covered in their work the phytoremediation potential of land and aquatic ornamental plants.

Thus, some ornamental plants can add a new measurement scale in the field of phytoremediation and phyto management of polluted aquatic and terrestrial environments [4].

Recently, much of the work has focused on fitness in the potential of biochar. Biochar is used as a soil restoration tool that can increase seed germination, crop and soil productivity, above-ground biomass, and vegetation cover in tailing mine mines, rock dumps and polluted industrial wastes. This whole process is carried out by increasing the nutrients of the soil and water holding capacity, improving the acidity of the soil and the function of stimulating microbial diversity [5].

A greenhouse study was conducted using a perennial chaff to determine its potential for restoring soil vegetation on the territory of the former ferrous metallurgy plant (in Naples, in southern Italy). These territories were contaminated with Cu, Pb and Zn at levels that exceeded the permissible regulatory limits of Italy. For the experiment, surface samples of soil from the territory (from 0 to 40 cm) were used, where mineral resources were located (RM1 and RM2). Samples of unpolluted cultivated soil (C) and the mixture in a 1: 3 ratio with contaminated soil samples (RM1 + C and RM2 + C) were taken from the nearby area [6].

The central zone of the Kyzylkum mainly consists of the deserts and steppes located in the deserted and lowland areas. This region has its diverse flora and fauna. The central Kyzylkum zone also plays a special role in the strategic importance of our country as it is very rich in rare, non-ferrous metals and other minerals. Works such as the refining of gold, uranium and other ores, as well as the extraction of phosphate rock in factories can have a negative impact on the environment. At present, the use of the phytoremediation technology on the empty lands and the study of their biogeotechnological properties are considered scientifically and practically important. A

number of research works were conducted on the utilization of harmful substances by microorganisms that are released into the environment by industrial enterprises [7].

However, no microorganisms can contain heavy metals dangerous for life such as mercury, cadmium, copper, mercury, selenium, lead, radioactive uranium isotopes, undergo the process of decay of uranium radionuclides, decontamination and removal from the soil in the form of green plants and concentrate in the tissues. Phytoremediation studies using local and introduct plants are insufficient. This problem is waiting for its scientific and practical solution in modern biology and biotechnology.

A number of biotechnological methods have been investigated for the effects of chemical and metallurgical production on the environment and their degradation in the environment. However, the study of the biodiversity of local and introduct plants, as well as the complex purification of xenobiotics is deficient.

When removing heavy soil with the help of plants, depending on the degree of contamination, density and concentration, soil is selected for the usage as a phytoculture. The degree of plant resistance to heavy metals in the soil varies widely, and different types of plants represent different cumulative characteristics of the same element.

In the refining process of various types of heavy metals, the phytoextraction method using plants of high density is most effective in international experiments.

More than 400 species of cultivated and wild species are used in 22 households to clean up soil contaminated with heavy metals. Among them peer-to-peer families are formed as a large group. At present, studies are being conducted with the new species to use in phytoremediation [8].

For example, *Matteucci astruthiopteris* (L.) absorbs cadmium from the soil and accumulates in the leaves. The experiments have shown that heavy metal ions accumulated in the leaves do not affect the photosynthesis of plants [9].

The cyanid and rodanids' waste water cleanage possibilities were revealed and biotechnological method was worked out. Anatomical structure was comparatively

studied and the quantity of macro and macroelements in high aquatic plants biomass, grown on cyanid and rodanid waste waters were determined [10].

Research methodology. The research has been carried out since March – April, 2018 in the Central Kyzylkum region to study the biogeotechnological characteristics of plants and their monitoring. During the experiment, more than 20 species of plants and their territory served as objects of study. To determine heavy metals in plants, the biomass accumulated mainly at the flowering stage, which had high physiological activity.

In 40°31 northern latitude and 65°00 long lanterns in the Central Kyzylkum region species such as *Kochia prostrate* (L) Sehod, *Ferela assa – foetida* L. and *Acanthophyllum albidum* were found to be dominant species of that area.

Also, the results of research on plant and soil samples of this region have been summarized as follows:

Analysis and results. Laboratory analysis of the study was carried out using X-ray examination in the Central Scientific Research Laboratory of Navoi Mining Metallurgical Combine. In the analysis of samples, the quantitative parameters of heavy metals such as Cu, Zn, Mn, Ni, Pb, Au, Mo, Cr and Re were investigated.

Soil samples which were the object of the study were analyzed by heavy metals and it was found out that the soil contained Cu-0,02%, Zn-0,02%, Mn-0,06% and the elements such as Ni, Pb, Au, Mo, Cr and Re showed lower levels than the sensitivity of the research method.

The following results were obtained when analyzing the composition of biomass of some of the plants in this soil environment with heavy metals (Table 1).

Table 1.

Results of preliminary analysis of heavy metals during the research (April, 2018)

Experiment samples	Cu	Zn	Mn	Ni	Pb	Au	Mo	Cr	Re
	%	%	%	%	%	%	%	%	%

Soil	0.02	0.02	0.06	-	-	-	-	-	-
Ferula assa-foetida L. (family of soybeans)	0.03	0.04	0.02	-	-	-	-	-	-
Kochia prostrate (L) Sehod. (mariy family)	0.03	0.03	0.04	-	-	-	-	0.003	-
Acanthopyllum albidum (carnation family)	0.02	0.03	-	-	-	-	-	-	-

From the table it can be seen that, the fulcrum of the ferrum analysis shows that the biomass of the plant L. (soybean) is higher than Cu-0.03%, and Zn-0.04% is higher than Cu-1.5, and Zn is 2 times higher than in the soil, and vice versa, Mn - 0.04% was found to be 3 times less than that of the soil. The elements Ni, Pb, Au, Mo, Cr and Re showed lower biomass sensitivity in the analysis method.

It was identified that the biomass of Kochia prostrate (L) Sehod plant (the family of marijuva) is Cu-0.03%, Zn-0.03% - 1.5 times higher than in the soil, and vice versa, Mn-0.04 % - 1.5 times less than in the soil. The elements Ni, Pb, Au, Mova Re showed lower sensitivity to biomass than with the method of analysis.

Despite the fact that the content of Cr in the soil is less sensitive than with the analytical method, the plant contains 0.003%. Thus, even with a small amount of crude oil, this plant contains a large amount of copper, which is much higher than in the soil.

In the biomass of the plant Acanthopyllumalbidum, the amount of metal Cu-0.02% was 1.5 times higher than in the soil Zn-0.03%. The elements such as Mn, Ni,Pb, Au, Mo, Cr and Re showed lower level of sensitivity relative to the biomass method.

Conclusion. Based on the results of the analysis, we can come to the following conclusions:

First, plants participate in the biogenic migration of many elements and absorb them in large quantities from the soil;

Secondly, not all plants can exactly absorb an element in the same quantity;

Thirdly, because of their development and accumulation of heavy metals in plants, their number may be higher than in the soil.

A preliminary analysis of plants in the Central Kyzylkum region showed that *Ferula assa-foetida* L., belonging to the family of soybeans, absorbed metals such as Cu and Zn, and *Kochia prostrate* (L) plants, belonging to the family of mariy, absorbed Zn and Cr metals more than other elements. This is a vivid example of the fact that the content of these elements in the soil is more than other elements.

Today the development of science and technology has led to the rapid development of this industry. The ecology of polluted technogenic lands and the solution of their problems using biotechnological methods is one of the urgent scientific and practical problems.

The use of hyper accumulating properties of plants in this area will allow to develop the mining industry innovatively, as well as separate rare metals from biomass and help solve certain environmental problems of the industry.

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ACTUAL PROBLEMS OF HISTORY AND PHILOSOPHY

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INTEGRATION IN THE NATIONAL LANGUAGE IN THE CONTEXT OF GLOBALIZATION: SOCIO-PHILOSOPHICAL ANALYSIS

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Annotatsiya: Ma'lumki, til moddiy, ma'naviy merosni saqlash va milliy madaniyatni boyitishning eng kuchli vositasi hisoblanadi. Madaniyatning mazmuni sifatida til milliy madaniyatni yagona semantik maydonga birlashtirish va uni avloddan avlodga tashuvchi odamlarning yagona tezaurusini yaratish vositasidir. Ushbu maqolada globallashuv sharoitida milliy tilda integratsiya jarayoni ijtimoiy – falsafiy jihatdan tahlil etilgan.

Kalit so'zlar: globallashuv, integratsiya, til, "o'lik til", "jonli so'zlashuv tili", jahon tili, tilning o'ziga xos xususiyatlari, milliy madaniyat, ma'naviy meros, Internet tizimi.

Аннотация: Как известно, язык является самым мощным средством сохранения материального, духовного наследия и обогащения национальной культуры. В качестве содержания культуры язык является средством объединения национальной культуры в единое семантическое поле и создания единого тезауруса людей, перевозящих ее из поколения в поколение. В этой статье рассматривается социально-философский анализ процесса интеграции на национальном языке в условиях глобализации.

Ключевые слова: глобализация, интеграция, язык, "мертвый язык", "живой разговорный язык", мировой язык, особенности языка, национальная культура, духовное наследие, Интернет.

Abstract: As you know, language is the most powerful means of preserving material, spiritual heritage and enriching national culture. As the content of culture, language is a means of uniting national culture into a single semantic field and creating a single thesaurus of people who carrier it from generation to generation. In this article, the socio – philosophical analysis of the process of integration in the national language in the context of globalization.

Keywords: globalization, integration, language, “dead language”, “live colloquial language”, world language, specific features of the language, national culture, spiritual heritage, Internet.

Introduction. Language, as a means of communication between people, symbolically coordinates their joint communicative activity in the process of interaction of people's speech. Each faction of the language can be regarded as a separate "organism" capable of self-development as an open system. “It is known that the perception of national self, the expression of national consciousness and thinking, the spiritual and spiritual connection between generations is manifested through language”[1]. Using an external semiotic environment, language recreates and evolves its structural concepts. In this case, the features of openness create conditions for self-organization, their stimulants are external conditions that reflect in the language and at the same time change it as the window of the period. Language is involved not only in thinking about what is already known-about events, but also in the formation of a new phenomenon, process, thing-piece and the like. Language is the basis of each person's thinking, "always in verbal forms, even when reaching a very high degree of abstraction" [2].

Language can be formulated as follows, reflecting the essence of national culture: it is a peculiar way of organizing and developing human life, manifested in the products of material and spiritual labor, in the system of social norms and institutions, in spiritual values, in the relations of people with nature and with themselves [3].

It is a national socio-cultural fund, in which the values of one national community, no less than or significantly different from anyone else, are reflected in the language. The study of the culture and values of another nation, its language in the study of its socio-cultural landscape, and the vocabulary that reflects it, is necessary for a more complete and in-depth understanding of this subject.

Literature review. There is not much that mankind has begun to study languages. Only of certain part of the languages of the world are studied scientifically. In the 21st century, the peculiarities of language, its influence on the sphere of national culture, began to be studied as a separate research object. In the conditions of globalization, integration processes are taking place in the same national language. In this context some languages are getting "dead" and oppositely "dominant colloquial language". According to data, the UNESCO list, compiled in 2005 year, covers 6912 language. 32,8 percent of the languages belong to Asia and 30,3 percent to the African continent. In some of them, when one billion, several tens or hundreds of millions of people talk, in some, several thousand, one hundred, even a few people communicate. For example, in Congo, the population speaks 500 languages, in Indonesia-250 languages, in Sudan-117 languages. If at the same time more than a billion people speak Chinese, then in chukot and vele there are several hundred thousand people communicate. Almost every village in New Guinea has its own language[4].

According to UNESCO estimates, about half of the current 7 thousand languages can be separated from their last owners in the current century. In the process of world integration, some languages are disappearing. The fact that two languages die every month on a global scale is a terrible phenomenon[4].

UNESCO assesses the level of language survival by several criteria such as the number of speakers, the abandonment of ancestors to generations, the attitude to language within society. The attitude to language within the society can be determined

by the fact that the language of that nation is provided with writing, the state language, the language of education and the language of the Internet.

Language issues in Uzbekistan are characterized by a number of peculiarities that emerged as a result of political and historical processes of the XX century. The Uzbek language is the state language according to the law adopted in 1989. Almost 80 percent of the population considers Uzbek as their native language, while the remaining 20 percent of the population considers several tens of thousands as their native language. Russian is one of the most common languages. In most cases, the non-Russian-speaking part of the population of the country uses the Russian language in place of the second, third or foreign language. The Russian language is of particular importance for the multinational population of Uzbekistan. For many, the Russian language is a means of communication between nations. In the XX-XXI centuries, the position of these two important languages in the country changed. Depending on the field of application, languages in Uzbekistan differ in their level of functionality. For example, the coverage of the use of the Russian language for communication in everyday life, within the family and in business is much higher than the number of those who consider it their native language.

In addition to the Uzbek language, which is considered a state language, in a number of Regions the population speaks other languages. For example, in the Autonomous Republic of Karakalpakstan, the Karakalpak language is the state language. Some departments of mass media, schools, lyceums, colleges and universities operate in the Tajik language in Surkhandarya, Samarkand, Bukhara, Namangan and other regions. In Tashkent and Navoi regions and the Republic of Karakalpakstan there are schools of Kazakh language and departments of universities. In the Khorezm region and the Republic of Karakalpakstan there are schools with Turkmen language education. In the regions where the Kyrgyz population lives (Andijan, Tashkent and Syrdarya regions), some newspapers are also published in the Kyrgyz language. More than 45 000 citizens

of Azerbaijani nationality live in harmony in friendly relations with Uzbeks. The center of culture of Azerbaijan operates in Tashkent. In Uzbekistan, representatives of another language minority — Uighurs-also live. Some TV and radio programs are regularly transmitted in the Uighur language[5].

Today, in the process of integration, the most risk-free languages can be listed in English, Chinese, Spanish, German, Japanese, French, Arabic. Because we ourselves witness the number of speakers of these languages, the power of their countries, the love language of their nation and the fact that they have developed as a mass language. Leadership in this regard is maintained mainly by the English language. As long as the US and England remain a leader in the economy, the position of this language will continue to be maintained. The Chinese language is the first in the world in terms of the number of speakers, but their speakers is the Chinese. It should be noted that the Chinese also make a serious attempt to spread their language to the world through education. According to some reports, Spanish, French and German maintain equality at the level of application. The role of the Japanese language is also special. But people learn from it not as an important means of communication, but simply because this language is “liked”, for exotics. And the Russian language is not yet able to restore its status. Although the number of English speakers is less than that of the Chinese language (450 million people), its fans are increasing day by day. In particular, interest in learning English in our country is increasing year by year. Along with learning English, the culture of the country is also studied. This is evidenced by the fact that English culture is spreading around the world. The survival of languages in the age of globalism depends more on the level of opportunities for application in the field of information and communication technologies, in the internet system. Since which language is not an internet language, this language will stand the risk of death opposite.

The semantic positions of the messages are extremely extensive. Coming from the word, through a gesture, a drawing, a dance, the smoke from the fires and others ways of

conveying information, mankind has learned to consolidate information in written symbols. Then it was transformed into a screen culture, diverse in its technical characteristics and reached the level of the information society, about which T.Stoner noted that “...tools and machines, being embodied work, are at the same time embodied information” [6].

At the same time, being quite clear in terms of subject and information, the language is a significant difficulty at the level of the problem of translatability in the process of communication of cultures, both within its elements (for example – the translation of literary language into artistic, artistic into scientific, etc.), and in the process of communication of representatives of different cultures (both national and professional, educational, etc.). At the household level, it is noticeable extremely well when the source information reports about the simplest thing that happens, and the final (transformed) it so that the perceiver needs to evacuate with the entire family in order to preserve life. For example, great creations (Dostoevsky, Pushkin, Tolstoy, etc.) make the most difficult operations with the text, saturating it according to the genius. In this case, the reader perceives the information contained in the work and studies the language as a semiotic system, extremely colorful and redundant, so that it can convey the finest nuances of experiences, the beauty of nature, etc., that is, it contains a set of visual and emotional aspects encoded in the literary text. In this case, the interest moves to the field of language itself, which demonstrates the brightness and saturation of the culture that gave rise to it. Thus, the language, saturating the space of culture, is a set of fractals that constantly interact with each other, replace each other (written on the picturesque, spoken on the mimic, etc.), which allows us to talk about it as an extremely mobile education. It captures the direction of thinking and generally encodes the perception of the world or mentality peculiar to a particular people at a particular time. It would seem that with such mobility, the language cannot act as a constant fractal of national culture.

However, a number of researchers (Y.Lotman, A.Luria, V.Red, M.Ctoni, D.Melchizedek and many others) argue that languages function as accumulators of cultural memory. Language necessarily retains the pattern of its previous context, sound. The very nature of the dialect and dialect and their study often help in more detail than historical research, to consider the history of the development of a particular culture. It is not by chance that linguoculturology turns to the study of texts and the restoration of cultural development on them more and more often. One fact of decoding the proto-Russian language and the analysis from this point of view of multiple, including ancient Egyptian texts speaks for itself. This is quite natural, as any bygone picture of the cultural life of previous eras comes to us inevitably in fragments. In this case, the text as a monument of language reconstructs integral meanings, the sum of contexts in which the text acquires meaning. In this case, the fractality of the cultural passage passes into integrity through the text, which recreates around itself a fairly specific cultural space, filled with a total sum of semiotic meanings. As a result, the language again becomes a semiotic sphere, recreating the culture with all its derivatives[7].

Research methodology. The purpose of this research is to examine the socio – philosophical analysis of national language in the development of national culture and its impact to the modernization of national culture, its participation in the process of integration. Nationwide techniques such as theoretical logic, structural analysis, historical and comparative analysis were used to cover the study. Thus, in the study of the integration process in the national language has been contacted of UNESCO statistics data, Constitution of the Republic of Uzbekistan, the first President of the Republic of Uzbekistan I.Karimov, B.Mengliyev, A.Akbarov, E.M.Vereshchagin, V.G.Kostomarov, Kozelko V.N., T.Stoner and other's scientific research work.

Analysis and results. Thus, the problem of the thesaurus is extremely acute – a common information understanding that can be achieved only between communicants at the same level of development and United by a similar situation, for example, a single

national culture or a single environment. Studies show that such coincidences are quite infrequent and can be detected only in people of one professional, age, conceptual, emotional, etc., based on a single national culture, levels. Moreover, if some parts of the transmission and perception of information can be considered as stable (professional and demographic parameters), the other (emotional mood, health, the presence or absence of time, etc.) – as situational parameters. They define the perception and assimilation of respectively myself, moreover, significance they can cover the stable position and distort the semantic basis of the latter.

At the same time, each epoch and its dominants reflect everything that happens in the language. Language, like no other constant, captures the changes taking place in society and attitudes towards them. Thus, as in a mirror, reflects the transformation of the existing culture, normative positions and attitude to changes. As such, we can note the media, which create and are included in the semantic and conceptual difference of language (in connection with the development of media and advertising in it). New images and representations defy classification - partly because they do not fit into the old categories, partly because they have a strange, fluid, incoherent form.

Social interest in this was high not only because it was linked to reality, but also with the formative aspects of language – publicity, oratory speakers, etc. It was transformed into such fractal changes that led to their spread in everyday life, full of aphoristic statements and expressions. The laconic statements containing generalization of social and life experience of the person, literary processed and in the form answering to conditions of aphorism (brevity, memorability, figurativeness), became, on the one hand, a sign of time, with another – a specific genre of modern language - folk literary aphorisms. The aphoristic nature directly links the language with respect to his social ontology. The content of aphorisms is extremely extensive. They affect politics, economy, culture, education, universal moral principles: attitude to work, money, neighbor, destiny, meaning of life and many others. It is interesting that most of the

statements of this kind are situational, become the basis of interpersonal communications, poured into the normative sphere of culture, which together gives fractal diffusivity.

As the languages die, the spirit, myths and legends of the same nation with him, the history of the nation at that time also disappears. Important measures are also being taken to preserve languages. In particular, on November 17, 1999 was announced by UNESCO February 21 - the International Mother Language Day, and in this day celebrated annually to promote linguistic, cultural development and multilingualism. In turn, the UN General Assembly declared 2008 as the International Year of Languages.

In the development and degradation of languages, the following cases are distinguished:

- 1) the transformation of languages into a dead language (etrusskian, sumerian, sanskrit, language ancient khorezm, sogdian);
- 2) the transformation of languages into another language (rreek, jewish, armenian);
- 3) Division of languages (german languages);
- 4) the emergence of new languages as a result of the addition of languages (uzbek, turkmen languages);
- 5) “resurrection” of languages (Hebrew). With the efforts of the Jews of the world, the Hebrew language “dead” was revived-a means of communication took its toll. A great role was played by eager specialists and selfless language owners. In order for the language to live, it will be necessary that the number of its speakers is not less than 100 thousand, or that specialists can burn.

The fact that from the first years of our independence the scope of the Uzbek language was practically spread, it was developed on a scientific basis, scientific, popular books, manuals and new dictionaries dedicated to the peculiarities of the language were published, contributes to the development of our society's thinking. Of course, our native language also has its own alphabet and spelling, the status of the state

language, the presence of more than 30 million speakers will please the person. In the 4 article of Constitution: "The state language of the Republic of Uzbekistan is Uzbek language"[8]. It can be said that "Recognition of the state language is not only raising its prestige, but also the need (requirement) of indispensable knowledge of it by all who by the nature of their work is obliged to own it: the heads of public institutions, medical workers, prosecutors, services in the areas, etc"[9].

The history of language construction in Uzbekistan was much more complicated and dramatic than it was at first glance. It is enough to say that the outstanding specialists of the country in the field of language and spelling have been resorted to or have been separated from active social and scientific activities for a long time. Because the way of restoration of the Uzbek literary language passed through a serious struggle, and in most cases this struggle was completely outside the scope of scientific discussions and moved to the political plane and experienced all the qualities inherent in it. One of the reasons for the complex situations and tragic events in the life of linguistics in Uzbekistan was the ideology of languages and language policy, and only the solution of linguistic issues fell into the hands of people with much more shallow knowledge, experience and understanding of language issues.

Conclusion. One of the serious changes in the field of education in recent years is the mandatory introduction of the native language into the entrance examinations of a higher educational institution. Of course, this will serve as the main ground for mastering and developing our native language by our future educated personnel. I hope that the scientists working on the Uzbek language policy today will have the potential to solve the issues that have been going on in this field for a long time.

Today, the world recognized the Uzbek people who tried to preserve their national language. Of course, we live in a state that has risen to the level of national language politics and culture. Even the fact that Uzbek language is a state language is defined in the Constitution. At the same time, we must not forget that we still have to do a lot to

increase the culture of language in our society. "The mirror life of every nation, which shows that it exists in the world, is a language and literature," says Abdulla Avloni. Loss National language is the loss of the spirit of the nation"[10].

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INTEGRATION OF NATIONAL AND UNIVERSAL CULTURE IN THE CONDITION OF GLOBALIZATION

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Annotatsiya: Ushbu maqolada milliy va umuminsoniy madaniyatning o'ziga xos xususiyatlari, tarkibiy qismlari, ko'rinishlari va globallashuv sharoitida integratsiya, modernizatsiya jarayonida ro'y berayotgan o'zgarishlar va milliy madaniyatni saqlash, rivojlantirish kabi masalalar yoritilgan.

Kalit so'zlar: madaniyat, globallashuv, integratsiya, modernizatsiya, milliy va umuminsoniy madaniyat, taraqqiyot.

Аннотация: В данной статье освещено особенности национальной и общечеловеческой культуры, ее составляющие, ее внешний вид, изменения происходящие в процессе интеграция и модернизация в условиях глобализации, и сохранения, развития национальной культуры.

Ключевые слова: культура, глобализация, интеграция, модернизация, национальная и общечеловеческая культура, развитие.

Abstract: In this article highlights the specific features of national and universal culture, its components, its appearance and the changes taking place in the process of integration, modernization in the conditions of globalization, and issues such as the preservation, development of national culture.

Key words: culture, globalization, integration, modernization, national and universal culture, development.

Introduction. Globalization at the present stage has become the main vector of development, the most important law of which is the formation of a single interdependent world, interaction and interaction of different communities, cultures and

civilizations. Under its influence, there is a realization that the world has become different, and this poses the task of finding new basic principles in its knowledge and understanding. “In today's world, there is a growing number of new threats and risks to peace and stability through global processes. Such a complex and dangerous situation requires a critical assessment of the work carried out in the field and improvement of its activity on the basis of modern requirements”[1].

The process of globalization is leading to the creation of a single world community in which common norms, institutions and cultural values are formed. There is a sense of peace as a single place. Globalization can be called a process of total integration. Nevertheless, it is fundamentally different from all forms of integration that existed in world history before.

The nation creates and saves the culture as character of realization of their rights. The nation, as a cultural reality, manifests itself in different spheres, such as custom, direction of will, value orientation, language, writing, art, poetry, justice, religion, etc. the nation must see Its highest function in the existence of the nation as such. It should always be concerned with strengthening the sovereignty of the state. Culture of community is not a simple sum of cultures of individuals, it is super individual and represents a set of values, creative products and standards of behavior of the community of people. “Culture is the only force that forms a person as a member of a community. The culture of preservation of national characteristics becomes richer if it interacts with many peoples of the world”[2]. Personal freedom, a high level of social cohesion, social solidarity, etc. – these are the basic values that ensure the viability of any small nations and implement national aspirations and ideals. Social life is, first of all, intellectual, moral, economic and religious life. It covers all the features of people's life together. No culture can exist without society, but no society can exist without culture. Of course, any culture has not developed independently in the history of mankind as a whole. They have been interacting, interacting, interacting, enriching each other since ancient times.

It remains to be noted that any national culture can actively develop, develop in the course of communication and influence. But today, changes and processes in national cultures are taking place under the influence of technological revolution, economic, political and social processes, in this respect, globalism, in fact, consistently serves the purpose of alienating peoples from local interests, national traditions, values and moral norms. “Globalization describes the acceleration of the integration of nations into the world system due to the development of modern means of transport and economic relations, due to the impact on people of the media (mass media). It promotes the expansion of cultural contacts between peoples, the intensive exchange of ideas and the migration of people”[2].

Literature review. Many Western scientists have thoroughly analyzed such issues as the global problems of the present period, the conflict of interests between developed countries, the peculiarities of the process of cultural integration, its impact on national culture. Also, issues such as the historical, social basis of national culture, the importance of culture in the life of society and person, globalism, modernization and integration, the preservation and development of national culture in the conditions of globalism have been thoroughly studied by scientists of our republic.

In the scientific literature of different eras was studied, the question of the development of national culture of the same period and its impact on the life of human and society. But the process of globalization is discovering new facets before humanity.

Russian scientist V.Inozemsov touched: "globalization, represents not only the process of formation of a single civilization, which relies on universal values that rise to the breasts, but also a completely different situation – the expansion of the “Western” model of society and adaptation of the world to this model. It can be more accurately stated that the westernization of process we are calling globalization today”[3]. Of course, studying the achievements of Science in the West, mastering modern technologies is necessary for any state. But the country, which tried to fully absorb

Western culture and values through modernization, will undoubtedly face a number of problems. First of all, as a result of such an “experience”, a society that does not have a clear idea of what culture it belongs to deprived of self-realization, a bisector state is formed to internal contradictions.

The process of globalization is especially evident in the field of culture. Professor of the University of Pennsylvania (USA) A.Appadurai believes that "the central problem of global interactions of our time is the struggle between two trends: cultural homogeneity and cultural heterogeneity»[4]. Therefore, even today, countries with ancient history have chosen a way to modernize the state and society, preserving cultural originality. In particular, Japanese reformers almost a century ago determined their way on the basis of the rule “Japanese spirit, Western technology”. Therefore, Japan has become a highly developed state, without losing its national identity, historical and cultural roots. Such a situation can be observed in other countries, such as Singapore, Taiwan, South Korea, in South-East Asia, where the principle of ”act with global thought, act locally”. They progressed spiritually without Westernization. Russian scientist V.D.Dianova said that as one of the characteristic signs of the present world “there is not only an active difference between cultures, but also diffusion, convergence, assimilation, creative interaction and others mutual interrelation, absorption of cultures, which can be expressed through concepts”[5].

Two of these processes, which covered the whole world and were enthusiastically experiencing and could be interpreted as a cultural revolution, contradicted each other, caused a reverse movement. On the one hand, countries that are leaders in the world and are trying to actively manage this process (mainly developed Western countries and the United States) want the formation of a single universal culture. "Today, the whole world is turning into a separate giant “Domna oven”, which processes national cultures”[6]. With this, the globalization arises from the loss of the originality of national cultures, the forgetting of their language by the few peoples, and even the cases of extinction. At one

time, wearing a cultural dress, in fact, one of the manifestations of a disease of zombies - "mass culture" is becoming universal culture.

But American scientist C.Huntington writes in his book "The Clash of Civilizations", although he thinks in the interests of the United States and the Western world in general, emphasizing that national culture serves the development of the country: "Neither the necessary condition nor the inevitable outcome of the modernization and economic development of the Westernization of Culture will be. On the contrary, modernization contributes to the re-awakening of interest in national culture... Modernization at the level of society leads to an increase in the overall material well-being and military potential of the country, which, in turn, confirms the dignity of the cultural norm, encourages people to be more confident in their culture. Therefore, in many societies outside the West there is a state of return to local-cultural traditions"[7]. It should be noted that global cultural development is "manifested in the partial universal characterization of common values, norms, standards, ideals, which have a clear tendency to unite local communities"[8].

The phenomenon of globalization, which covers all spheres, can be called the process of general integration. However, it is radically different from all forms of integration that existed in the past in world history: it is based on the idea of profit-making and material prosperity. The process of globalization leads to the creation of a single world community, in which uniform norms, institutions and cultural values are formed.

Research methodology. In this article, the integration of national and universal culture in the conditions of globalism, the positive and negative impact of this process on the life of mankind as a whole are methodologically analyzed socio - philosophically. Their basis is the comparative and structural-analytical methodology of the study of national culture and human culture in the context of globalization.

Analysis and results. In the culture of each community adopted a certain system of values and the corresponding hierarchy. The world of human values, affected by rapid changes, has become very changeable and contradictory. The crisis of the value system does not mean their total destruction, but a change in their internal structures. The values of culture did not die, but they became different in their rank. In any perspective, the appearance of a new element entails shuffling all other elements of the hierarchy. Every culture is a way of creative self-realization. Therefore, the comprehension of other cultures enriches us not only with new knowledge, but also with new creative experience. It includes not only the objective results of human activity (machines, technical structures, the results of knowledge, works of art, the rules of law and morality), but also the subjective human abilities and activity (knowledge and skills, the level of intellectual, aesthetic and moral development, worldview, methods and forms of mutual communication of people within the team and society).

Now there is such a phenomenon as cultural diffusion, that is, spontaneous and uncontrolled borrowing of cultural values. In short, one of the main problems of the globalization process at the moment is the issues of cultural dialogue. As a result of the changes that are taking place on a global scale and which are characterized by a “cultural revolution”, two actions that are contrary to each other and closely related to each other at the same time are noticeable. These are cultural unification (unification) in the manner of denying the diversity of personality culture and cultural identity (separation), which began during the resistance to it, more precisely, the desire to preserve the cultural identity of the state and peoples[9].

However, it should also be borne in mind that today's world history is a common holistic process that encompasses the past, development, cultural wealth and traditions of all peoples whose fate in the land is common. Therefore, the process of integration will be more reliable and effective if a person is able to intelligently harmonize national

and universal in his or her life, realizing this unity and integrity based on the diversity of the world.

Conclusion. By virtue of the fact that humanity, by their nature, is spiritually material, human consumes both material and spiritual means. To meet material needs, creates and consumes food, clothing, housing, creates equipment, materials, buildings, roads and etc. To meet spiritual needs, human creates spiritual values, moral and aesthetic ideals, political, ideological, religious ideals, science and art. Therefore, human activity is spread through all channels of both material and spiritual culture. Therefore, a person can be considered as the initial system-forming factor in the development of culture. At the same time, human creates culture, reproduces and uses it as a means for his own development.

In his time, the enlightened scientist Abdulhamid Chulpan was so burnt “Relatives. We were urban. But our great request from the peasants is that we should follow the example of European fashion, without taking the example of glass, broken morality and imitating them, but taking as an example from cultures of science, craft, industrial similarity European fashion and corrupt morality will make you bankrupt, impoverished, captive, enslaved. Save from this...”[10].

In general condition of globalization require the organization of its activities before any people in coordination with the principle that the processes of globalization with local, regional demands and needs are dictated, as well as the consistent conduct of work aimed at protecting society from cultural degradation.

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KHOREZM OASIS IN THE AGRICULTURAL SYSTEM OF THE ANCIENT ORIENTAL WORLD

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Аннотация: Мақолада қадимги шарқ дехқончилик тизимида Хоразм воҳасида суғорма дехқончилик ва шаҳарсозлик маданиятини ривожланиши тарихи кўриб чиқилган.

Калит сўзлар: Оқчадарё хавзаси, Қайр ерлар, Тозабогёб, Ўзбой, Яккапорсон 2, Қават 2.

Аннотация: В статье, рассматривается история орошаемого сельского хозяйства и городского строительного культуры в Хорезмском оазисе в сельскохозяйственной системе Древнего Востока.

Ключевые слова: Акчадаря, суходолы, Тазабагеб, Узбай, Яккепарсан-2, Кават-2.

Annotation: In the article, there was considered the history of irrigated agriculture and city construction culture in Khorezm oasis in the agricultural system of the Ancient East.

Key words: Akchadarya basin, dry lands, Tozaboghyop, Uzbay, Yakkaparson 2, Qavat 2.

Introduction

According to historical data noted in scientific literature, based on the results of archaeological research, human activity was first carried out in the cave locations situated on lofty mountains, in the vicinity of springs. In the 8th and 6th millennium BC, human settlements were plains and high steppes of slopes connected to river basins and basins emerged at the result of the rise of river water [1]. It's known that rivers have

given their gifts to all people who were active in the world. It is well known from historical sources that hunting economy was superior in human activity until the Neolithic Age.

Statement of the problem

Kin tribes settled in the south-eastern part of Little Asia carried out farming culture on the basis of settled life. The culture of kin tribes, who initially started cultivating, is peculiar to the 9th and 8th centuries BC and it organized production economy of society [2]. In the 8th-7th millennium BC, farming in the eastern part of the Mediterranean and the culture of farmers who carried household cattle breeding was noted with the term “Jericho” in the historical literature. Settled population took care of barley, two types of wheat and solved the food problem. Kin societies lived in residential houses built of clay and stone. Accommodation was surrounded by a stone defense wall [3].

It's well known from the results of archaeological investigations carried out by V.M. Masson at the foot of the Kopetdag mountain and the Murghab River basin that in the 6th-5th millennium BC, settled people constructed their accommodation being based on clay architecture and carried out wheat and barley agriculture and home cattle breeding in their everyday life [4]. According to the information noted in the researches of S.P. Tolstov and A. Vinogradov, kin societies were busy with hunting and harvesting in the interval between sand hills in the north-eastern territories of the height Yonboshkala on the right shore of the Amu Darya and on the banks of water basins appeared at the result of the rise of water level in the Akchadarya river [5]. From these historical sources it is known that during the Neolithic period, the Central Asian region of the Ancient East was divided into two poles – the first pole was Kopetdag Mountain Hills, the second pole was the central and northern regions and there was hunting and

fishing circles operated. The basis of the Neolithic society was the production and mastering economy.

There were developed hunting and fishing in the everyday life of the Neolithic Age kin tribes around water basins in The Akchadarya basin, the Kaparas oasis of the Tuyamuyin area and the Upper Uzbay borders. S.P. Tolstov concluded that in the last stage of the Neolithic era, new generations of kin societies established a form of production economy – livestock breeding [6]. Based on this conclusion, M.A. Itina substantiated the issue of establishment of production economy in the kin communities of the oasis in the final stage of the Neolithic Age by the discovery of wildlife bones in cultural layers of the Neolithic Age settlements as the Lower Zarafshan (Darvazakir) and Kyzyl-Kum (Chorbakti) [7]. According to historical data showing the content of scientific literatures, during the second half of the 3rd millennium BC until the middle of the 2nd millennium, the traditions of ancestors continued in the economy of kin communities settled around the lakes around Central and South Akchadarya, Sarikamish regions, Uzbay and Tuyamuyin [8].

The farming branch of the kin communities of the last stage of the Neolithic Age in the central territory in the second half of the 2nd millennium BC was known in the historical literatures with name as Suvyorgan culture. In the same historical period, the tribes which moved through the southern Kazakhstan steppes from the north-eastern part came to the territory connected with the southern border of the Akchadarya river basin [9]. It's possible to observe that there appeared certain changes in the history of the Bronze Age tribes in the Basin of South Akchadarya River. This conclusion can be proved by the fact that mastering economy had taken a significant step towards the production economy (livestock breeding and husbandry) in the life of population. Suvyorgan and Tozaboghyob tribes carried out a farming economy on dry-lands. So, wheat and barley were taken care in such dry lands. Thus, our ancestors brought to their

daily lives the primitive form of farming on the eve of the transition to the first Iron society.

Radical changes took place in the socio-economic and cultural development of Khorezm oasis in the last Bronze Age (9th-8th centuries BC). During this historical period, hot springs of the urbanization process from the hot regions of Central Asia covered the central and southern regions of Khorezm oasis. It should be noted that the primitive crop cultivation was only carried out in the basin of Central and South Akchadarya. There are no archaeological sources to prove the existence of agriculture in the northern Akchadarya basin and the territories of Tuyamuyin. During the 4th millennium BC, population left the territories of Sarikamish and Upper Uzbay region completely and moved to the Akchadarya basin and then formed a population density. As a result of the migration of the people to a new territory, there appeared the necessity to make them serve their interests.

In the 9th-7th centuries BC, the policy of cultivating new territories was realized due to the density of the population. According to historical data, the remains of irrigation ditches and field branches were investigated in the territory of Janbos-Kukcha, their area was 16x10, 10x10, 7x7 m and the length of ditches was 150-200 m. there were found the remains of sickles made of bronze, arrow heads, grain grinders and stone moulds to put in the instruments in the cultural layer of Yakkaparon 2 settlement – sources of farming culture based on artificial irrigation. Also, traces of short, shallow irrigation ditches were studied near the settlement [10]. V.N. Yagodin also noted information on the same labor instruments and irrigation facilities of imperfect character from Qavat 2 [11]. S.P. Tolstov concluded that new heirs of Yakkaparon people built large irrigation facilities at the beginning of the 8th-7th centuries BC and the roots of slavery relations in the society was formed [12]. M.A. Itina was the supporter of S.P. Tolstov's conclusion by saying that in the 9th-7th centuries BC, the transition to the slave

system had been the result of the collapse of the primitive society relations in the culture of the Amirabad community [13].

