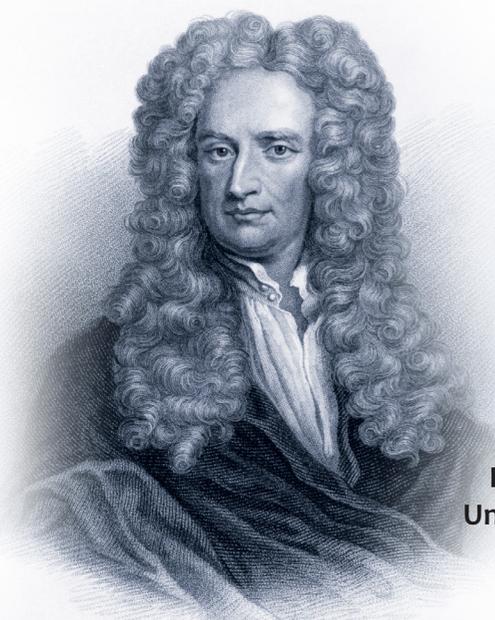




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SCIENTIFIC
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FORMALIZATION OF THE PHENOMENON OF FINANCIAL STABILITY OF THE BANK

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Abstract. In the work, the author makes an attempt to correctly formalize the phenomenon of financial stability of a commercial bank, highlighting the “expanded” interpretation of the stability of the bank and the “narrow” understanding of the stability of the most important area of its activity - credit and investment.

Keywords: commercial bank, financial stability, assessment of financial stability, bank portfolio, credit and investment activities, mathematical modeling.

It can be argued that a financially stable bank, possessing the necessary liquidity and sufficiency of equity capital, is capable of both providing the basic parameters of credit and investment activity (planned profit and return on capital) and fulfilling the “traditional” functions of a “banking firm” related to the accumulation of cash funds of clients and fulfillment of obligations on settlements with them.

With this in mind, in the appendix to the commercial bank, we will focus on an expanded interpretation of financial stability, reflecting the author’s position recorded in [1]: “Financial stability is a characteristic of the financial and economic state of the bank in terms of liquidity and equity reserves, which provide the ability to preserve and growth of the main parameters of lending and investment activity (including break-even, minimum profitability, volume of the loan portfolio) and the achieved proportions of customer funds accumulated in loans and other active assets in the changing macroeconomic environment and capital markets (including supply volumes and capital rates).”

Along with the “expanded” currents of the phenomenon of financial stability of a commercial bank, it is proposed to consider the stability of certain areas of its activity in capital markets. In [1], the author, from the standpoint of the traditionally used in the procedures of analysis of economic

and mathematical models tools for assessing the stability of optimal solutions, proposed a numerical method for quantifying the interval stability of a banking portfolio under the conditions of variable endogenous parameters of credit and investment activity. In assessing financial stability, Russian commercial banks use both the Central Bank methodology No. 1379-U "On assessing the bank's financial stability in order to recognize it as sufficient to participate in the deposit insurance system" and the Central Bank instruction No. 139-I "On mandatory bank ratios" [2], and techniques developed by rating agencies (for example, "Expert RA" [3]), or by the banks themselves based on Basel III standards [4].

Table 1 presents a comparative description of the above methods for assessing the financial stability of commercial banks.

Table 1
Comparative characteristics of methods for assessing the financial stability of credit organizations of the Russian Federation

Indicator	Bank of Russia methodology [2]	"Expert RA" Agency methodology [3]	V.S. Kromonov methodology [5]
Bank capital	Capital adequacy ratio.	Capital adequacy. Financial leverage ratio, capital quality ratio	General reliability facto (K_1), capital protection ratio (K_5)
Bank assets	Autonomy ratio	Arrears. The amount of collateral accepted. Volume of reserves, etc.	Instant liquidity ratio (K_2), cross-coefficient (K_3)
Bank liquidity	Maneuverability ratio	Liquidity ratios, the bank's dependence on the interbank loan market.	General liquidity ratio (K_4)
Profitability and rentability of credit investment and operational activities of the bank	Ratios of rentability of assets and equity-ROA, ROE, structure of income and expenses, net interest margin	ROA, ROE, net interest margin	Stock capitalization ratio (K_6)

We provide the necessary comments on the indicators listed in Table 1:

- capital adequacy ratio - a characteristic of the level of protection of investments in risky assets by the bank's own capital (recommended value - 10%) [5];
- the autonomy coefficient characterizes the risk of the bank's capital structure;

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- maneuverability coefficient - a characteristic of the mobility of a bank's equity;
- the coefficient of accumulation of equity characterizes the share of profits allocated to the development of core activities;
- asset rentability coefficient - a characteristic of the financial return of bank assets (the ratio of profit before tax to the average value of the bank's assets for the corresponding period);
- rentability coefficient of equity - a characteristic of the financial return on equity (the ratio of profit before tax to the average value of the bank's equity for the corresponding period);
- capital quality ratio - the ratio of the bank's fixed capital to the amount of its own funds (the share of first-level capital in the amount of the bank's own funds calculated in accordance with regulation №215-P "On the methodology for determining the own funds (capital) of credit organizations");
- financial leverage ratio - the ratio of bank liabilities to total assets (share of the bank's borrowed funds in the total amount of borrowed resources (borrowed and own));
- asset quality factor - the ratio of risk-weighted assets to the total value of the bank's assets (risk characterization of operations conducted by the bank);
- coefficient of arrears - the share of overdue loans in the total amount of loan debt;
- provisioning ratio for loans - the ratio of reserves for possible losses on loans formed in accordance with Regulation №254-P ("On the procedure for the formation by credit organizations of reserves for possible losses on loans, lending and equivalent debts"), to the total amount of loans debt (average rate of deduction to reserves);
- profit quality ratio - the ratio of net income from one-time operations to net profit of the bank (a characteristic of the stability of the structure of net profit);
- growth quality factor - the ratio of the difference between rentability of assets for the current reporting period and rentability of assets for the corresponding reporting period of last year to the percentage increase in assets;
- coefficient of the ratio of expenses and income - the ratio of the amount of expenses to the amount of bank income (calculated in accordance with form 102) (characteristic of the general level of bank costs);
- net interest margin ratio - the ratio of net interest and similar income to the average value of the bank's assets for the corresponding period (percentage of net interest income on rubles of the bank's assets);

- instant liquidity ratio - the ratio of highly liquid assets of the bank to liabilities on demand. It is determined in accordance with the procedure established for calculating the mandatory norm H2 ("Instant liquidity ratio"), the minimum value of the coefficient in accordance with the current version of Instruction 110-I ("On Mandatory Bank Ratios") is 15%;

- current liquidity ratio - the ratio of the bank's liquid assets to demand liabilities. It is determined in accordance with the procedure established for calculating the obligatory standard N3 ("Current liquidity standard of the bank"). The minimum value of the coefficient, according to the current version of Instruction 110-I ("On Mandatory Banking Ratios" - 50%);

- coefficient of dependence on the interbank loan market - the ratio of the difference between the borrowed and placed interbank loans (deposits) to the total amount of borrowed funds of the bank.

The Bank of Russia methodology is fundamental both for assessing the financial stability of individual banks and the entire banking system. Currently, the Bank of Russia methodology as of 11.06.2014 N 3277-U "On methods for assessing the financial stability of a bank in order to recognize it as sufficient to participate in the deposit insurance system" (as amended and supplemented) is used [6].

Using the methodology of the Bank of Russia, we will analyze the financial stability of "Transcapital Bank" PJSC (TCB) [7] for a number of consecutive periods (Table 2).

Table 2

Dynamics of stability factors of the TCB "Transcapital Bank"

Coefficient	2016	2017	2018
Capital adequacy	8,271	11,903	8,420
Autonomy	0,065	0,100	0,092
Maneuverability	0,941	0,350	0,234
Equity growth rate	0,005	0,004	0,040
Rentability of assets	0,02	-0,62	-0,41
Rentability of equity	0,35	-6,20	-4,82

From the data given in table 2, we can conclude that CB "Transcapital Bank" is in an unstable financial condition: risky assets are not adequately protected by their own capital, low autonomy ratio (a significant amount of

external loans), low maneuverability ratio (a significant part of the bank's funds is not available for investment in assets), rentability of assets and equity over the past years - negative (the bank suffers losses).

However, this conclusion is confirmed only by the dynamics of some indicators that have an equity structure and for this reason characterize the level of financial stability of the bank under study in comparison with those similar in portfolio structure and asset risk. However, if we take into account absolute indicators and, first of all, equity, then we can say that in the considered time interval, it showed a growth trend, providing the growth potential of the profitability of credit and investment activities in a favorable macroeconomic situation.

The aforementioned emphasizes the need to clarify methods for assessing the financial stability of credit organizations (including those having official status) in the direction of accounting not only for equity, but also for absolute indicators of credit and investment activity.

Let us analyze the financial stability of CB of 3rd tier "Agropromcredit" (Table 3). [8]

Table 3

Dynamics of financial stability ratios of CB "Agropromcredit"

Coefficient	2016	2017	2018
Capital adequacy	12,737	14,064	13,657
Autonomy	0,121	0,138	0,134
Maneuverability	0,911	0,681	0,675
Equity accumulation	0,050	0,044	0,052
Rentability of assets	0,03	0,02	0,01
Rentability of equity	0,04	0,05	0,00

It can be concluded that in accordance with the methodology of the Bank of Russia CB "Agropromcredit" maintains satisfactory financial stability during the period under review: risky assets are protected by equity, which reduces the risks of depositors and the bank; a high level of capital maneuverability with a low autonomy ratio is evidence of the effectiveness of the external borrowing policy.

An example of calculating the stability indicators for this commercial bank clearly demonstrates another negative feature of the official methodology: satisfactory financial stability of the bank with almost zero return on working assets and equity.

The author also conducted an analysis of the financial stability of CB 1st tier CB "Otkritie FC" (Table 4). [9]

Table 4
Dynamics of financial stability ratios of CB "Otkritie FC"

Coefficient	2016	2017	2018
Capital adequacy	5,791	12,077	16,406
Autonomy	0,050	0,101	0,174
Maneuverability	0,810	0,859	0,710
Equity accumulation	0,086	0,036	0,013
Rentability of assets	0,12	0,35	0,75
Rentability of equity	2,43	3,41	4,68

According to the data in table 4, we can conclude that CB "Otkritie FC" has a high (in comparison with the banks considered above) financial stability. Over the past two years, the capital adequacy ratio has increased (risky assets are protected by equity, which ensured the stability of lending and investment activities during the period under review). The autonomy coefficient is high enough for a bank of this scale. The maneuverability coefficient is more than 0.7, which indicates a sufficient amount of equity in the mobile handicap. Rentability on assets and equity is positive - evidence of the bank's sustainable profitability.

However, in accordance with the concept of "extended sustainability" noted above, the above analysis of the dynamics of the financial stability ratios CB "Otkritie FC" characterizes the sustainability not of the bank itself as a commercial enterprise, but of its lending and investment activities related to the management of the bank deposit-loan portfolio.

In our opinion, the "standardized" methods, including the Central Bank's methodology, are to a greater extent only a supplement to the reference and regulatory tools for regulating banking activities under the conditions of the Bank of Russia transformation of the banking segment and the consolidation of bank capital [10].

The methods of rating agencies, as follows from Table 2, are based on an expanded set of sustainability indicators, which, it would seem, should increase the accuracy of estimates of the stability of a commercial bank. However, they are not without drawbacks: ratings of national rating agencies are usually 2-3 steps higher than international ones. Moreover, the bank may refuse public rating.

A certain alternative to the "expanded" interpretation of the financial stability of a commercial bank is the stability of a specific area of its activity in the financial market. Of interest is the scope of its lending and investment activities, in the models of which, as will be shown below, it is quite convincing in assessing the stability of the optimal portfolio of the bank that the tools of the corresponding economic and mathematical methods can be used.

The parametric model of the bank's loan and investment portfolio, proposed by the authors in [1], allows you to look at the phenomenon of financial (more precisely, dynamic) stability of a commercial bank from the perspective of the tools used to analyze the stability of optimal solutions in economic and mathematical modeling.