If we take into account labor instruments used in farming, the low level of labor productivity, the fact that the artificial irrigation facilities was not due to the extensive study of the area and the width of the geographical coverage of the brush wood and reed areas taken by the creators of the Yakkaparson 2, Qavat 2 locations in the above-mentioned historical date, it's not possible to agree with the ideas of the two researchers. In the 8th-7th centuries BC, home livestock breeding, primitive husbandry and semi-cellars with wood columns were built by free teams with the support of priests. It should be noted that in the above-mentioned date, there were no sources in the history to confirm the activity of leaders, which had an advantage over the economic and legal interests of ordinary people, whose interests did not contradict one another.

According to historical data, some of the population of Yakkaparson 2 area, who were engaged in cultivation and cattle breeding, came and settled Kuyisay hill through the southeast of Sarikamish [14].

Ancestors of the Amirabad people, who settled down at the hill Kuyisay, remained faithful to their traditions of accommodation construction and were engaged in farming on dry-lands. Remains of irrigation facilities around the area were not recorded in researches [15]. The discovery of bones of cows, small cattle, horses and camels from the cultural layer of Kuyisay 2 location indicates that cattle breeding was superior in the lives of Amirabad people [16]. Husbandry in dry lands was an additional branch. L.T. Yablonsky referred to the scientific community calling locative livestock breeding farm of the 7th-6th centuries BC as "Saks of Sarikamish area". It is possible he idea of the researcher that people of Kuyisay were native livestock breeders, but the proposal of the culture of "Sarikamish" can be controversial among researchers. It should be noted that not the Saks created the new culture of Yakkaparson people who had come to the south-

western region of Sarikamish area, but it was created by the generations of the Yakkaparon people and it was correctly noted in the publications of V.I. Vineberg as “Kuyisay culture”.

In the 7th-6th centuries BC, the heirs of the tribes, who had created Suvyorgan and Tozaboghyob cultures, lived in Khorezm oasis and in the territories of Sarikamish, Uzbay areas developing single husbandry and home cattle breeding. According to the archeological investigations carried out by V.N. Pilipko at Odoytepa, located at the hill connected to the left bank of the middle of the Amu Darya River, representatives of farmer population, who had practical knowledge at clay construction and developing farming culture, carried out radical transformations in the construction of housing in South Khorezm. Odoytepa was square; the four sides were surrounded by defensive walls. The peasant population mastered wide sized territory in the right and left part of the Amu Darya River in the 6th-4th centuries BC and they brought irrigated farming to a classic level.

Conclusion

Thus, it's possible to note the following conclusion due to the historical data presented above.

- it has become known from historical information that the humanity who carried out hunting on the slopes of the Sultan Uvays Mountain, moved southward to the surrounds of Yonboshkala hill and they carried out hunting and harvesting;
- until the middle of the 2nd millennium BC, the aforementioned branches of economy were superior in the daily activities of our ancestors;
- in the life of the population living after the middle of the 1st millennium BC, husbandry and livestock farming were established. Hunting became an additional field;

- by the end of the 9th and 6th centuries BC, tribes living in Khorezm oasis were busy with husbandry and home livestock breeding. Some changes in quality occurred in the construction of accommodations. Indeed, on this historical date, the accommodations were used by the population in the construction of two styles i.e. houses built from wattle and daub houses and with semi-cellars.

At the end of the 7th and in the 5th-4th centuries BC, there emerged new and new farming oasis in the right and left side of the Amu Darya River as a result of large irrigation facilities were built in the Dovdon basin of the Amu Darya River, in the right bank Tozaboghyob, Kaltaminor and Amirabad by farmer people. Because of the fact that this process was carried out due to domestic policy of the centralized state and the labor force of the population, agricultural oasis became a prosperous country. The study of the results of the combination of life and work in the area of society development, housing construction, development of irrigated agriculture and town-planning culture in the ancient times of the population of Khorezm is a necessity.

It demands to separately investigate the results of generality in life and creation in the branches of developing society, constructing accommodations, developing irrigative farming and city construction culture in the antiquity of the population of Khorezm oasis.

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FROM THE HISTORY OF CONSTRUCTION OF THE NORTHERN FERGANA CHANNEL

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Annotation: On the basis of scientific, historical and archival sources, the author of the article shows a historical picture of the construction of the North Fergana Canal, built by the fast-moving folk method “hashar” in 1940. With the building of Canal new period of the development of irrigated husbandry was began, so water of the Canal gave opportunity for the irrigating the lands of Uychi, Yangikurgan, Namangan, Turakurgan, Kosonsoy and Pap districts of Uzbekistan and Asht district of Tadjikistan. As well as the author in the article analyzes the essence of the economic activities carried out by the Soviet government on the development of irrigated agriculture in the valley.

Key words: Fergana valley, agriculture, irrigation, channel, aqueduct, siphon, extensive development, ketmen, shovel, scrap, cubic meter, melioration, piedmont, canal, hydro component, building, district, government, public construction, kolhoz.

Аннотация: На основе научно-исторических архивных источников автор статьи показывает историческую картину строительства Северного Ферганского канала, построенного скоростным народным методом «хашар» в 1940 году. Со строительством канала начался новый этап в развитии орошаемого земледелия Ферганской долины, так как вода канала дала возможность оросить земли предгорных районов Уйчи, Янгикурмана, Намангана, Туракурмана, Косонсаяи Папа республики Узбекистан и Аштского района республики Таджикистан. А

также в статье анализируется суть осуществлённых экономических мероприятий Советским правительством по развитию орошаемого земледелия в долине.

Ключевые слова: Ферганская долина, земледелие, орошение, русло, акведук, сифон, экстенсивный путь развития, кетмень, лопата, лом, кубометр, ирригация, мелиорация, предгорный, канал, гидроузел, строительство, район, правительство, народная стройка, колхоз.

Аннотация

Мақолада муаллиф илмий тарихий ва архив манбалари асосида 1940 йилда халқ хашари йўли билан қурилган Шимолий Фарғона канали қурилиши тарихини ёритиб берган. Канал қурилиши билан бирга Фарғона водийси суғорма деҳқончилигида янги босқич водийнинг тоғ олди туманлари бўлган Ўзбекистон Республикасининг Уйчи, Янгиқўрғон, Наманган, Тўрақўрғон, Косонсой, Поп ҳамда Тожикистон республикасининг Ашт тумани ерларини Норин дарёси сувлари билан суғориб деҳқончилик қилиш бошланган. Мақолада яна Совет ҳукуматининг суғорма деҳқончилик соҳасини ривожлантириш борасида амалга оширган чора-тадбирлари таҳлил этилган.

Калит сўзлар: Фарғона водийси, деҳқончилик, ирригация, ўзан, акведук, сифон, экстенсив тараққиёт йўли, кетмон, лом, кубометр, мелиорация, гидроузел, қурилиш, туман, халқ қурилиши, колхоз.

Introduction: From historical sources it is known that the years 1938-1942 entered history as a period of "national construction." On December 22, 1939, the Council of People's Commissars of the USSR adopted a resolution "On measures to further increase cotton production in Uzbekistan", which stipulated that over the next six years, 430 thousand hectares of new irrigated land should be developed [1, p. 154]. To do this, with the help of the state, it was planned to build large water facilities in the regions of the

republic with the participation of collective farm workers. To this end, the state allocated the necessary funds, materials, equipment, machinery and vehicles.

Literature review. To implement this decision, the government of Uzbekistan on January 20, 1940 adopted a special resolution "On the construction of the Northern Ferghana Canal" [1, p. 51].

The adopted resolution emphasized the successes of the Uzbek people in terms of increasing acreage on the basis of further expansion of irrigated land, as a result of which, cotton crops were increased by 100 thousand hectares. Average cotton yields reached 26 centners per hectare. Based on the tasks set, in the Ferghana Valley in the period 1940-1944, it was planned to carry out irrigation and construction work to improve the water supply to irrigated lands. Construction of a number of irrigation facilities for the development of 125 thousand hectares of land. Overhaul of the Yangiaryk Canal in the Namangan oasis, construction of a new water intake on the Naryn River, construction of a reservoir on the Kasansay River, with an irrigation capacity of 10 million cubic meters of water, development of 12 thousand hectares of new virgin land. The resolution also emphasized that the construction of the Northern Ferghana Canal would begin on February 5 and it was planned to complete excavation work by May 10, 1940 [1, p. 54].

In 1939, the working people of the Pap, Turakurgan districts of the Republic of Uzbekistan and the Asht district of the Tajik Republic took the initiative to wave their hand labor and personal investment in expanding and deepening the channels of the Yangiariq and Rosenbakh canals. As a result of this, the deficit of irrigation water would be completely resolved. After the initiative of the collective farmers was approved by the governments of the two republics, the design and survey work of the Northern Ferghana Canal, headed by the engineer of the Sazvodproiz Institute V.N. Simakov with the participation of hydraulic engineers A. Tyulenev, A. Kuznetsova [2, p. 6-7].

Research methodology. According to the general project, the length of the Northern Ferghana Canal is 163 km. The canal's waters would provide 19 thousand hectares of new land in Uychinsky, Yangikurgan, Namangan, Turakurgan, Kosonsoy and Pap regions of the Republic of Uzbekistan and Asht district of the Republic of Tajikistan, and improve water supply to 66 732 hectares of irrigated land. In addition, they would sharply accelerate the economic development of such agricultural sectors as melon growing and gardening, located on the right bank of the Syr Darya River [3, p. 7-15].

According to the project, the channel capacity is 100 cubic meters of water per second, and for the first 61 kilometers, the channel's channel should have passed through the channels of the existing channels Yangiarik and Rosenbakh. The remaining 102 kilometers were planned to be built in the foothills of the Namangan oasis. It was envisaged that the canal takes water from the Naryn River and reaches the Kamyshkurgan steppe in the Asht region of the Republic of Tajikistan. The canal project was designed so that it will pass 144 kilometers through the territory of Uzbekistan, and 18.5 kilometers through the territory of the Republic of Tajikistan. To build this canal on a daily basis under construction, from 80,000 to 100,000 collective farmers had to participate in excavation work, the labor of which had to carry out land work in the amount of 6 million cubic meters and build 48 large irrigation structures [4, p.16-17].

The channel of the canal under construction was divided into 20 construction sites, where land work began on February 10. Working people of Popsky, Uychinsky, Kosonsoysky, Yangikurgan, Namangan and Turakurgan districts were the first to build [5, p.165]. On the first day, 38-40 thousand people worked in the construction. The next day, collective farmers from the districts of Uchkurgan and Izbaskan, Oyim and Pakhtaabad arrived to help the builders of the canal, who committed themselves to 1 million cubic meters of earthwork [5, p.165].



On February 16, in the republican press, to publish the daily life of the construction of the canal, the publication in Uzbek and Russian languages of the multi-circulation newspaper “Shimoly Fargona Kanali” - “Northern Ferghana Channel” [5, p.165] began.

Analysis and results. During the construction, some changes were made to the project. In particular, in the design of the canal, it was necessary to build a new dam for the reconstruction of the Yangyryk canal. The collective farmers of the Yangikurgan, Uychinsky and Namangan regions proposed; leaving the old dam on the left to expand the right bank of the canal. This proposal would reduce the amount of earthwork on the channel by 400-500 cubic meters [5, p.166].

An average of 90 thousand people took part in the construction of the canal daily. The implementation of land work was actively attended by collective farmers AbduganiKozokov and YuldashTillaboev, who came from the KrasnayaVolna collective farm in the Uychinsky district and who complied with daily excavation rates of 1200-1500%.

Following the guiding principles of “national construction projects”, the entire channel of the canal was divided into 20 plots, which in turn were divided into collective farms, and collective farm plots were divided into brigades, and they, in turn, were divided into links. Each link consisted of three people, where one dug the earth, and two others carried the earth to the sidelines. Each link had three ketmen, two stretchers, one pickaxe, Tools, as can be seen from this did not allow us to talk about high labor productivity. Only the high dedication of people and their patriotism was worthy of all respect.

The construction of the canal was stopped at the foot of the Chust ravine. The reason for this was the lack of an iron aqueduct that would help transfer water through rocks and troughs. In addition, it was necessary to crush, rocky monolithic rock. According to the general design of the canal, it was necessary to build two reinforced

concrete aqueducts at the intersection of the Ugrisay and Kaptarkhansai. In addition, in construction, there was an acute shortage of iron, cement and wood, which naturally negatively affected the period of commissioning of the canal.

Therefore, experienced builders of mirabs proposed to build instead of these two hydraulic structures a bypass channel of a canal with a length of 3.5 kilometers and a depth of 25-30 meters [5, p.166]. In this section of construction, in addition to stretchers, ketmen, scrap, pickaxes, six tractors and scrapers were also used. In some places, fuses were used in the construction of the excavation of land from the channel of the channel. The collective farmers who came from 17 districts of the Ferghana region [5, p.166] actively participated in the construction of this section of the canal.

Excavation work on the channel of the North Ferghana Canal under construction continued for 35 days. The total volume of excavation work amounted to 5382109 cubic meters. 2358.4 thousand workdays were spent on fulfilling the tasks set [5, p.167]. The estimated cost of construction work carried out on the channel of the canal was estimated at 35025 thousand rubles. During the construction of the canal, 2358 tons of cement, 1445 cubic meters of wood, 498.5 tons of iron and other building materials were used. During the construction of the canal, 10 old hydraulic structures were reconstructed, 4 new aqueducts, 6 dukers, 40 small wooden water trays, 17 engineering water distributors were built. Among them, the largest reinforced concrete plug in Rezaksai and a reinforced concrete aqueduct in Zhanzhalsay. In total, 20 mudflow sais, rivers, and ravines crossed the channel, through which reinforced concrete structures were built. At the construction of the Northern Ferghana Canal, 620 engineers worked, who supervised the implementation of land works [6, p.164].

Conclusion. Water was opened on the channel of the Northern Ferghana Canal on July 23, 1940, and the first waters of the Naryn River came to irrigate the foothill lands of the agricultural regions of Uychi, Yangikurgan, Namangan, Turakurgan, Kosonsai



and the Popes of the Republic of Uzbekistan as well as the Asht District of the Republic of Tajikistan. The construction of the canal made it possible to develop and irrigate 19,000 hectares of new land, of which 5590 hectares of new land with the waters of the Naryn River of the Kamyshkurgan steppe of the Republic of Tajikistan [7, p. 75].

The Northern Ferghana Canal, built by the labor feat of the peoples of the Ferghana Valley in 1940 with its life-giving moisture, has been serving the peoples of the Ferghana Valley for economic and social prosperity for 80 years.

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DEVELOPMENT OF JOINT-STOCK BUSINESS IN UZBEKISTAN IN THE YEARS OF INDEPENDENCE

(on the example of the joint-stock company " Business Fund")

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Annotatsiya: Maqolada mustaqillik yillarida Ozbekistonda aktsiyadorlik jamiyatlarini rivojlanish tarixi yoritilib, ushbu jarayonni rivojlanishida Biznes fond aktsiyadorlik jamiyatini ahamiyati ko'rsatilib o'tilgan

Kalit so'zlar: Aktsiyadorlik jamiyatlar, Biznes fond, aktsiya, devidend

Аннотация: В данной статье раскрывается история развития акционерных обществ в Узбекистане в годы независимости и роль в развитии акционерного дела АО Бизнес фонда.

Ключевые слова: Акционерное общество, Бизнес фонд, акция, дивиденд

Annotation: This article reveals the history of development of joint-stock companies in Uzbekistan in the years of Independence and the role in the development of joint-stock business

Key words: joint stock company, Business fund, dividend.

Introduction

With the acquisition of independence in Uzbekistan was the process of development of different forms of private ownership and economic forms of the economy. During the Soviet period, the process of corporatization of enterprises was already suspended in the

30s of the XX century. As a result, until 1991, this form of economic entity did not exist. In world practice, this form of farming and raising capital is one of the most effective forms of economic development.

During the years of independence, various forms of ownership began to form. One of these forms of ownership and economic activity were joint-stock companies, which were created in all spheres of economic life. So one of the first joint-stock companies was "Uzbek Republican universal commodity-stock exchange "Tashkent" established in 1991. Since 1991, medium and large enterprises of light, food processing industry, coal mining transport, trade, communications and other areas began to transform into joint-stock companies. In 1994 the Union of Consumer societies "Uzbekbirlashuv" was transformed into the Central Union of joint-stock company of consumer cooperation [1] 1994 state Concern "Uzbekhlebpodukt", In 1996 joint-stock company "Orthopedics"

Research Methodology

On the basis of the decision of the trust Council of April 27, 1994 and the order of the state property management and privatization Committee of the Republic of Uzbekistan of may 19, 1994 ,Sredaz tsvetmetenergo was reorganized into an open joint stock company[2] . In 1993, by the resolution of the Cabinet of Ministers of the Republic of Uzbekistan dated January 7, 1993, joint-stock commercial Bank "Tadbirkor" was established on the basis of "Uzagreprombank"[3]. Concern of the food industry in 1993 the Uzbek state joint-stock concern was organized. Tashkent state-joint stock construction Corporation "Tashkent" was formed by the Cabinet of Ministers of the Republic of Uzbekistan in 1993{4}.

In 1994 the open joint stock company "Uzelektroapparat" was formed.[4] 1993 April 3 joint stock company "meat and Dairy production", joint stock company "Uzneftegaz"[5], etc.

For the development and support of entrepreneurship in 1993 July 21[6], according to the decree of the President of the Republic of Uzbekistan No. 629 of the Cabinet of Ministers of July 30, No 380, also creditalso meeting on 7 August the Fund was established in A [7] which since 1995 has become to innovatica Joint-stock company "Business Fund".

The main field of activity of this joint-stock company was creation of conditions for development of business activity , establishment of grants, providing technological assistance to business, leasing, to participate at creation of the investment companies. All these measures were aimed at the development of joint-stock business in the Republic.

In the initial stage of activity in most cases carried out operations of primitive form. But in 1997 at Business Fund the Department of computerization which gave a sharp impetus to development of activity of this joint-stock company was formed .

Since that period, in this area began to form and activities conditions for the market economy. In its activities, the Business Fund was not limited only to its activities, but also together with the Republican commodity exchange began to hold various fairs. One such example is when in 1995 with the Republican commodity exchange held jointly a special fair in which participated more than 200 private enterprises from all regions with 286 names of their own products, in which contracts were signed for the amount of 40.27 million soums. It was also established a Fund business relationship with the Eurasia Foundation , representatives of the German economy, with firms "Malino" (Turkey), "Moulinex "(France),"mercury"(Pakistan), "Sumitomo" (Japan) and others [8]. In 1995 alone, 1775 credit lines of GS 2081.1 million soums were opened on July 26.

In 1996, the Business Fund financed 180 projects worth 170 million soums. An example of which can be formed with the support of the Business Fund enterprises and firms.

For example, in Bekabad district company "Alantic East" began to produce canned fruits and vegetables Navickas region opened a mini-dairy plant "received". Production of garments and its implementation in the Bukhara region was opened a private enterprise "Shakhlo", which employed 280 jobs. In Tashkent was opened, the limited liability company for the production of xylophobic plates using the waste. In the Pskov region small enterprise "Shukhrat LTD" for processing of agricultural products, etc [9]. From 1995 to 1996, the Business Fund allocated loans in the amount of 1836.1 million soums for 1668 m projects. In August 1996, the profit of the Business Fund amounted to 627.0 soums [10].

The Business of the Fund. Over the years, its capital began to increase. So if in 1996 on October 1 the balance of this joint-stock company was 4.907.298 soums, in 1998 the balance of the company was 8.463.378 thousand soums, and profit only for the 1st half of 1997 amounted to 301830.3 thousand soums [11]. Only in 1996, joint stock companies were issued shares in the amount of 10 million, 100,000 pieces, of which 90 thousand ordinary and 10 thousand privileged. In which the distribution of shares participated, such founders as: Uztadbirkorbank, Uzoptbirzhetorg, JV "Unitech-international" center for innovation and management, joint stock company "Agrohizmat", the Republican stock exchange Tashkent, Firm "Barno" LTD, the Republican commodity exchange[12], the stock exchange is not limited in its activities in Tashkent, and led the work throughout the country, where it had 14 offices.

The joint-stock company in the activity distributed dividends from profits. All these data from 1995 to 1999 can be viewed in the table of profit for the 1st half of the year [13].



Only in 1999 was released on 7 45067 shares in the amount of 75.355.725 soums. Of which 711106 ordinary and 33961 privileged.

In 2001, the share of the company's main investors was distributed as follows [14]

-State Property of The Republic Of Uzbekistan-26, 6%

-Tadbirkorbank-18, 6%

-Association of banks of the Republic of Uzbekistan-10.7 percentage.

As you can see, the main part of the shares, i.e. 66.6% of the shares were distributed among 4 state institutions.

In 2001 joint stock companies Business Foundation has funded 53 of the enterprises of small and medium business in the amount of 11 95 733,61 soums[15]. In support of investment projects in the period from 1995 to 2003, 11 thousand projects totaling 17.5 billion soums [16] were financed.

From 2000 till 2005 years in Republic was the process of increasing in all branches, especially in oil,gas, coal and also was the rising of the production electric power. For instance, gas branch from 51,1till 54, coal industry from 2,6 to 31,1, the branch of electric power from 46,8 till 47,7 [17].

Undoubtedly there was a big role of joint-stock companies in increasing all these branches.

As can be seen from the above data, this area of development has enabled the formation of market relations in the country.

Conclusion

In 2003, December 23, decree of the President of the Republic of Uzbekistan No. 3367 and Resolution of the Cabinet of Ministers of December 24, 2003 No. 563.On

improvement of mechanisms for financial support of small business from the balance sheet of joint stock company "Business Fund" from January 1, 2001 the balance sheet of this direction was transferred to the balance sheet of joint-stock commercial Bank "Tadbirkor Bank"[18] .

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PUBLIC CONTROL — NECESSITY ON THE WAY OF SECURING THE SUPREMACY OF LAW

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Аннотация: Ушбу мақолада давр талаби сифатида дунё ҳамжамиятини қизиқтириб келган, кенг жамоатчилик фикрида шаклланиб бораётган тушунча, яъни «жамоатчилик назорати» ҳамда унинг мазмун моҳияти тўғрисида фикр билдирилган. Шунингдек, мамлакатимиз ижтимоий ҳаётида бу феномен билан боғлиқ олиб борилаётган ислохотлар ҳам таҳлил этилган.

Калит сўзлар: давлат, жамият, қонун, ижтимоий тараққиёт, жамоатчилик назорати, ислохот, фуқаролик институтлари, манфаат, демократия, давлатнинг назорат функциялари, Олий Мажлис Сенати.

Аннотация: В настоящей статье изложены мысли о интересе мирового сообщества в качестве требования времени такого понятия как “общественный контроль” формирующегося в широком общественном мнении, его содержании и значении. Также проанализированы осуществляемые реформы связанные с этим феноменом социальной жизни нашей страны.

Ключевые слова: государство, общество, закон, социальный прогресс, общественный контроль, реформа, гражданские институты, интерес, демократия, контрольные функции государства, сенат Олий мажлиса.

Abstract: This article sets forth thoughts about the interest of the world community as a requirement of the time of such a thing as “public control” form in broad public opinion, its content and meaning. And also, It analyzes the ongoing reforms associated with this phenomenon of social life in our country. **Keywords:** state,

society, law, social progress, public control, reform, civil institutions, interest, democracy, state control functions, the Senate of the Oliy Majlis.

Introduction

Any reforms carried out in public life for progress should be based on democratic principles, human interests. But if it does not find a solution in public opinion and does not adapt in real life, from the point of view of existence, it will remain insignificant. This is a natural law of society. Therefore, before the adoption of any law regarding it, it is necessary to organize a wide public opinion and also to govern it. It should also be noted that the executed control of the adopted laws is the reason for its deep rooting in public life. Means in the social life of our society. It is not without reason that today such a thing as “social control” is rapidly entering the social life of our society. This opinion can be justified as follows:

First, the gradual inclusion of public control in the activities of governing bodies is a prime requirement for any state that seeks to build a civil society based on historical and legal democratic principles. This is because the basis of the national development of society is how public control over reforms is implemented. In other words, when will the state successfully fulfill its mission? When effective public control over the activities of government agencies is established[1].

Secondly, ensuring public control, that is, it is necessary to study the degree of public attitude to socio-economic, political and spiritual reforms in society, analysis of public opinion, the creation of an internal control system in public administration (*public control*), the creation of a democratic governance mechanism in accordance with international principles. That is, systematic social control is the best way to build a strong civil society. This is a path proven by international experience[1].

In general, we should objectively and critically evaluate our place in the modern world, to keep pace with the ever-increasing demands of life, to create a holistic system of public control over the activities of state power, and to strengthen the legal norms, if

necessary. It is important to adopt special laws[2]. Adoption of the Law on Public Control:

- taking into account the public interest, public opinion in the adopted legal acts, decisions, as well as in the state, sectoral and regional development programs;
- ensuring the priority of rights, freedoms and legitimate interests of citizens;
- establishing publicity and openness of public control;
- unjustified interference and illegal interference of subjects of public control in the activity of state bodies and their officials;
- providing legal guarantees to citizens' self-government bodies to be aware of [3], reports and information of government officials.

Literature Review

This concept was also highlighted by the first president of our country, Islom Karimov:

- if we cannot ensure public control and establish public control over state institutions, we will not be able to completely eliminate existing negative phenomena. There is no other way to fight this evil, this disease[4].

– For this reason, state bodies and government bodies in the implementation of legislative documents it is time to adopt the law “On Public Control in the Republic of Uzbekistan” as an effective legal systemic mechanism for exercising control by civil institutions[5].

- The laws developed in our country comprehensively fit international standards of law.

Research Methodology

Such harmful phenomena that we inherited from the former royal policy as violence, boasting, greed, selfishness, bureaucracy, localism, nationalism and other similar phenomena so absorbed in the blood of our people that despite the struggle with these phenomena since the first days of independence, unfortunately, does not bring

tangible results. As an example of this thought: we should not forget that no matter how we strengthen the functions of state control, increase the number of state regulatory bodies, the violence and corruption of officials will also increase. Therefore, we must pay special attention to the overwhelming strengthening of public control over state activities, in particular over the activities of law enforcement agencies. There are no other alternative solutions to this problem, Islam Karimov said categorically, stressing the need for public control[6].

Analyses and Results

The reforms carried out by the head of our state, Shavkat Mirziyoyev, in particular, reforms in the field of establishing public control over government bodies (in the field of legislation, the court and the enforcement authorities) deserve special praise. In particular, the proof of this thought is the law on public control adopted on April 12, 2018 (ZRU-474). This law is a logical continuation of the initiation and practical work of the first head of our state and its main meaning is as follows:

Research in the regional system is an important step in ensuring public opinion control. Regional structures have the potential to ensure the control of public opinion:

- The media is an important tool in controlling the changes in public opinion. According to our president, “Real journalist is who consider the meaning of his life and job as realizing the noble aspirations of our people, the various obstacles that stand in the way, the bureaucracy, indifference, corruption and others and forming an intolerant public opinion against them. [1]

Today, the mass media can be used to prepare public opinion for any alterations in the society, and its capabilities are getting to the level of mechanism for organizing, shaping and moving public opinion in the social life. However, there is still a lot to be done to make this area more objective, which is to control public opinion on the basis of modern requirements. In this issues, Islam Karimov said: “Increasing the role of the media in securing freedom of information, establishing public control over the activities

of state and governing bodies, turning them into a platform where people express their ideas, their attitude and position to events happened nowadays remain our most urgent task today”. [4]

- the introduction of multi-party politics in the country promotes the formation of democratic principles in the country. The role of political parties in securing the control of public opinion can be summarized as follows: Firstly, the activities of the party function as a balance between the state and the public. Secondly, political parties form public opinion on public reform. Thirdly, the political parties are the mediators who raise issues of public opinion to the level of the state. Fourth, the parties are exploring the views of the public in the public interest. Fifth, political parties provide control of public opinion in such a way that people seek their deputies, not state bodies, but their deputies.

The global stage is also important and has vital role in ensuring public opinion control. This stage is characterized by the following features:

- There is an internal control system that monitors public opinion and maintains a team management system based on the obtained analytical findings, whereby public opinion is formed, managed and monitored as needed. Ensuring public opinion is reflected in the reforms that are being undertaken;
- the leadership of the state simultaneously conducts reforms both at the regional and global levels to ensure public opinion control;
- Leadership activities are constructive in controlling public opinion and have the ability to control any public opinion in the state is crucial. It can also carry out reforms that have an impact on the world community.

Conclusion

–There is a need to adopt a support law that will support the single systematization and unification of a number of regulatory documents related to public control. In this area, Shavkat Mirziyoyev expressed this idea:

– I want to make a proposal to the leadership of the Senate of Oliy Majlis and the Legislative Chamber, deputies and senators. Life itself requires that, in order to form effective mechanisms of public and parliamentary control, to study the real situation in cities and regions, to introduce the procedure for submitting for discussion the reports of relevant leaders at the Kengash session of people's deputies[1].

– Public control is necessary not only for society, but also is important in the effective organization of the activities of state structures and government bodies. Since, together with ensuring the effective operation of the laws of public control, respect for human rights and freedoms, calls them to protection, it ensures the optimization of state structures.

Generally, the proper organization of trends in the formation and development of public opinion control is of constructive importance in solving any problem. Because public opinion is influenced by social consciousness, it is organized, managed and controlled by its influence. Therefore, the use of forms of social consciousness is the best way to achieve national goals, that is, to organize public opinion control.

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EVOLUTION OF ETHNOCULTURAL TOURISM IN UZBEKISTAN

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Annotation: This article examines the genesis of ethno cultural tourism, the features of its manifestation at various social historical stages and situations, and its manifestations in the history of Eastern peoples.

Keywords: tourism, ethnography, integration, culture, cultural relations.

Аннотация: Ушбу мақолада этномаданий туризмнинг генезиси, турли ижтимоий тарихий босқичларда ва турли вазиятларда намоён бўлиш хусусиятлари, Шарқ халқлари тарихида учрайдиган кўринишлари тадқиқ этилади.

Калит сўзлар: туризм, этнография, интеграция, сайёҳлик, маданият, маданий алоқалар.

Аннотация: В этой статье исследуется генезис этнокультурного туризма, особенности его проявления на различных социально-исторических этапах и в различных ситуациях, его проявления, встречающиеся в истории восточных народов.

Ключевые слова: туризм, этнография, интеграция, туризм, культура, культурные связи

Introduction: Uzbekistan has great tourism potential and is one of the tourist centers not only in Central Asia but also around the world. The ancient Silk Road connecting China and Europe has many architectural monuments of various historical

periods in the most attractive cities for tourists. In ancient cities of Uzbekistan, modern architecture is integrated with national architectural monuments of the past. Uzbekistan is a country with great potential for attracting many foreign tourists: deserts and nature reserves, rich in various animal and plant species; mountain peaks and rivers; mineral water springs; traditions of applied art and original folk culture. Tourism (both national and international) is a product of long historical development that dates back to antiquity.

Literature review: ethnocultural tourism is a type of tourism activity that focuses on the study of folk culture, relax and leisure activities. According to A.G.Butuzov, who brought ethnocultural tourism to the university as a special subject and wrote the first textbook on it, the interest of peoples in the culture, ethnography and way of life of antiquity existed from ancient times. “Later, empirical sources on the expansion of communication networks, political evolution, cultural development, and ethnoculturalism have steadily increased. The emergence of the first ethnological knowledge was directly related to the practical needs of people. Ethnic differences were known to humans long before the wheel was discovered, which was a feature of social and individual consciousness”[1]. Differentiation of one from other ethnos, as a philosophical and psychological phenomenon, has caused the person to identify himself with a certain people, nation and separation from other ethnos.

According to A.G.Butuzov, this identification and separation has been initiated by ancient Persians. “The ancient Persians are the first pioneers of the idea that we are ethnically related to the “civilized circle”. Interest in ethnographic sources begins to develop in the form of efforts, travels, and even hikes. To develop evolution of ethnocultural tourism, Beruni [6], A.G. Butuzov [1], M. Obidov [3], Sodikov H, [4], A. Urinboev, O. Buriev [5], N. Ibragimov [7], Bichurin [8] works have taken into consideration.

Research methodology : The methodological basis of this analysis is the use of general methods such as theoretical logic and systematic analysis, historical and comparative analysis.

Results and discussion: According to historical sources, from the VI-V centuries BC various relations between Central Asia, China, Iran, Mesopotamia and India began to form. Bactria is one of the largest cities in Zoroastrianism, the Saxons, the Massagets, the Parthians, the Kushanites, the Scythians, the Yucchi lived in a vast expanse of steppes, forming a unique socio-cultural and political community. For example, in 139 a special emperor of the Chinese Empire came to Central Asia and collected the necessary information about the customs of his people, geography and ethnos. The Sogdian traders went to the Chinese princes, India, and even Alexandria. The Kushan ambassadors were in the Roman Emperor Augustus[2].

Alexander Makedonsky's expeditions expanded the range of military, economic and cultural ties between the two continents, while Ptolemy Lag, then Arrian, Quint Kurtius Ruf, Plutarch left valuable historical and cultural writings about them. For example, Arrian and Quint Curtis Ruth wrote about Samarkand with admiration and pride [2]. These historics and chroniclers were among the Greeks of Macedonia, so their stories are more reliable and well-described. Thus, some of the men involved in military campaigns, chroniclers, and scholars have written down what they have seen and heard, important events of their time. At that time, travelling was not an occupation, the writing of diaries and descriptions was random. It is true that, some kings and rulers had solicitors and calligraphers in their palaces, but their knowledge was limited.

Ancient Chinese chronicles state that economic and cultural ties between the Han Empire and Central Asian countries were established and supported by these states. In the second century BC, the Ambassador of the Khan Empire Zhang Tsyau arrived in Sogdiana and Bactria (now Uzbekistan, Tajikistan and partially Afghanistan) with

official mission. In a report to the emperor, the ambassador said, "There are about 70 cities and villages in the Davan state (present-day Fergana Valley), where the population grows rice and wheat. You can get onions, cotton, pomegranates, nuts and cucumber seeds from there"[3]. It appears that the ambassador did not only fulfill his diplomatic mission, but also spoke about the lifestyle, agro-culture, and benefits of our people. "If there were regular local markets in the East and West of the Silk Road (China and Europe), the markets in Asia would be an international commodity market." There were hotels, translators, money exchangers, caravan leaders, carpenters and tax collectors. The Great Silk Road was not only a caravan road between the East and the West. It has developed commerce, brought cultures closer, strengthened mutual trust among nations. The culture and customs of the 12,000-mile-long nations affected each other. Even Christianity and Islam reached China "[3]. Historical sources indicate that Amir Temur played a great role in the development of the Great Silk Road. Amir Temur's letter to Chinese Taipei states that "Roads between caravanhouses have been opened, road pirates have been finished, and travelers who go to other countries began to feel safe." According to historical sources, the lord sent envoys to China eight times. Among these groups were merchants, pilgrims, researchers, who wrote the road accidents in special books and returned to the palace. In its turn, ambassadors and traders from China also expanded their economic and cultural ties. In Japanese scholar Kadzuo Enoki's works on Chinese diplomatic relations with Amir Temur and Timurids during the Ming Dynasty, Edzi Manusi's "Amir Temur Koragoni. Timurid Genealogy", Gary Hands's "Temur and Emperor Yun Le", Hiroshi Watanebe's "List of Ambassadors and Crusaders from the Muslim Countries in the Thousand Years" Amir Temur's multi-dimensional policy, military policy, diplomacy, religious activities, science and cultural activities were described. US scientist Maurice Rosati also published a book "Chen Ho and Timur: their Relationships", which is full of interesting ideas, facts and data about Timur. The views of Taipei Chiu, the famous admiral Chen Ho, who had organized four

maritime expeditions around South East Asia and India in the early 15th century and even reached the Strait of Hormuz were described in the book. It is unknown to many people that the expeditions were made to establish a military alliance with the Persian Gulf, the Red Sea and the Indian states against Amir Temur [4]. There were a lot of ambassadors, tourists, traders and scholars who left writings about travellings among the oriental people. Among them Nosir Khisrow (1003-1088) travelled to Arab countries, Abdurazzak Samarkand (1413-1482) made a tour to India, Ibn Hurdodbeh (820-913), Ibn Hawqal (d. 976), Al Idrisi (1110-1161), Abul Fido (1273-1331), Al Khorezmi (783-850), Abu Rayhan Beruni (973-1048) made trips to different places and each of them wrote and left ethnographic, geographical and social information. The works of scholars of Central Asia contain important information about the geographical location, nature, economy, cities, peoples, customs and trade routes of China and East Turkestan. For example, Abu Raykhan Beruni listed the cities of Eastern Turkestan and China, their geographical latitude and longitude in his book "Qonuni Masudiy". In the books *Devonu lugat ut-Turk* by Mahmud Kashgari and "Jahonnoma" by Najib Bakro there was information about resources and richness of these countries [5]. Beruni's book "India" is the largest and most valuable experience in travel writing. It shows how the scientist traveled to India and collected all the wonders that fit the human mind as a scientific sacrifice. Biruni presented and analyzed customs, geographical peculiarities, and scientific results of each city, province, and place [6]. In general, they traveled several times from Central Asia to China, India, Iran, Babylon, and Arabia, collected and wrote important sources about these countries. While some went to trade, some other tourists came to be propagandists of Islam, while some were ambassadors or just tourists. During the reign of Amir Temur's fourth son, Shahrukh Mirzo, the first Chinese ambassador visited Herat. In 1419, Shahrukh sent ambassadors, traders and his men to China. Abdurazzaq Nakkash also took part in this mission. The trust of Shahrukh Mirza to Abdurazzaq Nakash was very important. "By sending Mirza Boysunqur (on his

behalf), Sultan Ahmed and Giyasuddin Nakkash (with the ambassadors) he ordered them to write daily report about the quality of the roads, the quality of provinces and buildings, about the rulers of the cities, the power of the king, the power and the manner in which they rule the state, whatever they see in the wonders of cities and towns from the day of departure to the return of Herat" [5].

Evidently, Shahrukh Mirzo did not just tell the ambassadors to visit or establish diplomatic relations, but he also envisioned collecting information on how to open the road to China, how to govern the country, and the palace. During the raveling to Movarounnahr Moroccan Traveler Ibn Battuta wrote "Travel Guide" and collected various information about our country, its nature, people, work and lifestyle.

As he notes that "melons and pumpkins grown in the Khorezm region were the favorite food of the people of Amu Darya. According to the Khorezm people, the fresh and ripen melon not only eaten for thirst, but was also eaten instead of food. Therefore, Khorezmians tried to bring more melons with them during their long journeys or in public hashars "[7]. Ibn Battuta also mentioned the climate, nature, basic occupations of the people, the appearance of homes, roads and cities, and seasonal times. Ibn Battuta collected data as a true tourist and scientist, and tried to introduce his countrymen to Central Asia, including I. Buchurin.