Managed by parameters of the optimal portfolio model are indicators in a formalized form that reflect the restrictions on credit and investment activities of the bank, corresponding to its limit policy. Varying their values, the bank can manage the structure of the loan portfolio, increasing (decreasing) the stability of credit and investment activity in the context of adaptation to changes in unregulated parameters of the external environment in relation to the bank.

Here is a description of the parametric model of the optimal loan and investment portfolio of a bank, in which we will use the following variables:

T – time horizon for planning credit and investment activities of the bank, t - planning period ($t=1, \dots, T$); $I^{(t)}$ - the number of deposits opened with the bank at the beginning of the period t ; $J^{(t)}$ - the number of loans and other investments included or considered from the perspective of possible inclusion in the bank portfolio by the beginning of the time interval t ; $D_i^{(t)}$ - i -th deposit in the time period t , the value of which is a non-linear function of the interest rate determined by the bank:

$$D_i^{(t)} = D_i^{(t)}(\rho_i^{(t)}); \tag{1}$$

$K_j^{(t)}$ - loans and other investments of the bank in the period of time t ;

$$K_j^{(t)} = K_j^{(t)}(Y_j^{(t)}), \tag{2}$$

where: $Y_j^{(t)}$ - loan rate for the period t , K_j - non-linear function of the dependence of the amount of credit on the rate, sensitive to its change.

Consider the limitations of the model:

$$\sum_{i=1}^{I^{(t)}} D_i^{(t)} \leq DP^{(t)}, \tag{3}$$

where $DP^{(t)}$ - marginal savings for period t , which can be placed in deposits;

$$\sum_{j=1}^{J^{(t)}} K_j^{(t)} + CK^{(t)} \leq DI^{(t)}, \tag{4}$$

where: $CK^{(t)}$ – bank equity in liquid form (for the period t), $DI^{(t)}$ - potential investment market capacity for the period t .

Inequality setting bank balance for a period t:

$$\sum_{i=1}^{I^{(t)}} (1 - r_{1i}^{(t)}) \cdot D_i^{(t)} + CK^{(t)} \geq \sum_{j=1}^{J^{(t)}} (1 - r_{2j}^{(t)}) \cdot K_j^{(t)}, \quad (5)$$

where $r_1^{(t)}$ and $r_2^{(t)}$ – mandatory reservation rates, respectively: $r_{1i}^{(t)}$ – deposit reserve ratio in the Central Bank, depending on the type of deposit; $r_{2j}^{(t)}$ – deduction rate for the j-th loan (investment) in the bank's reserves, depending on the risk of default (loan portfolio model parameters established by the regulator).

The following restrictions - are on the limit values of the general coefficient of bank reliability and the coefficient of capital protection (model parameters established by the bank's internal standards):

$$K_K = \frac{OC}{OA} \geq P_1, \quad (6)$$

where P_1 – limiting value of security of risky investments in operating assets (OA) with own capital (OC);

$$K_{LV} = \frac{LV}{K} \geq P_2, \quad (7)$$

where P_2 – the limit value of the share of the bank's funds (LV) placed in liquid assets (equipment, real estate, jewelry) in order to protect against inflation.

As a criterion for the parametric model, based on the content of the phenomenon “financial stability of credit and investment activities of the bank”, we should take a function that sets the result of this activity - the maximum interest margin (excluding the risk of loan default):

$$F_1 = \max \left\{ \sum_{j=1}^{J^{(t)}} Y_j^{(t)} \cdot K_j^{(t)} - \sum_{i=1}^{I^{(t)}} \rho_i^{(t)} \cdot D_i^{(t)} \right\}; \quad (8)$$

(or including):

$$F_2 = \max \left\{ \sum_{j=1}^{J^{(t)}} \delta_j^{(t)} \cdot Y_j^{(t)} \cdot K_j^{(t)} - \sum_{i=1}^{I^{(t)}} \rho_i^{(t)} \cdot D_i^{(t)} \right\}, \quad (9)$$

where $\delta_j^{(t)}$ - non-repayable loans (depending on interest rate $Y_j^{(t)}$).

Expressions (1) - (8) describe a parametric model of the optimal option for a bank's lending and investment activity in the conditions of a free choice of internal standards that directly affect the structure and composition of the bank portfolio and indirectly - the financial stability of the bank in the field of lending to medium and large borrowers.

For the model under consideration, the stability of the (interval) structure of the optimal banking portfolio obtained as a result of solving the optimization problem (1) - (8) should be understood as the intervals of changes in exogenous (uncontrolled) parameters, within which the choice of endogenous (controlled) parameters of credit and investment activity of the bank is possible, ensuring the preservation of the structure of the optimal portfolio and the predicted change in indicators of its profitability and risk.

The author's calculations of the optimal portfolio for the selected bank (the average largest regional universal commercial bank) showed a significant dependence of its structure on exogenous parameters: required reserve ratio, financial market capacity and refinancing rate.

To increase the importance of endogenous parameters when choosing the optimal banking portfolio, M. Gorsky [11] in his work proposed an integrated measure of the stability of credit and investment activities of a commercial bank on the time horizon $t \in [1; T]$, which is a linear reconciliation of Rentability indicators of equity and accumulated liquidity:

$$FU = \beta_1 \cdot \frac{T}{\sum_{t=1}^T OC^{(t)}} \cdot \frac{\sum_{t=1}^T \lambda_0^{(t)}}{(1+e)^t} + \beta_2 \cdot \frac{\sum_{t=1}^T \lambda_0^{(t)}}{T \cdot \max_{T=1;T} \{DS^{(t)} + DV^{(t)} + DP^{(t)}\}}, \quad (9)$$

where: β_1 and β_2 – CB rentability and liquidity ratios ($\beta_1, \beta_2 \geq 0$, $\beta_1 + \beta_2 = 1$).

The first term - is the discounted rate at the rate e (weighted average cost of the bank's investment capital) of the accumulated interest margin per unit. the average (over the time horizon) value of the Bank's own capital $OC^{(t)}$ (indicator of rentability of the bank's equity);

The second term - is the ratio of accumulated liquidity to the amount of capital attracted over the time horizon to liabilities (an indicator of the liquidity risk of the bank's balance sheet):

$\lambda_0^{(t)} = \sum_{j=1}^{j^{(t)}} \delta_j^{(t)} \cdot \gamma_j^{(t)} \cdot K_j^{(t)} - \sum_{i=1}^{i^{(t)}} \rho_i^{(t)} \cdot D_i^{(t)}$ (liquidity gaps) - the difference in the current value of working assets and liabilities covering them.

The monotonous nature of the indicator for each term allows us to confirm its adequacy in real banking practice, which, however, does not solve the problem of verifying the proposed integral indicator of financial stability

when choosing the best option for credit and investment activities of commercial banks, which differ in the amount of capital, its application, and attitude to risk and other features.

Conclusion

The following important results for banking theory and practice are obtained in this publication:

- the content of the concept of “financial stability” of a credit institution is clarified;
- a comparative analysis conducted of indicators and methods for assessing the financial stability of commercial banks developed by the Bank of Russia and rating agencies, their advantages and disadvantages;
- the concept of “interval stability of the optimal portfolio of the bank” introduced according to the selected or group of exogenous parameters of the macroeconomic environment;
- an integral indicator of the stability of credit and investment activities of a commercial bank at a given time horizon is proposed.

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ANALYSIS OF THE PUBLIC DEBT OF THE RUSSIAN FEDERATION

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Abstract. The research topic is relevant in that today, in conditions of economic instability, the question of the effective management of public debt of the constituent entities of the Russian Federation raises. This need can be attributed to the fact that the costs that are necessary to carry out government tasks in most entities are higher than income. As a rule, this leads to a budget deficit, as a result of which there is an increase in public debt, which is a source of financing for this deficit.

Keywords: public debt, public debt of constituent entities of the Russian Federation, debt obligations.

In accordance with the Budget Code of the Russian Federation, public debt includes debt obligations of the Russian Federation to individuals and legal entities of the Russian Federation, subjects of the Russian Federation, municipalities, foreign states, international financial organizations, other subjects of international law, foreign individuals and legal entities arising in the result of government borrowing of the Russian Federation, as well as debt obligations under state guarantees provided by the Russian Federation.

The public debt of the constituent entities of the Russian Federation is fully and unconditionally secured by all property owned by the constituent entities of the Russian Federation and constituting the capital of the constituent entity of the Russian Federation.

Debt obligations of a subject of the Russian Federation may exist in the form of:

1. loan agreements and contracts;
2. government loans of a subject of the Russian Federation, carried out by issuing securities of a subject of the Russian Federation;
3. contracts and agreements on the receipt by the subject of the Russian Federation of budget loans from budgets of other levels of the budget system of the Russian Federation;
4. agreements on the provision of state guarantees of the subject of the Russian Federation;
5. agreements and contracts, including international, concluded on behalf of the subject of the Russian Federation, on the extension and restructuring of debt obligations of the constituent entities of the Russian Federation of previous years.

The public debt of the constituent entities of the Russian Federation must be repaid within the time period determined by the terms of borrowing and should not exceed 30 years.

The structure of public debt of the constituent entities of the Russian Federation is a grouping of external and internal debt obligations. By types of debt, the internal public debt of the constituent entities of the Russian Federation includes:

- loans from credit organizations and international financial organizations;
- government securities;
- budget loans from other budgets of the budget system of the Russian Federation
- state guarantees;
- other debt obligations.

External public debt of the constituent entities of the Russian Federation by types of debt obligations includes:

- loans from foreign banks;
- government securities;
- state guarantees;
- other debt obligations.

Next, we consider the dynamics of the state debt of the constituent entities of the Russian Federation over the past five years (Figure 1).

According to the data presented in Figure 1, we can conclude that the dynamics of the state debt of Russian regions has a floating trend. From 2015 to 2016 there is an increase in actual terms by 34.6 billion rubles. From 2016 to 2017, the volume of the analyzed indicator is reduced by

37.79 billion rubles. In 2018, this trend continued, but the rate of decrease in debt was more significant than in the previous period by 109.09 billion rubles. In 2019, there is already a slight increase in the indicator under study - by 6.67 billion rubles.

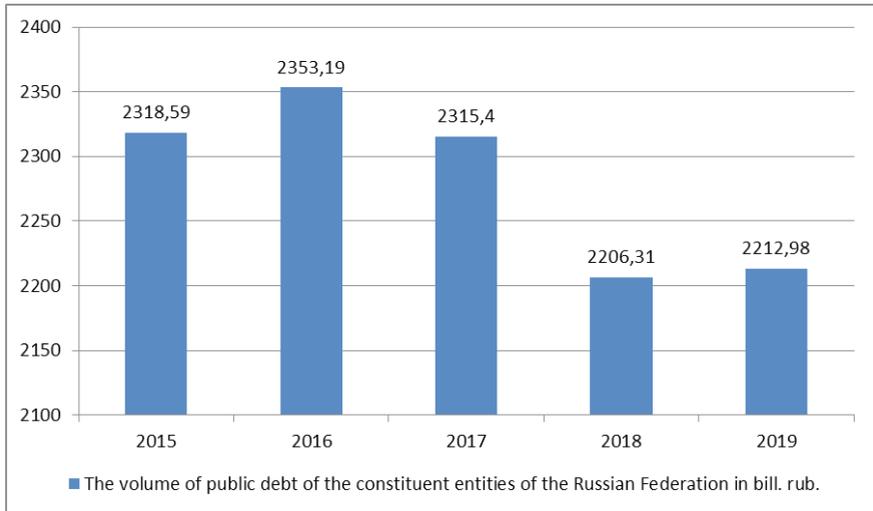


Figure 1. Dynamics of public debt of the constituent entities of the Russian Federation for 2015-2019

To understand the reason for this trend in the dynamics of the public debt of the constituent entities of the Russian Federation, we will analyze in detail the structure of the public debt of the constituent entities of the Russian Federation over the past three years (table 1).

Table 1. The volume and structure of the public debt of the constituent entities of the Russian Federation for 2017-2019.