It is noted that diplomatic and trade relations between China and Central Asia, Russia, and tourism are the most frequent occurrences of tourism. People have been interested in each other on the Eurasian continent based on large historical and ethnographic sources[8]. Of course, there are many self-sacrificing people who have traveled the country for many years to learn and investigate. For example, it is the fact that Imam Bukhari traveled throughout Arabia and Iran to collect hadiths, went to Mecca forty times to find out the authenticity of a hadith, or Beruni traveled along the country, especially to remote countries to collect evidence and information to his

“Hindiston” book. Scientists travelling to find the “truth” have always been associated with hardness and difficulties of wondering through the country. These examples show that the genesis of tourism dates back to antiquity, and that the human soul has a enthusiasm to learn something mysterious. Ethnocultural tourism, from an etymological point of view, is derived from the words "folk culture" and "travel". According to Alisher Navoi, "tourist" means traveler [9]. In the explanatory dictionary of the Uzbek language, the word "traveler" means resting, leisure or seeing the world [10]. Based on these interpretations, ethnocultural tourism is a type of tourism activity related to the study of folk culture, resting and leisure activities. It can be translated as an unnatural tourism.

The object of ethnocultural tourism is the people, the nation, the culture of the nation, the way of life, customs, the created cultural values, artifacts. Tourists are particularly interested in ethnocultural objects and it is important for them to learn something about cultural values which is different from theirs. In this context, ethnocultural tourism differs from trips to mountainous areas and ponds. The ethnocultural mark is unique. Exactly this originality, soleness and uniqueness attracts the tourist to the interest of historical heritage, national traditions and customs.

Conclusion: The globalization that is taking place in the world today is undermining the diversity of cultural life, unifying its distinctiveness under the banner of integration. It encourages tourists to look for diversity, originality and national identity. That is why they are interested in learning about the history of ethnos, who are interested in preserving their traditional culture, and who are trying to preserve their past. Ethnocultural tourism, special companies, systems, and staffing are available for this opportunity. Having a certain place in the tourism market, ensuring socio-economic development through attraction of tourists has become a policy of the states, countries with ethnocultural resources are trying to use them effectively and create their own tourism market.

In our opinion, for the successful development of ethnocultural tourism in the regions it is necessary to perform the following tasks:

- 1) to develop of special laws and their legal mechanisms for the formation of ethnocultural tourism industry;
- 2) to collect all available materials, documents, programs and plans for the development of ethnocultural tourism in the regions;
- 3) to assess investment opportunities for the development of sustainable ethnic tourism and the formation of a set of investment proposals in the form of a database;
- 4) to study the demand for ethnic tourism services;
- 5) to create a network of various organizations interested in the development of ethnic tourism.

In addition, a set of marketing surveys should be conducted by national communities to assess the development of sustainable ethnic tourism, as well as to identify potential populations of ethnic tourism and their willingness and ability to develop in their areas. Of course, the project would not be possible without proper staff, which would require local people to be trained in ethnic tourism.

We believe that the implementation of the above recommendations will help to further develop the tourism infrastructure, increase its attractiveness and the flow of tourists.

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UDK 101.1

PHILOSOPHICAL APPROACHES TO THE STUDY OF THE CONCEPT OF “VIRTUAL WORLD”

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Abstract: Today, scientific research of “Virtual world” is of urgent importance. Because the development of the virtual world is taking place very quickly. In this article is highlighted the concept of “virtual world” is studied philosophically, the content of the concept of “virtual world”, the history of its appearance, its components, its impact on the life of man and society, the research conducted in this regard.

Keywords: “virtuality“, “virtual world“, “virtual reality“, virtualistics, philosophical approach, computer technology, “virtual civilization”.

Annotatsiya: Bugungi kunda “Virtual olam”ni ilmiy jihatdan tadqiq etish dolzarb ahamiyatga ega. Chunki virtual olamni rivojlanishi juda tez amalga oshmoqda. Ushbu maqolada “virtual olam” tushunchasi falsafiy jihatdan o'rganilgan bo'lib, “virtual olam” tushunchasining mazmuni, paydo bo'lish tarixi, tarkibiy qismlari, uning inson va jamiyat hayotiga ta'siri, bu borada olib borilgan tadqiqotlar yoritib berilgan.

Kalit so'zlar: “virtuallik”, “virtual olam”, “virtual voqelik”, virtualistika, falsafiy yondashuv, kompyuter texnikasi, “virtual sivilizatsiya”.

Аннотация: Сегодня актуальное значение приобретают научные исследования “виртуального мира”. Потому что развитие виртуального мира происходит очень быстро. В данной статье освещено понятие “виртуальный мир”, изучено философское содержание понятие “виртуального мира”, история

возникновения, составляющие, влияние на жизнь человека и общества, проведены исследования в этой связи.

Ключевые слова: “виртуальность”, “виртуальный мир”, “виртуальная реальность“, виртуалистика, философский подход, компьютерные технологии, ”виртуальная цивилизация”.

Introduction. The development of the virtual world is happening very quickly, so it is much more difficult to predict the result of these events. The area of socio-philosophical research of this problem is being created slowly. Therefore, it is necessary to develop methodology of research of the virtual world within the work of philosophical, socio-psychological, moral and other problems, as well as to base the concept of the virtual world as a philosophical phenomenon.

It is not important reminds that the ”virtual world” of the emotional world and the concrete experiences of person in it, but how strange the relevant ideas are, it is important that person is in the universe that corresponds to these ideas. Virtual world - computer games have created a new concept of the virtual world, in there is expressed many aspects of the existing world. Online games have also entered into the commodity-money relationship. The concept of virtual world – as the concept has the same meaning as the concept of reality (virtual corporation), multimedia is a new technology of contactive information interaction, which with the help of operational means carries out exactly the state of entry and participation (illusion) in the existing world, which is expressed in the “world of screens”. This is a huge abstract – relative world, from which it is created in the imagination of the user. In “virtual world” simultaneously and independently explore the virtual world, participate in its activities and communicate with others[1].

Today, the notion of “virtual” is quite common in the field of computer equipment: for example, ”virtual disk“, ”virtual memory“, ”virtual server” are in such sentence. The

rapid developments in the field of computer and information technology, gradually replacing simple means of communication, the discovery and introduction of a new methods of information exchange gave a significant impetus to the urgency of research in the field of "virtual world". In general, virtual worlds allow for multiple users but single player computer games, such as Skyrim, can also be considered a type of virtual world[2]. Over time, the concept of "virtual" penetrated into various spheres of human theoretical and practical activity. For example, it is now widely used in relation to various virtual trainees and simulators, which help a person master the skills of management and quick decision-making.

Literature review. In comparison point of view of philosophical virtual world, it is the universe that is created in any substrate with the help of technical means and is transmitted to a person by his usual senses, which allow him to perceive the material world: vision, hearing, smell knowledge and other abilities.

Virtual world from a philosophical point of view-is a universe created using technical means on any substrate and transmitted to person by his usual senses, which allow him to perceive the material world: vision, hearing, smell knowledge and other abilities. Synonyms: electronic world, computer model of the universe. Currently, virtual world products are used widely in various spheres of human activity: project and design, underground wealth mining, military technology, construction, trainees and simulators, marketing and advertising, leisure industry, etc. In other words, the person perceives "virtual world" as an independent world, an independent reality. But in addition, the "virtual world" is a reality for a person among other events, that is, he occupies certain status in the hierarchy of modern culture and values, as well as in relation to other symbolic realities.

In 1989, Jaron Laner introduced the term "virtual existence", which is now widely used, into scientific circulation. In fiction literature, virtual world is a way of

communicating with the “cybernetic environment” in which people and machines that are created in computer networks interact. “Aspen cinema” which created in 1977 at the Massachusetts Institute of Technology, is the first virtual asset system. This computer program simulated a trip across the city of Aspen, in Colorado, creating the opportunity to choose between different ways of reflecting the place. Winter and summer options are based on real photos.

Virtual world an automated, shared, persistent environment with and through which people can interact in real time by means of a virtual self", by Richard Bartle in 2010[3]. “A persistent, simulated and immersive environment, facilitated by networked computers, providing multiple users with avatars and communication tools with which to act and interact in-world and in real-time” by Carina Girvan in 2013[4].

Ultimately, virtual worlds are the place to go when real life becomes overbearing or boring. While in real life individuals hesitate to communicate their true opinions, it is easier to do so online because they don't ever have to meet the people they are talking with[5].

In recent years, virtualistics is also studied by philosophers. The problems of virtually and virtualistics like many other scientific evidence, it is necessary to philosophically understand, analyze and without breaking the initial data, divide it into explanatory and predictive systems. Today, the philosophical status virtualistics, the system of categories, the universal basis are forming.

Virtualistics has its own history, like other direction and areas. If virtual, then in English means “virtual”, “virtu” means goodness, dignity, then in Latin means potential, probable, courage, imagination, fantasy. The so-called phenomenon of “ignorance” is not even a new phenomenon. But the perception of the role of a “virtual world” in human life began with the full implementation of electronic technologies. The same informed society made it possible to decide “virtual world” as a phenomenon of universal importance, against

which the so-called phrases "virtual Civilization" appeared, even with its increasing importance.

If we look at virtual reality as a phenomenon, we can understand that it is aimed at a particular purpose. After all, if the goal that caused it to disappear, it is clear in itself that virtual reality also disappears. Also, this goal can be achieved in a conscious or unconscious way. If it is created consciously, it acquires the property of an artificially created object and formed as a result of a certain condition.

Virtual reality is intrigue, so we can see the freedom of human thinking and in some cases spontaneity in it. Virtual reality can be interpreted as a set of objects simulated by real processes[6], the content and form of which do not coincide with these processes. That is, virtual reality is very flexible, that is, it has the property of variability. And it reflects an unstable world in itself, at the same time it manifests itself in an atmosphere, that is, in a way of reality, in direction environment to forming necessary experiences. The case of satisfaction is one of the priorities of virtual reality. Indeed, today modern categories of social, philosophical analysis are not enough for the analysis of virtual reality and culture that drives it. N.Shermukhamedova expressed about virtuality in her work "Philosophy and methodology of science": "when we thought about the phenomenon of virtual reality, first of all, we wanted to focus that virtuality should be connected with the pursuit of a certain goal"[7]. Therefore, the study of this problem has a topical significance in the philosophy of the present tense.

Through virtual technologies, will appear question such as feeling a new way of person life, will be able to access a new physical appearance and how such this changes affects him. In addition, it is necessary to look at the problem of communication differently, because people who have a virtual body (to body) can interact directly with each other in the virtual world and it is difficult to imagine what such unexpectedly opened opportunities will become.

When talking about the signs of virtual reality, it is not enough to note that it is compatible with actual reality, that is, it includes time, space, movement, development and reflection. It should also be noted that virtual reality is an ideal – an artifact, having its own unique virtual properties. The processes in time and space are not connected by the same fundamental physical constants, they can manifest in the number N of dimensions, breaking the order of time that is going from the past to the present through to the future.

One important feature of virtual reality is its wealth of events. Events are completely independent of the reasons that make them exist and the real virtual reality of property relations in reality is connected with each other, recording and imitating many realities that are ontologically independent. Causality, relevance, independence and interactivity are the main functions of virtuality.

In virtual reality, reflection processes take place in multimedia mode, that is, it is possible to stop, slow down, accelerate, move forward, go back and take a break, while motion will not have the status of absolute variable. The development can be inversely, that is, it can also be turned back. The color-coloration of the interaction can manifest mysterious losses, unknown in the conditions of earthly causality, which we are accustomed to. In the book "Philosophy" explained about issue of virtuality. In this book was express about virtuality: "There is such a part of world that it can neither be nor be. Such a part of world has a probable meaning. It is still far from reality, in the content such of world is called virtual world" [8].

It would be wrong to think that the content of virtual reality consists in recounting the world, rather, it is aimed at entering this world or at least filling it. According to opinion of A.Sevalnikov "the paradoxical feature of such an environment is that something that does not exist with the essence of "will exist". It will always exist in its environment. Virtualistics also creates its own hardware of concepts. In the division of concepts into groups, the dialectic pair "virtual - fixed" serves as a criterion.

Research methodology. The purpose of this research is to examine the philosophical analysis of “virtual world”, “virtual reality”. Nationwide techniques such as theoretical logic, structural analysis, historical and comparative analysis were used to cover the study.

The concepts in this direction include the following: virtual - part of virtual reality; capacity - subject that creates virtual reality; agent - representative - subject that lives in virtual reality. Such an understanding of the idea of virtual reality allows to take a fresh look at the theoretical problems of science philosophy.

Analysis and results. Understanding and emphasizing the dialectical nature of the virtual world, its structure, the euristic potential of classification and the special characterization of computer virtual reality are the main aspects in its classification. “It is extremely important to understand the difference in the introduction of computer virtual worlds from the concept of computer virtual reality in the quality of soundness, from the idea of computer virtual worlds that have already been created, existing and even released to the vast market”[9] argues E.V.Kovalevskaya. Thus, at present, there are concepts in which the virtual world is extremely diverse, often intersecting and competing with each other. However, the concept of “virtual world” is becoming more and more firmly established day by day in science and method of cognition.

Today the diversity of approaches that exist does not exclude the possibility that a single concept of the “virtual world” can be created in the future. The hypothesis of the interdisciplinary nature of the conceptual generalization in the early 21st century is now evident clearly. “Today the same thing is certain, there are not a world, but existent many worlds. This is not only the world who is working in science, but also the reality of everyday life, simple knowledge. Subjective world is available. There are cases of ideal objects of culture: scientific and philosophical theories, works of art, interpersonal relations, communications (sometimes they connect the world of intersubjectivity with this). Today it is possible to say that a virtual world in the quality of a particular type of

human communication is emerging” says V.A.Lektorskiy[10]. The next period of the “information revolution” really exists as before and is forcing a head start on the question of what specific boundaries exist between the virtual world.

In order to bring the pace of the virtual world to perspective, it is required to find out the packaging dimensions of virtual reality, its existential nature, the forms of appearance of these processes, the stages of institutionalization. When developing virtual world concept, it is first necessary to study the genesis of social reality, while having the basis for the application of the “case/virtual” dichotomy.

Conclusion. In conclusion, in modern scientific literature there are three groups of concepts and ideas that analyze the phenomenon of virtuality in different ways.

The first group includes philosophical and generalized conceptions, which analyze the ontological status of causality.

The second group observes social ideas, observing the emergence of virtual employees in society.

The third group, the activities of the life of the society are organized by the ideas of social communication, which show the general laws and mechanisms as a whole and internationalization as one side of it.

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MILITARY STRATEGIC SIGNIFICANCE OF THE AMUDARYA WATERWAY IN ANCIENT PERIOD AND MIDDLE AGES

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Аннотация: Мақолада Амударё сув йўлининг қадимги давр ва ўрта асрларда ҳарбий стратегик аҳамиятиманбалар асосида таҳлил қилинади.

Аннотация: В статье проанализировано военное стратегическое значение водного пути Амударьи в древнем и средневековым периода на основе источников.

Abstract: In the article there is analyzed military strategic significance of the waterway of Amu Darya in ancient and Middle Ages on the basis of sources.

Калит сўзлар: Ўрта Осиё, Амударё, Сирдарё, трансчегаравий дарёлар, кечув, “Окс цивилизацияси”, Жайхун, Чоржуй, Кулзум (Каспий) денгизи.

Ключевые слова: Средняя Азия, Амударья, Сырдарья, трансконтинентальные реки, переход, “цивилизация Окса”, Джайхун, Чаржуй, Кулзум (Каспийское) море

Key words: Central Asia, the Amu Darya, the Sirdarya, trans-continental rivers, transition, “Ox civilization”, Jayhun, Chardjuy, the Kulzum (Caspian) sea.

Introduction

Amu-Darya and Sir-Darya played an important role as trans-boundary rivers in the formation and development of Central Asian civilizations. The use of trans-boundary rivers was one of the most pressing issues that had emerged since the beginning of the first state shrubs in the region. This issue was usually solved by the use of force, usually by powerful states of the ancient and medieval times. This approach has changed in

shape, has practically preserved its essence and has reached our era. Only recently in the use of trans-boundary rivers the issue of taking into consideration the interests of all the states in the region has been put on the agenda and works on its solution. The solution to these issues has thousands of years of historical experience and lessons learned from it. Therefore, applying to the accumulated historical experience on the use of the Amu-Darya River and its waterways should be considered as an urgent scientific task.

Statement of the Problem

In the history of humanity, the navy goes back to the end of the Mesolithic and Neolithic era. In the Neolithic era, tangible findings and illustrations from different regions prove the usage of light boats of different shapes and sizes, controlled by oars[2].

The Amu Darya, as the largest river in the region, occupies a leading position in the emergence and development of sailing. During the Bronze Age, where the foundations of statehood began to emerge in Central Asia, control of the major transitions and the development of sailing in the river were considered a priority and the military strategic significance of the ships in the river increased. During this period, competition for the right to use waterways that constitutes an essential part of the regional communications system developed in line with society's development, needs and interests. The aspiration for the control of the Amu Darya River and its transit was of particular importance for the development of historic and cultural lands on both sides of the great river. The study of these processes, first of all, allows us to clarify many aspects of the ancient Bactria and its ancient Khorezmian history, which appeared in the upper stream of the Amu Darya. Many historical facts and archeological findings confirm that the Amu Darya waterway and its trans-boundary processes are associated with the formation and development of the Ox civilization.

Historical and archaeological studies have shown that the formation and gradual development of sailing in the region had been linked to the life conditions of the tribes

lived near large rivers, first and foremost in the middle and lower streams of the Amu Darya River (High speed of water flow in the upper parts of the rivers in the continent, roughness of waterways hindered the development of navigation.). The first period of the Amu Darya river access was associated with the Neolithic period when small boats were built and used and the Kaltaminor culture, living in the downstream of the Amu Darya River, could be regarded as one of the nation's sailing ships.

By the time of the Bronze Age, large ships were put into operation in the Amu Darya basin. The finding of a ship painting, considered to belong to the Bronze Age and found in Beshtepa rock pictures 20 km to the south of Nukus, was of great importance in the clarification of this issue, under the leadership of the archaeologist S.P. Tolstov[13]. The boat like Egyptian, East Mediterranean, Mesopotamian and Balkan vessels, with a flat bottom, a mast, a saddle, a high-angle front and a lower tail-made ship attracted the attention of specialists. Therefore, it has been concluded that there had been influence of civilization centers of the East in the development of ancient ships[10]. According to the historian U.Mavlonov, this picture shows, first of all, that the development of sailing in the Ancient East and Central Asia was based on common features, legitimacy, mutual exchange of information and cultural influence. Secondly, the local foundations should not be denied in the process of sailing in the lower line of the Amu Darya and the Aral Sea[5]. In the subsequent historical period, we see that the development of sailing in the Amu Darya basin corresponds to the development of the Khorezm civilization. In particular, in the first and developed Middle Ages, commercial and military naval vessels of Khorezmians dominated the northern part of the Caspian Sea[13]. This proves that ships of Khorezm oasis had ancient foundations and local traditions.

There is a description of an ancient ship on the bulla (Bulla – a thing made of wood or clay stamped on one side in three places) found in Karatepa Memorial, near the ancient city of Northern Bactria – Old Termez at the result of archeological investigations. This

finding has played an important role in clarifying our understanding of the shape and structure of ships used in the Amu Darya in ancient times. Experts believe that a flat-bottomed, leather-covered, high-rise front-end dragonfly and a rugged, horizontally shaped ship, similar to As Sirianships and Babylonian ship-boats. At the tail of the ship there is a rider on the bottom of the board, 18 riders (which means 36 crew members and one managing crew). The siege of 5 ships on the ship shows that it was used for military purposes[10].

In the Middle Ages, ships were further developed in our region. Islamic sources say that navigation was organized in 12 rivers in the khalifat, including Jayhun (Amu Darya) and Sayhun (Sir Darya)[7]. In addition to the Amu Darya and Sir Darya, ships were put on the way in other large rivers with their streams. Boat remains were found by archaeologists in the city of Shavkat, which is located on the right bank of the Angrenriver (Akhangaran), near the Uvaitepa or the ancient Khonobod memorial[6]. This is an important source of evidence of the development of sailing along the Angren river flow in the medieval era. The ships were also settled in the other rivers – in the tributary streams of the Sir Darya River. Ibn Hurdodbeh Hashart reports that freights were carried by boats in the middle streams of the Sir Darya River – the Angren, Chirchik, and Talas rivers. In the work “Hudud al-olam”there was given information that boaters lived in the city Nudjakat located one kilometer far from Binkat (Tashkent), and they boated in Parak (Chirchik) river and in the water ways of Sir Darya[16].

In the Middle Ages, major rivers in the region used ships and boats mainly to carry passengers and goods in economic and commercial relations. At the same time, although there are no specially-equipped warships in our area, it can be seen in many sources that commercial vessels and large boats were used for military purposes. The Khujand governor, Temur Malik, turned the Sir Darya boats into a “floating castle” impervious to bullets, rebuilding them on the demand of a military conditionin order to

escape the persecution of Mongols besieging Khujand and that can be interpreted as an example of the centuries-old experience accumulated in this area[4].

Navigation in the Amu Darya and Sir Darya also developed during the period Amir Timur and Timurids and there is a lot of information about the use of ships not only in transportation, but also in economic relations and for military purposes. The following information in Sharofuddin Ali Yezdi's work is remarkable among them. According to him, by the order of Amir Temur, ships and shooters (i.e. shooters of combustible and explosive bomb weapons) in Jayhun (Amu Darya) reached the Kulzum (Caspian) Sea along the water way from Chardjuyand captured the ships belonging to enemy groups of Amir Temur and took part in the conquest of Mahan fortress[8]. There are a number of important peculiarities of this information. It is being approved that firstly, during the rule of Amir Temur, river fleet developed considerably for his time and, secondly, navigation was well-established on the Amu Darya water ways and finally, the fact that the Amu Darya River reached the Caspian Sea through the Sarykamish and Uzbay ridges.

The use of ships for military purposes did not stop during the period of Shaibaniys, especially during the reign of shaibaniangovernor Abdullakhan the II. Particularly, it is well-known that the ships were used for military purposes during the time of Abdullaxan II sieged Termez (in 1572), which is located on the Amudarya River and had a solid defense system. In the sources it was reflected that during the siege of the city Termez, which was great as "Madinatar-Rajjol (The City of Men)", besides attacking from land all ships were gathered from the border of Khorezm till the outlying districts of Termez and 50 riflemen and 50 bowmen were located in each ship and an attack was also carried out on ships to Termez from Amu Darya according to the order of Abdullakhan II[15]. This information, on the other hand, shows that a large number of cargo ships were moving along the Amu Darya during that period, and on the other hand, it allows us to have a clear idea of the size and capacity of the ships.

Information confirming the use of navigation and ships in the Amu Darya for military purposes is also cited in the book “TarikhNodiri (The Rarity of History)”. The Iranian ruler Nadirshahbuilt many ships to carry his troops from the Amu Darya before the military occupation of Bukharan Khanate. Under his command, the Governor of Balkh built 1,100 ships in the Amu Darya each of which could carry 1,000 man (One man was equal to from 2-3 kg till 13,8 kg in the Middle Ages). A part of the Nodirshah army entered the Bukhara Khanate on the ships byKeliftransition in August 1740 and in September of that year, the Iranian army attacked to Khorezmwith a large number of guns and food supplies in ships[4].

Other information also approves that the use of ships across the Amu Darya Riverwas well settled in the last Middle Ages in Bukhara and Khiva khanates. In particular, there was reflected information related with waterways of the Amu Darya, transitions navigation in local sources as the famous “Sharafnamei Shakhi”[15] by Hofiz Tanish Bukhari and Khiva’s Khan Abulghazi Bahadirkhan’s “Shajarai Turk”[1]. We also find such information in the works of the Turkish admiral Saydi Ali Rais, who was in the continent in the middle of the 16th century[11].

The struggle for the control over the Amu Darya river waterways and transitions played an important role in Bukhara-Khiva political relations. During the period of next conflicts, in the mid-1920s, the ship, in which Khiva’s khan Eltuzarkhan and his relatives settled, sank in the Amu Darya River and that indicates that the ships were used in military situations[12].

Conclusion

Thus, consistent use of waterways in the region has a history of 3 millennia. Navigation developed in the Amu Darya and Sir Darya basins and the cities and castles appeared which control coastlines, collect taxes and serve boats to stop. The waterways along the Amu Darya and Sir Darya riverswere important branches of the region’s

communications system, not only in regional economic and cultural ties, but also in controlling the military and political environment in the region.

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RELIGIOUS BELIEFS IN BUKHARA IN THE PRE-ISLAMIC PERIOD (ACCORDING TO THE WORKS OF THE ACADEMICIAN V.V.BARTOLD)

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Annotatsiya: Ushbu maqolada Buxoro va uning atrofida islom dini kirib kelguniga qadar mavjud bo'lgan diniy qarashlar akademik V.V.Bartold asarlari asosida tahlil qilinadi. Islomgacha bo'lgan diniy e'tiqod turlari, ularning tarqalish hududi va bir biriga ta'siri bo'yicha V.V.Bartoldning qarashlariga ilmiy tahliliy munosabat bildiriladi.

Kalit so'zlar: Akademik V.V.Bartold, Buxoroda islomgacha diniy e'tiqod, butparastlik, otashparstlik, zardushtiylk, oyga sig'inish, nasroniylk.

Аннотация: в данной статье анализируются религиозные взгляды в Бухаре и его окрестностях до появления религии ислама на основе трудах академика В.В. Бартольда. Выражается научное аналитическое отношение к взглядам Бартольда относительно доисламских религиозных разновидностей, области распространения и их взаимодействия

Ключевые слова: академик В.В. Бартольд, доисламская религиозная вера в Бухаре, идолопоклонничество, огнепоклонничества, зороастризм, поклоняющиеся луне, христианство

Abstract: in the following article, there is an analysis of the religious views which has indicted in Bukhara and it's environs prior to the advent of Islam on the basis of the works of academician V.V. Bartold. The analytical relation is expressed to the views of V.V.Bartold regarding the varieties of pre-islamic religions faiths, area of allocation and their mutual interaction.

Keywords: academician V.V.Bartold, pre-islamic religious faith in Bukhara, iconoclasm, fire, zoroastrism, moon-worshippers, Christianity

Introduction:

The religious belief is one of the most essential concepts of the human life. According to the researches conducted there were more than 3000 religious views and types of faiths formed during the history of human society. Many forms of religious beliefs have undergone the influence paving the way for others, others during the elapsing time had expanded their geography. Of course, all of them have occurred under the influence of human factor.

In the ancient Bukhara there were several types of religious faiths prior to the arrival of Islam. The diverse habitual types of the belief of the populace of the Bukhara have attracted the local and foreign researchers with their considerable characteristics. Well reputed academician, orientalist V.V.Bartold (1869-1930) has conducted part of his researches with this problem, while revealing the problem V.V. Bartold had referred to the works of local historians, also to the sources in Indian, Chinese, and Persian.

Literature review

The valuable information regarding the types of religious faiths which were espoused by the population of pre-Islamic Bukhara while analyzing the scientific legacy of V.V.Bartold can be established. There is a work related with this theme: "Place of pre-Islamic cult in Bukhara and it's environs"(12).

In this work V.V.Bartold gives complete info on the types of religious faiths and their importance in Bukhara and it's environs. The scholar mentions that he relied on the data given by the "History of Bukhara" of M.Narshakhi. Meanwhile, V.V.Bartold had extensively used the rare sources written by Beruni(1), Istakhri, Sam'ani, Mas'udi and Tabari.

In the revelation of theme the scholar refers also to the scientific works of his contemporary scholars. In this case the rare info given by the works of L.A.Zimin,

I.I.Umnyakov, I.V.Sitnyakovski, V.L.Vyatkin, Kyuzing, Kristensen are used effectively by V.V.Bartold.

Research methodology

This work is conducted in accordance with the methods of historiography, sources studies and historical research. In the article the works of V.V.Bartold are analyzed. Therefore, the scientific relation to the researches on the types and importance of the religious faiths existing in the pre-Islamic Bukhara is formed.

The conclusions of V.V.Bartold on the skills of usage of primary sources and results of his researches are reconsidered. The conclusions and recommendations are drawn on the basis of the data regarding the types of religious faiths in the pre-Islamic Bukhara.

Analysis and results

Till the beginning of the 8th century there was a temple in the Bukhara Ark kourgan. Afterwards in 713 the temple was demolished and the mosque was built in its place. V.V.Bartold says that “The term temple may not relate to the zoroastrism. While relying on the Narshakhi he makes a turning point by saying the following: “the idols which are called images as such by the Muslim relates to the Zoroastrian’s”. After the Arabic conquest the rich tradesmen living in the Bukhara Shakhristan to the north western part of the fortress constructed 700 castles. They have built magnificent dwellings each having the replica of the family idols on the door. The houses are “Castles of Mughs”, that’s Zoroastrian’s, says V.V.Bartold.

V.V.Bartold having difficulties in establishing the location point of the temples of idols, expresses that their location is not definitely shown. He casts doubt to the Narshakhi’s views on the location of these temples. In the Khanikov’s scheme it is said that the temple was located not far from the north of the kourgan’s wall(). V.V.Bartold confirms that there was an ancient mosque built in the place of temple and it was not spotted by the Europeans.

Tabari describes that there was an idol temple(House of Gods) and fire temple in Tavaish. V.V.Bartold confirms that “House of Gods” Tabari has written these info relying on the Madai.

Narshakhi confirms that the peacocks were kept in the households of Tavaish indicating that they were decoration of the house, not having the link with any religion.

In his story “Bazoor of Mokh” it is expressed that the people had bought idols, the people of B was idolatry and in the location of the “Mokh mosque” (besides the ditch) there was a idol commerce took place. Afterwards it was turned into the place where where fire was kept. On market days the people had gathered there, worshipping for the fire in the temple(1).

According to the legend of the population of Bukhara, there was a temple in ancient Romitan, the accessories of the temple were brought by the Chinese princess who had married to one of the rulers of Bukhara.

As a result of squeezing the Buddhism in Bukhara in some places it was substituted by the Zoroastrism, according to the V.V. Bartold it occurred in the same way such as in Turkestan in the 7th century. The struggle between the Zoroastrism and Buddhism has links to the immemorial times. According to V.V.Bartold the Zoroastrism himself was the enemy of those people worshipping for buddism.

According to Bartold there was a Siyavush faith in Ark related with the Zoroastrism. Because there is a legend on the construction of Ark by Siyavush. Siyavush’s tomb was located in the entrance to the Eastern gate inside of Ark. Mughhs(Zoroastrism) used to make pilgrimage to his tomb. Every year in Navruz, just before the sunrise the cock was sacrificed. Sacrificing the cock takes place in the Siyavush faith, but the cock was considered as the holy animal in Zoroastrism. It means that the Siyavush faith was distinct from the Zoroastrism. In the sources the Siyavush faith is referred as the Tengrianism. Siyavush tomb was situated in the entrance of the

eastern gate of the fortress, as for Bartold the “Mughs of Bukhara” were glorifying this place.

According to the Narshakhi in Bukhara *fire-worshipping* was formed after the advent Buddhism. Firstly, faith of fire, afterwards the faith of idols were formed. The selling of idols had been taking place even during the time of the historians’s lifetime. The expanding of Zoroastrism didn’t damage to other customs, habits. There were many fire temples in Bukhara. In the kourgan, in the dwellings of households there were firehouses.

According to the Beruni, the pagans had gathered in the fire temple of the Romush village and were celebrating the “Brother Romush”(4).

Worshipping to the fire and construction of special firehouses were the customs of the ancient bukhara population, being one of the pre-islamic religious faiths. It is noteworthy to mention that the fire places preserved to the date in the Paykent city are the indicators of it.

V.V. Bartold compares the data given by Narshakhi with those presented in the Persian sources. There was a temple of fire of Kaykhusrav and according to the Persian chronology is more ancient than the Bukharaian one. As it can be revealed from the above-mentioned data worshipping to fire in the environs of Bukhara was formed before the advent of the Zoroastrianism.

Narshakhi reminds of Mokh gate, Maghok mosque. In Bukhara there is an oral tradition according to which Maghok mosque is the Mokh Mosque. According to Umnyakov there, there were two Maghok mosques, located in Attar and Kurpa bazaars. While giving info on the Mokh mosque V.V.Bartold refers also to the scholars of his epoch. By analyzing all these opinions he expresses his impartial stance (2).

The word Mokh as a proper name is very frequent in Bukhara. In Soghd language it means moon. According to the phonetics rule of Soghd it corresponds to the mokh of Persian, Soghd version being mokh. Beruni uses the word moh as the first month of

Soghd calendar. Here Bartold refers to the view of persologist Kristensen. Kristensen 1904 advances his own hypothesis. According to him: Moh mosque at first was “lunar” temple and worshipping to moon was one of the local faiths of the Bukharians. According to the Khyuzing’s article worshippers to the moon had no links to the Zoroastrianism.

The description of the full moon in the coins of Sasanids, the replica of the moon in the roof of the zoroastrian temple is confirms the views Kristensen. In the editions of 1907 Kristensen defends his views of the existence worshipping to the moon as a local faith. In his references to the Narshakhi, in Bukhara there was a faith of worshipping to the moon.

According to the V.V. Bartold referring to Narshakhi there is “the existence of Attaron gate in between the gates of Bukhara Shakhristan”. It was also called market gate. If you enter the interior of the shakhristan, on the left there was a Christian church, being directed at the mosque of benukhonzola tribe. According to the legend given by the Umnyakov, the church was located in the place of the contemporary Grand Mosque and its location was changed by the Arslankhan in the 12th century. There are data in the disposal of Narshakhi, says *V.V.Bartold*.

Conclusion

As a result of the analysis we can conclude that there were several religious faiths in the pre-Islamic Bukhara. Based on the data available in the works of V.V.Bartold we can divide the religions existing in the Bukhara into the following types:

Fireworshippers, Buddhism, Zoroastrianism, Moon worshipping, faith of Siyavush (tengrianism), Christianity.

The formation, the vital significance, philosophical shape of these types of religious faiths are important for the ancient period of the life of populations of the Bukhara (from BC. 9-8th to AD.7th).

Academician V.V.Bartold had conducted the researches on the types of religious faiths, their formation period and dissemination place based on the local and international sources. The scholar had used masterly the primary sources while conducting the survey. Thus the researcher translates the original versions of the sources, carefully studying them. We can highly appreciate the fact that scholar had relied on the multilateral sources while giving the info on the theme.

In the central makhallas of the ancient Bukhara city there were the representatives of four, five types of religious faiths living in the harmony. As it revealed from the abovementioned data the sprouts of the contemporary religious harmony in Uzbekistan has its deep roots stretching to the centuries.

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MODERN PROBLEMS OF TOURISM AND ECONOMICS

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FOREIGN EXPERIENCE IN FINANCING PRE-SCHOOL EDUCATION: ITS IMPLEMENTATION IN UZBEKISTAN

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Annotation: This article studies the experience of some well-off nations in financing preschool education. In addition, it analysis the current funding condition in preschool financing by regions. Moreover, it develops some conclusions and recommendations relying on the analysis and studies.

Keywords: preschool, financing, enrollment rate, state funding.

Аннотация: В данной статье изучается опыт некоторых богатых стран в финансировании дошкольного образования. Кроме того, анализируется текущее состояние финансирования дошкольного финансирования по регионам. Кроме того, в статье разрабатывается некоторые выводы и рекомендации, опираясь на анализ и исследования.

Ключевые слова: дошкольное образование, финансирование, коэффициент охвата, государственное финансирование.

Annotatsiya: Ushbu maqolada ba'zi rivojlangan mamlakatlarning maktabgacha ta'limni moliyalashtirish tajribasi bilan tanishib chiqilgan. Bundan tashqari, mintaqalar bo'yicha maktabgacha ta'limni moliyalashtirishning joriy holati tahlil qilingan. Bundan tashqari, maqolada tahlil va tadqiqotlar asosida ba'zi xulosalar va tavsiyalar ishlab chiqilgan.

Kalit so'zlar: maktabgacha ta'lim, moliyalash, qamrab olish darajasi, davlat tomonidan moliyalashtirish.

Introduction: The first years of a child's life provide a unique opportunity to lay a solid foundation for healthy growth and development, and then for education and economic success. However, because of poverty, poor nutrition and health, as well as the precarious home environment in developing countries, 200 million children under 5 years of age are lagging behind in their development. High drop-out rates, poor learning outcomes and other disruptions in the education system are partly due to the fact that children enter school unprepared and without adequate health and nutrition. Quality early childhood development (ECD) services, which include education, health and nutrition, protection and water, sanitation and hygiene, can be a powerful and effective way to mitigate these risks, especially for children from disadvantaged families.

Investing in services in the field of ECD, such as quality preschool education and a visit to the home, can bring greater economic returns than interventions made later in life. It is of course noteworthy that today a great deal of attention is paid to education. The development of the education sector itself will help to solve the existing problems in all spheres of the state. Particularly in our country there are major changes in this direction, in addition to higher and secondary education, there are a number of reforms aimed at improving the pre-school education. In particular, the Resolution of the Cabinet of Ministers approved the Regulation on the Pre-School Education Development Fund. This Charter defines the procedure for the organization of the Foundation for Pre-school Education Development.

According to the document, the fund is not a legal entity and its funds are accumulated in a personal treasury account of the Ministry of Pre-school Education of the Republic of Uzbekistan.

Financial resources of the Fund:

- Enrollment of preschool educational institutions in the designated list of construction sites and expansion of their network;
- financial incentives for employees of preschool education;

- Involving highly qualified specialists, including foreign experts, as well as fellow citizens working abroad to work on the Ministry based on civil-law treaties;
- Involve specialists of state bodies and organizations, project institutes, scientific and higher education institutions, leading international and foreign organizations, as well as experts as consultants within the framework of the tasks and functions entrusted to the Ministry;
- Organizing training, retraining and professional development of the Ministry staff, including who are abroad;
- Ministry of Health of the Republic of Karakalpakstan, Ministry of Pre-school Education, Regional Pre-School Education Departments and Tashkent City Pre-School Education Headquarters, Pre-School Education (District) Pre-School Education and Pre-School Education Facilities to repair;
- The educational process is spent on the introduction of advanced pedagogical and information technologies, as well as other activities aimed at improving the ministry's performance.

Establishment of the Ministry of Pre-school Education also shows the high level of attention paid to this stage of education.

It is not a short time to make the reforms in this field in Uzbekistan so effective, so in this article, we will examine the results of the work done in the advanced countries.