Indicator	Year			Absolute (+/-) and relative (%) deviation			
	2017	2018	2019	2018/2017		2018/2019	
				+/-	%	+/-	%
The volume of public debt of the constituent entities of the Russian Federation in bill.rub.	2 315,40	2 206,31	2 212,97	-109,09	95,29	6,66	100,29
Including:							

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1) domestic debt of constituent entities of the Russian Federation in bill.rub.	2 315,13	2 206,31	2 086,86	-108,82	95,30	-119,45	94,59
Including by types of debt obligations (in bill.rub.)							
- government securities	548,52	551,36	558,53	2,84	100,52	7,17	101,37
- loans from credit organizations, foreign banks and MFIs	666,96	636,02	575,77	-30,94	95,36	-60,25	90,53
- budget loans from other budgets of the budget system of the Russian Federation	1 010,34	939,98	876,83	-70,36	93,04	-63,15	93,28
- state guarantees	81,54	71,50	45,65	-10,04	87,69	-25,85	63,85
- other debt obligations	7,78	7,45	0,08	-0,33	95,76	-7,37	1,07
2) external public debt of constituent entities of the Russian Federation (in thous. US dollars)	4 732,45	0,00	421 857,03	-4 732,45	0,00	421 857,03	0,00
Including by types of debt obligations (in thous. US dollars)							
- budget loans from the Russian Federation in the framework of the use of targeted foreign loans	0,00	0,00	151 201,56	0,00	0,00	151 201,5	0,00
- state guarantees provided by the Russian Federation as part of the use of targeted foreign loans	0,00	0,00	156 808,15	0,00	0,00	156 808,1	0,00
- other debt obligations	4 732,45	0,00	113 847,32	-4 732,45	0,00	113 847,3	0,00

Compiled by the author according to the official website of the Ministry of Finance of the Russian Federation. URL: <https://www.minfin.ru/ru/> (appeal date 12.02.2020)

According to table 1, we can draw the following conclusions:

1. The internal public debt of the constituent entities of the Russian Federation for the analyzed period has a negative tendency. From 2017 to 2018, the indicator decreased by 108.82 billion rubles (or 4.70 percentage points). From 2018 to 2019, the domestic public debt decreased by 119.45 billion rubles (or 5.41 percentage points).

The composition of internal debt includes such debt obligations as:

- government securities. This indicator for the entire analyzed period showed a positive trend: from 2017 to 2018, it grew in absolute terms by 2.84 billion rubles (or 0.52 percentage points), and in the period from 2018 to 2019 increased by 7.17 billion rubles (or 1.37 percentage points);

- loans from credit organizations, foreign banks and MFIs. The studied indicator for the entire analyzed period shows a negative trend: from 2017 to 2018, the reduction amounted to 30.94 billion rubles, and from 2018 to 2019 - 60.25 billion rubles (4.64 and 9.47 percentage points, respectively);

- budget loans from other budgets of the budget system of the Russian Federation. This indicator for the entire analyzed period shows a negative trend. From 2017 to 2018, budget loans from other budgets decreased in actual terms by 70.36 billion rubles (or 6.96 percentage points), from 2018 to 2019 - by 63.15 billion rubles (6.72 percentage points);

- state guarantees for the entire analyzed period also had a negative trend. From 2017 to 2018, the indicator decreased by 10.04 billion rubles (by 12.31 percentage points), from 2018 to 2019 - by 25.85 billion rubles (by 36.15 percentage points);

- other debt liabilities for the analyzed period showed a negative trend. For 2017-2018, the studied indicator decreased in absolute terms by 0.33 billion rubles (by 4.24 percentage points), for 2018-2019 - by 7.37 billion rubles (or 98.93 percentage points).

Next, we consider the proportion of debt in the total domestic public debt of the constituent entities of the Russian Federation (Figure 2).

According to the data presented in Figure 2, it can be concluded that for the entire analyzed period, the largest share in the structure of the domestic public debt of the constituent entities of the Russian Federation is occupied by budget loans from other budgets of the budget system of Russia - 43.64% in 2017, 42.60% in 2018 and 42.02% in 2019. At the same time, their share over the entire period decreased - from 2017 to 2019 by 1.62 percentage points.

The second most important indicator is loans from credit institutions, foreign banks and international financial organizations, which amounted to 28.81%, 28.83% and 27.59% from 2017 to 2019, respectively. Their share has also decreased since 2017 by 1.22 percentage points.

The third most important indicator in the total volume of state internal debt of the constituent entities of the Russian Federation - government securities - occupied 23.69%, 24.99% and 26.77%, respectively, for the analyzed period. From 2017 to 2019, their share increased by 3.07 percentage points.

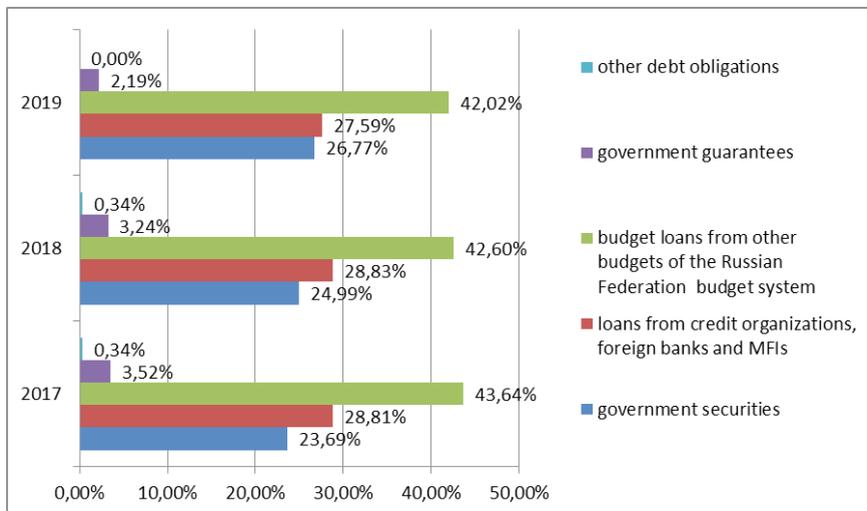


Figure 2. The structure of the internal public debt of the constituent entities of the Russian Federation (in%)

The remaining two indicators (state guarantees and other debt obligations) in 2017 and 2018 are less than 4%, and in 2019 - less than 3%.

Thus, according to the analysis, we can conclude that the negative dynamics of the domestic public debt of the constituent entities of the Russian Federation was affected by such debt obligations as budget loans from other budgets of the budget system of the Russian Federation and loans from credit organizations, foreign banks and international financial organizations, which the entire analyzed period had a negative trend.