Literature review: Various government programs have been implemented in several countries to fund pre-school education and a series of researches have been conducted to study their outcomes. Pre-school education rates in the US have significantly increased in the 1960s [1]. Although most preschoolers have become pre-schooling, these programs are funded by parents and funded by government funds. Efforts to attract more children to such programs often have political impediments. The Comprehensive Child Development Act was approved by the Senate in 1971, which could provide the inclusion of all children in the preschool education program, but President Nixon vetoed

it [2]. The rejection by the president of this legislative act has led to the increase in local authorities' participation in preschool education programs [3]. After almost 40 years, the arguments against the wide availability of public pre-school institutions remain similar. The most visible concerns are that governments should not get too carried away with such traditional family issues as caring for and caring for young children [4],[5]. The selection of financing mechanisms for preschool initiatives is mostly a political issue [6].

Research methodology: The research methodology in this paper is a qualitative method. Therefore, it uses comparative analysis method in order to find out the share of public expenditure in GNP of continents to pre-school education. Moreover, it collects data on per pupil expenditure. The data is considered to be secondary, because the paper uses the data in the report of the UNESCO on pre-school education. First of all, using the comparative analysis method, continents are compared in terms of public expenditure, after that across countries experiences are studied in details.

Analysis and results: In low-and middle-income countries, ECD has limited resources. For example, the cost of high-impact nutrition interventions in the early years of life is much lower. While regional averages are not available, it is estimated that low-and middle-income countries spend \$ 2.9 billion annually. Interventions such as the addition of several micronutrients, the addition of vitamin A and the treatment of severe acute malnutrition, which aim to slow growth, depletion and anaemia, and support exclusive breastfeeding, are estimated at US \$ 1,600.

This spending level reflects a small share of the budget of the countries in the region. For pre-school education, developing countries spend an average of 0.07 per cent of GNP. There are still large differences between regions, as shown in figure 1. Expenditures also vary significantly within regions; for example, in Latin America and the Caribbean, pre-school expenditures amounted to 0.1 per cent of GNP in Panama and 0.5 per cent of GNP in Mexico.

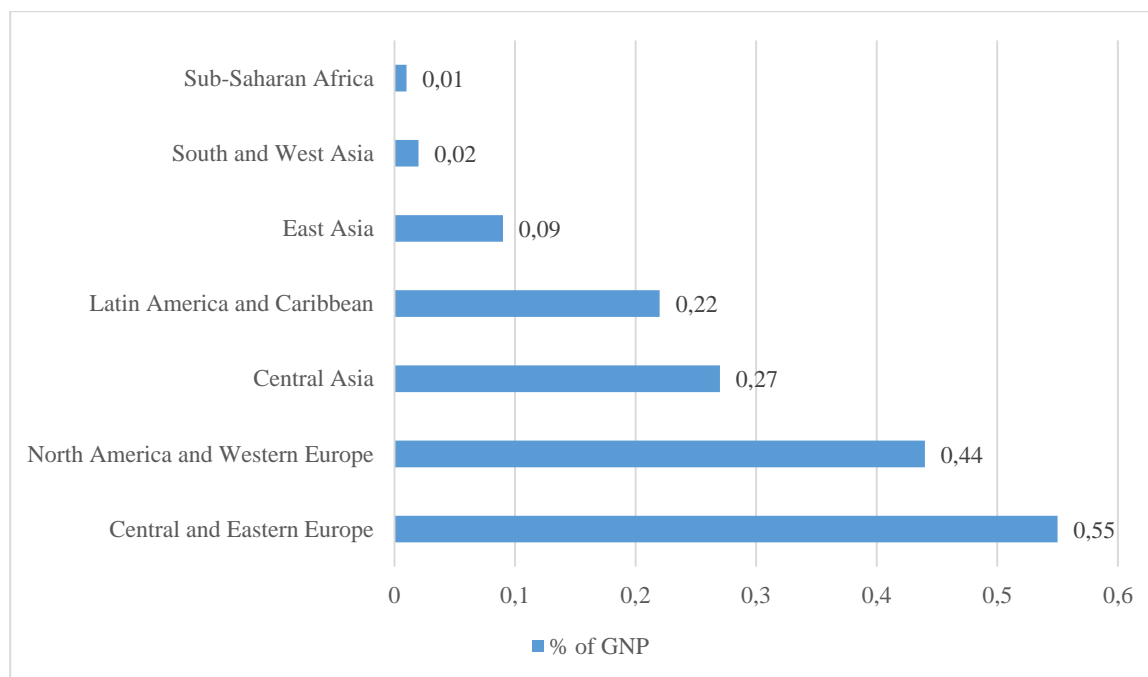


Figure 1. Public expenditure on pre-primary education by region
Source: UNESCO. “Education for All Global Monitoring Report Statistical Tables” (2015).

This level of funding contrasts with what is spent in countries with higher levels of income, where in many cases the care of young children and education are universal: from 1 year to several countries in Northern Europe and 2 to 3 years in Belgium, France, Germany and other countries. United Kingdom. Figure 2 shows how the cost of one pre-school student reaches us \$ 7,943. US in North America and Western Europe and 37 us dollars. Sub-Saharan Africa. Although higher-income countries tend to spend more on pre-school education than low-and middle-income countries, they tend to spend less on one child in early childhood than on primary education, often because pre-school teachers earn less than their primary school counterparts.

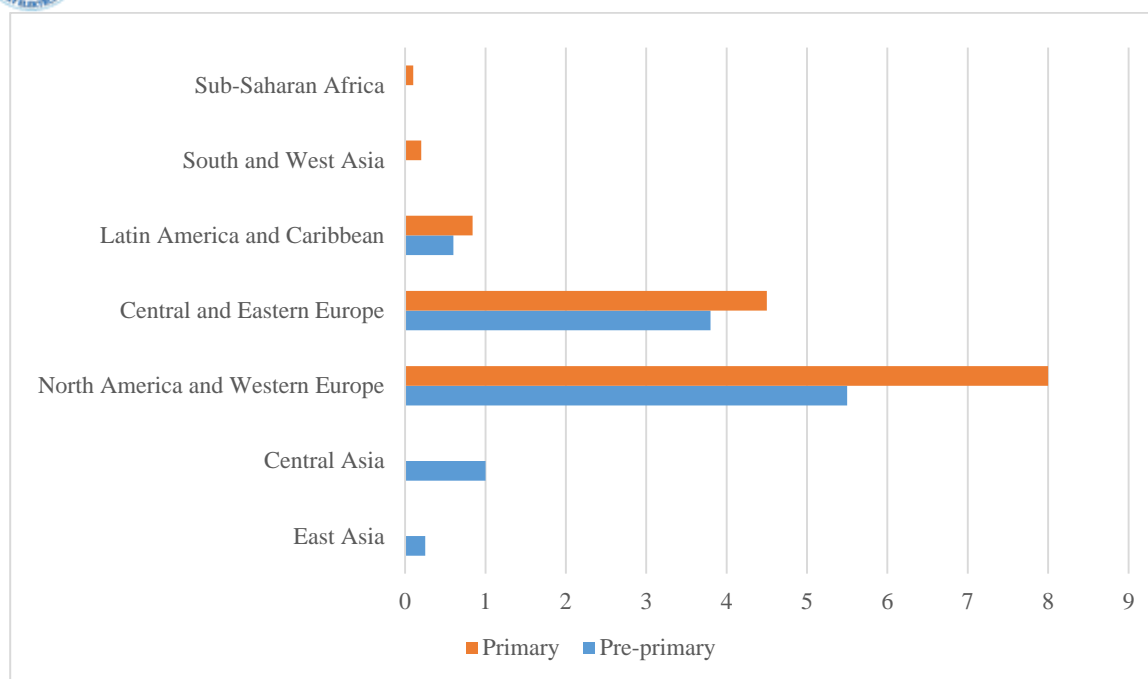


Figure 2. 2012 Per Pupil Public Education Expenditure by Region (Constant 2011 US Dollars in Thousands)

Source: UNESCO. “Education for All Global Monitoring Report Statistical Tables” (2015)

In developing countries, the cost of ECD programmes per child varies considerably due to a number of factors, including wage levels, heterogeneity of services, delivery mechanisms and the quality of resources. For example, the ECD Madras programme in East Africa estimated unit costs of between \$ 14 and \$ 24 per child per month. In comparison, the annual cost per unit of the programme supported by the Honduran Institute for children and the family was estimated at \$ 1,602 USD.

Some countries’ experience in financing preschool education.

Many developed countries have already undergone the reforms in preschool education, while developing nations are still seeking for the appropriate policy to improve this level of education. Below the paper studies the experience of some well off countries.

England

With the introduction of the National child care strategy, the government of labour has made significant changes in the organization of early years [7]. For the first time, a local

planning system was introduced to try to provide adequate conditions to meet demand, with each local education authority (LEA) having to establish Early Years Development and Childcare Partnership (EYDCP).

A number of initiatives aimed at children living in poverty have also been introduced. The Sure Start programme, for example, included, as a key aspect, increasing the availability of childcare facilities [8], along with various new types of service delivery, including children's centers and early learning centers that integrate education and care in disadvantaged areas.

From 2003-04 to the end of 2005-06, funding for the education of three-and four-year-olds was provided to local authorities through a block grant (income support grant) from the Central government for local services [9]. Funds for pre-school education were distributed through the section "Education Formula Spending Share" (EFSS).

The USA

In the USA there are following types of funding sources: Common Federal, State, and Local Preschool Funding Silos.

The choice of a specific funding mechanism alone is unlikely to affect the benefits of participation [10]. However, the funding landscape for pre-school education is complex. The different funding flows for public pre-school programmes are generally not consistent with each other. As a result, these funding flows can be considered as separate repositories. Each Federal, state, or local funding source has its own requirements, and to the extent that preschool providers mix or braid funds from different sources to create a single class, they must coordinate their actions (sometimes conflicting) with the rules associated with each bunker. At the Federal level alone, there are dozens of initiatives to support early childhood education and care [11].

Russia

Financial provision of care and maintenance services is only partially entrusted to the authorities, which are responsible for compensating for parental fees and for

exemption of privileged categories. Financial provision of expenses related to the payment of compensation is an expenditure obligation of the constituent entities of the Russian Federation. To this end, the regulation of the average size of the parent fee has been introduced. Thus, Article 65 stresses that “the average size of the parental fee for the supervision and care of children in state and municipal educational organizations is determined by the state authorities of the constituent entity of the Russian Federation”.

The regulation of the amount of the parental fee is established in particular: “The founder of the organization conducting educational activities is entitled to charge parents (legal representatives) (hereinafter the parental fee) for the supervision and care of the child, and its size, unless otherwise specified in this document. Federal law. The founder has the right to reduce the size of the parental fee or not to charge it from certain categories of parents (legal representatives) in the cases and procedure determined by him. For the care and care of children with disabilities, orphans and children left without parental care, as well as children with tuberculosis intoxication enrolled in these educational institutions, the parental fee is not charged. "It is not allowed to include the costs of the implementation of the educational program of preschool education, as well as the costs of maintaining the real estate of state and municipal educational organizations implementing the educational program of preschool education in the parental fee for the supervision and care of a child in such organizations.

Conclusion

According to what the paper has studied, we have following conclusions:

- In Central Asian Countries including Uzbekistan enrollment rates for preschool education used be lower than other regions, therefore there is necessity in Central Asia to increase this rate.
- Many nations have experienced challenges and changes in preschool education; therefore, Uzbekistan is also expected to face those kind of challenges.

- In financing preschool education, some countries use different sources. In most cases, both state funds and parent fees implement the funding. In few of them even state funding is also divided sub funding sources such as federal and local.

The paper develops some recommendations:

- Taking into consideration the experience of the USA there should be the perfect regulation and mechanism to finance the preschool education. Because in the USA, even there are different sources of financing the same program, they have different requirements. In Uzbekistan also, before financing they should set their requirements.
- In Russia, the money taken from state and parents is directed to separate expenses. It is regulated by legislative document, thus it is advisable to implement this policy in Uzbekistan.

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UDK - 338.48

EFFECTIVE APPROACHES TO THE DEVELOPMENT OF INTERNAL TOURISM: THE EXPERIENCE OF JAPAN

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Annotatsiya. Hozirgi vaqtda turizm sohasi mamlakat iqtisodiyotining ustuvor yo'nalishlaridan biridir. Shu munosabat bilan, O'zbekistonda sayyohlik sanoatini modernizatsiya qilish, sohani barqaror rivojlantirish uchun me'yoriy-huquqiy bazani ishlab chiqish va takomillashtirish, xalqaro me'yorlarga muvofiq xorijiy mehmonlarga xizmat ko'rsatishni tashkil etishga alohida e'tibor qaratilmoqda[0]. Respublikada ichki turizmni rivojlantirish uchun turizm sohasida yuqori ko'rsatkichlarga ega mamlakatlar tajribasini o'rganish zarur, shu o'rinda Yaponiya ana shunday mamlakatlardan biri hisoblanadi. 2018 yilda Yaponiyaga tashrif buyurgan turistlar soni rekord darajadagi 30 milliondan oshdi. 2020 yilga kelib Yaponiya 40 milliondan ortiq turist qabul qilishni rejalashtirmoqda. O'zbekistonda Yaponiya turizmini rivojlantirish bo'yicha tajribasini joriy etish mamlakatning turizm industriyasi maqsadlariga erishishiga yordam beradi [0].

Kalit so'zlar. Turizm, iqtisodiyot, ichki turizm, daromadlar, strategiya, marketing, turizm siyosati, destinatsiya, turistik resurslar.

Annotation. Currently, the tourism sector is one of the priority areas of the country's economy. In this regard, Uzbekistan pays special attention to the modernization of the tourism industry, the development and improvement of the regulatory framework for the sustainable development of the industry, the organization

of services for foreign guests in accordance with international standards[0]. For the development of domestic tourism in the republic, research is needed on the experiences of countries with high rates in the tourism sector, where Japan is one of such countries. The number of tourists visiting Japan in 2018 reached a record number of more than 30 million people. By 2020, Japan plans to receive more than 40 million tourists. And the implementation of experience in the development of tourism of Japan in Uzbekistan would help to achieve the goals of the country's tourism industry[0].

Key words. Tourism, economics, domestic tourism, revenues, strategy, marketing, tourism police, destination, tourism resources.

Аннотация. В настоящее время сфера туризма является одним из приоритетных направлений экономики страны. В этой связи в Узбекистане уделяется особое внимание модернизации туристической индустрии, разработке и совершенствованию нормативно-правовой базы для устойчивого развития отрасли, организации обслуживания зарубежных гостей в соответствии с международными стандартами [0]. Для развития внутреннего туризма в республике нужны исследования опытов стран с высокими показателями в сфере туризма, где одним из таких стран является Япония. Число туристов, побывавших в Японии в 2018 году, достигло рекордного количества — более 30 миллионов человек. К 2020 годам Япония планирует принимать более 40 млн. туристов. И внедрения опыта в сфере развития туризма Японии в Узбекистане очень помогло бы достичь поставленных целей индустрии туризма страны.

Ключевые слова. Туризм, экономика, внутренний туризм, доходы, стратегия, маркетинг, политика туризма, дестинация, туристические ресурсы.

Introduction. In 2019, important documents were adopted in the tourism sector, in particular, Decree of the President of the Republic of Uzbekistan dated January 5, 2019 No. UP-5611 “On Additional Measures for the Accelerated Development of

Tourism in the Republic of Uzbekistan”, Resolution of the President of the Republic of Uzbekistan dated January 5, 2019 No. PP -4095 “On measures for the accelerated development of the tourism industry” and Decree of the President of the Republic of Uzbekistan dated August 13, 2019 No. UP-5781 “On measures for the further development of the tourism sector in the Republic of Uzbekistan”. In Uzbekistan, for the first time, the Tourism Development Concept for 2019-2025 was approved, in accordance with which the main directions of tourism development until 2025 are determined and, most importantly, the industry targets are determined. As a result of the implementation of practical measures based on the results of 8 months of 2019, more than 4.3 million foreign tourists visited the republic. This is 26.7 percent more than for the same period last year (3.4 million tourists). According to the results of the export of tourist services amounted to 854.5 million dollars. Compared to the same period last year (\$ 666.8 million), the export of tourism services increased by 28 percent. By the end of 2019, it is expected that more than 6.5 million foreign tourists will visit the republic, which is 15% more than last year (5.3 million).

We know that international tourism continues to grow and in the first quarter of 2019 the number of tourist arrivals increased by 4%, the number of international tourist arrivals in the Middle East increased by 6%, in the Asia-Pacific region, where the number of trips to Northeast Asia grew by 9%. In Europe, the number of arrivals increased by 4%, the most popular for travel was Southern, Eastern Europe and the Mediterranean - 5%. In 2018, revenues from international tourism amounted to 1.7 trillion US dollars., the number of tourists in 2018 amounted to 1.4 billion people, which is 5% more than the previous year[0].

Studying the statistics of international tourism, it is necessary to take into account the fact that without the experience of countries with a developed tourism industry in Uzbekistan it is impossible to develop tourism. Tourism in Japan is an industry that is developing at a rapid pace and in the near future, Japan will accept millions more

tourists than last year. Japanese experts are doing everything necessary for the development of domestic tourism: they simplify the visa system, revised aviation tariffs, provided international service standards, etc.

In 1995, a modest 3.3 million travellers went to Japan, a fascinating land of ancient temples, neon skyscrapers, snow-capped mountains and sandy beaches. That year it was the 34th most visited country on the planet, according to the United Nations World Tourism Organisation (UNWTO), behind the likes of Bulgaria, Ukraine and Belgium. Growth was steady, if unspectacular, for the next decade or two. In 1998, 4.1 million overseas travellers spent at least one night on Japanese soil, making it the 33rd most visited nation. In 2005, 6.7 million went, moving it to 32nd on the list. It rose one more place, to 31st, in 2010, when foreign arrivals totalled 8.6 million[0]. From 2011 to 2015, Japan's inbound tourism grew by 33 percent a year, among the fastest rates in the world. This growth was driven in large part by external factors (depreciation of the Japanese yen and China's economic growth) as well as onetime policy changes (airline deregulation and the relaxation of visas for tourists from China, Malaysia, and Thailand) that helped to make the country more accessible to outside visitors. The rewards of bolstering Japan's tourism industry are great: in 2015, international tourists contributed JPY 3.5 trillion (approximately USD 35 billion) to the Japanese economy. Japan's leaders, recognizing that inbound tourism could be a powerful economic engine, have set an aspirational target to double annual inbound tourism from 19.7 million visitors in 2015 to 40 million in 2020. The government also seeks to nearly triple the annual number of visitor nights in non-metropolitan areas to harness tourism as a catalyst for the revitalization of these less-populous regions. These goals are not impossible to achieve, but ensuring that inbound tourism can grow sustainably will require more robust infrastructure, capabilities, outreach, and internal collaboration. To become a "tourism-oriented country" by 2020 calls for a shift in Japan's growth path [0]. The Japanese managed to achieve a lot in this direction by providing the tourism industry

with all the necessary resources in the right quantity and quality. We only need to study and implement this in the tourism sector of our country. Having been in Japan in 2003, I personally became convinced that the Japanese tourism service system is more than just tourist service. In the Japanese customer service system, the client / tourist / guest is placed above the attendants, the entire system is tailored to the tourist, and sometimes it seems that the tourist feels excessively relaxed. But at all levels of service there are standards, where compliance with these standards is strictly mandatory for all personnel.

Literature review. The scientific works of various researchers provide different approaches and information on the development of domestic tourism in Japan. Their writings contain statistics on Japanese tourism, the main problems of Japanese tourism and ways to solve them, the methods that Japanese experts and politicians have taken to develop tourism in their country. In Japan, the promotion of national tourism products on the international market is a complex and time-consuming process. This is the task not only of tour operators, but also of the entire state as a whole: Japanese firms of other profiles working abroad and diplomatic services are involved in the work. Outbound tourism tour operators have direct contacts with the Ministry of Foreign Affairs, and tourists traveling abroad can directly contact diplomatic staff if significant problems arise. Representatives of the Japanese travel industry also prefer to work only with reliable, trusted partners to reduce their risks to a minimum. The Japanese government, wanting to attract tourists to its territory, simplifies the procedure for issuing visas for foreign citizens. International tourism is one of the industries in Japan that have a negative balance of income and expenses. In terms of income from international tourism, the country is in 31st place in the world (\$ 3.5 billion). As for the share of revenues from trade in tourist services, it is only 5%. However, Japan takes the fourth place in the world in terms of spending on international tourism (\$ 26.5 billion) and the second place after Germany in terms of the balance of the passive balance of income and expenses on international tourism (Japan - \$ 23 billion, Germany - 29 billion dollars).

Nevertheless, the Japanese government continues to pay special attention to the tourism industry as a priority in the country's economy. In 2008, with the assistance of the government, the Japan Tourism Agency announced a plan for the further development of tourism and the creation of a tourism-oriented nation. This plan was calculated until 2015 and took into account such socio-economic factors as the low birth rate in the country, an aging society, and national debt of 170% of GDP. The plan was to intensify the development of technology and involve a large number of people in the promotion of tourism in the country, which makes it possible to revive the economy of some regions of the country and increase the number of jobs. The government of the country needs to solve a number of serious tasks aimed at eliminating some of the reasons that prevent tourists from many countries from coming to Japan, namely: a) reducing the price of a tourist product; b) the provision of easily accessible information for the bulk of tourists not only in Japanese, but also in English, French and other languages; c) cancellation or simplification of the visa regime. The solution of these problems will eliminate the big problem that exists in Japanese international tourism so far: a huge imbalance between outbound and inbound tourism. To date, tourists from Japan leaves much more than comes to the country. Japan can be called a unique tourist destination, which has enormous advantages: favorable climatic conditions, a unique distinctive culture with a large number of historical and architectural monuments, the country's political situation is quite stable, and economic policy is aimed at developing tourist infrastructure [0]. In a scientific article by Joan Catherine Henderson, other aspects of increasing the flow of foreign tourists to Japan in subsequent years are given. The factors and forces underlying the upturn are examined to reveal the importance of national conditions in the country as a whole alongside government tourism policy, attractions and amenities, access and mobility and destination marketing. These emerge as key determinants of the destination development process with international conditions also playing a role. Further growth in Japan's inbound tourism is expected in the years leading up to 2020

when it will host the Olympic Games, but the multiple influences at work create some uncertainty about the future as well as new opportunities. While exhibiting distinctive characteristics, the case does afford more general insights into how and why states acquire the heightened popularity attendant on destination development [0].

Research Methodology. As a research method, an analysis was made of the current state of the Japanese tourism market in recent years. Based on these analyzes, certain conclusions can be made. Japan ranks 9th in the world and 2th in the region of the Asia-Pacific countries. In 2018, nearly 30 million people visited this country. The success of Japan may be due to the rich cultural resources (6th place in the world) with unique UNESCO monuments and efficient transport infrastructure (17th place in the world). Tourists and businessmen also praised the paid WiFi network deployed throughout the country. The workforce is well trained and has achieved unprecedented success in customer service (1st place in the world). Despite low competitiveness in price (119th place in the world), Japan attracts tourists of a new middle class from neighboring countries. Singapore ranks 11th in the world. Excellent business environment (1st place in the world), highly qualified workforce (3rd place in the world) allow you to effectively develop tourism. Singapore has taken many measures to increase the openness of its country (1st place in the world), is actively investing in transport infrastructure (6th place in the world). The state notes an increase in expenses of sightseeing tourists on entertainment and casinos. Along with other developed countries, Singapore also has low competitiveness in price (116 th place in the world) [10,4]. If we analyze the Uzbek tourism market, then you can observe the growth in the flow of tourists, although the growth rate is not very high compared to other countries. As for foreign tourists, the leading tourist destination for Uzbekistan is the Russian Federation (18.2%), followed by Turkey (11.9%) and India (10.4%). Visitors from the Federal Republic of Germany (5.1%) represent the main European market for tourists to Uzbekistan, and visitors from the Republic of Korea (7.7%)

represent the largest segment of the tourist market in the Asia-Pacific region. Limited data are available for cost analysis by country of origin, but it is estimated that markets in countries such as Japan, the United States of America, the People's Republic of China, the United Kingdom, and France may also represent major or growing economically significant markets. It is recommended to continue research in order to verify the cost structure of tourist destination markets. [0].

Analysis and results. Making analyzes of the above facts, one can observe that the internal tourism of Uzbekistan is developing slowly. But the resources that we have available allow us to more rapidly develop tourism in different directions. Several significant reforms have been carried out:

- Simplification of visa and registration procedures
- Development of tourist infrastructure
- Transport infrastructure
- Standardization and certification
- International cooperation and investment attraction
- Promotion of tourism potential
- Capacity building

All these reforms serve the development of the tourism industry as a whole throughout the republic. Each of these reforms requires huge financial and time costs. Uzbekistan began active propaganda in almost all countries where the tourism industry is developed, in order to attract tourist flow and, of course, investments in this area.

In addition, a number of benefits have been announced specifically for the tourism sector. There are all possible conditions for introducing the Japanese experience in the development of domestic tourism. When conducting a survey with Japanese tourists, they replied that they could not find open and reliable information about all the services

in any electronic database. And they gave their recommendations to address the existing problems in the tourism sector.

Conclusion/ Recommendations

The research has concluded that there is an in-depth understanding of the role that can be played by internal tourism in Uzbekistan. It emerged from the research that there is a significant potential for development tourism and to be involved in traveling in Uzbekistan. However, the number of internal tourists can be increased by capitalizing on the marketing strategies available to tourism and hospitality operators. Based on the outcomes of the study, the results show that there are seasons for internal tourism especially the Easter, New year and School holidays. The study has revealed the need for tourism operators to accommodate internal tourists and appeal to them using certain marketing strategies. The tools that can be used to appeal to internal tourists could include the use of advertising, direct sales, the print and electronic media as well as the Internet. Promotion could include the use of group discounts, special packages, incentives and competition involving international tourists. It emerged from the study that tourism and hospitality operators need to fully utilize publicity to effectively position their offerings to international tourists.

The study and inventory of all resources of tangible and intangible nature on the fact of use for tourism purposes is proposed. It is recommended that air carriers revise the fares of all flights, because tourists, comparing the prices of air travel, give preference to other regions, where you can get cheaper. In this regard, laws are passed that allow other foreign airlines to make flights to Uzbekistan. In general, there are all conditions for the development of domestic tourism in Uzbekistan, and the state is trying to accelerate the pace of tourism development in the country as soon as possible.

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UDK 332.1

EFFECTIVE USE OF DESERT PASTURES

(as an example of Bukhara region)

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Abstract: This article discusses the use of desert pastures in the period of new economic conditions on the example of the Bukhara region. Desert territories of Bukhara region qualification for pasture purposes.

Key words: Desert zones, pastures, economic potential, industry, agriculture, landscape, irrigated land, medicinal plants, economic stability.

Аннотация: Мақолада янги иқтисодий шароитда чўл яйловларидан самарали фойдаланишнинг масалалари кўрилган. Бухоро вилоятида чўл ҳудудлари яйлов нуқтаи назаридан таснифланган.

Калит сўзлар: Чўл ҳудудлари, яйлов, иқтисодий салоҳият, саноат, қишлоқ хўжалиги, чорва моллари, ландшафт, суғориладиган ерлар, шифобахш ўсимликлар, иқтисодий барқарорлик.

Аннотация: В данной статье рассматривается вопрос об использовании пустынных пастбищ в период новых экономических условиях на примере Бухарского вилоята. Пустынные территории Бухарского вилоята квалифицированы в целях пастбищ.

Ключевые слова: пустынные территории, пастбища, экономический потенциал, промышленность, сельское хозяйство, скот, ландшафт, орошаемые земли, лекарственные растения, экономическое стабильность.

Introduction. Approximately two-thirds of the country's territory consists of desert zones. The growing number of population, increasing food security, increasing

the impact of industrial production, particularly mining industry, and the development of economic sectors are becoming increasingly important in terms of effective use and protection of the country's desert potential. Research has shown that our country's desert regions have enormous economic potential, and today we use only a small part of them, and in traditional routes.

Desert zones are particularly important for livestock breeding. Desert pasture cattle breeding is one of the sources of daily life and living conditions of our country's desert and adjacent territories.

The Decree of the President of the Republic of Uzbekistan of March 18, 2019 "On Measures for Further Development and Support of the Livestock Sector" is aimed at further deepening of structural transformations in agriculture, effective use of pastures, increasing the competitiveness of livestock production, and the development of feed cultivation in pasture land, the development of seed-growing seeds, and the effectiveness of the use of renewable technologies has identified priority areas, such as screening [1].

Literature review. Desert pastures in Central Asia and Uzbekistan are economically poorly studied. Until now, the desert pastures of Uzbekistan have been studied for ecological, biological, reclamation and other purposes, but little has been studied in economic areas.

Shamsutdinov N. Z., Shamsutdinova E. Z. (all-Russian research Institute of hydraulic engineering and melioration named after A. N. Kostyakov) in his work "Natural forage resources of arid regions of Central Asia: prospects for their use in phytomelioration and selection" (2017) considered plant resources of forage plants of natural pastures of Central Asia and prospects for their use in phytomelioration and selection [2].

The scientific work Bakurova K. B., Yuferov V. G. (all-Russian research Institute of agroforestry, Russia) "Ecological and economic assessment of degradation of

agricultural landscapes on the basis of remote monitoring" (2009) presents the implementation of the methodology for determining the yield of pasture lands by the density of the projective cover according to aerospace surface monitoring. The productivity of pasture cenoses in the structure of agricultural landscapes is determined on the basis of the analysis of the density of projective grass cover [3].

In the work Bobokulov N. A. Mukimov T. H., Rafieva, B. H., Rasulov, A. "Desert and grazing of Uzbekistan and the rational use of food resources" (Tashkent, 2014) considered that desert pastures are the basis of the fodder base for sheep farming, providing troglodyte animals grazing. The methodology of determining the yield is proposed in the knowledge of the yield of different types of pastures. Basic principles of correct grazing of animals on natural pastures [4].

In scientific work "Evaluation of the ecological state of arid pastures by MODIS and geobotanical data" (A. N. Zolotokrylin, I. A. Trofimov, T. B. Titkova Institute of geography of the Russian Academy of Sciences, all-Russian research Institute of fodder the name V. R. Vil'yamsa, Russia) are considered diagnostic of the condition of pastures. When interpreting the results of the diagnosis of the state of pastures in most cases, there are significant uncertainties. To reduce them, this article proposes to divide the diversity of pasture States into "normal" and critical States, including risk, crisis and disaster [5].

UNDP-GEF - Goskomzemgeodezkadastra project of the Republic of Uzbekistan "Reducing the burden on the use of natural resources as a result of competing exploitation of rain-fed, dry lands in mountainous, semi-desert and desert landscapes of Uzbekistan" (2010-2015). This 5-year project is designed to provide improved, more sustainable and more flexible land-use management in the rain-fed arid desert, steppe and mountain landscapes of Uzbekistan, which make up a large part of the country's territory, and to reduce the competitive burden between land-use forms, in particular in the use of pastures and forestry [6].

The scientific exploration of the deserts of the region was started by the geobotanics, instructed by Tishenko in 1931. Later, it was continued by Ramenskiy L.G, Fayziyev A, Granitov A.I, Monina Z.F, Korovin Y.P, Zakirov K.Z, Nazarov I and Toshev X. Scientists the identified types of postures of all administrative districts, their areas and fertility. But, the financial aspects of using those pastures were not taken into account by the above mentioned explorers and this proves its vitality.

Research Methodology. The methods of statistical analysis, logical thinking, economic analysis, systematic approach, observation and collection of facts, historical, logical and others are applied in the work.

Analysis and results. In the view of the information given by the Uzbekistan Korakulchilik and desert ecology SRI nowadays 40% of our deserts are facing different levels of erosion and the average fertility rate has decreased by 21% In a sense in the Republic of Karakalpakistan, in the regions of Bukhara and Navoi the fertility of their pastures has decreased to 42-43% [7].

The major part of the territory of Bukhara region consists of deserted zones and the latitudes are regarded as one of the largest of deserted zones of our country the territory of Bukhara is situated in the republic of Uzbekistan, in the bottom of the south-western river of Zarafshan, in the south- western desert of Kizilkum as well as the Region is confined by the deserts of the Republik of Karakalpakistan, Kharezm, Navoi and Kashkadarya.

Bukhara is one of the largest regions which produce the products of rural economy. The region produced 8.8% (worth 17464.4 billion sum product) products of the rural economy of the Republic, namely 9% (worth 8452.5 billion product) of gross cattle products of the republic. The agricultural sphere is one of the specialized spheres of Bukhara and produced in this sphere. The share of cattle products takes 50.8% of the total rural agricultural products[8].

The total territory of the region is 40.8 thousand km² 11.4% of the region consists of oases and 88.6% is taken by deserted areas (pastures).

In our republic, particularly in Bukhara, the structure of fertile lands has been changed by the result of the recent developments. Although the tendency of shrinking the cotton fields in the republic is continuing, as a result of an extension of vegetable fields and gardens. The areas of cattle food are decreasing. In the region, from 1995 to 2018, the area of cattle food narrowed from 463 thousand hectares to 24.8 thousand hectares, namely was reduced by 21.5 hectare.

According to the explorer's data, 88.6% the region's area consists of pastures, and their average fertility rate equals to 2.5 k/ro, but another 1/6 k/ro is provided with water, only[9].

Scientists have differentiated 72 formations and 298 associations of plants in Southern Kizilkum. Similarly, Granitov I.I mainly based on sand cap and relief of the area while differentiating the types of pastures. On account of his suggestions: the average annual yield of pasture species is 1.0-7.6 cc. is observed. The average yield is 2.0-3.0 centners, which means that 3-4 hectares of pasture land per sheep, and 8.2 centners of dry feed per year are required. It is stated that the main disadvantage of pastures in desert is not in low level of fertility, but there is a sharp difference in the circle of fertility of metrologic years [10].

The areas of Bukhara region have been explored by explorers and the types of the lands capes were distinguished in the following table: (table information).

Table.

Landscape types in Bukhara region and their scale

№	Types of landscape	Arena	
		Hectare	Arena
1	Region (Bukhara, Karakul, Karavulbazar regions)	458000	11.4
2	Sandy	1354925	33.6
	including, transportable sand	156675	3.9
3	Sandy	900000	22.3
4	Clay	300000	7.5
5	Puffed sandstone-gypsum	299000	7.4
6	Low mountain slopes sand-clay-crushed—gypsum	200000	5.0
7	Saline	190000	4.7
8	Low mountain slopes lyosy-clay-crushed	145000	3.6
9	Water	82125	2.0
10	Gypsum-sandstone	35000	0.9
11	Lowmountain watershed-rocky-stony	28000	0.7
12	Dam-ecotone	20950	0.5
13	Sandstone, gravelly-gypsum	17000	0.4
Total by region:		4030000	100

The table shows that 55.9 percent of the region's territory is composed of sandy desert areas. Sandy desert zones are characterized by their low productivity, instability of relief forms, rapid release of anthropogenic and ecological changes caused by human

and other factors such as poverty, flora and fauna. In this context, the use of desert areas in the Bukhara region requires specific approaches.

Today, the pastures of the Bukhara region, according to scientists' calculations are:

- satisfactory pastures - 1663200 hectares (41.3%),
- partly satisfactory pastures - 1342000 hectares (33.3%),
- unsatisfactory pastures 484675 hectares (12.0%).

It does not include water (2.0%) and region (11.4%) landscapes (table data) [11].

The researchers identify the desert pastures in the Bukhara region according to their characteristics:

1. Sandy desert pastures

- They occupy the area of 33.6% (1354925 hectares) of the region, of which sandy areas are 156675 hectares;
- In the sandy deserts, such as white, black saxaul, sugary, rabbitbone, herbaceous, sesame, selenium, singrene, battalion are dominant bushes as well as such grassy plants as iliac, coriander, gluten, herbaceous, kumtorin, gambling;
- The sandy deserts are usually fragmented, and large areas are found in the Karakul oasis in the northwest (Kandymli) and at the foot of the Ayakoghitma (Mirzaqum, Jillicum).

2. The sandy desert pastures

- The sand dunes are currently located in the ancient delta of Zarafshan, the Bukhara oasis of Echkilisoy and the Daryosoy valley and Gazli;
- In sand-cloving pastures, ephemeral and ephemerals are dominated by groats, groats, grapes, gourds, cobbles, butterflies, sorghum, partake, wormwood;
- The type of landscapes is 900000 hectares (22.3%).

3. Wild desert pastures - In the Daryosay bog at the foot of Kuljugtog they have the largest square. Karakul, Burgutli, Usmanquduq, Kurobov, Yonbashli and Chodaroz can be seen as bays of the islands;

- Their area is 300 000 hectares;
- The plants are poor.

4. Saline Desert pastures

- In the saline soils mostly sarsazan, surrounded by shrubbery salts, jails, cane, plumage, and partly bush have been lead;
- Their total area is 190000 hectares (4.7%);
- There are 33 large saline areas (formed on the basis of erosion-tectonic beds) in Bukhara region.

5. Totally pastures

- In the region, the type and scale of these pastures is limited (20950 hectares or 0.5%), along rivers, canals and dumps;
- Two types of turquoise species are formed in rooted mausoleum. In their surroundings are varieties such as cucumbers, peaches, watermelons, red horns, pheasants, pheasants, reed, moss reed, bream, prisons, snails;
- Butane, grassy mausoleum, formed around the Magistral drainage and dumping lakes (brush wood around lakes Oyokogitma, Korakir, Zamonbobo, Katta-Tuzkon, Dengizkul, Devzor, Khodzha and Kumshulun lakes).

It is well-known that the decisive factor in the development of livestock is a solid nutrient reserve. In desert pasture livestock, natural pastures are the main sources of nutrition and are used in all seasons of the year. Desert pastures are the cheapest source of nutrients and they provide biodiversity, yield and pasture nutrition for vegetation. It is noteworthy that the intensive use of desert pastures without taking into account the peculiarities of the desert pastures will ultimately lead to the crisis of the pasture vegetation and desertification processes will be intensified.

One of the most important tasks is to improve the quality of pastures and improve the quality of pastures at farms and cultivator farms in the desert zones. To do this, it is desirable to establish desert seedlings in the places where possible, to take measures to protect the seeds from livestock, to identify the size and condition of the pastures, to identify the need for seeds, to breed the seed farms, implementation of mechanisms, strict control over efficient use of desert pastures.

When analyzing the characteristics of all pastures, it became clear that livestock was difficult to provide with adequate pasture feeds in early spring and winter seasons. There is a clear example of a reduction in the living weight of animals.

In some farms, a large number of reed yachts are harvested, its nutrient content is very low and the reed is harvested when it is sprouted, and its direct feeding without crushing indicates that it does not exceed 20-30% of feed, and excessive extortion is allowed.

Rice and wheat stalks are often used on an irrigated land, near the banks of the Amudarya river. It also leads to extinction, expense, and economic downturn in those areas.