2. The external public debt of the constituent entities of the Russian Federation for the analyzed period had a specific tendency. In 2018, the indicator was at zero. This means that the debt was fully repaid at the beginning of 2018. In 2017, the analyzed indicator was at a minimum - 4 732.45 thousand US dollars. From the point of view of the structure, the indicator included only one obligation - other debt obligations. However, at the end of 2019, the external public debt of the constituent entities of

the Russian Federation amounted to 421,857.03 thousand US dollars. In 2019, compared with 2017, the indicator increased by 417 124.58 thousand US dollars (or by 8 814.14 percentage points).

At the end of 2019, there were such debt obligations in the structure of the state external debt of the constituent entities of the Russian Federation, as:

- budget loans from the Russian Federation in the framework of the use of targeted foreign loans, which amounted to 151 201.56 thousand US dollars;
- state guarantees provided by the Russian Federation in the framework of the use of targeted foreign loans, which amounted to 156 808.15 thousand US dollars;
- other debt instruments, which amounted to 113,847.32 thousand US dollars.

Next, we consider the structure of the external public debt of the constituent entities of the Russian Federation at the end of 2019 (Figure 3).

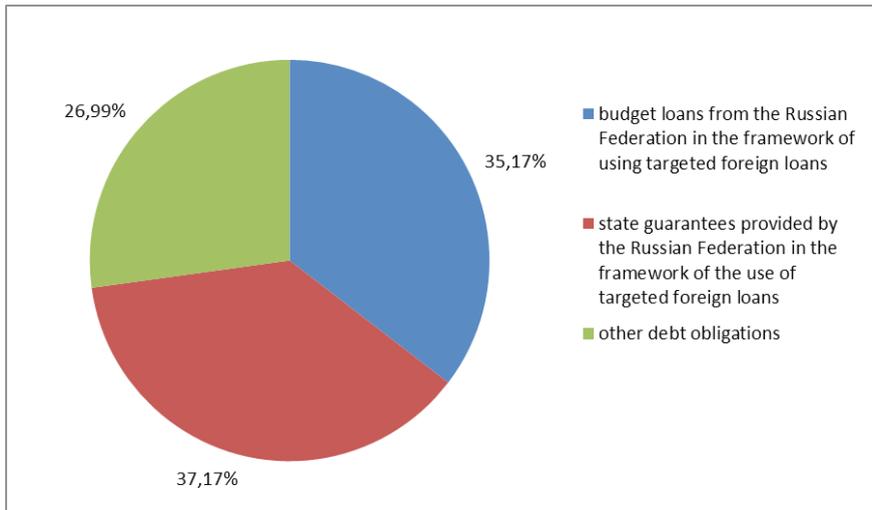


Figure 3. The structure of the external public debt of the constituent entities of the Russian Federation on 01.01.2020 (in%)

According to the data presented in Figure 8, it can be concluded that the largest share in the structure of the external public debt of the constituent entities of the Russian Federation is occupied by the state guarantees provided by the Russian Federation in the framework of the use of targeted

foreign loans - 37.17%. The indicator budget loans from the Russian Federation in the framework of the use of targeted foreign loans ranks second in the total volume - 35.17%. And the indicator of other debt obligations occupy 26.99%. Thus, indicators of the structure of the external public debt of the constituent entities of the Russian Federation occupy almost equal shares in the total volume.

Summing up on this issue, it should be noted that this trend should be expected since, despite the fact that the state debt of the entities and the debt burden fell to zero in 2018-2019, however, by the end of 2019 and the beginning of 2020, the subjects of the Russian Federation could not cope independently with the costs of social obligations, it has become more. The need to comply with the May decrees, as well as implement national projects and initiatives voiced in the Address of the President of the Russian Federation to the Federal Assembly, at some point forced the regional authorities to resume borrowing. And taking into account the reduced opportunities in attracting loans from the federal budget, the shares of debt securities and commercial loans in the structure of regional public debt have increased.

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IMPACT OF POPULATION SAVINGS ON THE COUNTRY'S ECONOMIC GROWTH

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Abstract. The paper considers the concept of economic growth, its measurement and manifestation methods, one of which is the savings of the population. There is a correlation between the share of people's savings in the structure of their spending and GDP. Ways of increasing the savings of the population to ensure the economic growth of the country are proposed.

Keywords: economic growth, savings of the population, correlation

Introduction

The most important criterion of social and economic development, applied in the evaluation of the functioning efficiency and management practices of the national economy and the region and reflecting the economic growth of the country, is the growth of gross domestic product (GDP) and gross regional product (GRP). The problem of searching for factors contributing to the economic growth was actualized when V.V. Putin, in his message to the Federal Assembly in 2003, set the task of doubling GDP over ten years. Factors of economic growth were considered in the works of F. Ramsay and I. Fischer, R. Harrod and E. Gross Domestic Product. Domara, R. Solow and T. Swan, P. Romer and R. Lucas, P. Aggion, A. Hawitt and other scientists [1, p.27,28]. In general, these include the ratio of consumption to capital stock, technological progress, investment, labour force availability, targeted research activities, and population growth rates. In economic theory, investment always corresponds to savings. However, in practice they do not coincide as they are made by different economic entities and are influenced by different factors. In this connection, the au-

thor has set a task to research the impact of population's savings on the economic growth of a country by testing hypotheses about the existence of such a relationship. The basic method of analysis is correlation analysis.

1. The experimental part

Economic growth is a separate topic of scientific research. Russian and foreign economists: V.V.Leontiev, P.Douglas, S.Kuznets, R.Solou, R.K.Harrod, D.Van, J.Stiglitz, D.Romer, T.Malthus, etc. made a great contribution to development of theoretical and methodological problems of economic growth factor analysis. In studying the works of these authors, as well as educational literature, the conclusion was made that there are two approaches to the study of economic growth: reproductive and functional-macroeconomic. Reproduction approach is considered in the works of political economy classics, Marxist political economy, in the works of domestic economists of the 19-20 centuries. The second approach is presented in the works of J.M. Keynes and his followers and further developed within the framework of the "mainstream" of economic thought. Criticism of the Keynesian doctrine, but those who considered it to be a neo-Caine-sian, represented by R. Solow, who is considered the founder of modern theory of economic growth. He formulated the so-called "golden rule", the essence of which is that production grows by increasing investment in fixed capital and the corresponding growth in the capital structure of labor until a balanced state, after which its further pace depends only on population growth and technological progress. The use of Solou model allows choosing the most effective structure of capital investments and determining the optimal direction of economic growth [2, p. 456]. Regardless of the approach, economic growth is usually understood as a quantitative and qualitative improvement of a social product over a certain period of time.

As with any phenomenon, economic growth is characterized by the following characteristics:

- 1) Economic growth is what happens at the aggregate level. The concept of economic growth refers to individual countries or regions.
- 2) Economic growth is a long-term effect. A measure of development over a long period of time (dozens of years). The theory of economic growth explores long-term trends.
- 3) Economic growth is an increase in income. The total income of a country can be measured in different ways. Usually the Gross Domestic Product (GDP) indicator is used.
- 4) Economic growth is related to real income (GDP in real terms).
- 5) Economic growth is related to income per capita.

In its most general form economic growth means quantitative and qualitative change of production results and their factors (their productivity). Its expression is economic growth at the level of the state finds its expression in the increase of GDP in absolute terms, in the increase of similar indicators, recalculated per capita.

In the conditions of modern Russian economy, two directions of economic growth policy are distinguished: conductor and liberal. The liberal direction adheres to the neoclassical approach, according to which the economic growth policy should not be pursued on purpose. Economic policy measures that stimulate and support economic growth are concentrated within the cycle. Economic growth is supported by the market and does not require special government intervention. The conductor model considers innovation and investment as one of the main factors of growth, and government intervention and assistance is needed to strengthen the role of these factors in economic growth [7, p.15]. The peculiarity of the above directions is that none of these policies considers savings as one of the economic growth factors. The works research the relationship between investment and economic growth, the relationship between savings and investment, but the theoretical study of the population savings impact on economic growth is beyond the scope of the research.

In the general definition, the savings of the population is understood as the part of income that remains after the payment of taxes and other mandatory payments [5]. From the point of view of the Federal State Statistics Service, organized forms of population savings are savings in deposits, savings in securities, and cash savings.

In formulating the conclusion about the existence of the correlation between the population savings growth rate and GDP growth rate, the following hypotheses were considered: the correlation between the indicators is weak positive (negative) with the correlation coefficient from 0 to +0.5 (-0.5), the correlation between the indicators is moderate positive (negative) with the correlation coefficient from +0.5 to +0.8 (-0.5 to 0.8) and the correlation between the indicators is strong positive (negative) with the correlation coefficient from 0.8 to 1 (-0.8 to -1). To determine the value of the coefficient, a general statistical analysis of the indicators of the population savings and GDP, GDP per capita was carried out.

In the course of the research, the authors considered the dynamics of savings not in the expenditures of the population, but in their income, as one of the key reproductive proportions in the economy is the ratio between the income consumed and the income saved, which creates prerequisites for economic growth.

When analyzing statistical data in the field of savings, their unstable dynamics in the use of household incomes is mentioned, and in general, the indicator has decreased almost three times over the period.

Table 1 – Share of savings in the structure of use of household incomes in 2010-2018, in % to the total [4].

Indicator	2010	2011	2012	2013	2014	2015	2016	2017	2018
Savings	14,8	10,4	9,9	9,8	6,9	14,3	11,1	8,1	5,6

The insignificant amount of savings in the structure of income use indicates that the population is not ready to save or invest. This may be due to the low level of financial literacy of the population, low confidence in non-credit financial organizations (investment funds, brokerage and dealership companies). The sharp jump in the share of savings in 2015 is explained by the weakening of the Russian ruble against foreign currencies, primarily the U.S. dollar and the euro, with a simultaneous decline in real disposable income of the population and a 2% growth of the population with virtually zero average annual growth rates in previous periods.

In most cases, households prefer to save money in bank accounts in the form of deposits rather than in the form of cash or investments in securities, as well as in the form of other savings (for example, purchase of real estate for additional income), which is confirmed by the data in Table 1.

Table 2 – Savings structure of the population for 2011-2018, (in percent) [6]

Indicator	2011	2012	2013	2014	2015	2016	2017	2018
Savings of all	100	100	100	100	100	100	100	100
Including								
Savings in deposits	84,5	90,6	82,7	69,1	88,1	76,5	72,9	66,1
Savings in cash	13,4	0,1	6,4	3,1	-4,3	7,6	15,6	18,4
Savings in the form of securities	2,1	9,3	10,9	27,8	16,2	15,9	11,5	15,5

At the same time, individuals prefer to save in Russian currency. This is explained by the fact that savings in the form of bank deposits both in the national currency and in foreign currency, in particular, in U.S. dollars and euros, provide a stable income, since the basic level of return on deposits throughout the period exceeds the level of consumer prices. Individuals prefer to save money both in roubles and foreign currency in PJSC 'Sberbank RF', where the share of savings is about 45%. In most cases, in PJSC "Sberbank RF" individuals open deposits in national currency [3]. Savings in the form of cash are in the second place by the results of 2017 and 2018. According to the authors, such investments are unreasonable, as they lead

to their depreciation due to inflationary processes. These investments will be effective when investing in foreign currency, especially in the conditions of the pandemic. The least demanded method of saving is investment in securities, which, according to the authors, is associated with a small income on them, as a rule, it coincides with the interest income offered by the bank on the deposit at long terms of their circulation and increased risk.

In today's environment, savings play an important role in the redistribution of funds. There is a close relationship between the population, entrepreneurs and the state. As the population holds a significant part of money, they invest their savings. Therefore, the volume of investments will directly depend on the amount of savings. In turn, the amount of investment is closely correlated with the gross domestic product, through which economic growth is expressed.