The new era in the economy of Uzbekistan, the new reforms require more efficient use of available resources, including natural resources. Traditionally, desert zones have been used in livestock and mining industries, but nowadays these trends are rising.

Nowadays, as a growing and growing trend in the use of desert areas in our country, we can show the followings:

- livestock production (weft, cattle breeding, cattle breeding, cattle breeding, beekeeping, ostrich and etc.);
- tourism (jailoo tourism, ecotourism, agro tourism, caravan, medical tourism, cosmetics, etc.);
- treatment (sand, mud, mineral water, salt, etc.);

- cultivation of medicinal plants;
- hunting;
- mining industry trends.

Conclusion/Recommendations. Given that the list of these routes is expanding over time, it becomes clear that the range and intensification of desert areas, including desert pastures, will increase. This in turn requires the development of integrated utilization programs for these areas to effectively utilize and protect their desert areas, and to implement a comprehensive approach to the use of desert areas. Innovative approaches to organizing and managing work are required.

In desertification, the aforementioned directions are managed by different organizational structures as separate sectors of the economy and are based on the benefits of this sector. In the future it is required to introduce mechanisms for the interaction between these areas, integrated management of the common impacts on desert areas, and the benefits of general protection and development of desert zones.

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CLUSTER APPROACH IN TEACHING FOREIGN LANGUAGES: Integration of cultural competence in English language teaching and learning

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Annotation: The article is concerned with the contribution and integration of the teaching culture into the foreign language classroom. More specially, some consideration will be given to the why and how of teaching culture. It will be demonstrated that teaching a foreign language is not indistinguishable to give a sermon on syntactic structures or learning new vocabulary and expressions but mainly integrates or should incorporate some cultural elements, which are tangled with language itself. Furthermore, an attempt will be made to incorporate culture into the classroom by means of considering some methods currently used. The main principle of the paper is exploring the role of culture in language teaching and the importance of the integration of culture into the teaching of language. Survey data are often used to map cultural diversity by aggregating scores of attitude and value items across countries. However, this procedure only makes sense if the same concept is measured in all countries. In this study we argue that when (co)variances among sets of items are similar across countries, these countries share a common way of assigning meaning to the items. Clusters of cultures can then be observed by doing a cluster analysis on the (co)variance matrices of sets of related items. This study focuses on family values and gender role attitudes. We find four clusters of cultures that assign a distinct meaning to these items, especially in the case of gender roles. Some of these differences reflect response style behavior in the form of acquiescence. Adjusting for this style effect impacts on country comparisons

hence demonstrating the usefulness of investigating the patterns of meaning given to sets of items prior to aggregating scores into cultural characteristics.

Keywords: cluster, culture, intercultural competence, Cross-cultural comparative research, Cultural diversity, Gender roles, Family values

Аннотация: Мақолада чет тилларни ўқитишда тили ўрганилаётган давлат маданияти тўғрисида олиб борилган тадқиқот натижалари баён этилган. Хорижий тилларни ўқитишда тили ўрганилаётган мамлакат маданиятини ўқитиш нима ва қандай амалга оширилишини кўриб чиқилган. Хорижий тилларни ўқитишда синтактик бирикмаларни, сўз бирикмалари ва ибораларни ўқитиш муҳим восита эканлиги маълум, лекин хорижий тилларни ўқитиш ва ўрганишда тили ўрганилаётган мамлакатнинг айрим маданий элементларини дарс жараёнига киритиш кераклиги ушбу мақолада ўз аксини топади. Бундан ташқари хорижий тилларни, хусусан инглиз тилини ўқитишда маданиятлараро компетенцияни дарс жараёнига интеграция қилиш муҳим аҳамият касб этиши кўрсатилган. Маданият кластерларини тегишли элементлар тўпламининг фарқланиш матрицаларида кластер таҳлилини ўтказиш орқали кузатиш мумкин. Ушбу тадқиқотда оилавий қадриятлар ва гендер ролига бўлган муносабатларга эътибор қаратилган.

Калит сўзлар: кластер, маданият, маданиятлараро компетенция, маданиятлараро қиёсий тадқиқотлар, маданий ҳилма-ҳиллик, гендер роллари, оилавий қадриятлар

Аннотация: В статье излагается о культуры обучения в преподавании иностранных языков. В преподавании иностранных языков рассматривается, что и как осуществляется преподавание культуры страны, в которой изучаются иностранные языки. Известно, что преподавание синтаксических соединений, словосочетаний и словосочетаний в преподавании иностранных языков является важным инструментом, но необходимость включения в учебный процесс элементы культурны страны. Также показано, что важное значение в преподавании иностранных языков, в частности, английского, имеет интеграция

межкультурных компетенций в учебный процесс. Культурные кластеры можно отслеживать путем проведения кластерного анализа в матрицах дифференциации соответствующего набора элементов. В этом исследовании основное внимание уделяется отношению к гендерной роли семейных ценностей.

Ключевые слова: кластер, культура, межкультурная компетентность, межкультурное сравнительное исследование, культурное разнообразие, гендерные роли, семейные ценности

Introduction: Today, it is a broadly known fact that teaching and learning a foreign language cannot be abridged to the direct teaching of linguistic skills like phonology, morphology, vocabulary, and syntax. The modern models of communicative competence show that there is much more to learning a language, and they comprise the dynamic element of cultural knowledge and awareness (Bachman 1990; Council of Europe 2001). In other words, to learn a language well usually entails knowing something about the culture of that language. Communication that lacks applicable cultural content often results in hilarious incidents, or worse, is the source of solemn miscommunication and misunderstanding. According to Kramsch (1993), culture is always in the background, right from day one, ready to unsettle the good language learners when they expect it least, making evident the restrictions of their hard-won communicative competence, perplexing their ability to make sense of the world around them.

To develop measurements of national cultures, scholars often use cross-national surveys and aggregate individual-level responses to Likert-type items from these surveys to the national level. For example, Inglehart (1997) positions countries on a survival versus self-expression dimension and a traditional versus rational-secular dimension by aggregating factor scores derived from individual-level measurements of personal values and attitudes. Other experts on human values systems, such as Schwartz (1992) or Hofstede (2001) also investigate cultural differences using aggregate scores derived

from individual-level variables. However, the approach of using aggregated scores is prone to two complications that may confound findings in cross-cultural research: firstly, cultural diversity in the interpretation of the content of items and secondly, cultural differences in how people respond to survey questions regardless of the content of the questions.

However, when writing or talking about “teaching culture,” theoreticians and practitioners often limit themselves to the particular culture of the target language. In English as a Second Language (ESL) contexts, where students live and are engrossed in the culture of the English speakers, this may be a satisfactory approach. But in English as a Foreign Language (EFL) settings, this is a very constricted view. In an EFL class, students are usually monolingual and they learn English while living in their own country (Krieger 2005). They have little access to the target culture and therefore a partial ability to become culturally competent. Prominently, their aim for learning English is not only to communicate with native speakers of English but also with non-native speakers of English, which is why EFL learners are typically learners of English as an International Language (EIL). By learning English, EFL students are empowering themselves to become users of international or rather intercultural communication. Thus, the target language becomes a tool to be used in communication with people from all over the world, where interaction in English takes place in fields such as science, technology, business, art, entertainment, and tourism. It is observable then, that in order to successfully function in a culturally miscellaneous environment, our learners need to progress intercultural communicative competence (Alptekin 2002). This article will discuss the intercultural approach and present methods for English language teachers who wish to broaden their students’ multicultural awareness.

Culture is demarcated in terms of intercultural communication (Reimann, 2006), the capability and ability to enter other cultures and communicate efficiently and applicably, inaugurate and maintain relationships, and carry out tasks with people of

these cultures. With the rapid increase in foreign language learning/teaching recently, the concept of ‘intercultural competence’ has expanded much more importance in relation to the role of culture in EFL learning/teaching.

The significance of teaching culture in and through language teaching has been renowned and widely deliberated over the last two centuries. As research and practice have proceeded over these years, the definition of culture and the connection between language teaching and culture have been demarcated and redefined.

The article illustrates the importance of cultural competence through several methods (grammar-translation method, direct method, suggestopaedia method) that used in teaching language. That is to say, in this work it is aimed to develop some peculiarities of cultural competence in teaching English language and In this paper we investigate whether, and to what extent, cultural variations exist in the meaning assigned to items linked to family values and gender role attitudes across Europe. In a European Union context in which egalitarian policies are developed, an increased understanding on what causes cultural variations in these items is of utmost importance. The novelty of our study involves following a stepwise approach aimed at discovering the principal cultural differences. First, we use cluster analysis to group countries in such a way that the largest differences in (co)variances among both sets of items are identified in clusters of cultures. These clusters are internally more measurement invariant than the pooled group of European countries, thus increasing within cluster comparability. Then we estimate separate measurement models for all clusters. Each measurement model is then adjusted for acquiescent response behavior and compared to models that do not adjust for this type of response style. The final purpose then is to demonstrate how within ‘clusters of cultures’ differences between countries shift, depending on whether the measurement model has been defined on the pooled versus cluster specific measurement models. Whether accounting for acquiescence contributes to our understanding of differences is demonstrated as well. This study will show that

particular family values and gender role items truly have different and sometimes opposite meanings in different countries, even to the extent that what is regarded as egalitarian in one culture might have an opposite meaning in another culture.

Objects and methods of investigations

The following educational establishments were chosen as objects during the investigations:

1. Gulistan State University;
2. Uzbekistan State World Languages University.

In the progression of investigations, we analyzed and learnt the improvement of cultural competence of learners. In this, we used some certain methods of scientists that used to increase cultural competence of the learners in English teaching by themselves are grammar-translation method which was developed by Stephens (2001), direct method that advocated by such educators as Berlitz and Jespersen, suggestopaedia method that established by a Bulgarian psychotherapist, Georgi Lozanov (1979).

RESULTS AND DISCUSSIONS

Culture is deeply embedded part of the very grit of our being but language the means for communication among members of a culture is the most observable and accessible expression of that culture. So a person's world view, self-identity, and systems of thinking, acting, feeling and communicating can be disrupted by a change from one culture to another. In a word, culture is a way of life. It is the framework within which we exist, think, feel and relate others. It is the "glue" that binds a group of people together. It directs our behavior in groups, makes us sensitive to matters of status. Thus, culture helps us to know how far we can go as individuals and what our responsibility is to the group. Reimann (2004) maintains that a language is a part of a culture and a culture is a part of a language. Our investigations rely on Reimann claims that the two are intricately interwoven so that one can not isolate the two without losing

the importance of either language or culture. As a result, cultural competence is an integral part of language learning, especially in foreign language learning.

We reached such results in investigations that relationship between culture and teaching foreign languages is appeared in using certain methods.

The results of the usage of grammar-translation method

Grammar-translation method was constantly involved in the comparison of the two languages through translation, hence forced into implicitly recognizing that language is closely interwoven with every aspect of culture, and in fact language is also culture.

In the process of learning language, it is important to prolongate the translation of words, sentences and texts. Whilst the extation of researches, we had analyzed apprentices' language skills and levels. The same as, it is focused attention on development of cultural competence through the translation ability.

During the progression of translating, the ability of imagination was taken into consideration. For example, the word "Theatre" was translated, brainstormed by the learners and they tried to make sentences, texts. While doing this, students imagination about theatres was widen. That is to say, learners' were aware of the attitude of people's towards theatre, history and regime of theatre. It appeals students to know more words in order occupy in depth about theatre. This motion aids learners to improve enthusiasm for learning language and arose respect to the target language's culture. Sequentially, students compare their attitude to the national theatres with international theatres. The appeared imagination helps apprentices to put an aim of development their national theatres.

These kind of translation of words, sentences, texts can cause altering world outlook better to the surrounding and lifestyle.

The culture involved in Grammar-translation method refers only to the high arts of a country, which may not contribute significantly to the students' ability to function

linguistically and socially while facing a foreign reality in a daily social interaction, nor to a full understanding of the foreign people.

It can be concluded that, in order to improve cultural competence, the role of translation is significant

The results of the usage of direct method

People now had to deal with real-life situations because they wanted to travel to other countries and do business there. Therefore, their attitude toward learning/teaching a foreign language changed. This method received its name from the fact that meaning is to be conveyed directly in the target language through the use of demonstration and visual aids with no recourse to the students' native language.

The main characteristics of this method are that the use of culturally oriented pictures that makes students aware of some of the everyday situations they might encounter in the foreign culture and teach in accordance to their special interests and professions. On the basis of the particularities, in our investigations, we used newspapers, magazines, textbooks that match up to apprentices' specialty. It makes improve students' interest to the target language and culture.

In the progression of teaching language, we focused on the specialty and interests of students. According to this, it is aimed to teach English language that corresponds to their specialty for occupying their career deeply. We subdivided students of the group into mini groups according to their interests (art, education, technique, agriculture and others). In this, students are directed to learn terms, gather information that correspond to their interests to compare the national with international. For instance, the students of Gulistan Art College were busy with the task about a "Theatre" with their intentions as their direction tallies to the method. This kind of direction served as development cultural competence in English language teaching. The students whose interests were techniques were aware of info about the construction of buildings, advanced technology of target language.

The results of the usage of suggestopaedia method

Suggestopaedia is another humanistic teaching method developed by a Bulgarian psychotherapist, Georgi Lozanov. Lozanov (1979) claims that, by this method, a language can be learned three to five times faster than by the above teaching methods. This method is based on the modern understanding of how the brain works and how we learn most effectively. Much of the learning relies on music, games, puzzles etc. The culture which students learn in this method concerns the everyday life of people who speak the target language.

Ongoing of our occupations, the grouping activities that implemented to improve language proficiency gave favourable results. The activities conformed to the interests and professions of learners had been organized according to the terms they learnt. For example, in the one of the groups, namely, “Teachers” students acted out as teachers and arranged mini lessons. Activities that belong to musical acting stimulated students to catch knowledge of target language in depth and improved cultural competence.

In the other group, namely, “Artists” students played roles out as if actors and actress. Their acts for musical activities made them raise the feeling of encouragement for learning language and its culture.

These kind of activities can cause not only increase their interests and improve their knowledge but help to develop their world outlook. The method of grouping and playing roles in English by students conduct them occupy cultural knowledge and act culturally.

Whilst utilizing acting activities, we supported some puzzles devoted to the directed groups. The puzzles aligned some problems of their chosen directions and improved the ability of contrasting their choice with the target language’s professions.

All these methods and activities were directed and approached to get knowledge culturally, deeply their professions and improve their cultural, intercultural competence.

CONCLUSION

Research has shown that there is a close relationship between language and culture, foreign language learning is often second culture learning and cultural competence is an integral part of language competence. Lack of cultural knowledge is frequently the majority poor abilities of people in educating, translating and intercultural communicating and is also the most neglected factor in English language teaching. Therefore, culture teaching should be what teachers are increasingly concerned about. By using above mentioned methods grammar-translation method, direct method, suggestopaedia method, as teachers introduce and differences between the target culture and the native one, always greatly contribute cultural competence.

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OVERVIEW OF THE HISTORY OF ABDULLA QODIRI'S NOVEL "THE DAYS GONE BY" AND ITS TRANSLATION INTO ENGLISH

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Annotatsiya. Maqolada o'zbek adabiyoti tarixida o'chmas iz qoldirgan, uning rivoji uchun ulkan xissa qo'shgan buyuk adib Abdulla Qodiriyning "O'tkan kunlar" romanining dunyoga kelish tarixi va romanda kechgan voqea-hodisalar, shuningdek, asar muallifining kechmishlari bayon etilgan.

Kalit so'zlar: O'tkan kunlar, adabiy meros, adabiyot durdonasi, kamtarlik, hayotiylik, o'tmishga nazar, buyuk adib.

Аннотация. В статье излагается история создания романа «Минувшие дни» Абдуллы Кадири – великого писателя, внесшего большой вклад и оставившего неизгладимый след в истории и развитии узбекской литературы.

Ключевые слова: Минувшие дни, литературное наследие, литературная жемчужина, смиренность, жизненность, взгляд в прошлое, великий писатель.

Annotation. The article describes the history of the novel "The Days gone by" and the novelty of the novel by Abdulla Qodiriy, who left an indelible trace in the history of the Uzbek literature and contributed to its development.

Key concepts: The days gone by, literary legacy, pearl of literature, modesty, a look at the history, great writer.

Introduction. There are enough great writers who left an indelible mark in the history of Uzbek literature and contributed to its development. Their way of life and creation, the rich literary heritage make today's people think about history. The most important characteristic of Abdulla Qodiriy's creative work is the extensive publicity of

the events and phenomena that occurred during the historical deviations. The extracts of the novel "The days gone by" was released in 1922 and began to publish in early 1926. Roman sufficiently illuminated grey days of the recent past. The novel "The days gone by" has reached the highest level in the literature in terms of content, form and style[1].

It should be noted that Abdulla Qodiriy was born in 1894 in Tashkent, but lived short but glorious life. His first novel "The days gone by" was rightfully recognized as the pearl of the 20th century Uzbek literature, and is one of the favorite works of generations of Uzbek readers[2].

The prominent writer, the brightest representative of the Uzbek enlighteners was a victim of the Soviet Union repression and was executed in 1938. The novel has been banned for many years after the author's death[3]. There is evidence that even people who had "The days gone by" at home were accused and imprisoned. After twenty years from his death, Abdulla Qodiri was acquitted and his works were republished.

Literature review. The novel of "The days gone by" by the great Uzbek writer Abdulla Qodiriy was later acknowledged as an outstanding event in the Uzbek literature, and nobody had written such a novel before, nobody has written so far. Although the writer humbly called the "The days gone by" as a "little experiment on the way to acquaintance with novel of the new era", this work has been admired the millions of pupils with their originality, vitality and heroes so far[4]. Moreover, he created the new Uzbek literature, presented the best works which everybody loves. The novel "The days gone by" is able to satisfy the spiritual and cultural needs of the people from child to the old.

According to researches, Abdulla Qodiri was consciously searched novelty for the literature and his research was effective. It is not an exaggeration to say that he created the Uzbek school of literature[5]. Of course, Abdulla Qodiri begins his work with the following words: "From the writer: Since we have stepped in the new era, we must

follow the news of this new period, and introduce people with new versions of "Tohiz-Zuhra", "Chor Dervishe", "Farhod-Shirin".

My intention is to write "The days gone by", a little experience in the way of getting acquainted with the new trend in literature, and more correctly it is a desire. As it is known that it is natural for each work to come to the stage with a great deal of shortage initially, then become perfect with development in it. Thus, I was encouraged by the desire, and I did not worry about ambitious mistakes and faults behind.

They say that it is good to go back to history. Accordingly, I have set the theme from recent history, the black times of the nation: "times of Khanates" that the most dirty days of our history. Abdulla Qodiriy (Julqunboy).

Many comments were widely expressed about the idea of the novel, the subject and the main heroes of the novel. Doctors of Philology Umarali Normatov and Bahodir Karimov writes in the articles of the National Encyclopedia of Uzbekistan: "The days gone by" has a very broad scope. It contains various human destinies, socio-political, spiritual-moral, family-romantic issues. However, the issue of the fate and independence of the country, the nation is the most essential one[6]. Consequently, the issue of independence and unity of the country is the theme of the novel. The main heroes of this work, Otabek and Yusufbek Hoji, devote their lives for the sake of independence, prosperity and tranquility. The "The days gone by" is considered as a huge and clear reflection of the history, which widely explicitly embodied the specific ethnicity of the Uzbek nation, its existence, traditions, spiritual world, its appearance[7]. The romantic adventures and tragedies of Otabek and Kumush are depicted skillfully. Under the romantic adventures of the couple, the author embodies a certain historical period - the state of Turkestan under repression of the Russia and the dark days. Qodiri is brave enough to say and skillful to describe in a hidden way behind the love that the main reason for the country's capture is ignorance, retardation, illiteracy and internal conflicts. Historical novels by Abdulla Qodiri have helped to overcome the complex ideological

and literary problems of the new Uzbek literature in the 20th century and accelerated the literary development”[8].

Another well-known scientist, Naim Karimov, makes the following comment on the main idea of the work: "It is wonderful that the barrier facing Otabek is not the only thing that attacks his happiness. No matter how difficult this barrier may be, Otabek overpowers it. However, it is unlikely that he goes through another barrier called "Parent's Dream." He stumbles there and loses the happiness he has earned. The writer's intentions to write this work and the importance of it are shown here. Abdulla Qodiri also reveals the reasons for the Uzbek people's enslavement over the past several centuries. This is ignorance that Uzbek people lived in mutual conflict and jealousy, were surrounded by dreary traditions through ignoring that colonialism was on the country's borders”[9].

Research methodology. In this work, mostly descriptive and analytical research methods are utilized to describe the history of “Otkan kunlar” and its English translation, the article is a general overview to the work and the researches based on the masterpiece.

The work also analyzes the translation features of “Otkan kunlar” as “Days gone by” by A.Qodiri and investigates the reasons why the work was written, the hidden concepts in it and examines whether the translators could serve the stylistic effect through preserving the hidden meaning in the work.

Analysis and results. For the next decades, as in all countries, translation theory have been consistently developing in our country. The quality of translations is gradually improving as well.

It should be noted that the team led by I. Tukhtasinov have been working effectively for the last few years and translated the masterpieces of Uzbek literature. They also interpreted the novel "The days gone by" into English into Abdulla Qodiri. Of course, it is not easy to translate, edit, and print such large and serious samples of our

classic literature[10]. First of all, cooperation with foreign experts has been initiated for publishing them. In particular, he was essentially editorialized by American Kristin Smart in English. It was edited by English specialist Elise Brittain and published in 2017.

In addition, the Fund named after Islam Karimov also contributed to the preservation and promotion of the rich cultural heritage of Uzbekistan by allocating grants for translation and publication of cultural, educational and scientific resources and publications of Uzbek literature. "The days gone by", the first example of the Uzbek school of novel, was recognized as a true pearl of the 20th century Uzbek literature. Almost a century back, the novel is one of the most widely read works of Uzbek literature.

The novel "The days gone by", which has become a national spiritual treasure of Uzbekistan, has its own fans of foreign readership. At the same time, the work introduces a foreign reader for the spiritual world of the Uzbek people, high artistic backgrounds and vital values and traditions.

The first example of the Uzbek literature was also published in Nouveau Mond, the French publishing house in 2019. According to reports, the novel was translated by British literature writer Carol Ermakova who translated more than 30 works, and edited the translation by Julien Wiesen.

Conclusion. The creative legacy of Abdulla Qodiri is, unfortunately, not well-known for foreign readers and they have not received enough information. Therefore, these translations of the work, along with acquaintance with the writer's works, give foreign readers information about the period, the unique national values and traditions of the Uzbek nation. "The Days Gone by" is the main play of Abdulla Qodiri. The reason of calling "The Days Gone by" is that the author aimed to demonstrate the original of spiritual life of the Uzbek people on the basis of expressing "black days" of nation's history. The writer tried to describe beautiful decorum, great respect to other people,

great spirituality in communication of people with each other, different systems of lifestyle of nation at that period. This work is valuable for national culture of the Uzbek people was described as much as possible. You can see events devoted to thinking, saying and acting like Uzbek in communications between Otabek and his parents, between Mirzakarim praymaster Oftoboyim and their groom, Otabek and Kumush. It gives great pleasure on national culture of the Uzbek people to readers.

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"LINGUISTIC PRINCIPLES OF RESEARCH IN MODERN TERMINOLOGY"

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Abstract: In this article explored the actual problems of modern terminology, linguistic principles of terminology, synonym, innovative and cognitive approach and various sources on the formulation of terms, as well as the internationality of terms on their basis.

Key words: term, terminology, foreign language, linguistic principles, synonym, translation, acquisition.

Аннотация: Ушбу мақолада замонавий терминологиянинг долзарб муаммолари, терминологиянинг лингвистик тамойиллари, синоним, инновацион ва когнитив ёндашув ва терминларнинг шаккланиши бўйича турли манбалар ҳамда улар асосида терминларнинг интернационалиги тадқиқ қилинди.

Калит сўзлар: термин, терминология, чет тили, лингвистик тамойиллар, синоним, таржима, олинма сўзлар.

Аннотация: В данной статье исследуются актуальные проблемы современной терминологии, лингвистические принципы терминологии, синонимы, инновационный-когнитивный подход и различные источники по формулированию терминов, а также интернациональность терминов на их основе.

Ключевые слова: термин, терминология, иностранный язык, лингвистические принципы, синоним, перевод, усвоение.

Introduction. Different terms appeared in the process of communication for practical purposes long before the formation of the science of terminology. Since the middle of the XIX century, the science of terminology has become a separate direction

of Lexicon. And the work carried out on its practical aspect laid the groundwork for the development of terminology. The terminology section of the lexicon relies on linguistic methods of this science. With their help, the sides of the terms, unlike other non-lexical units, were determined. One of the main differences is that the terms do not have and should not have synonyms for a particular area, since the meaning of many of the terms creates difficulties in understanding the meaning of the terms used in the process of communication, which takes place in specific conditions for a specific purpose. Various sources on the formulation of terms were studied, on the basis of which the internationality of terms was determined.

Literature review. In the XX century, the basis of terminology was formed, but for science it was not enough. Within the framework of terminology, the phenomenon of synonymy led to the use of two or three terms under certain conditions, which caused problems in the framework of their interaction. From linguistic methods to terminology science gave impetus to the development of word-building models. Within this aspect by G.O.Vinokur researchers from the established School of terminology studied the possibilities and functions of vocabulary building terminology in various fields.

Some scientists, such as E.I.Tolikina, excluding the presence of synonymy, believe that the language of science is unemotional, so the terms can be included in synonymic relations only as doublets [1]. In their opinion, the terminological synonymy differs from the common language in that it does not perform stylistic functions. Thus, synonyms in terminology correlate with the same concept and object, but do not characterize its different properties.

According to Y.N.Marchuk for the very rapid development of each science, the emergence and disappearance of terms is also very quickly realized [2]. We also agree with this opinion. Indeed, society, technique, with the variant of science, some terms are obsolete, new terms are created in their place. In modern terminology, there are several different terminological schools and directions.

In modern terminology, a systematic approach or systematic analysis is used to study the term. Representatives of this direction have interpreted the system as a whole object, consisting of interrelated parts, since integrity is the main feature of the system [3]. In addition to integrity, the structure of the system is distinguished by the interrelationships of the elements included in it. V.M.Sergevnina pointed out: when it is said that the "terminological system", it is understood that the complex integrity of concepts within the framework of scientific and certain specialties intertwined by linguistic nominations[4].

At the current stage of the development of terminological science, the same trend is observed in relation to the linguistic concept of the terminosphere. The explanation of the single definition or interpretation of this concept is not mentioned in the following dictionaries and glossary-reference books of world linguists: "Dictionary of linguistic terms" (O.Akhmanova), "Dictionary-reference of linguistic terms" (D.E.Rosenthal, M.A.Telenkova), "Linguistic encyclopedic dictionary" (V.N.Yartsev), "Dictionary of sociolinguistic terms", dictionary-reference "Terms and concepts of linguistics: General linguistics. Sociolinguistics", T.V.Zherebilo; Dictionary of linguistics (Тіл біліні сөздігі) and others. Nevertheless, the concept of " terminosphere " is actively used in scientific literature. This is evidenced by the active application of the concept in the Russian scientific style, as well as in the scientific languages of some CIS countries, in particular in Uzbek and Kazakh languages[5].

Recently, the "English-Uzbek Dictionary of terms related to banking-finance and tax " published by O.S.Akhmedov, S.A.Nazarova and Sh.Ch.Murodova it will be used as the main source of this study. Terms do not arise by themselves, they are created as a result of science and technical fiction. In modern terminology science, there are problems that arise as a result of a number of extralinguistic factors. In terminology, linguistic processes, the emergence of new terms, abbreviated form of terms, synonyms, multi-meaning, portable meaning, international and hybrid terms, etc. According to

L.B.Tkachyova to study terms, it is necessary to turn to science and technology, because as a result of the same linguistic and scientific and technical processes, terminology is formed[6]. His opinion is expressed by well-known linguists O.S.Akhmanova, I.V.Arnold, R.A.Budagov, F.B.Filin, E.D.Polivanov, Y.D.Desheriyev supported. Their sociolinguistic view on the science of terminology is not surprising. It turns out that the influence of sociolinguistics on language construction is great. In this way, sociolinguistics interpreted a number of its problems in the field of terminology both theoretically and practically, and, most importantly, proposed new views and approaches to the study of the essence of terminology. In this process, the importance of diachronic research plays an important role. Because, diachronic determines the time and features of the formation and development of terminology[7].

S.V.Grinev's idea that "the reason for the beginning of diachronic research is the time of the emergence of terminological lexicon"[8]. Lexical, belonging to the system of terms, is a unit of Science and technique, performing a number of important functions. Exactly the diachronic aspect reveals the history of terminology and the secrets of synonymic variability [9]. Many cognitologist-scientists believe that the cognitive approach characterizes not only the form of the external structure of the term, but also its internal structure, and the terminologies refer to the study of the exact characteristics of the term, its internal regularities [10].

Research methodology. The principles and criteria for the selection of terms determined by the researcher determine the subsequent stages of terminological activity. Further work consists in strict implementation of the chosen methods of research and limitation of the information necessary for the dictionary, based on both the requirements for the term and the developed methodological principles of terminological work: the definitive criterion, the principle of synchronicity, which determines the chronological framework of the terminological dictionary, the principle of normativity and the principle of consistency, implemented in practice by modeling the logical-

conceptual system. In the highlights the issues were used to theoretical logic, structural analysis, historical and comparative analysis.

Analysis and results. The “clarity” and compactness of the meaning of terms is the interaction with a particular sphere. For example, if the terms in the medical field denote various diseases and medical equipment, the names of new dishes in the cook are easily understood, the creation and understanding of terms in the banking and financial sphere is much more complicated. Indeed, society, technique, with the variant of science, some terms are obsolete, new terms are created in their place.

The diachronical volume of terms professional communication is considered as a language tool. Despite the intensity of diachronic research of terms in recent years, the problem of professional communication terminology has been overlooked from the research point of view. For example, the communicative functions of a special lexicon, the phenomenon of variability of terms, neologization, standardization and archaisms require a complex study.

One of the latest achievements in the development of modern terminology science should be identified the interaction of this science with cognitive linguistics. As a result of this, the term is studied as a means of reflection, cognitive perception, information processing and transmission. The cognitive approach used in the study of terms provides an opportunity to raise the quality of the scientific research work carried out within the framework of terminology, to study the phenomena of cognition and discursion, and to understand and interpret the terms used in the process of discursion. V.M.Leychik noted that the cognitive approach, in combination with cognitive semantics, serves to reveal the essence of the special lexical, and in the special activity the communication process is correct and smooth[11].

Summarizing the work of linguists engaged in terminology can distinguish the following principles of modern terminology:

1. The principle of allocation of the descriptor(O.S.Akhmanova);

2. The principle to build the word nest (E.V.Filippova);
3. The principle of the analysis of the paradigmatic relationship between lexical units lingualumina (antonymy, polysemy) (S.Z.Noga);
4. The principle etymological component (A.I.Smirniskiy, A.V.Ivanov);
5. The word-forming principle(M.N.Volodina).

Conclusion. In conclusion, despite the fact that there are many studies within the framework of terminology and terminology, the essence of terminology is the need for a new interpretation through a cognitive-discursive approach. Cognitive terminology is the most promising direction and studies the process of development of universal culture. Our research carried out within the framework of banking and financial terminology makes it possible to determine the legalities of mental processes, to interpret the terminology system in the cognitive sphere. This system also includes terms in the areas of finance, tax, accounting, customs, Marketing, Management, Audit.

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CLASSIFICATION OF METHODS OF TEACHING ENGLISH

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Annotation: The article is devoted to the problem of studying the goals, methods and approaches of foreign language teaching. At the present stage, it is very important for a foreign language teacher to be able to combine new techniques and technologies in teaching foreign languages with traditional methods. The aspect of foreign language learners is considered.

Key words: teaching, foreign language, method, pedagogical technology, pedagogical competence, education.

Аннотация: Статья посвящена проблеме изучения целей, методов и подходов преподавания иностранных языков. Преподавателю иностранных языков очень важно на современном этапе уметь соединять новые приемы и технологии в обучении иностранным языкам с традиционными методами. Рассматривается аспект для изучающих иностранные языки.

Ключевые слова: преподавание, иностранный язык, методика, педагогические технологии, педагогическая компетентность, образование.

Annotatsiya: Maqola chet tillarni o'qitishning maqsadlari, usullari va yondashuvlarini o'rganish muammosiga bag'ishlangan. Chet tili o'qituvchisi hozirgi bosqichda xorijiy tillarni an'anaviy usullar bilan o'qitishda yangi texnika va texnologiyalarni birlashtirilishi juda muhimdir. Shuningdek, chet tillarini o'rganuvchilar uchun o'ziga xos xususiyatlari ko'rib chiqilgan.

Kalit so'zlar: o'qitish, chet tili, metod, pedagogik texnologiya, pedagogik mahorat, ta'lim.

Introduction. Foreign language as one of the means of communication and knowledge of the world occupies a special place in the system of modern education because of its social, cognitive and developmental functions.

At present, Uzbekistan has established diplomatic, economic, cultural and other ties with a large number of countries in the world. That is why the role of foreign languages, especially English, as a means of communication in international relations has become essential. Knowledge of not only one, but two or more foreign languages by modern specialists has become in great demand in the labor market, as thanks to this young professionals will be able to use new technologies in their professional activities and achieve their goals. Our society needs well-educated and qualified specialists with creative thinking, sense of responsibility and ability to solve complex problems. At the end of 2012, Uzbekistan adopted a Resolution of the President of the Republic of Uzbekistan "On measures to further improve the system of learning foreign languages", which identified new challenges in teaching foreign languages [1].

Literature review. Teaching of training are objects created by man, as well as natural objects used in the educational process as carriers of educational information and tools for the activities of the teacher and students. Means of training along with the living word of the teacher are an important component of the educational process and an element of the educational material base of any educational institution.

The concept of learning method is very complex. However, despite the different definitions that are given to this concept by individual didactics, it is possible to note something in common that brings their points of view. Most authors tend to consider the method of teaching as a way of organizing educational and cognitive activity of students. Taking this provision as a starting point, we will try to consider this concept in more detail and approach its scientific interpretation.

The word "method" in Greek means "research, way, way to achieve the goal." The etymology of this word affects its interpretation as a scientific category [2]. "Method is a

way to achieve the goal, a certain way of orderly activity", – said in the English-Russian dictionary of pedagogy [3]. It is obvious that in the process of learning the method acts as an orderly way of interrelated activities of teachers and students to achieve certain educational goals.

I.P.Podlasie wrote that under teaching methods (didactic methods) to understand a set of ways, methods of solution of problems of education[4].

Since training is a joint activity, it is appropriate to talk about teaching methods in relation to the teacher. And in relation to the student – methods of teaching. If we are talking about the joint work of teachers and students, there is no doubt that teaching methods are manifested [5]. Let us consider the essence and features of the most reasonable classifications of teaching methods:

1.Classification of teaching methods by sources of knowledge (N.M.Verzilin, E.Y.Golant, E.I.Petrovsky, etc.), which serve as a common feature of the methods allocated in it. The main sources have long been known three: practice, visibility, word. In the course of cultural progress, they were joined by another – a book, and in recent decades, more and more declares itself a powerful paperless source of information – video combined with the latest computer systems.

2.Classification of methods by purpose, or by the main didactic purpose for which they serve (M.D.Danilov, B.P.Esipov, I.F.Komkov). As a General feature of the classification are the successive stages through which the learning process in the classroom, and the goals that are achieved in each of them. There are methods: a) acquisition of knowledge; b) formation of skills; C) application of knowledge; d) creative activity; e) consolidation; e) testing of knowledge, skills.

3.Classification of methods by type (nature) of cognitive activity(I.Y.Lerner, M.N.Skatkin) [6]. From this point of view, they identified the following methods:

a) explanatory and illustrative, or information-receptive: story, lecture, explanation, work with a textbook, demonstration of paintings, films, diafilms, etc.;

- b) reproductive: reproduction of actions on application of knowledge in practice, activity on algorithm, programming;
- c) problematic presentation of the material under study;
- d) partially-search or heuristic method.

Y.K.Babansky divided the whole variety of teaching methods into three main groups:

- a) methods of organization and implementation of educational and cognitive activities;
- b) methods of stimulation and motivation of educational and cognitive activity;
- c) methods of control and self-control over the effectiveness of educational and cognitive activity [7].

Research methodology. Each method of teaching organically includes the teaching work of the teacher (presentation, explanation of new material) and the organization of active educational and cognitive activity of students. That is, the teacher, on the one hand, he explains the material, and on the other – seeks to stimulate educational and cognitive activity of students (encourages them to reflect, self-formulation of conclusions, etc.). Training methods for many different functions. The main ones are: educational, motivational, developmental, educational, organizational.

Thus, the method of training – the way to achieve this goal. Teaching methods consist of techniques – individual one-time actions. The method clearly visible objective and subjective parts. Where the teacher makes specific changes in the method, his work is manifested [3].

Analysis and results. There are many ways to achieve the goal of learning, the teacher can choose any of them, but he will always strive to choose the best. To facilitate the problem of choice, methods should be compared in their effectiveness. And to compare, you need to imagine how many of them there are, to unite in groups. This is

facilitated by the classification, the main purpose of which is the ordering of teaching methods.

Different authors classify active teaching methods on different grounds: the number of students, the nature of educational and cognitive activities and others. Active methods are divided into two large groups: group and individual. Group methods are applicable simultaneously to a certain number of students (group), individual – to a particular student. The nature of the learning activities active learning methods A.M.Smolkin offers to divide by imitation and not imitation. Simulation methods, in turn, are divided into gaming and non-gaming. Simulation game methods are divided into: business games, didactic or educational games, game situations. Simulation is not gaming: analysis of specific situations, action instructions, problem solving and so on. Not simulation: discussions, active problem lectures, problem solving [8].

Depending on the purpose of the lesson, T.A.Samoilova suggests using grammatical, lexical, phonetic, spelling, creative games [9].

Innovative methods can be divided into four main groups:

1) information processing, 2) social, 3) personal, 4) behavioral.

1. The First group proposes to use methods that relate to the organization of information processing and problem solving. One of these methods is the method of inductive thinking, which means data analysis. The next technique is to achieve a concept that helps students learn concepts.

2. The second group of innovative methods are called social methods. These methods involve students to work together in groups to develop reflective, interactive, decision-making skills. It uses communicative language learning and inductive learning. The method of observation is one of the social methods.

3. The third group, innovative methods, student-centered method. The following two methods characterize this method. They take the form of indirect learning and self-



esteem. The role of the teacher is to help students in their endeavors to set goals and achieve those goals.

4. The fourth group of innovative methods is the behavioral method. This method uses such strategies as learning method, direct instructions. In training, students accept the information that they want to learn and the material is presented in various ways. At the end of the training, students will be tested. Direct training is based on research activities. The teacher monitors the progress and achievements of students.

Conclusion. Due to the fact that the position of the English language in the world as a leading means of international communication is increasingly increasing, and there are no significant trends to stop or slow down this process, the problem of using effective methods of teaching English is extremely important. Given the great and serious interest of students in information technology, it is necessary to use this opportunity as a tool for the development of motivation in English lessons. Active teaching methods make it possible not only to increase students' interest in the subject, but also to develop their creative independence, to teach them to work with different sources of knowledge. In the process of conducting such lessons, favorable conditions for the versatile development of the individual are formed.

Based on the above, we can conclude the interests and personal characteristics of students as full participants in the learning process, built on the principles of conscious partnership and interaction with the teacher, which is directly related to the development of independence of students, their creative activity and personal responsibility for the effectiveness of training [10].

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THE MAIN REASONS THAT LED HAMLET TO THE TRAGEDY AND ITS EXPRESSION IN THE TRANSLATION

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Abstract: The article focuses on the expression and translation of feelings of love and hate in the text of the Hamlet tragedy. Hamlet's reverence and love for his ancestors, his love and hate for his mother, and his beautiful Ophelia, and those feelings that eventually led to the tragedy, were skillfully expressed in the work and translated.

Key words: Hamlet's monologues, The translations of the Hamlet tragedy, the death of Hamlet, the love and hatred of Hamlet, the comparative, contrastive, descriptive, semantic-methodological methods.

Annotatsiya: Maqolada “Hamlet” fojiasi matnida muhabbat va nafrat tuyg'usining ifodasi va tarjimalariga to'htalib o'tildi. Hamletning ota arvohiga bo'lgan hurmati va muhabbati, onasi va sohibjamol Ofeliyaga nisbatan muhabbati va nafrati va alal-oqibat shahzodani fojiaga olib kelgan ushbu tuyg'ular asarda otashin so'zlarda mohirlik bilan ifodalangan va tarjimada ham o'z aksini topgan.

Kalit so'zlar: Hamlet monologi, Hamlet tragediyasi tarjimasi, Hamletning o'limi, Hamletning sevgi va nafrati, qiyosiy-chog'ishtirma, tasviriy hamda semantik-uslubiy metodlar.

Аннотация: Статья посвящена выражению и переводу чувств любви и ненависти в тексте трагедии Гамлета. Почитание и любовь Гамлета к своим предкам, его любовь и ненависть к его матери, его прекрасная Офелия и те чувства, которые в конечном итоге привели к трагедии, были умело выражены в работе и переведены.

Ключевые слова: монологи Гамлета, трагедия Гамлета, смерть Гамлета, любовь и ненависть к Гамлету, сравнительный, контрастивный, описательный, семантико-методологический методы.

Introduction

Hamlet is the Crown Prince of Denmark. He is a famous hero of world literature. The language of Hamlet captivates the soul as a stream of endlessly exhilarating illumination in Shakespeare's works. Shakespeare does not use metaphors in ordinary speech, but he is known for his thought-provoking thoughts and monologues. His spirit is pure and sophisticated that will not leave a reader indifferent. Hamlet is overwhelmed with strong passion and conflicting emotions. His exciting life evolves throughout the work in harmony with the image. Hamlet's personality, attitude to his surroundings, his ideas at the same time, his interpretation of the play continue unnaturally under the subconscious. Many writers believe that Hamlet's soul and mind reflect the traumatic conditions of Shakespeare's life, although the playwright's personal life has not yet been documented. [1] Based on the psychological and realistic analysis of Shakespeare's experts, such as Shakespeare's researchers, one can hardly imagine that the spirit of the prince was not in vain, and his spirit really reflected the author's mood at some point.

Literature review

The books about the Hamlet tragedy make up the whole sea. Significant efforts have been made to undermine its essence, as Hamlet is one of the most mysterious tragedies in the world. The essence of proper study of the tragedy is that there are two conditions to solve puzzles,

a) Belief in Shakespeare genius

b) Careful study of the work, the contradictions in the work are not the disadvantages of Shakespeare, but the work of art.[3]

Hamlet's restless, anxious state of mind cannot ignore the inhuman evils of life; he does not want to accept them. This is the priority of the play. This development is a

critical element in the development of the prince's recognition of evil - both the good and the evil, and thus the nature of humanity. Mankind is a fascinating central issue of reconciliation with broken nature of human nature. In Hamlet, the conclusion that the relationship develops is presented in the image of a glorious and powerful owner.

Hamlet's grief is so deep that he is convinced that nothing can happen. The second scene of the first part depicts her miserable plight in verses 76-86, which looks as though she is in tears.[4] It is not the executor who can or will not solve the plot of the world that surrounds him, but rather the life of the person who is more thoughtful and full of issues and problems that are directly related to the suicide of a person. On the one hand, and on the other, the goodness of mankind, on the one hand, and the evil on the other. Above all, it does not stop thinking about the nature of evil and the conditions that cause it.

Research methodology

It draws our attention to the difference between reality and appearance, which is different in a particular way, with the protagonist's outfit, color, mood, character, behavior, complexity, confusion; he tries to cover the world, the man, with his great emotional wounds. The senselessness of his previous scenes seems to him thin and lifeless like an onion peel, which is nothing compared to the endless, inexhaustible pain and loss of the pacifier. Hamlet's mother is in hurry to marry her brother-in-law Claudius, and her father's dignity, his portrayal of her as a man of noble character, and the demand for murder for him, is a source of bitterness. He sees his father as a truly great king in the highest dream.

He cannot forgive his mother's acceptance of Claudius as a substitute for his father. Hamlet is the child of one mother, who wife of his father, and also his uncle. The fact that he has a way of escape from the desperation of a world in which he has fallen is low morale, and that death is better than life, but the world has said that suicide is the great sin. And the world in which he lives:

“Qanday ayanch, qanday jirkanch va to'mtoq bo'lib
Ko'rinadi butun olam, butun kori bor.
Qarab - qarab ko'ngli aynib ketadi!
Xuddi g'ovlab ketgan, tashlandiq bir boqqa o'xshaydi.
Qadam qo'yish maxol, axlat, hammayoq axlat.” [2]

(Scenario 1.2, page 222 the translation of Jamal Kamal.)

This attitude towards life in the human world is proof of the depression and despair of man. Another of Hamlet's strange remarks is seen in his conversation with his classmates Rosencrantz and Guildenstern:

“So'nggi paytlarda negadir butun xushchaqchaqligim va mashg'ulotlarga bo'lgan maylu ishtiyoqimni yo'qotib qo'ydim. Shu qadar shikastamanki, shu koinot gulshani, shu kurrai zamin ko'zlarimga unumsiz, tap-taqir bir qoya bo'lib ko'rinadi, samovatga tutashgan mana shu cheksiz havo chodiri, ko'ryapsizmi, zarrin shu'lalar bilan muayyan ana shu shohona gumbaz nazarimda, qo'lansa va zaxarli bug'larning yig'indisidir, xolos. Tabiatning qanday ajoyib xilqatidir inson! Uning zakovati qanchalar baland! Layoqati naqadar cheksiz! Sur'at va siyrati naqadar mumtoz va mukammal! Turish-turmushi farishtalarga naqadar yaqin! Nazar – nihoyati Tangri taologa qalin! Olamning ziynati! Tamomiy tiriklikning toji davlati! Xo'sh, mana shu xoku g'uborning asosi – avvali men uchun nima degan gap? Erkaklar meni qiziqitirmaydi, xotinlar esa boyagidek... Siz mundoq kinoyali kulmang, parvoyimga ham kelmaydi.” (p. 268. The translation of Jamal Kamal) [2]

He says that his life is not worth “I see my life worth a penny”. In fact, he agrees with his death, as stated in monologue 1:

“O, koshkiydi, shu zil gavda, shu bir xalta go'sht
Irib-chirib ketsa, shabnam bo'lib taralsa,
O, koshkiydi, o'z joningga qasd qilib,

Xalos bo'lsang, gunoh emas, savob sanalsa.

Yo Xudoyim! Yo Rabbano! YO Parvardigor!" [2] (J. Kamal)

He refuses to commit suicide, first of all the religious teachings do not allow it, and on the other hand, he hates and despises the changes that have completely ruined Hamlet's life. After all, he needs to improve the world: The theory that Hamlet loved his mother, like King Edip - cannot be reconciled - because he had to deal with real life (Charles Boyce) but disagree with Boyce. [1]

Imagine that Hamlet, a well-educated philosopher, was expected to become the ruler of a whole hereditary state, and would be separated from the Ophelia. We know, however, he was sympathetic towards his daughter, Polonius, Laertes's sister. The famous monologue of "To be or not to be" reveals that he loves Ophelia when he meets her, and the more convincing proof is that we find Laertes in the cemetery.[5]

Analysis and Results

Shakespeare's tragedies, unlike other works, are wider and more widely distributed and used, that is, read, analyzed, and tried to read. He deserves to be assessed for a rigorous analysis of tragedies over other plays. Shakespeare, according to experts, has never commented on the tragedy. But some of his contemporaries, such as Ben Jackson and Webster, have opinions about the images of the tragedy, in which high and excellent tragedy reveal the greatest and portray wounds. [6] The kings of this scene feared to be bloodthirsty, tyrannical, and bloodthirsty men feared to expose their cruelty and nature; some were happy with their feats, some were even proud, they had no sympathy, of course they had learned from the uncertainties of the world, and knew that such a weak foundation would speak like a golden grape. However, not only is Shakespeare's commentary on Aristotle's insistence that he was unaware of theories about the Greek tragedy, according to some Shakespeare scholars` opinion. [7]

There is a saying that "the translation text is a strictly decisive key-word interpretation of the original." The word "commentary" is used here in a way that is, in a sense, modestly beyond its limits. [8]

Hermeneutics is – the ability to understand and interpret texts. Peter Scondi wrote about the genesis of hermeneutics: "generally considered to have originated in the Efforts of the Athenians of the classical period to establish the literal sense of the words of the Homerik epics, the language of which was no longer accessible to them,[...].(h)ermeneutics is thus in the first place, a discipline designed to mediate= vositachilik qilmoq successive stages of a language".[9]

The following is a list of ready-made phrases that define the power of Shakespeare's language and are still used today, which we have just mentioned:

Absent thee from felicity awhile.
All is not well. (Hammasi yaxshi emas)
The bird of dawning singeth all night long. [10]
Brevity is the soul of wit.
Frailty thy name is woman!
Give me that Man/That is not passion slave.
Give the thoughts no tongue.
How all occasions do inform against me I am sick at heart.
I could a tale unfold.
In my mind's eye.
It cannot come to good.
It started like a guilty thing.
The lady doth protest too much.
Lay not that flatter emotion to your soul.
Leave her to heaven.
Like sweet beads jangled, out of tune and harsh.
Man delights not me:/nor woman neither.
More honoured in the breach than the observance.
More in sorrow than in anger.

More watter, with less art.
Neither a borrower, nor a louder be.
Not a mouse stirring

Claudius:

Why, tis a loving and a fair reply.
Be as ourself in Denmark-Madam, come
This geutle and unforced word of Hamlet
Sits smiling to my heart, in grace whereof
No jocund health that Denmark drinks today
But the great cannon to the clouds shall tell,
And the King's rouse the Heaven shall bruit again,
Respeaking earthly thunder.Come away. [11]

Qirol.

Mana bu xush so'zing g'oyat ma`quldir bizga.
Daniya o'z uying. Qani, malikam, yuring.
Lutfi karam qilib, zero o'g'limiz Hamlet
Sevinch-surur soldi hozir yuragimizga,
Buning sharafiga bazm-u jamshid tuzaylik,
Qadaxlarning dovrug'ini so'ng zambaraklar
Qah-qahasi bulutlarning bag'riga eltsin.
Va samoviy guldurosalar yangrab galma-gal
Qadahlarning jarangiga qo'shilib ketsin. [2]

From Hamlet's observation of Claudius in this scene - the murder of Gonzaga, it became clear that the play made Claudius' heart hurt, his taste soaring. Claudius's departure from the spectacle proved to be a sin in the eyes of Hamlet and Horatio.

Both Hamlet and Laertes were fatally wounded. Not intentionally, but unintentionally. Nevertheless, Hamlet wounded Claudius to death. At the closing of the play, Fortinbras, the nephew of the king of Norway, who had lost the battle to the beloved King Hamlet, was returning from a battle on the pretext of a small place in



Poland. [7] He comes in with his troops, and Hamlet has already advised Horatio that Denmark should recognize him as the king. Fortinbras orders that Hamlet be buried with all the customs.

Conclusion

By the time of Shakespeare, drama had revised the specifics of the tragedy. The Greek plays must surely be the hero of the tragedy; he can achieve great success, then be defeated and disappointed with life, realizing his tragic guilt and defect.

Hamlet was born into a noble family, his countrymen respected him, they wanted to change the world that surrounded Hamlet, and in the end Hamlet had to sacrifice his life so that justice could prevail.

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MODERN PROBLEMS OF PEDOGOGY AND PHYHOLOGY

UDC 13.00.04

THE USE OF MODERN PEDAGOGICAL AND INFORMATION TECHNOLOGIES IN IMPROVING THE EFFECTIVENESS OF PHYSICAL TRAINING LESSONS

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Annotatsiya. Ushbu maqolada jismoniy madaniyat yo’nalishi bo’yicha “Turizm” fanini o’qitishda zamonaviy pedagogik va axborot texnologiyalaridan foydalanishning samaradorligi masalalari yoritilgan.

Kalit so’zlar: pedagogic texnologiya, axborot kommunikatsiya, “Idrok xaritasi”, “Venn diagrammasi”, samaradorlik, ta’lim, tarbiya, texnika, taktika.

Аннотация. В данной статье освещается эффективности современный педагогический и информационный технологий в процессе обучения в предмет “Туризм”.

Ключевые слова: педагогический технология, информационное коммуникация, “Познавательная карта”, “Диаграмма Вен”, эффективность, образования, воспитания, техника, тактика.

Annotation. This article illustrates the effectiveness of using modern pedagogical and informational technologies in teaching the discipline “Tourism” in physical training direction.

Key words: pedagogical technology, informational communication, “Cognitive map”, “Venn diagram”, effectiveness, education, training, techniques, tactics.

Introduction

The Decree of the President of the Republic of Uzbekistan Sh. Mirziyayev, PF-4861, “On measures to ensure the accelerated development of the tourism industry of the Republic of Uzbekistan” sets the following tasks: to develop tourism in the Republic acceleratedly, to use the existing tourism potential fully and efficiently, to accelerate other potential types of tourism such as pilgrimage, ecological, educational, ethnographic, sports, medical, health and fitness, rural, industrial, business, and more along with traditional, cultural and historical tourism, to strengthen the social importance of tourism through the accelerated development of tourism for children and youth, for the elderly and families, to establish new tourism routes in regions and their passportization, to work out and implement national and regional development programs aimed at the formation of a single national registers of complex development of internal, inbound and outbound tourism concerning with tourism destinations and objects [1].

The Resolution PQ – 3031, of the Prezident of the Republic of Uzbekistan, “On measures of developing Physical training and Mass sport” says about the importance of mass sport for people and their families and it is considered the basis of physical and spiritual health. In order to protect young generation from bad habits much emphasis has

been placed on the creation of the necessary conditions for the realization of their abilities and talents [2].

The task of upbringing the young generation with high intellectual potential in our country has become one of the priority directions of state policy. In our country, a lot has been done to raise public education policies to international standards. The development of our country depends on people who have a deep knowledge of the spirit of the country, a firm will of belief, modern ideas, so one of the most important tasks of education and upbringing is to educate the young generation with such qualities.

Education has always been the basis of the development of society, so the country is creating conditions for young generation to use up-to-date pedagogical and information technologies in education and upbringing. In particular, the effective use of pedagogical technologies, innovations, interactive methods in the educational process, which are actively integrated into the education system of the country, has a positive effect on education.

Literature review. (Material and research methods)

Let us emphasize the meaning and definition of these concepts. The word “technology” is derived from the Greek word “technos” which means “art, crafts” and “logos” which means “subject”.

Pedagogical technology is the process by which a teacher helps students to master professional knowledge well and use it in practice by teaching and upbringing them using effective methods. “Innovation” means “introduction of new ideas or methods” [3].

Innovative technology is a pedagogical process, as well as innovations and changes in the teaching and listening activities that are used primarily in interactive methods. The interactive method is to enhance the effectiveness of the lessons based on

the interaction of teachers and students, to develop students' ability to think and communicate independently. Interactive methods are understood as ways in which learners can activate, motivate, think and become the center of the learning process [4.5].

In recent years, pedagogical activity has been focusing on the organization of educational process with the use of various information technologies (computers, television, slides, videos, and audio records). One of the tasks of the teacher is to use information technology in education purposefully and effectively.

Information technology is a means of telecommunications with computers and data, which is a variety of ways of processing information with different technical and software devices.

Research methodology (Results and discussion).

Physical education is organized as a lesson in educational establishments of all types and categories in accordance with the state educational standards of the Republic of Uzbekistan. Its content, form and purpose are fully reflected in the programs of physical education. They are mainly based on the content of the theory and methodology of physical education and tourism as a means of physical education is also given a special role [6].

Tourism, as an important component of physical education, is an essential factor and tool to upbringing young generation in the spirit of professional development, in the spirit of patriotism, labor productivity, longevity, cultural leisure, commitment to national ideas. Based on the above, we can consider that the widespread introduction of modern pedagogical and information technologies into the educational process of "Tourism" will enhance the effectiveness of education. There is growing interest in the use of innovative technologies, interactive methods and learning in educational

institutions. Correspondence between peculiar forms of modern pedagogical and information technologies provides students with effective knowledge. The student acquires the knowledge and ability to make independent judgments and to apply the knowledge gained in practice.

For example, an electronic version of the “Cognitive map” is presented through a projector, which is one of the innovative teaching methods used in the training on the importance and role of tourism in the physical education system.

Cognitive map.

The “Cognitive map” method is a graphical presentation of study materials on the subject, allowing for systematic, regulative and visual development of information. The “Cognitive map” is an effective way to retain knowledge in memory. Graph 1.

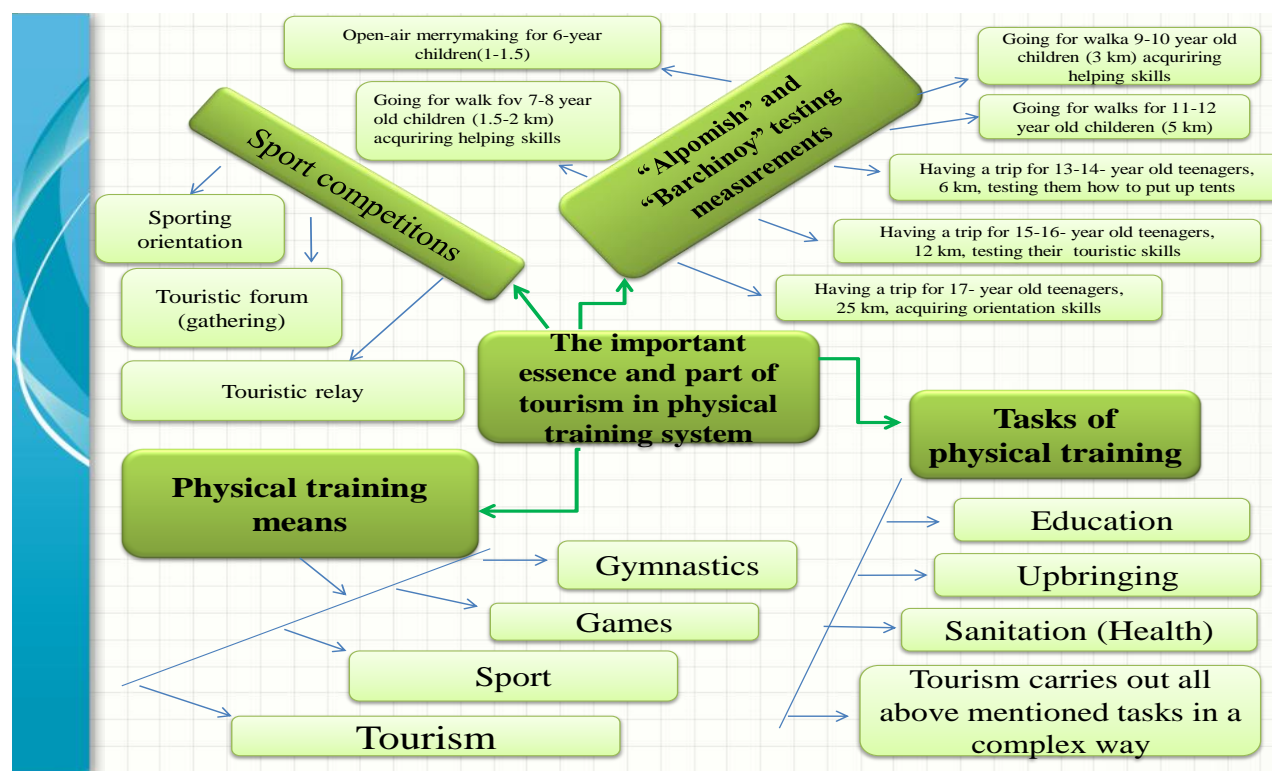
Purpose and form of application:

- Lectures- presentation of new knowledge, teamwork;
- Seminars- testing, consolidation of knowledge in small groups;
- Independent study- creative work, development of logical thinking skills, individual;

The teacher asks students questions before applying the method of cognitive map. In particular, questions about the means of physical education, the tasks of physical education, the “Alpomish” and “Barchinoy” program tests in the system of physical training, etc. This allows the teacher to easily explain to students the essence of the topic.

The “Cognitive map” method.

Graph 1.



From the map above, students will be able to explore the topic, systematize and analyze creative ideas for independent thinking so that students can easily grasp the subject. Generally, they can consolidate and improve their knowledge.

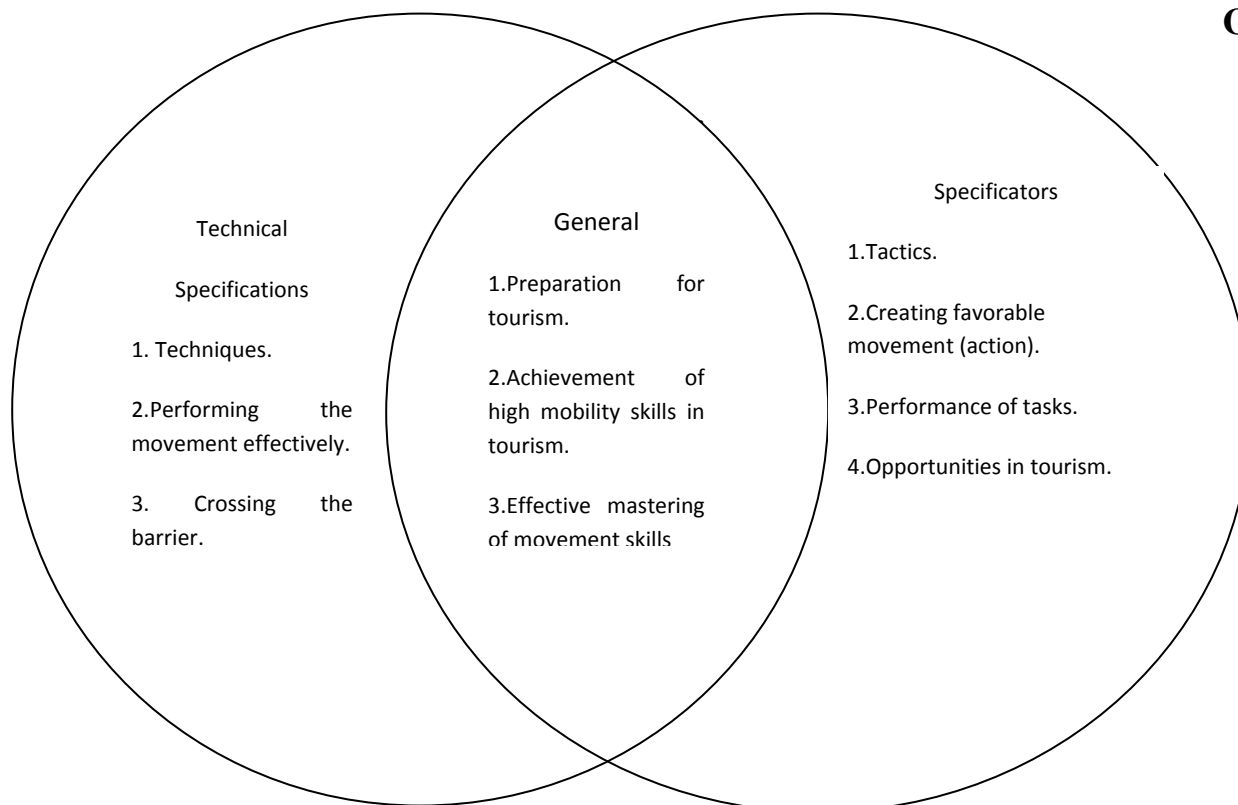
For example, another topic is one of interactive teaching methods in the field of “Techniques and tactics in tourism”, as in sports using “Venn diagram” technology to show the specific techniques and tactics of tourism can be effectively illuminated through one of the modern information technology tools, namely, a modular electronic board.

Venn diagram The use of this method is helpful in analyzing, comparing and consolidating related aspects. Through the “Venn diagram” we help students develop independent skills. For this, two or more intersecting circuits are formed on the modular

electronic board. Only the technical specifications are written to the left of the circle, tactical specifications are written to the right of the circle. Specifications related to both technical and tactical aspects are written in the centre of the circle.

“Venn diagram” method

Graph 2.



The strategy of “Video puzzle”

There is also the benefit of using the video puzzle strategy method to enhance the student’s knowledge of the subject and to enhance his knowledge of the elements of the tourist technique. When using the “Video puzzle” strategy, several videos are shown

without commentary on the subject, illustrating the essence and process of the tourist technique on the subject. When using the “Video puzzle”, the following steps are taken:

- Students will be shown several videos without annotations to help them illustrate the essence of the topic.
- The student explains how each process is reflected on each page.
- The student records the essence of the process, events displayed in the video footage.
- The student answers the questions asked by the teacher.

After showing the video, students are asked to reflect on the process of making a video on the tourism technique. Finding the answer to the video riddle helps students gain new knowledge and skills.

Analyses and results

In the experiment on the method of rope or rope binding on the subjects of tourist techniques, groups 151 - 152 became experimental group, groups 153 – 154 became control group, and the results were investigated. In groups 151 – 152 , as well as traditional methods of training on the elements of tourist techniques, the video puzzles method, which is one of the sophisticated pedagogical technologies, was used, and for groups 153 – 154 traditional methods of teaching elements of tourist techniques were trained. Five (2 variants of each method) methods of rope binding were selected and used in the experiment. Each option was rated 10 points.

Method 1 - (Simple or direct binding methods, 1-2)

Method 2 – (Head binding method, 1-2)

Method 3 - (Looping in the middle method, 1-2)

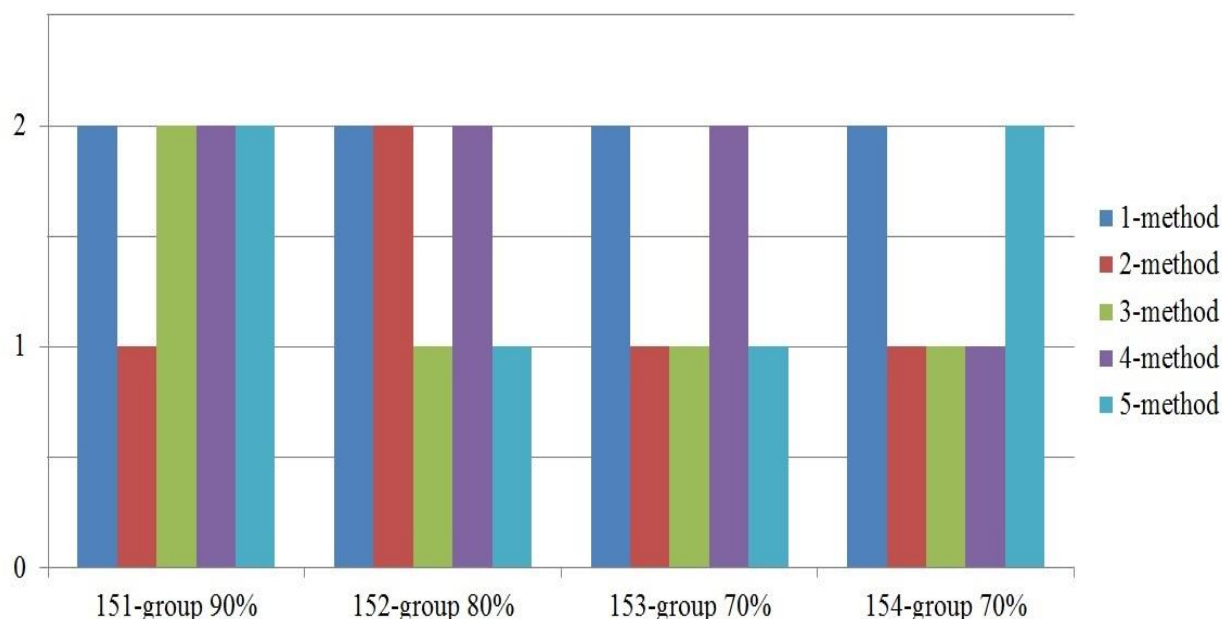
Method 4 – (Breast, shoulder strap binding method, 1-2)

Method 5 – (Waist and feet binding method, 1-2)

The results of the study are presented in the diagram – 1 below.

Indicator dynamics of rope binding techniques.

Diagram 1



Conclusions

It should be noted that special tests of “Alpomish” and “Barchinoy” are important for improving the physical development of students. For this reason, along with hiking, the importance of walking trips is also essential for the promotion of human health. Walking is a guarantee of longevity and retention of physical peculiarities for a long time. Healthy practical tourism develops personal and human qualities of students as to help each other, support each other, be an active organizer, be disciplined, committed to their responsibilities.

The use of modern pedagogical technologies in tourism training helps to improve the quality of lessons. Including:

1. The more information is provided through the “Cognitive map”, the more detailed analyses of learning can be made.
2. Using the “Venn diagram” increases students’ ability to think independently.
3. Using the “Video puzzle” strategy, students will gain a complete picture of the subject.

It should be noted that the use of modern pedagogical and information technologies in training sessions has a positive effect. The wider use of modern pedagogical technologies, in combination with information technology tools improves healthy environment among students and enhances their motivation for learning.

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THE ANALYSIS AND INTERPRETATION IN A POETIC TRANSLATION

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Abstract: Existence of poetic and stylistic devices is a main factor of any poem. These units act up as the embroidery for the ideas that as ordered in a rhyming scheme of a language. In most cases, a translator who renders a poetic text from a SL into a TL has to tackle with these kinds of devices. The article covers the translation of an outstanding opening stanza of a ghazal by Alisher Navai translated into English by three different translators.

Key words: poetic translation, poetic and stylistic devices, form, meaning, harmony;

Аннотация: ҳеч бир шеърӣ матнни поэтик ва услубӣ воситаларсиз тасаввур этиб бўлмайди. Мазкур воситалар шоир томонидан қофияланган фикрларнинг беазаги бўлиб хизмат қилади. Уларнинг таржимада сақланиши, шеърӣ таржимада уйғунликни таъминлаб беради. Мақолада Алишер Навоийнинг шоҳбайт матласи ва унинг инглиз тилига қилинган таржималари хусусида фикр юритилади.

Калит сўзлар: шеърӣ таржима, поэтик ва услубӣ воситалар, шакл, мазмун, уйғунлик;

Аннотация: Стихотворение нельзя представить себе без фигур речи и поэтических приемов. Они украшают мысли поэта завернутые в рифмованные

строчки. Сохранение этих приемов в переводе, обеспечивает гармонию в переводе поэзии. Данная статья рассматривает перевод одной вводной строчки газели Алишера Навои сделанную разными переводчиками.

Ключевые слова: поэтический перевод, фигуры речи и поэтические приемы, форма, смысл, гармония;

Introduction. The article will discuss the translation quality of the first stanza of a ghazal by Alisher Navai performed by three different translators in different times. The selection criteria of the TTs were the formal, semantic and poetic transformations that happened as the (mis)interpretation of the ST by the translators. According to our explorations, faithfulness to the form, in most cases, has been achieved at the cost of meaning, and vice-versa. The accuracy of the images converted from the same source is not the same, as well. The paper will analyze the transformation of a poetic language from ST to TT.

Literature review. As the source for the translation analysis have been taken from direct translations of the ghazal in “Ummondan durlar” (“Pearls from the ocean”) by Qosim Ma’murov and Leonid Kmetyuk; “Selected gazels” by Dinara Sultanova; “Twenty-one ghazals” by Dennis Daly.

The comparative and parallel analysis of all three translated texts will provide us with the chance of exploring the levels of harmony provided by the translators in each case.

Research methodology. To provide the scientific value of the article the methods of comparative, descriptive and analytical analyses are used in order to discuss the harmony of the translations and the original texts structure, language and meanings.

Analysis and Results. The first two lines are considered as a “shokh-bayt” or “husni matlaa” – the initial stanza with a great ornamentation.

Qaro kozoom kelu mardumlug' emdi fan qilg'il,

Kozoom qarosida mardum kibi vatan qilg'il. [A.Navai, 333]

Meaning:

My dark eye come and humanity now learn,

In black of my eyes (iris) as a pupil, make your home.

The stanza consists of at least ten types of oriental classic poetic devices as “apostrophe”, “epithet”, “tardi aks”, “tajnis”, “iyhom”, “ishtiyoq”, “tashbih”, “amr” and “muraddaf”.

1. **Apostrophe** – rhetoric appeal or address; in the English language we can compare it to the interjection. The words or phrases that are aimed to appealing to either god, beloved or nature. In the ghazal, it is represented by the phrase “Qaro kozoom” (“My dark eyed”).

2. **Epithet** - an adjective or phrase expressing a quality or attribute regarded as characteristic of the person or thing. It is represented by the word “Qaro” (“dark”); in the oriental court poetry, the epithet “dark” is very common. In addition to the dark eyes, the beloved beauty usually has dark eyebrows as well. The word “dark” toward a woman's hair, eyes and eyebrows, together with here fair skin, associates with her absolute beauty, whereas the same word used for the male usually describes his being ultimately fortuneless and miserable in front of his beloved. There are features of using the words “dark”, “black” or even “raven black” in the English poetry.

3. **Synecdoche** is a type of metaphor where a part of an item stands for the whole or the whole stands for the part. “Qaro kozoom” (“My dark eyed”) in this context stands for the person in a whole.

4. Alliteration – the usage of the same consonants in a line in order to provide certain poetic sounding. For instance, *qaro, qilg'il, qarosida, qilg'il; kozoom, kel-u, kozoom;*

5. Iyhom – the literal meaning is “to cause someone doubt”; it is the art of creating extra meanings or sub-contexts. Reading a line, we can perceive the first or literal meaning of it; however, after a while, the reader is able to understand the additional meaning of the line that is built on the previous art of tajnis using homonyms in a line. According to this, “Qaro kozoom” can be read either:

a) My black eyed beauty – a beautiful girl with black eyes;

or

b) My dear person – a person who is very dear to me, despite the eye-color;

6. Ishtiqoq – the usage in the line derivatives of the word. On this line, the poet uses the words “mardum” and “mardumlig”.

7. Tashbih – in English literature it is called simile. The word “kibi” from the second line can be translated into English with “as” or “like”. “Mardum kibi” in the second line corresponds to the likeness to both “person” and “pupil”;

8. Amr – the usage of the imperative mood in a sentence. It is very common in oriental poetry. Here the poet rouses the friend to an action. In the framework of the stanza, the words “kelu” and “qilg'il” can be shown as an example to this.

9. Tardi aks – “vice versa” repeating of the word combinations in the line. Here, the structure “Qaro kozoom” (“My dark eyed”) from the first line is repeated as “Kozoom qarosida” (“In black (dark) of my eyes”) in the second line. Though, involving only two words, it does not create tautology. In the first line, as we have seen above, we

read the address to the beloved woman, while the second line creates the meaning of “in the iris of my eye”.

10. Muraddaf – according to the structure, a traditional ghazal may be of two rhyming forms. Muraddaf is the form where the whole ghazal ends with the same word – radif. Here, the radif is the word “qilg’il” (“make”).

11. Tanosub – the usage of the words with close meanings through the lines. The words – “ko‘z, mardum, mardumug‘, qaro” (“eye, pupil, person, humanity, dark”) are all express close meanings;

12. Tajnis – the usage of the homonyms in the lines. The meanings of the word “mardum” are: 1) pupil of an eye; 2) person, man;

The translation of D.Sultanova contains a pretty much of the transformation of both form and the meaning of the original stanza. It starts with the verb and after comes the subject – forming inversion in the line. One should pay attention that “my dark eye” of the original has turned into “my dark eyed beauty” in translation. The translator was able to understand the initial idea of the greatest poet; he would never write a devotion to his own eye, of course:

Come, my dark eyed beauty that dwelling thy endeared land make,

Dwell in the pupil of my eye black, of it your Homeland make.

[D. Sultanova, 20]

Apostrophe, epithet and synecdoche are well recreated. However, the first line of this translation lacks the fervent supplications of showing kindness and humanness, creating instead new image of “dwelling her endeared land to make”. It is not clear from the very first read what dwelling the poet may be talking about in the first line. The translator may be using it for adequate rendering of eastern poetic device – ishtiyoq –

using derivatives, but instead of “mardum” and “mardumlig” of the original she uses “dwelling” and “dwell” in the translation. One of the obstacles on the way of the creation of the equivalent translation of poetry is its form. What can be given as comments or explanations in simple narratives like stories or novels, unfortunately, do not work perfectly the same with the poems. In case of working with classical poetry, except from the form as a whole, we deal with the archaic or historic language that is not clear to modern people.

Nevertheless, this translation is the only one that recreates eastern poetic device *tardi aks*: “my dark eyed” of the first line is changed with – “my eye black” in the second line. Apparently, the translator escapes from the usage of the repetition of “dark” and chooses its synonym “black”. In the poetry, both adjectives are common to be used with the word “eye”. Another transformation of the meaning waits for us in the second line of the translation. Here, the simile “as a pupil” of the source text is omitted and replaced to “in the pupil”. Translator found impossible the recreation of the wordplay on the basis of two meanings of the word “mardum” in the English translation, that is why, instead of *tajnis* in the second line, we see the translation-comment “of it your”. On the issue of the rhyming scheme, the translator succeeded in the recreation of *radif* – “make”, so “*muraddif*” was rendered into the TL.

Spelling and accuracy is critical in publishing of a translated piece of poetry. For instance, the words “kidness” and “weawe” that even do not exist in the English language, obviously appeared in the process of publication of the book “*Ummondan durlar*” (“Pearls from the ocean”); we would consider them “kindness” and “weave” respectively.

Come my dark eyed one come and show your kidness,

Weawe a nest for yourself, in the depth of my pupils.

[K. Ma'murov/L.Kmetyuk, 114]

This translation starts with the inversion as well; “my dark eye” of the original is translated as “my dark eyed one” – the initial idea of the poet was correctly interpreted. The first line contains the repetition of the verb “come” – we believe the aim of the translators were to keep rhythm of the line. The meaning of the rest line is perfectly transferred into the English language. The second line is a general summary of the main message of the original. Unfortunately, keeping the idea, the translators were not able to recreate the formal beauty of the ST. For instance, we counted three poetic devices here: *tardi-aks*, *tajnis* and *simile*; none of them were kept, unfortunately. Instead, we have the construction of “weave a nest”. There is a phrase “to build a nest” in the English language. “Weaving” is more the action of the spiders rather than birds; “nest” is a house for birds not spiders. “In the depth of my pupils” – is another phrase that was transformed. A “pupil” becomes “pupils”, a new image of “depth of pupils” appeared. The phrase sounds rather artificial as pupils do not have depth. Moreover, poet never mentioned about “depth of pupils” as well. The original line contained a *simile* together with *tajnis* (the usage of homonyms) where a person’s living in a house was compared to pupil’s being in the center of an iris, i.e. “be around, let me see you all the time”.

There is a similarity between the previous translation and translation of the initial stanza by D.Daly. The translator uses the phrases “dark-eyed one” and “depth of my pupils”:

Dark-eyed one come, show the nature of your kind soul,

Probe into the depth of my pupils, seek my soul. (D.Daly)

Omitting the possessive pronoun “my” translator keeps the word order of the original. However, he changes the verb into “probe into” – “asking questions or trying to discover facts about something, investigating”; the translator seems to urge the beloved to inquiry his eyes – that are windows of the soul in order to search for it. Apparently, the aim of the translator was to keep some formal balance using “show ... your kind

soul” in the first and “seek my soul” in the second lines. However, it did have the consequences for the meaning of the whole stanza. It reads much as the short synopsis of personal interpretation of the lines, rather than a translation. Usually, the beloved is described as unfair and heartless. Therefore, asking for showing the nature of a kind soul does not correspond to the classical image of the beloved. In TT the translator wants her to look deep in his eyes, and seek his soul, while in ST the poet does not mention his own soul. From the devices we counted above, only apostrophe and epithet are kept in the translation.

Conclusion. According to the above discussed, we came to the following conclusions:

1. All the three translations maintain the original formal constitution, i.e. 14 lines in 7 stanzas;
2. The rhyming words “fan, vatan, chaman, rasan, kohkan, shikan, tikan, kafan, anjuman” were not recreated in the translations;
3. The radif word “qilghil” has been transmitted only in the translations of D.Sultanova and D.Daly, though here the word in the original was substituted with the word “soul”; whereas, no sign of it can be traced in the translation from the book “Pearls from the ocean” (“P.O”);
4. The easiest and rhythmical translation to read to an English ear is one made by D.Daly. Nevertheless, it should be pointed out that it does not correspond with the rhythm of the original. Still, none of the three of the translation does.
5. All of the translations contain the changes of the ideas and images of the original; However, in comparison, the most deviations and misinterpretations can be traced in the translation of D.Daly. Being a genuine poet himself, D.Daly creates very beautiful lines that are super easy for reading. Nevertheless, the lack of the deeper knowledge of the language, culture and literature makes a very bad service to his translation.
6. Almost every TT we have been analyzed contains the interpretation-translation of the authors of the translation.

Translation of a traditionally structured poem contains a lot of difficulties indeed. The translator must take into consideration not only the vast variety of meters, types of rhyme and forms of stanza, not to mention the individuality of their combination in a particular source poem, but also the highly probable difference in the way they function in the language of original and the language of the translation. We believe that no translator may use their creative freedom just for the sake of formal constitution of the TT and transform the ideas and the atmosphere of the original according to their interpretation. Translating poetry does not have ideal formulas, as it is a creative work. Nevertheless, the creativity should never overwhelm the original text.

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CONDITIONS OF SYSTEMATIC APPROACH IN DEVELOPING INTERDISCIPLINARY RELATIONS IN AN EDUCATIONAL PROCESS

(The Elementary Class is an example of natural science classes)

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ABSTRACT: This article discusses aspects that should be taken into account when shaping interdisciplinary learning in the learning process. It also describes the pedagogical conditions of a systematic approach, as well as how the learning process can be effectively achieved. The author outlines the systematic approach to formulate interdisciplinary attitudes through the example of natural sciences taught in primary classes. This article considers that the system of education in the system of education, which is historically composed, has to be preserved, and now it must be independent of academic subjects. Each of them expresses a separate field of science with its own language, conceptual apparatus, methodology, methodology, research subject and concept. At the same time, opportunities should be created for their interconnected learning. The conclusion that this opportunity has been provided by the author in the methodology of the interdisciplinary approach, as well as the integration of curriculum as a method of synthesis of subjective knowledge, has been proven in the conclusion.

Key words: educational process, integration, pedagogical conditions, interdisciplinary connection, elementary education, natural sciences, educational science, didactic, integrative approach, synthesis, synthesis of subjective, new knowledge, integration.

АННОТАЦИЯ: В этой статье обсуждаются аспекты, которые следует учитывать при формировании междисциплинарного обучения в процессе обучения. Он также описывает педагогические условия системного подхода, а также то, как процесс обучения может быть эффективно достигнут. Автор выделяет системный подход к формулированию междисциплинарных установок на примере естественных наук, преподаваемых в начальных классах. В данной статье рассматривается, что система образования в системе образования, которая сложилась исторически, должна быть сохранена, и теперь она должна быть независимой от академических предметов. Каждая из них выражает отдельную область науки со своим языком, концептуальным аппаратом, методологией, методологией, предметом исследования и концепцией. В то же время должны быть созданы возможности для их взаимосвязанного обучения. Вывод о том, что эта возможность была предоставлена автором в методологии междисциплинарного подхода, а также интеграции учебной программы как метода синтеза субъективных знаний, был подтвержден в заключении.

Ключевые слова: образовательный процесс, интеграция, педагогические условия, междисциплинарная связь, начальное образование, естественные науки, педагогика, дидактика, интегративный подход, синтез, синтез субъективного, новые знания, интеграция.

АННОТАЦИЯ: Ушбу мақолада таълим жараёнида фанлараро алоқадорликни шакллантиришда эътибор бериш лозим бўлган жиҳатлар ҳақида мулоҳаза юритилган. Шунингдек, бу жараёнда тизимли ёндашувнинг педагогик

шарт-шароитлари ҳақида, ҳамда қай тарзда ташкил этилса, таълим жараёнида самарага эришиш мумкинлиги ҳақида ҳам баён этилган. Муаллиф бу мақолада айнан фанлараро алоқадорликни шакллантиришда тизимли ёндашувни бошланғич синфларда ўтиладиган табиатшунослик дарслари мисолида орқали ўз тавсияларини баён этган. Ушбу мақолада таълим тизимида тарихан таркиб топган фанларга бўлиб ўқитиш тизими сақланиб қолинганлиги ва ҳозирда ўқув фанлари нисбатан мустақил бўлиши кераклиги ҳақида ҳам фикр бериб ўтилган. Чунки, уларнинг ҳар бири ўз тили, тушунчалар аппарати, методологияси, методикаси, тадқиқот фани ва концепсиясига эга алоҳида фан соҳасини ифода этади. Шу билан бирга, уларни ўзаро боғлиқликда ўрганиш билан боғлиқ имкониятлар рўёбга чиқарилиши лозим. Бундай имконият жумладан фанлараро ёндашув асосида таъминланишини муаллиф тадқиқот методологиясида ёритиб берган ва бу орқали ўқув фанларини интеграциялаш шакли сифатида ҳам, субъектив янги билимларни синтез қилиш методи сифатида ҳам қараш мумкинлиги ғояси хулоса қисмида ўз исботини топган.

Таянч сўзлар: таълим жараёни, интеграциялаш, педагогик шарт-шароит, фанлараро алоқадорлик, бошланғич таълим, табиатшунослик, ўқув фанлари, дидактик, интегратив ёндашув, синтез, субъектив, янги билимлар синтези, интеграция.

Introduction

Reforms in the field of education in our country require full informatization of the education system, revision of traditional teaching, integration of academic subjects, effective use of innovative pedagogical technologies in teaching. This in turn creates the need for the formation of a unified information educational environment in the educational institution, the creation and utilization of the information base, and the improvement of educational, normative documents on the basis of the integration of science.

When we take care of the childhood to realize the abilities of our children and mobilize all our abilities for their perfection, there are many Beruniys, Ibn Sina and Ulugbeks from our country. I believe it. [1]

Improving the quality of education, increasing the intellectual activity of the students is the main task of the teachers today. The lesson is the important tool in upbringing students in the early grades of comprehension. Lesson is the most important element of the educational process. In today's turbulent times, the form and content of the lesson, its ideology, effectiveness, and effectiveness are changing. As the main form of education, the teacher should make a solid foundation for his students to be conscious and active in this process, to grow society as patriots, fair, hardworking and self-sacrificing people. This process involves the use of innovative pedagogical technologies to ensure the effectiveness of educational and training activities:

- Wide use of interactive and interactive methods in lessons.
- Working with didactic materials during the course.
- Uninterrupted use of media technology.
- Independently prepare students for innovative activities.
- Integration of science.
- Organization of tests.
- Systematically formulate distance learning. [10]

Literature review

The didactic essence of the integration of academic sciences is determined by the need to develop the order and the laws of pedagogical activities, which allow to define conceptual structures and methods of formation of new knowledge in various subjects. In a narrow sense, integration of academic subjects is an in-depth continuation of the synthesis of science and scientific knowledge.

The main objective of the curriculum is to synthesize subjective knowledge, and the main task of integration processes is to develop pedagogical technologies aimed at the synthesis of subjective new science knowledge. What is the synthesis of subjective knowledge in the study of the subject curriculum? - maybe a question. Different forms of integration are proposed, such as the integration of curricula into a single course in didactics. However, pedagogical experiments show that such forms do not produce enough results. We are for the preservation of the system of education that is historically composed in the education system. Academic subjects should be relatively independent. Each of them expresses a separate field of science with its own language, conceptual apparatus, methodology, methodology, research subject and concept. At the same time, opportunities should be created for their interconnected learning. This opportunity is provided on the basis of interdisciplinary approach. It can be seen as a way of integrating both the curriculum and the method of synthesis of subjective knowledge.

We consider interdisciplinary approach as the most optimal direction for pedagogy in integrating general and special sciences. We rely on the conceptual idea that the result of the integration of curriculum is the acquisition of subjective knowledge, which can not be formulated when the subjects are interconnected. In science, the interdisciplinary synthesis of new knowledge is progressing very slowly, and sometimes it is equal to several decades. During the learning process, a teacher may have to "bring" one or more workshops, or even a few minutes, to the subject's subjective knowledge, which is based on knowledge gained in various subjects. That is, they should not be given the information in the ready state, but should create appropriate conditions for their synthesis. One of the technological means of implementing this task is to link one branch of knowledge to one another, which is the main mechanism for establishing intercultural communication.

Research Methodology

The modern didactic and methodology emphasizes that the success of the teaching, development and upbringing of learners is related to the conception of the unity of their world, the need to understand the necessity of acting according to the laws of nature, and the ability to navigate through science and philosophy in natural sciences. The integration of education is discussed through a systematic approach to the content of the curriculum. Interdisciplinary communication in the learning process has a direct impact on the key components of the learning process, meaning the content of the teaching material, teaching methods and technical tools selected in this process. During the study, integrated classes in primary education were required to meet the following requirements:

- two or more items of science must be connected;
- the course must be fully descriptive;
- the students should aim at creating an integrated vision of nature, society and living conditions;
- students should be encouraged to find interdisciplinary connections and to engage in independent and creative thinking.

In addition to the "World of Environment" and "Natural Sciences" subjects, other disciplines have a great potential to introduce young people to the knowledge of nature and its protection. For example, through writing in native language lessons, students can enhance and expand their knowledge of nature. Especially when writing essays, texts and diagrams related to the environment and its protection, and green wildlife excursions, positive outcomes are achieved in environmental education.

Elementary pupils face difficulties when writing essays about nature phenomena. These difficulties are due to the fact that knowledge and skills on nature are still insufficient in schoolchildren because they do not know the flora and fauna. So, when



the topic of the essay is given to younger students, the plan is created together. Here is an example of a written work plan:

1. Nature changes in nature in autumn.
2. What happens to plants in the autumn?
3. Preparation of animals for winter.
4. Autumn work by readers in the nature of green nature.

It is necessary to create a methodological and didactic infrastructure for the scientific justification of interdisciplinary communication in the educational process in harmony with these tasks, and to ensure the interdependence of the teaching subjects using the innovative pedagogical technologies used in the educational process. The effectiveness of interdisciplinary learning in the learning process is largely dependent on the creativity and performance of teachers in the curriculum. The following results can be achieved on the basis of interdisciplinary teaching subjects in primary education:

- curricula and curricula for primary education are optimized;
- reduce of a number of subjects in elementary grades may result in the opportunity to study or develop a foreign language since the school age;
- students of elementary school age have theoretical and practical thinking and abstract thinking skills;
- students will be able to form integral concepts and concepts about life, society and science, vital skills;[3]

Analysis and results

The link between elementary subjects in the curriculum, interdependence, and conformity with the nature of the natural sciences to the particular class of students are seen as a factor in the formation of the interest towards nature. The use of the concepts of communication between the subjects in the course of the course creates interest in the study of natural sciences, as well as the realization of interdisciplinary connections in their teaching, understanding the essence and nature of the nature, processes and

changes in them, comprehending and applying general and specific concepts in the content of the curriculum. , the ability to create biological concepts in the process of building students' skills and skill yacht. Interdisciplinary teaching includes internal and external links, and interconnection is the link between the subjects of the subject matter. In the external link, it is understood that the subjects of this field are interconnected with other subjects of the subject.[5]

An objective analysis of the content of natural sciences in primary education, their interdisciplinary approach to learning, horizontal and vertical links, and their use in educational process play an important role in activating learners' learning.

Horizontal linking refers to the parallel linkages between the subject curriculum and the curriculum. It is summarized as follows: "Spring Falling Fall", "Insect Life", "Winter" in the 2nd Class "Our Universe". "The life of plants in the spring", "The work of spring in the spring", "Letters of the people in the spring", "The initial letters in the names of animals", "Capital letters in the city, the village, the street, the river" In the textbook of the 3 rd class of "Natural sciences", the subjects "Nature of the Mountain of the Mountain", "Pets", "Lessons of mother tongue", as well as 4th grade "Natural resources", "Forests", " An example is an interdisciplinary narrative of the theme "Quality-enhancing additives" in the 3-rd classroom "Mother tongue". This type of link is mainly formed in parallel to the classroom during the course.[2]

Vertical linking is the classification of subjects through the use of the knowledge acquired in the previous classes on the curriculum and curriculum topics. For example, in the 4th grade Tabiyatshunoslik textbook, "Forests", "Nature of the Mountain Mountains", "The Impact of Man on Nature.", "Nature of Tashkent city and Tashkent region" in the textbook "Mother tongue" in the third grade, "Desert life", "Na'matak", "Mother sparrow", "Bird's bird" and others. An illustration is an example. These types of

connections are mainly organized and conducted in classrooms (in different circles, olympiads, conferences, etc.). [6; 9]

Discussion

The process of forming integrated concepts in students requires a systematic approach to the problem. That is why all the subject matter of natural sciences teaching has been the need to determine the possibility of forming a link between science in the classroom, extracurricular activities, excursion and out-of-class exercises by introducing students to the environment. In doing so, he prepares students to apply their theoretical knowledge in natural sciences.

Forming the content of general secondary education is aimed at ensuring the development of socio-economic aspects of humanization of all school subjects. The elementary school is focused on natural sciences, reading, native language, music, fine arts, and the deep humanity of our society. The natural-mathematical syllabus plays an important role in educating the students in the spirit of humanity. In a subject matter, one another and the boundary sciences combine large ideas, factors, and conclusions.

The content of the general education is aimed at the comprehensive development of the students and the development of different perspectives. Studying each subject allows the child to understand the process of the material, to remember it, to intensify sensitivity, to create a mental focus that enhances the thinking, speech and imagination. It is particularly important to develop the types of thinking that are closely interconnected in the process of learning.[7]

Experience-based thinking carries out the task of gathering initial data in living queries for generalizations and conclusions. He teaches children to read real events, events, recordings, and gatherings. The abstract allows you to define the essence of the phenomena in the case of contingency events.

Interdependence between science is an objective reflection of the existing link between nature and society. Hence, mutual consensus is a common and important feature of nature and society. Everything depends on knowing how to deal with events.

The implementation of interdisciplinary communication in educational institutions requires the use of computer and information technology. Because teaching, modeling, demonstration and controlling pedagogical software allows pupils to learn the generalized methods of knowledge, synthesis, know-how and solve common problems.[8]

Effective implementation of the interdisciplinary approach during the course requires the in-depth and thorough preparation of the instructor to prepare the students for the adoption of new teaching materials, interdisciplinary communication, creating problematic situations, and planning each lesson. This, in turn, helps to increase the effectiveness of the course.

Conclusions and recommendations

It is important to use the mechanism of interdisciplinary communication in the learning process in the development of independent thinking skills in elementary school students. By summarizing the imaginations and knowledge generated in the study of natural sciences, students have developed a certain skill and skill based on the interdisciplinary learning process in the socially-gigantic learning environment, and the following conclusions have been made:

1. The phenomenon of interdisciplinary communication in the process of learning is complex and diverse didactic process.
2. The philosophical basis of the interdisciplinary connection, the interconnected development of science and scientific concepts has been clarified by prominent scientists. They emphasized that in the course of the course the subjects of

interdisciplinary communication are a leading didactic phenomenon in methodological and didactic principles.

3. Interdisciplinary communication is a didactic phenomenon that enhances didactic conditions in the learning process and in all its teaching staff.
4. The content of interactive subjects in the learning process is consistently coherent.
5. Enhance the scientific and practical level of the material being studied.
6. The interrelated knowledge is consolidated as a didactic unit;
7. Identify ways to integrate sustainable and systematic knowledge in the mind of students;
8. Determine the tools that will help expand the ability to utilize generalized knowledge.

In summary, the younger generation should be educated in all subjects on environmental education and upbringing. This work should be directed to the deepening of the knowledge of nature by students. Modern science and education systems are based on the interdisciplinary process of creating a comprehensive theory of man and individual development.

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RESEARCHING THE METHOD OF IMPROVING THE COORDINATION SKILLS OF YOUNG FEMALE FOOTBALLERS.

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Аннотация.: Мақолада 16-17 ёшли футболчи қизларнинг координацион қобилиятларини такомиллаштириш усули ёритилган бўлиб, ўқув машғулот жараёнида тажриба гуруҳида педагогик тажриба ўтказиш йўли билан қўллаш орқали унинг самарадорлиги аниқланган.

Калит сўзлар: координацион қобилиятлар, техник кўникмалар, мусобақа фаолияти, аёллар футбол жамоалари, педагогик тажриба, статистик характеристикалар, Студент критик қийматлари, эркинлик даражалари сони, статистик ишончлилиқ.

Аннотация: В статье освещен метод совершенствования координационных способностей футболисток 16-17 лет. Кроме того, определен его эффективность путем проведения педагогического эксперимента в учебно тренировочном процессе в экспериментальной группе.

Ключевые слова: координационные способности, технические навыки, соревновательная деятельность, женские футбольные команды, педагогический эксперимент, статистические характеристики, критическим значения Студента, число степеней свободы, статистическая дотоуеность.

Annotation: The article highlights how to improve the coordination skills of 16-17 year old female footballers, its effectiveness has been determined through the using of pedagogical experience in the experimental group during the training.

Key words: coordination skills, technical skills, competition activity, female football teams, pedagogical experience, statistical characteristics, critical values of the students, number of self-rule degrees, statistical reliability.

Introduction. Today, one of the most pressing problems of women's football is the low level of development of coordination skills. The fact that this aspect lags far behind men's football is connected with the need for research in this area.

Literature review. At present, many theoretical and experimental studies have been conducted in this area, and their authors have received important information in the development of coordination skills. Lyax V. I [4,5] found that fundamental research related to the mentioned aspects of the coordination problem was conducted in children, adolescents and young people of school age. At the same time, knowledge about the achievements of "technology - coordination" in sports, including football, is still fragmented. Moreover, many aspects of the coordinated preparation of football- players are still insufficient both theoretically and experimentally. The accuracy (reliability and validity) of tests that will allow to assess and predict the level of development of the specialized coordinated skills of young talented players and girls has not yet been developed. [6,7] Football players did not change their coordination abilities depending on age, gender, sportsmanship, and other factors. Athletes who have reached different stages of development of sports have not received statistically reliable experimental data on the dynamics of the development of coordination skills. [9] Analysis of literature data serves as a basis for confirming that experimental facts are related to specific preparatory coordination and the level of development of several coordinated skills (differentiation, orientation, ability to rhythm, etc.), as well as dependence on training skills, technical skills and gaming performance of players. (Lyaks V.I., Vitkovsky 3,

Djmuda V) [5]. Until now, there was no system of coordinating exercises that could be effectively used in the training of specialized coaching abilities in football. In this regard, no experiments were conducted to determine coordination capabilities, technical skills and the use of special coordination techniques and techniques for the effective work of players.

Research methodology. The survey have been conducted in the women's football club "Sevinch" in the city of Karshi, Kashkadarya region in the season 2018-2019. The women's football teams of the Tashkent region, „Metallurg” and „Almalyk”, were observed as a control group. 22 people from “Sevinch” (experimental group), 24 „Metallurg” teams and 22 athletes from the „Almalyk” team were trained. The control group conducted a traditional training session, and in the experimental group the proposed player was used to improve the coordination skills of girls. During the four months of training, the number of hours devoted to coaching skills of female footballers in the training program of the „Sevinch” team increased. In addition, a set of tools close to game conditions was developed and introduced into the educational process.

Analysis and results. At the same time, weekly research microprocessors developed training sessions to improve coordination, which did not exceed the total working time. Statistical comparative analysis of the results of the pedagogical experiment of students is presented in the table (Table 1). At the beginning of the pedagogical experiment, it was found that the coefficients of variation, determined by the statistical characteristics of the three players who participated in the tests, were good and higher (their value ranged between 4.04 and 9.27). Similarly, Student critical distribution points are calculated from the number of these characteristics and the corresponding degree of freedom, comparing these theoretical values (ranging from 0.29 to 1.39) with the data in the tables,

1-Table.

Statistical comparative analysis of the results of pedagogical experiments

		At the start of the observation			At the end of the observation			$t_{CT \text{ на3}}$	p
		\bar{X}	σ	V, %	\bar{X}	σ	V, %		
Almalyk (n=22)	1	8,25	0,47	5,70	8	0,46	5,75	1,78	>0,1
	2	8,1	0,51	6,30	7,9	0,49	6,20	1,33	>0,1
	3	225	9,1	4,04	220	9	4,09	1,83	>0,05
	4	63,3	4,9	7,74	67,1	5,3	7,90	2,47	< 0,05
	5	55,3	4,2	7,59	57,6	4,4	7,64	1,77	>0,1
	6	7,3	0,59	8,08	7,6	0,49	6,45	1,83	>0,1
Sevinch (n=24)	1	8,2	0,66	8,05	7,6	0,64	8,42	3,20	< 0,01
	2	8	0,65	8,13	7,3	0,63	8,63	3,79	< 0,001
	3	229	18,9	8,25	209	17,4	8,33	3,81	< 0,001
	4	65,4	5,1	7,80	72,2	6,3	8,73	4,11	< 0,001
	5	56,8	4,8	8,45	61,4	5,4	8,79	3,12	< 0,01
	6	7,4	0,71	9,59	8	0,76	9,50	2,83	< 0,01
Metallurg (n=22)	1	8,1	0,45	5,56	7,9	0,43	5,44	1,51	>0,1
	2	8,2	0,65	7,93	7,9	0,59	7,47	1,60	>0,1
	3	227	8,6	3,79	223	8,4	3,77	1,56	>0,1
	4	64,3	5,3	8,24	67,8	5,5	8,11	2,15	< 0,05
	5	56,1	4,8	8,56	58,8	5,2	8,84	1,79	>0,05
	6	7,5	0,51	6,80	7,8	0,58	7,44	1,82	>0,05

Note: The exercises for convenience are numbered as follows: 1 - go round by obstacles (left side) time,s; 2 go round by obstacles (left side) time,s; 3- Bring to a stop a
<http://khorezmscience.uz>

jumping ball (sm); 4- Holding the ball on the foot (right)time, s.; 5- Holding the ball on the foot (left) time s.; 6- gymnastic bench turnings arithmetic means of the results were statistically uncertain. Thus, for similar results of the „Sevinch’’ and „Almalyk’’ teams, the critical values were between 0.29 and 1.29, „Sevinch’’ and „Metallurg’’ were 0.48 and 1.02, and „Metallurg’’ and „Almalik’’ between 0.57 and 1.20, respectively. These facts indicate that at the beginning of the pedagogical experiment the athletes of the control and experimental teams were at the same level of training and should have done so.

It turned out that in the control and experimental groups for the studied tests, the indicators changed compared with the beginning of teaching practice. However, these changes were less frequent and statistically insignificant than changes in the experimental group in all control groups (with the exception of 4 retaining balls in the right leg). Thus, statistical confidence based on test results of female players based on the difference in pedagogical experience is only 4 points - confidence in right-handed training is $p < 0.05$, while $T = 2.47$ and 2.15 . The increase in the remaining exercises was unreliable, and the T value ranges from 1.33 to 1.83 (Almalyk) and from 1.51 to 1.82 (Metallurg).

The results of Sevinch players showed that the results of the chosen exercises were significantly more reliable and statistically reliable than at the beginning of the teaching experience. In particular, the arithmetic average of the results in exercises 1, 5 and 6 is < 0.01 (tst nos = 3.20, 3.12 and 2.83); and in the remaining (2-, 3-, and 4-) exercises, it was found that < 0.001 (Tst nos = 3.79; 3.81 and 4.11) change significantly.

Conclusion .Thus, the results obtained and their statistical analysis had an impressive effect on the level of preparedness of non-traditional means of improving the coordination skills of the Sevinch team. Improving traditional tools used during community training periods, especially increasing the number of tools that influence the development of coordinated skills, will have a big impact. Initial and post-research

analysis show that the proposed female footballers is effective in improving the coordination skills .

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THE SIGNIFICANCE OF RESOLUTION AND FORMATION OF VALEOLOGY ISSUES OF INDIVIDUALS

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Аннотация: Мақола шахсининг соғлом турмуш тарзини шакллантириш муаммоси ва уни ечимига бағишланган. Шунингдек, соғлиқни муҳофаза этиш билан боғлиқ муаммоларга бағишланган фалсафий, педагогик, психологик, тадқиқотлар таҳлил этилиб, замонавий ўзбек маданиятига мансуб талаба шахсини валеологик маданиятини шакллантиришнинг шарт-шароитлари ва омилларининг ижтимоий-психологик жиҳатлари асосланган.

Калит сўзлар: валеологик маданият, объектив, субъектив, индивидуал, институализация.

Аннотация: Статья посвящена проблеме формирования здорового образа жизни и ее решению. Также анализируются философские, педагогические, психологические, исследования, связанные с проблемами здравоохранения, основанные на социально-психологических аспектах условий и факторов формирования валеологической культуры современной узбекской культуры.

Ключевые слова: валеологическая культура, цель, субъективность, индивид, институционализация.

Annotation: The following article is dedicated to the issues of resolution and formation of healthcare problems of individuals. Besides, the conditions and socio-psychological aspects of resolving healthcare issues and shaping the culture of valeology in a modern Uzbek student are thoroughly inspected and discussed.

Keywords: valeologic culture, objective, subjective, individual, institutionalize.

In the social spheres our contemporary age, the matter of identifying and acclaiming the value of healthcare has already transcended the point of central significance and attention. Along with the industrial progress and boom of information technology, the negative impact of rough social, economic and political changes have also been enormous on the segments of modern society. This whole process made it possible to decrease human physical activity, and develop into the activation of intellectual workload. In the scopes of industrial and information technology, it's been demanding to provoke not only physically healthy youth but also intellectually bright employees. The recent economic crisis discouraging people financially has initiated the prices of random medical services to growing twice as much as the growth and advance of medical equipment and technology.

However, the biggest problem of ours is still the lack of moral completeness. To the Uzbek people, the healthcare issues are not still a primary value. The imitation to the western culture and idolization has also been avoiding us from accepting healthcare as a true priority. In this socio-cultural process, the mentality and way of thinking of Uzbek people about healthcare have shaped into something, that is not spiritually healthy and right.

Furthermore, the increasing volume of deceases – AIDS, micro plasmatic infections, flue with different etiologic consequences, and other oncologic, neurological disorders have been immobilizing the overall situation of healthcare.

Building a healthy lifestyle and taking care of health daily, has brought a sense of huge importance of exploring valeologic culture in modern society. [1].

There has been a great deal of research and study on forming and establishing a healthy generation during the years of independence. In the formation of a physically healthy individual, the impact of co-operational support of different educational facilities, or the psychological and pedagogical aid in supporting the disabled and encouraging the youth socially and legally has been reviewed and investigated.

T. Abdullayeva, I. Jabborov, Y. Jumaboyev, Kh. Ziyoyev, D. Kenjayeva, K. Nazhmiddinova, K. Nazarov, D. Rakhimboeva, M. Khairullaev, M. Kholmatova, P. Khudoybergenova, H. Shaikhova, E. Yusupov, N. Urinboev, Z. Kodirova and others have studied the problems of raising human potential activities in the social sphere highlighting the significance of fitness and healthcare. The scientists of pedagogy such as A. Abdukodirov, R. Dzhurayev, H. Ibragimov, G. Ibragimova, M. Inomova, U. Inoyatov, A. Isimova, Z. Ismoilova, S. Yuldosheva, U. Mahkamov, M. Mahmudova, A. Munavvarov, O. Musurmonova, S. Nishonova, N. Ortigov, M. Ochilov, S. Ochilov, K. Risulova, D. Rzieva, S. Tursunov, Sh. Sharipov, D. Sharipova, Sh. Shodmonova, N. Egamberdieva, E. Yuzlikaeva, Sh. Kurbonov, M. Kuronov, and others researched the issues of enhancing spiritually healthy individuals.

M. Davletshin, V. Karimova, Z. Nishonova, N. Safaev, N. Soghinov, F. Shoumarov, E. Ghoziev, and others brought about the psychological patterns of youth upbringing and its association with the community and social environment. Also, K. Mamedov, O. Avlaev, Sh. Samarova, Sh. Kholiova carried out a good deal of research on studying the psychology of children with disabilities and seeking a cure for their impairments.

The researchers such as K. Mamedov and O. Avlayev studied social adaptation, psychological stability, and other illnesses in children with disabilities and highlighted the importance of psychological rehabilitation. They gained a complete recovery through multiple psycho-training procedures.

In the works of Kh. Shaykhov the principles such as beneficial communication between human beings and society, the conception of formulating healthy ideas and ideologies, the importance of a healthy lifestyle of the young generation as an acmeologic factor were thoroughly investigated and explored.

O. Musurmonova tried to prove scientifically that a healthy lifestyle is an inseparable part of our spiritual culture. Also, she demonstrated that the true essence of healthcare elements is firmly associated with spiritual values.

Likewise, M. Kurbonov considers that the enhancement of the extents of valeologic culture generates immunity from external psychological threats. In this manner, their civil positions are reinforced through enhancing their outlook, mindset and social behavior.

In CIS countries, a lot of research works on the general problems of valeology have been conducted by V.I. Osik, G.L. Apanasenko, I.I. Brekhman, E.N. Weiner, V.P. Kaznacheev, V.V. Kolbanov, G.A. Kuraev, V.L. Tatarnikov, Yu. P. Lisitsyn, A.A. Gusseinov, G.I. Tsaregorodtsev, A.M. Izutkina and other works of A.I. Demov, V.E. Davidovich, A.E. Chekalov, I.N. Smirnovova N.K. Smirnov, K.S. Khrutsky have illustrated the socio-philosophical explorations of healthcare and fitness education. Besides, L.N. Ivanitskaya, M.I. Lednova, M.G. Romantsev, L.P. Vashlaeva, S.V. Kim, A.P. Maltsev, A.I. Revenko and others are investigating the science of valeology from both psychological and pedagogical stances.

In the researches of Russian scientist G. P. Novikova the practical and pedagogical aspects of developing education, the moral upbringing in kindergartens, supporting creators in the educational process and the ethic upbringing of a child in public schools were the key discussions points.

E.A. Mensh brought about the sense of accepting healthcare as a value through the means of intercultural development. T.B. Kamenskaya created the entire complete system of children's healthcare culture development in nursery schools.

A.B. Karabasheva researched the interactive methods of maintaining healthcare competency among upper-class schoolchildren in secondary schools. P.L. Dribinskiy established healthcare as a value scientifically for the first time. As long as, the

investigation of the problems of healthcare and fitness is processed, the necessity of expanding and forming the culture of valeology remains in force.

The major aim of our investigation is to formulate and provide the standards of valeologic culture and its core fundamental psychological aspects as a whole complete routine.

However, to these days, the notion of "the culture of valeology" has not been expanded or defined. It's always been suggested to accept valeology as "the streamlined principles of promoting and preserving healthcare in a single individual's socio-psychological conduct". [4]

We can classify the characteristics of valeologic culture as the following:

1. The culture of valeology is an outcome of a human's daily routine, and human being is a central figure in this procedure. However, compared with other types of culture, valeologic culture happens to be ecological. The healthcare issues are associated with outer environment and ecology, as we can encounter the understanding of "ecologic-valeologic culture". [2]
2. The main purpose of culture, in general, is "to create a human" and human is the product of culture. Thus, through learning the measures and means of a healthy lifestyle, a human can demonstrate his inner world decently. Similarly, it's appropriate to assume that the culture of valeology opens up the nature of human being in a certain way.
3. The valeologic culture is always referred to as humans, associated with them, and characterized by human potential.
4. The valeologic culture expresses the connection between material and spiritual values.
5. This (valeologic culture) has to be scrutinized as progress and a part of the culture, as it also promotes steady progress of society.
6. The valeologic culture is a system of images and values which pushes individuals forward to achieve perfection.

As we regard, the culture of valeology came into existence at the time when first people were created on the Earth. The main affair of valeologic culture includes regular maintaining and preserving the health of oneself. The valeologic culture gained its position by providing a stable extent of healthcare. The institutionalization of culture has upgraded the standards of living to a certain point. In this manner, we can consider that the culture of valeology has already turned into a social normative tool of people which demonstrates their way of living, psychological thinking and mentality. It's also necessary to claim that the valeologic culture is a historical process. Objectively, it determines people's mutual relationship, their communication with environment and healthcare issues.

The culture of valeology can be interpreted as both individual and social sense. At the first stage, it specifies emotions, senses, existential modus and aggregation. Secondly, the valeologic culture of an individual exists within himself, in his emotional and intimate spirit. Also, his beliefs, education and religion background depends on his valeologic culture upbringing. Therefore, it (the culture of valeology) is diverse. In this sense, Yu. M. Orlov once asserted that "we used to think that our health is dependent on our eating habits, ecology, medicine, and human activities. However, only a few know that it's undoubtedly connected to our way of thinking and the philosophy of life." [3] Overall, we can conclude that the problems of valeologic culture can be resolved by soberly feeling the responsibility of our health and fitness on ourselves.

At the same time, this phenomenon is determined by objective and subjective factors.

Objective factors include a substantial life of each individual, the development levels of the healthcare system, social programs, medical commercialization and the absence of sanitary prophylaxis functions. It's vital to claim that the material life of each individual is the major characteristic of his healthcare issues. It's easy to fall ill without taking care of health, yet being motivated financially. The life we deserve is an attitude to conditions and options for maintaining health. At the time being, the biggest factor of

providing common healthcare services for the population is the outdoor atmosphere and environment.

A human being altering his views about nature and society, also need to be careful and responsible for others. Unfortunately, a typical modern individual doesn't benefit from current social changes, either psychologically or physically. The financial and cultural crisis, unemployment, political clashes, and other global or local disagreements are producing an unprecedented range of neurologic and infectious deceases, depression and suicides. [1].

A person who considers his health, mind, and behavior as valuable machines, by no means, sees them as a substantial configuration of his body and soul. The primary subjective attributes of an individual, however, include his outlook, mind, stereotypes, norms of behavior and habits about the outer world.

In conclusion, the problems of forming the culture of valeology in each individual can be resolved through maintaining subjective and objective grounds such as mutual communication and relationship between people and nature, ecology and society.

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UDC: 42/48+531.1+741

TEACHING GERMAN PREPOSITIONS WITH MNEMONICS

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Abstract: This article highlights the specifics of teaching and learning German prepositions using mnemonics. Unlike traditional teaching and learning, modern use of mnemotechniques is considered to have a stronger effect on language learning. At the same time, not the teacher, but the learner becomes the focus of the learning process. The lessons will be interesting, effective and it gives opportunity to memorize the new information you have learned.

Key words: teaching prepositions, mnemotechniques, movement, painting, tutorial process, memory.

Annotatsiya: Ushbu maqola nemis tilidagi ko`makchilarni mnemotexnika yordamida o`rgatish va o`rganishning o'ziga xos xususiyatlarini yoritadi. An'anaviy o`rgatish va o`rganish uslubidan farqli o'laroq, mnemotexnikadan zamonaviy foydalanishni til o`rganish samarasiga ta'siri kuchliroq hisoblanadi. Shu bilan birga dars jarayonlarining markazida o`qituvchi emas, til o`rganuvchi bo`lishiga olib keladi. Darslarni qiziq, samarali bo`lishi va muhimi o`rganilgan yangi ma'lumotlarni yodda saqlanishiga sharoit yaratiladi.

Kalit so'zlar: ko`makchilarni o`rgatish, mnemotexnika, harakat, rasm, dars jarayoni, xotira.

Аннотация: В этой статье освещаются особенности преподавания и изучения предлогов в немецком языке с использованием мнемоники. В отличие от традиционного преподавания и обучения, современное использование мнемотехники, считается что, сильнее влияет на изучение языка. В то же время становится центром в учебном процессе не учителя, а ученика. Уроки будут



интересными, эффективно и важно, чтобы иметь в виду новую информацию, которую вы узнали.

Ключевые слова: преподавание предлогов, мнемотехника, движение, рисунок, учебный процесс, память.

Introduction

Teaching foreign languages is becoming more and more common trend in nearly all spheres of education. New methods and technics are coming to tutorial process. Both, German teachers and students often express the complexity of German grammar. This is true, but with the help of new techniques we can solve these problems or at least avoid them. The following are some of the problems we have in learning and teaching German prepositions and addressing them.

One of the biggest problems with the teaching and learning of prepositions is that the facilitators are quite uncertain and lack clear guidelines for their application.

Literature review

In describing the difficulty of teaching and learning preposition as problematic as numerous analyses of the linguistic output of learners have revealed. Furthermore, with regard to the use of preposition in German, rules that govern the usage of preposition limits the usage of certain preposition to be usable for many function. It is stated that in German, prepositions appear in adjuncts, they mark the arguments of predicates and they combine with other parts of speech to express new meaning. The preposition and the function is not memorable to language learners. There are quite a number of them to be memorized with their function. It is said that usage errors involving prepositions are among the most common types seen in the writing of non-native German speakers. Furthermore, Horst Sperber (1989) [1] is quite famous scientist and mnemonic researcher for German as a foreign language. One way to make language learners aware

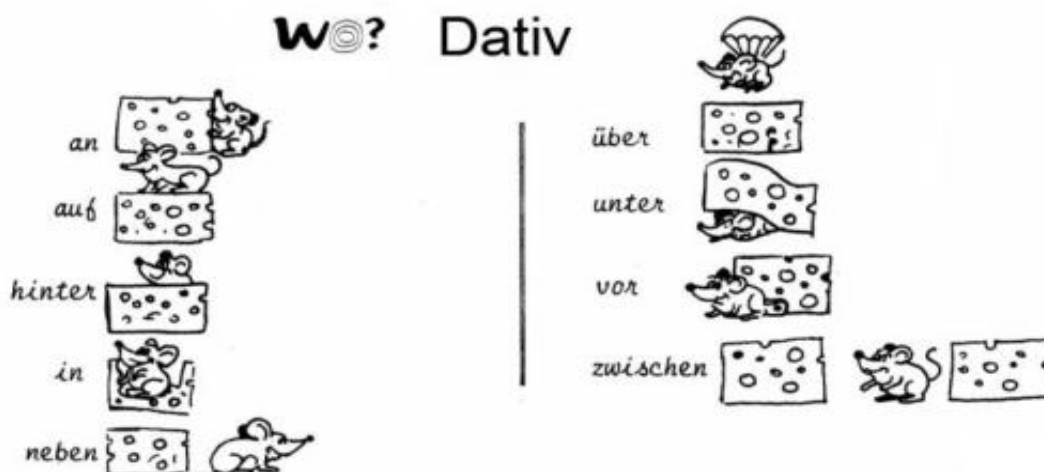
is by using language learning strategy namely the use of mnemonic technique. A learning strategy is an individual's way of organizing and using a particular set of skills to learn content or accomplish other tasks effectively and efficiently in both academic and non-academic settings. Peter Heinrich (2012) [8] is most famous internet blogger and German teacher for learning and teaching German prepositions with mnemonics. He has an internet website for learning German language.

There is also a support group in German called “Wechselpräpositionen”. They are used in both Dative and Accusative cases. Mnemonic body movements can also be used to memorize them: [6]



Picture № 1

Pictures depict the prepositions *auf*, *über*, *unter*, *neben*, *an*, *zwischen*, *vor*, *hinten*, *in*. In their teaching, teacher should repeat these actions several times, making all students stand up. It is also required to pronounce the loudspeakers in accordance with the movement. Goethe-Institut teachers also use this exercise during their workouts. It is known that these prepositions are used in both Dative and Accusative cases. There are also different ways to differentiate when they are used with Dative and when used with Accusative. The most important of these are visualization:



Picture № 2

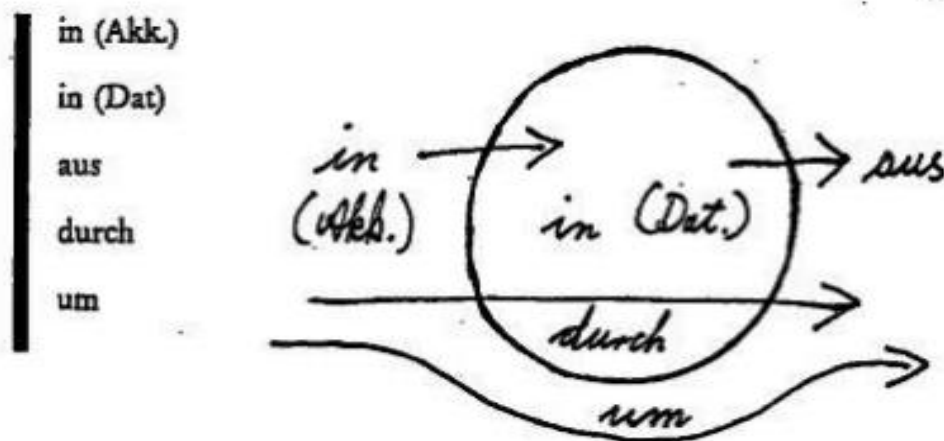
As you can see from this picture, if wo / where there is a word that answers the question, these prepositions are supported by Dative.



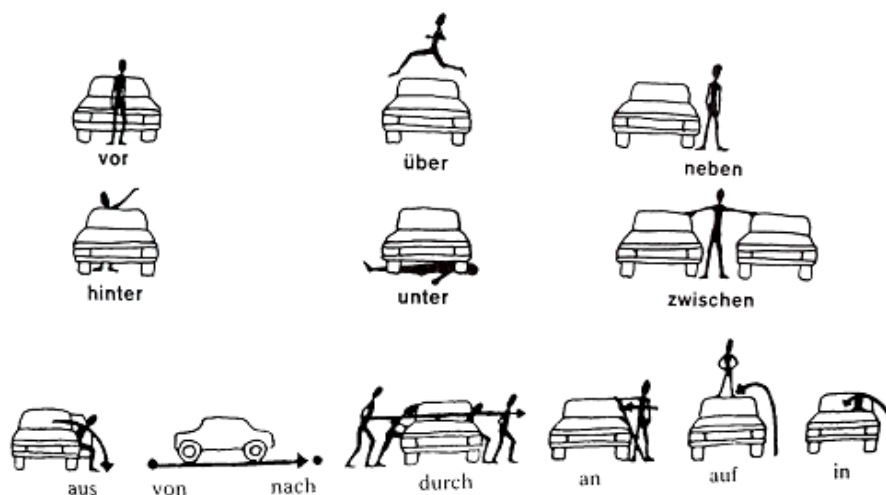
Picture № 3

For Accusative, the wohin / where to needs to be used, that is, the direction of the movement.

The following pictures can also be used to learn these prepositions: [7], [1]



Picture № 4



Picture № 5

Temporal prepositions also mislead learners. Rhythmic poems can be used to remember them. In addition, the use of a picture or form can also make it easier to remember:[6]

Wann?

pIM	2017
pAM	Juni
pUM	Mittwoch
	12:00 Uhr

Picture № 6

As you can see, the words wann / when answering the question, if the month is the name with the "im" (in + dem = im), if the day of the week with the "am" (an + dem = dem), the hour is used with the preposition "um". In order to rhyme with these words, each of them added a "p" sound, resulting in a "pim-pam-pum" rhythm. It is pleasant and easy to remember.

For many foreign German teachers, the use of the following poetic rhythms for Dative supporters is as follows:

Herr **AusBeiNach** und

Frau **von SeitZuMit**

sind für die Dativ-Party fit.



Picture № 7

You can also see the appropriate image.

Using of the following image is also useful:



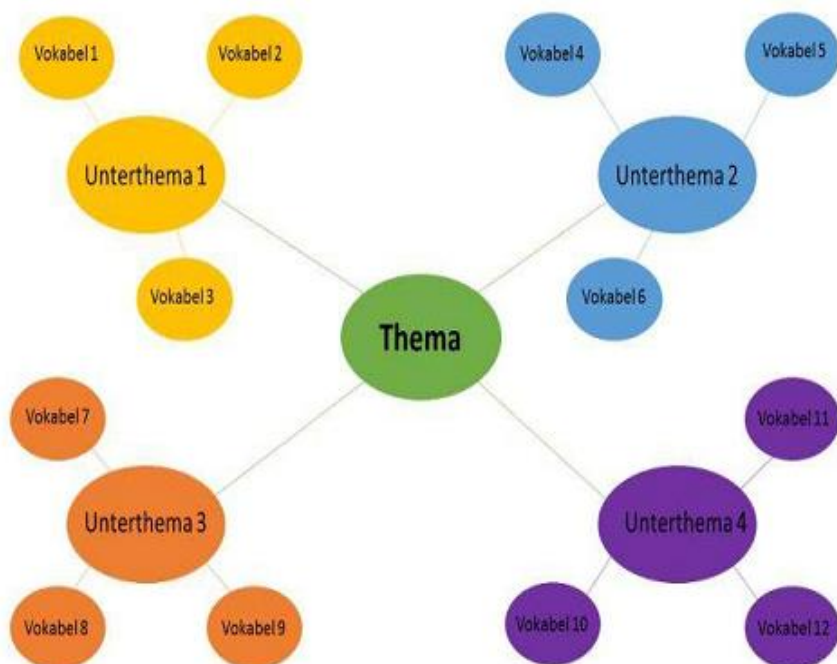
Picture № 8

It is necessary for language learners to remember that the most effective way to create pictures themselves. One of the easiest ways to accomplish this task is to use an associograms. For example, the language learners can provide the following associograms for Accusative prepositions: [2]

:



The Mind Map, which is a bit more complex than the associograms, can be used to describe all prepositions: [9]



In this case, the main theme is Prepositions and the other four sub-themes need to write each kind of prepositions, and its branches will have to write the sub prepositions. Such a scheme can also be used to duplicate or strengthen all prepositions once they have been studied.

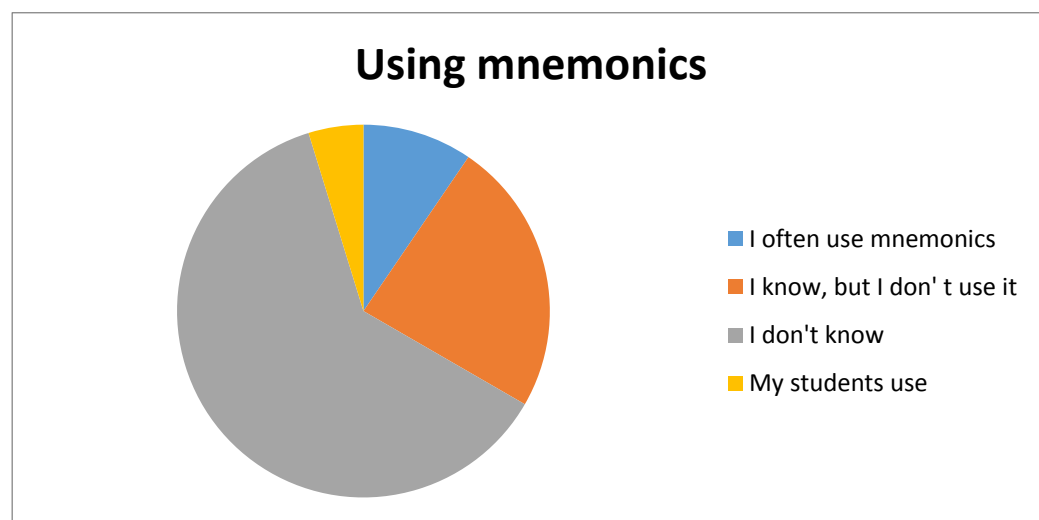
Research methodology

The research based on descriptive and comparative methods of analysis. Firstly, information has been obtained through the research that has been done before. Then, appropriate information has been completed in the literature review.

For the benefit of analysis of alternative ways of teaching prepositions, the researcher collected data on the basis of questionnaires from teachers and observations of teachers' ways of assessing students' knowledge. For the research methodology, the researcher gained data collection from the teachers and students of Fergana polytechnic Institute during 2018-2019 study years.

Analysis and Results

Diagram 1: Using mnemonics in teaching foreign languages.



From the diagram we can see only some participants know about mnemonics and use it in their lessons. Some teachers know mnemonics but they don't use it. The most common answer was "I don't know", it means they don't use mnemonics. Little part of teachers say "My students use mnemonics". It means, they have heard about mnemonics from their students.

Table 1: Interested in using the mnemonic in learning

	Students quantity	percent %
interested	42/48	87,5 %
not interested	4/48	8,3 %
neutral	2/48	4,1 %

From the table we can see, that 87,5 % participants are interested in using the mnemonic in learning German prepositions.

Table 2: Effect of using mnemonics in teaching and learning prepositions:

Results of students test before using mnemonics:

Students quantity	percent of right answers %	percent of false answers %
48	70 %	30 %

Table 3: Effect of using mnemonics in teaching and learning prepositions:

Results of students test after using mnemonics:

Students quantity	percent of right answers %	percent of false answers %
48	90 %	10 %

From the tables 3 and 4 we can see result of using mnemonics.



Conclusion

This is an important innovation that will help language learners learn German prepositions more effectively and in an interesting way. Mnemonic learning strategy such as communicative method is a potentially effective learning method because it provides a novel and different way of learning components of German language. The use of this learning method should be encouraged in the classroom as this learning strategy is useful for learners and for teachers too. It makes it easy for students to remember all prepositions.

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INNOVATIVE APPROACH TO IMPROVING THE QUALITY OF EDUCATION IN PRESCHOOL EDUCATIONAL INSTITUTION

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Abstract: In this article topical issues such as the importance of innovation and innovation activities in the educational system, types of innovation methods, non-traditional methods most commonly used during classes in preschool educational institutions and the need for their application, its impact on educational performance have been investigated.

Key words: innovation, innovation activity, non-traditional lesson methods, pedagogical skills, preschool educational institution, quality of education.

Аннотация: В этой статье рассмотрены такие актуальные вопросы, как значение инновационной и инновационной деятельности в системе образования, виды инновационных методов, нетрадиционные методы, которые наиболее часто используются во время обучения в дошкольных образовательных учреждениях и необходимость их применения, влияние на эффективность образования.

Ключевые слова: инновации, инновационная деятельность, нетрадиционные методы обучения, педагогические навыки, дошкольные образовательные учреждения, качество образования.

Аннотация: Ушбу мақолада таълим тизимида инновация ва инновацион фаолиятнинг аҳамияти, инновацион методлар турлари, мактабгача таълим муассасаларида машғулотлар давомида энг кўп қўлланиладиган ноанъанавий усуллар ва уларни қўллаш зарурати, унинг таълим самарадорлигига таъсири каби долзарб масалалар тадқиқ қилинган.

Калит сўзлар: инновация, инновацион фаолият, ноанъанавий дарс усуллари, педагогик маҳорат, мактабгача таълим муассасаси, таълим сифати.

Introduction. Improving the quality of pre-school education today is possible only through the implementation of a new innovative approach that determines the pre-school education of the modern generation. The development of national education is provided by pedagogical technologies, which are aimed at achieving high results through the introduction and effective use of new forms and means in the practice of the educational process.

On September 30, 2017, President of the Republic of Uzbekistan Shavkat Mirziyoyev signed the decree "On measures to radically improve the management of the preschool education system". On the basis of this document, the Ministry of preschool education was established. In a word, it will not be a mistake to say that a new period has begun in the pre-school education system of our country since that day.

The system of preschool education, which is considered the primary component of the system of continuing education, plays an important role in the upbringing and preparation of healthy and harmonious child personality in all respects.

Literature review. As you know, the concept of "innovation" is widely used since the XXI century. "Quality of education in preschool educational organization" is considered as the degree of compliance of the set of properties and results of education of preschool children with the projected development goals based on the requirements and standards, needs and expectations of the subjects of the educational process (children, teachers, parents). From this point of view, the quality of education is studied in three aspects: the quality of the conditions, the quality of the education process, the quality of the results[1]. Recently, the development of pedagogical innovations is associated with the actions of the general pedagogical community, with the need for rapid development of the school system. The use of new approaches became widespread fairly quickly. Based on this, the need for interpretation and interpretation of such

concepts as “news”, “innovation”, “innovation process” has become more acute. The concept of “innovation” (from lat. In – inside, novus – new) a number of authors interpreted as “application of new”.

The concept of “innovation” is aimed at continuity, improving the quality and efficiency of the educational process. Innovation is the methods introduced for the development of internal resources and the chances of improving the quality and effectiveness of the individual's consciousness[2].

“Innovation” is a concept that means “newly introduced orders, rules, technologies and news”[3]. Innovation can be called new methods used in solving problems to achieve a favorable result, ensuring the quality and efficiency of the educational process. “Innovation” is a new approach to solving problems in a particular activity, ensuring high results through the use of new technologies in the educational process. In short, an innovative approach is a conceptual approach in this process [4].

Creation and dissemination of innovations is a complex process of using innovations[5].

The role of the child in the educational process, that is, the requirements for the child on the part of adults, are considered the main property of pedagogical technology. The achievement of effective results from classes is provided by the use of advanced innovative technologies. The basis of the activities of the teacher as an organizer, leader, builder, in this process account for his knowledge and skill, his ability to use technical tools, the ability to stimulate the interest and activity of the child, using the methods leading to the achievement of the guaranteed effect. Innovative activity changes the traditional management system and focuses on the teacher and pupils, heads of educational institutions, their professional needs and requirements. The creative potential of teachers becomes the driving force of development of preschool institution: their professional growth, the relation to work, abilities to reveal potential opportunities of the pupils [6].

In opinion K.Belaya despite the fact that the problems of innovative pedagogical activity are widely and firmly included in the life of pre-school institutions, regulatory and instructional management support of the processes of updating management and methodological work in the of pre-school institutions, improving their efficiency in the conditions of innovation is clearly not enough [7].

According to the opinion Idriskhujayeva J.S. based on the above, the essence of the innovative mechanisms used by teachers-educators in the preparation of preschool pupils for school education, can be expressed in the following order:

- the creation of a creative environment, the awakening of motivation in children of the preparatory group for further education in school;
- the creation of socio-cultural and material conditions for the perception of various innovations occurring in the social environment;
- research in the education system and support of their mechanisms from all sides;
- integration of the most promising and productive projects that have a real effect in the system of pre-school education, as well as the introduction of accumulated innovations in the research and experimental educational regime of the system[8].

L.M.Denyakin researches are devoted to the use of innovative technologies in the management of preschool educational institution. S.V.Savinova, who showed that the information support of the management of preschool educational institution is a necessary condition for the renewal of preschool institutions.

In general, research scientists (I.A.Kopylova, V.S.Lazarev, V.Y.Laudis, V.P.Panasyuk, Y.V.Smirnova, E.N.Stepanova, G.V.Yakovleva and others) show that the modern educational process in the kindergarten requires innovative models of educational activities. This means that many coordinated and coordinated innovations should be introduced into the pedagogical systems of preschool educational institutions, so that educational institutions for preschool children will be able to achieve higher than

before results in the education and development of children (V.Kozlov, N.V.Kuzmina, A. K. Markov, etc.).

Research methodology. According to the author, the innovative development of preschool education as well as other stages is impossible without informatization of the institution. In achieving the effectiveness of education and training, it is necessary to properly organize each type of activity in pre-school educational institutions.

The content of child-oriented education is aimed at the full implementation of the base programs “child” through innovative technologies. This as a modern pedagogical technology makes the educational process more communication and exercise-based entertainment, motivating educators to work with the use of new methods. So, nationwide techniques such as theoretical logic, structural analysis, historical and comparative analysis were used to cover the study.

Analysis and results. Analysis shows that, innovative activity of the teacher-educator in the educational process of preschoolers is relevant in the following cases:

- in the analysis of non-standard situations and making quick decisions;
- in the search for acceptable and effective means of solving problems and systematization of the results of the experiment;
- in the planning of independent work on themselves;
- in the process of monitoring and analysis of the results of their work;
- if necessary, the use of new information technologies;
- in the search for new ideas, pedagogical tasks.

Whatever problems arise in the implementation of modern innovations, they are still being implemented. Among the innovations, it is worth noting modern educational technologies used in the practice of preschool educational institutions [9]:

- health-saving technologies;
- technologies of project activities;
- technology of research activities;



- information and communication technologies;
- personality-oriented technologies;
- technology portfolio of preschooler and educator;
- game technology.

In general quality implementation of the order of the state and society in preparation for school comprehensively developed personality of the child [10].

Conclusion. In conclusion, we can say that in modern conditions on the basis of an innovative approach in the process of preparing preschoolers for school education, there are opportunities to improve the content and methods of the educational process in preschool educational institutions. In pre-school educational institutions, it is necessary to provide conditions and a favorable environment for the implementation and regular use by teachers-educators of modern forms and innovative methods of preparing preschool children for school education.

The teacher-educator, feeling thirst for modern knowledge, and at the same time correctly directing interests of children, their abilities in education, first of all has to constantly work on himself and be informed in application of information and communication technologies, get acquainted with news of a global network[10]. Only in this case will be realized the great task set before the education system, the essence of which is the comprehensive development of the younger generation, the formation of full-fledged individuals who have mastered in the future fully any profession.

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MODERN PROBLEMS OF INFORMATION AND COMMUNICATION TECHNOLOGIES

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ECONOMIC ANALYSIS AS A METHOD OF ASSESSING AND INCREASING THE EFFECTIVENESS OF EDUCATIONAL MANAGEMENT

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Abstract. This article examines a wide range of work on modernization of the system of higher and secondary special education, the introduction of modern forms and technologies for training specialists, and demonstrates the importance of economic analysis in the formation of the system in accordance with the international standards. Large-scale work on development of continuous education and science in the country provides the necessary conditions for training highly qualified specialists. Through the use of economic analysis in education, we can achieve an optimal operation in this system.

Key words: education, economics, analysis, quality, modernization, education, system, technology, package of application software, statistical analysis, prognosis, index.

Аннотация. Ушбу мақолада олий ва ўрта махсус таълим тизимини модернизация қилиш, ўқитишнинг замонавий шакл ва технологияларини жорий этиш, мутахассислар тайёрлаш бўйича кенг кўламли ишлар ўрганилиб, тизимни жаҳон стандартлари асосида шакллантиришда иқтисодий таҳлилнинг аҳамияти кўрсатиб берилган. Мамлакатимизда узлуксиз таълим ва илм-фан тизимини ривожлантириш бўйича олиб борилаётган кенг кўламли изчил ишлар юқори малакали мутахассисларни тайёрлаш учун зарур бўлган шароитларни таъминлашга замин яратмоқда. Таълим жараёнида иқтисодий таҳлилни қўллаш
<http://khorezmscience.uz>

орқали тизимни ишлаш ҳолатини оптимал ташкил қилишни таъминлашга эришишимиз мумкин.

Таянч иборалар: таълим, иқтисодий, таҳлил, сифат, модернизация, ўқитиш, тизим, технология, амалий дастурий пакет, статистик таҳлил, башорат қилиш, кўрсаткич.

Аннотация. В данной статье рассматривается широкий спектр работ по модернизации системы высшего и среднего специального образования, внедрению современных форм и технологий обучения и подготовки специалистов, а также демонстрируется важность экономического анализа в формировании системы в соответствии с международными стандартами. Масштабная работа по развитию системы непрерывного образования и науки в стране обеспечивает необходимые условия для подготовки высококвалифицированных специалистов. Благодаря использованию экономического анализа в процессе обучения, мы можем достичь оптимальной работы системы.

Ключевые слова: образование, экономика, анализ, качество, модернизация, обучение, система, технология, пакет прикладных программ, статистический анализ, прогнозирование, индекс.

Introduction. Today under the umbrella development strategy of the Republic of Uzbekistan for 2017-2021 large-scale work has been carried out on modernization of the system of higher and secondary special education, introduction of modern forms and technologies in education, training of specialists etc.

Establishment of new higher education institutions in the regions based on the needs of the real economy sector and the social sphere, formation of modern stages, directions and specialties in education for training highly-qualified and well-educated personnel are considered as the most significant priorities in creating higher and secondary special education system which will meet the requirements of international standards.

Vast amount of work on the development of continuous education and science in the country provides the necessary conditions for training highly qualified specialists.

At the same time, the analysis of the work done shows that there are some challenges and drawbacks that impede the effective organization and implementation of the objectives of higher education system.

Today a comprehensive economic analysis in education management can facilitate in avoidance of challenges and lacks.

Literature review. Today's rapidly changing and developing world requires every member of our society to master up-to-date knowledge based on scientific and technological achievements.

Worldwide practice shows that deep and foreseeable reforms can't be accomplished without the formation of economic thinking. [1,2].

The modern world level of development of information technologies dependent on the creation of a national system in the republic, which is compatible with the integration of information infrastructure and the national information-computing network is an important factor in the effectiveness of economy, management, science and education. These challenges are quite complex and relevant for our country [3,4].

The interconnected, comprehensive integration of the informatics industry and economy shows that their complexity is the basis of our national economy [5].

Uzbekistan has many intellectual capabilities and information resources for the introduction and development of information technologies. The need for various information and communication technologies is growing in our country day by day. Widespread implementation of automated information systems and technologies in all sectors of the national economy has ensured optimal management, education and production. [6,7].

The latest “information boom” has generated a new sphere of the information industry which is closely connected with technology, methods and techniques for

developing new knowledge. Worldwide experience shows that at present automated information systems and information technologies are getting their popularity quite rapidly [7]. They are widely used not only in the economic sphere, but also in medicine, construction, social and military spheres.

Research methodology. The objectives of economic analysis are to organize analytical data based on information technology and statistical methods. They will serve to study continuous and comprehensive development of various sectors of the economy of the country and its regions.

The software package used in complexes consists of electronic statistical analysis and forecasting system, as well as software for preparing and compiling applied statistical surveys and other commonly used software products.

Packages can be used by both novice and statistical experts. Currently software packages for statistical analysis and data prediction is considered as one of the best application packages.

The introduction of primary research data on statistical analysis and forecasting in education will allow for a complete periodicity that is starting with the data collection and review, and ending with a comprehensive set of modern methods of applied statistics and the analysis of the results.

From a functional point of view, the software package includes: data editor, graphical data visualization tools, utilities for change, and programs for statistical analysis etc.

The following is used to analyze and predict dynamic data:

- models of dynamic regression;
- prediction models based on linear regression;
- harmonic, spectral analysis and frequency filtering models.

Each of the above-mentioned models is managed by a user with a set of parameters describing this model. Such an approach to the program will gradually assign the capabilities and facilitate the work with them.

Economic analysis takes intermediate stages in education management. [8,9]. There are three main stages in the process of management:

- data collection and preparation;
- economic analysis of the condition of the object and making proposals based on its results;
- management decisions.

In education management system, these three stages are inextricably linked with each other.

In the economic analysis, the education management leader must thoroughly study its activities. For this purpose a system of indicators should be widely used. To this end, the formation of groups of indicators studied in economic analysis, and their implementation is also important in ensuring its effectiveness.

Documentation and data used in the analysis process are considered as the sources of analysis. The analysis of the education system's activities is widely used in the day-to-day and yearly reporting data of schools (institutions etc).

The quality of economic analysis and synthesis depends on the accuracy of the sources. Therefore, all materials used in the analysis are thoroughly studied arithmetically, paying attention to their balance, and checking for errors in the plans and reports[10].

Indicators (figures) in the data prepared for the analysis should be simplified (rounded up), adjusted for comparison, and then organized and grouped for further analysis. It is expedient to use the various methods of such analysis through understanding of economic theory.

In particular, the system of organization of teaching in higher and secondary special education, the system of teaching content by the teaching staff, and the system of assessing students' knowledge is not in the high level yet;

the content of the educational programs and the pace of updating the organization of the educational process on the basis of modern technologies do not fully meet the evolving demands of the dynamically developing sectors of the economy and the labour market;

secondly, the inadequate knowledge, pedagogical skills and mastery skills of the teaching staff and the use of innovative educational technologies have led to the failure of graduates to meet the requirements of the employers in the labour market

the disproportion between the labor market and the educational services market has led to the lack of adequate planning mechanisms for admission of students to higher and secondary special educational institutions;

thirdly, the fact that higher education and secondary special educational institutions have not become centers for dialogue with innovative and technological ideas, and that the systematic study of existing problems and shortcomings in relevant areas has led to underdeveloped areas of science;

fourthly, the low social status and prestige of higher and secondary special education, the low level of incentives for employees, in many cases, lead to many problems in the industry;

decentralized appointments of heads of higher and secondary special educational institutions, approval of their organizational structures create certain challenges in the effective organization of management of educational institutions and the accelerated the process of their task completion;

fifth, the issues of up-to-date information and communication technologies and management in higher and secondary special educational institutions, the organization of

the educational process, the integration of software into the educational content are not in demand;

strengthening and upgrading the material and technical base of the system of higher and secondary special education by providing educational establishments with modern laboratories, information and communication technologies.

Conclusion. In order to organize high-quality training of specialists with higher and secondary special education in accordance with the priorities of social and economic development of the Republic of Uzbekistan it is necessary to radically improve the system of higher and secondary special education by establishing educational institutions with automatic management system meeting the international standards.

Regular data collection and comprehensive analysis are key to the success of educational institutions.

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**SOME LOCAL PROBLEMS FOR THE PARABOLIC-HYPERBOLIC TYPE
EQUATION INVOLVING A RIEMANN–LIOUVILLE FRACTIONAL
DIFFERENTIAL OPERATOR**

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Abstract. In this work, we study the boundary-value problems for a third-order mixed type loaded equation with fractional differential operator. Using method of integral equations, a unique solvability of the formulated problem has been proved.

Keywords. Equations of mixed type, boundary-value problems, integral equations, loaded equation.

Annotatsiya: Mazkur maqolada uchinchi tartibli kasr-differensial operatorli yuklangan aralash tipdagi tenglama uchun chegaraviy masalalarni o`rganamiz. Integral tenglamalar metodini qo`llagan tarzda chegaraviy masalalarning bir qiymatli yechilishlari isbotlanadi.

Kalit soʻzlar: Aralash tipdagi tenglama, chegaraviy masalalar, integral tenglama, yuklangan tenglama.

Аннотация: В данной работе мы изучаем краевые задачи для нагруженного уравнения смешанного типа третьего порядка с оператором дробного

дифференциала. Методом интегральных уравнений доказана однозначная разрешимость поставленной задачи.

Ключевые слова: Уравнения смешанного типа, краевые задачи, интегральные уравнения, нагруженное уравнение.

1 Introduction

Boundary-value problems for the mixed type equations involving the Caputo and the Riemann-Liouville fractional differential operators were investigated in works [1-7]. The theory of boundary value problems for loaded second-order equations with an integro-differential operator was studied in the studies of A.Kh. Attaeva and V.M. Kaziev for the loaded hyperbolic type equation, in the works of V.N. Borisova and A.M. Nakhushева, for equations of elliptic and elliptic-hyperbolic types, in the works of B. Islomov, D.M. Kuryazov, B.S. Kishin, O.Kh. Abdullaev for parabolic-hyperbolic and elliptic-hyperbolic equations. The construction of the theory of unique solvability in the study of the questions of the correctness of problem statements for loaded third-order differential equations of parabolic-hyperbolic operators with a real parameter and variable fractional order coefficients is required both for the internal completeness of the fractional integro-differentiation theory and for numerous applications. The main goal of the paper is to formulate and to investigate of the unique solvability of boundary-value problems for the linear loaded differential equation of the third order, with the Riemann-Liouville operators.

2. Formulating of the problem

Let Ω be a simple connected domain located in the plane of independent variables x and y , in the case $y > 0$, is bounded by the segments AB, BC , and $BC(A(0,0), D(1,0), B(0,1), C(1,1))$, of the straight lines $x = 0, x = 1$, and $y = 1$,

respectively, and in the case $y < 0$, with segments $AE: x + y = 0, BE: x - y = 1$ originating at the point $E\left(\frac{1}{2}, -\frac{1}{2}\right)$.

We use following designation:

$$I = \{(x, y): 0 < x < 1, y = 0\}, \Omega_1 = \Omega \cap \{y > 0\}, \Omega_2 = \Omega \cup \{y < 0\}.$$

We consider a linear loaded integro-differential equation [8]

$$\left(a \frac{\partial}{\partial x} + b\right) Lu = 0, \quad (1)$$

where

$$Lu \equiv \begin{cases} L_1 u \equiv u_{xx} + a_1(x, y)u_x + b_1(x, y)u_y + c_1(x, y)u - \sum_{i=1}^n d_i D_{0x}^{\alpha_i} u(x, 0), & y \geq 0, \\ L_2 u \equiv u_{xx} - u_{yy} + a_2(x, y)u_x + b_2(x, y)u_y + c_2(x, y)u - \sum_{i=1}^n e_i D_{0x}^{\beta_i} u(x, 0), & y < 0, \end{cases}$$

a, b are given real parameters, a_i, b_i, c_i, d_i, e_i are given functions on $\Omega_i (i=1, 2)$ and $b_1(x, y) < 0, c_1(x, y) \geq 0$ on $\bar{\Omega}_1$, moreover the functions $a_1, b_1, c_1, d_i, a_{1x}, a_{1y}, b_{1x}, b_{1y}, d_{ix}, d_{iy}$ on Ω_1 are satisfy Hölder condition, and $a_2, b_2 \in C^2(\bar{\Omega}_2), c_2 \in C^1(\bar{\Omega}_2), e_i \in C^1(\bar{\Omega}_2)$. $D_{0x}^{\alpha_i}$ is integro-differential operator (in the sense of Riemann-Liouville[7]), $\alpha_i, \beta_i < 1, i=1, \dots, n$.

For equation (1) we investigate the following problems ($a \neq 0$).

Problem 1 Find the function $u(x, y)$ possessing the following properties:

1. $u(x, y) \in C(\bar{\Omega}) \cap C^1(\Omega)$;

2. $u_x(u_y)$ is continuous up to $AB \cup AE$ (AE);
3. $u(x, y)$ is a regular solution of equation (1) in the domains Ω_1 and Ω_2 ;
4. $u(x, y)$ satisfies the boundary value conditions

$$\begin{aligned} u(x, y)|_{AB} &= \varphi_1(y), \quad 0, y, 1, \\ [u_x(x, y) + cu(x, y)]|_{BC} &= \varphi_2(y), \quad 0, y, 1, \\ [u_x(x, y) + cu(x, y)]|_{AB} &= \varphi_3(y), \quad 0, y, 1, \end{aligned} \quad (2)$$

$$u(x, y)|_{AE} = \psi_1(x), \quad 0, x, \frac{1}{2}, \quad (3)$$

$$\frac{\partial u(x, y)}{\partial n}|_{AE} = \psi_2(x), \quad 0, x, \frac{1}{2}, \quad (4)$$

where c is given real parameter, $\varphi_1(y), \varphi_2(y), \varphi_3(y), \psi_1(x)$ and $\psi_2(x)$ are given real-valued functions, moreover $\varphi_1(0) = \psi_1(0), \psi_1'(0) = \sqrt{2}\psi_2(0) - 2\varphi_1'(0)$.

Problem 2 Find a function $u(x, y)$, satisfying the condition:

1. $u(x, y) \in C(\bar{\Omega}) \cap C^1(\Omega)$;
2. $u_x(u_y)$ is continuous up to $AB \cup DE$ (DE);
3. $u(x, y)$ is a regular solution of equation (1) in the domains Ω_1 and Ω_2 ;
4. $u(x, y)$ satisfies the boundary value conditions (2) and

$$u(x, y)|_{DE} = \psi_3(x), \quad \frac{1}{2}, x, 1, \quad (5)$$

$$\left. \frac{\partial u(x, y)}{\partial n} \right|_{DE} = \psi_4(x), \quad \frac{1}{2}, x, 1, \quad (6)$$

where n is an inner normal, $\varphi_1(y), \varphi_2(y), \varphi_3(y), \psi_3(x)$ and $\psi_4(x)$ are given real-valued functions, moreover $\varphi_2(0) = \psi_3(0)$.

3. The main results

From condition 1) problems 1, 2 it follows that [9]

$$u(x, +0) = u(x, -0) = \tau(x), \quad (7)$$

$$u_y(x, +0) = u_y(x, -0) = \nu(x), \quad (8)$$

$$u_x(x, +0) = u_x(x, -0) = \tau'(x), \quad (9)$$

where $\tau(x)$ and $\nu(x)$ are still unknown functions.

Assume

$$u(x, y) = \begin{cases} u_1(x, y), & (x, y) \in \bar{\Omega}_1, \\ u_2(x, y), & (x, y) \in \bar{\Omega}_2, \end{cases}$$

the equation (1) can be represented in the form of two systems[10]:

$$\left. \begin{aligned} L_1 u_1 + \sum_{i=1}^n d_i D_{0x}^{\alpha_i} u_1(x, 0) &= v_1(x, y), \\ a v_{1x} + c v_1 &= 0, \end{aligned} \right\} (x, y) \in \bar{\Omega}_1, \quad (10)$$

$$\left. \begin{aligned} L_2 u_2 + \sum_{i=1}^n e_i D_{0x}^{\beta_i} u_2(x, 0) &= v_2(x, y), \\ a v_{2x} + c v_2 &= 0, \end{aligned} \right\} (x, y) \in \bar{\Omega}_2, \quad (11)$$

where $\nu_1(x, y), \nu_2(x, y)$ are derivative continuous functions.

Theorem 1. If $b_1(x, y) < 0$, $c_1(x, y) \leq 0$ and $a_i(x, y) \geq 0, \forall (x, y) \in \Omega_i$,

$$\varphi_i(y) \in C^1[0, 1], (i = 1, 2), \quad \varphi_3(y) \in C[0, 1] \cap C^1(0, 1), \quad (12)$$

$$\psi_1(x) \in C^1\left[0, \frac{1}{2}\right] \cap C^3\left(0, \frac{1}{2}\right), \quad \psi_2(x) \in C\left[0, \frac{1}{2}\right] \cap C^2\left(0, \frac{1}{2}\right), \quad (13)$$

then there exists a unique solution to the problem 1 in the domain Ω .

Theorem 2. If $b_1(x, y) < 0$, $c_1(x, y) \leq 0$ and $a_i(x, y) \geq 0, \forall (x, y) \in \Omega_i$, condition (12) is satisfied and

$$\psi_3(x) \in C^1\left[\frac{1}{2}, 1\right] \cap C^3\left(\frac{1}{2}, 1\right), \quad \psi_4(x) \in C\left[\frac{1}{2}, 1\right] \cap C^2\left(\frac{1}{2}, 1\right), \quad (14)$$

then there exists a unique solution to the problem 2 in the domain Ω .

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