Table 3 – Dynamics of GDP, GDP per capita for 2011-2018, in percent [5]

Indicator	2011	2012	2013	2014	2015	2016	2017	2018	Среднее
GDP	104,3	103,5	101,3	100,7	96,3	100,3	101,6	102,3	101,3
GDP per capita	109,8	110,8	105,8	107,8	103,4	106,2	106,9	112,8	107,9

There has been a general decline in economic growth rates. If the “70 rule” is followed, at the current rate of GDP growth, which averages 101.3% per year, it will only be able to double in 70 years, which is negative, because throughout the period it was below the inflation rate in the country. The growth rate of GDP per capita per year was higher than that of GDP due to the reduction in the country's population. The slowdown of economic growth dynamics is largely due to fundamental technological and institutional factors, which include, firstly, low level of investment demand, primarily for machinery and equipment; secondly, limited and structural disproportions of labor resources, including those caused by demographic factors; thirdly, employment (use of labor force) and GDP production per employee (labor productivity) [2, p.633].

When comparing the rate of growth of the population savings with that of GDP, there is an unstable dynamics in changing the share of savings in expenditures of the population with relatively stable growth of GDP and GDP per capita (the year 2015 was an exception).

Pearson's correlation coefficient, calculated by formula 1, has shown a moderate or strong negative correlation between savings shares (exogenous variable X) and GDP growth rate (dependent variable Y), GDP growth rate per capita ($K = -0.75$ and -0.69 respectively). The indicator is statistically significant, because t-calculated ($|2.78|$) is larger at t-critical (2.45) level of

significance 0.05. The relationship between savings and GDP growth rate can be presented as an equation, graphically shown in Figure 1.

$$\text{Pearson's correlation coefficient} = \frac{\sum_{i=1}^n (x_i - \bar{x})(y_i - \bar{y})}{\sqrt{\sum_{i=1}^n (x_i - \bar{x})^2 * \sum_{i=1}^n (y_i - \bar{y})^2}} \quad (1)$$

$$Y = -0,9837X + 115,92 \quad (2)$$

The determination coefficient was 0.56, which indicates a high quality of the regression equation, which is statistically significant, since F-statistics (7.75) exceeds F-statistics (5.98).

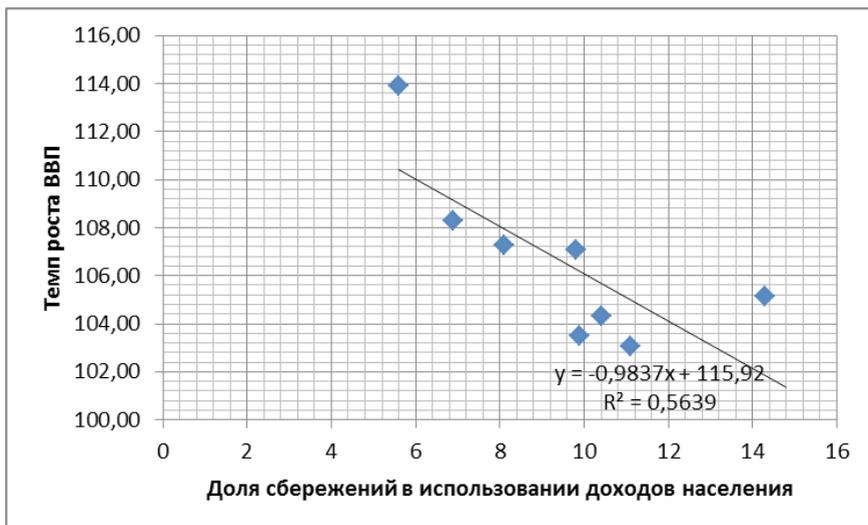


Figure 1 - Relationship between savings and GDP growth rate

The indicator showing the relationship between GDP growth rate and savings is statistically insignificant. The calculated value is -1.21, while the critical value is 2.45. Therefore, the authors did not create the regression equation for these two indicators.

2. The results

The conducted research allows us to conclude that the country uses conducting policy of economic growth, there is a slowdown in economic growth rates. The economic growth is provided by investments in the state economy, including the use of private investors' funds, the population. Attraction of population's savings in the country's economy is carried out mainly at the expense of bank deposits. There is a significant decrease in the share of savings in the structure of household income use, which affects low rates of economic growth manifested in GDP change.

3. Conclusion

Modern scientific discussions suggest many approaches to the analysis of factors that influence economic growth in Russia, but they all agree that structural and institutional reforms are needed to restore growth. Accordingly, the task is to identify macroeconomic and institutional constraints to economic growth and to identify factors that initiate growth and factors that support it [2, p.633]. One of such factors can be the savings of the population, which can be used not only in traditional directions related to their investments in foreign currency and the banking sector, but also in new ones related to their investments in electronic currencies - cryptocurrencies. Such investments provide higher returns, but are a more risky option to save money compared to savings in deposits or cash savings. To reduce the risks and increase the attractiveness of this instrument, it is necessary to legislate on the issue and circulation of cryptocurrencies.

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WAYS TO REDUCE THE FINANCIAL RISK OF AN ENTERPRISE

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Abstract. This article discusses methods to reduce the financial risks of an enterprise. The methods analyzed: risk aversion, risk taking on, risk transfer, insurance, risk pooling, diversification, hedging, their advantages and disadvantages are revealed.

Keywords: risks, financial risks, risk reduction, risk management.

One of the main tasks of managing financial risks of an enterprise is to reduce losses associated with this risk to a minimum.

Consider techniques to reduce the financial risks of an enterprise:

1. In the course of its financial activities, the company may evade risk (refuse to perform financial transactions).

On the one hand, risk aversion makes it possible to completely avoid potential losses, on the other hand, it does not allow to make profit associated with risky activities.

The decision to refuse this type of financial risk can be made both at the preliminary stage of making a decision, and later, by refusing to continue the financial transaction if the risk is higher than expected. However, most decisions on risk avoidance are made at the preliminary stage of decision-making, so the refusal to continue the financial transaction often entails significant financial and other losses for the company, and sometimes it is difficult due to contractual obligations.

The application of the risk aversion method will be effective in the following cases:

- in case of rejection of one financial risk, it will not cause another risk with a large number of losses;
- income from the proposed financial transaction is much lower than the level of risk;

- in case of large losses from a financial transaction, the company will not be able to cover losses from its own funds [7].

2. The next trick is to assume the risk and in this case, the company is looking for sources of resources to cover losses from the risk. If the company's own funds are not sufficient, this can lead to a reduction in business volumes and cash flow.

With this method, the company can cover losses from its own:

- income from continuing operations;
- cash on hand, residual value of property;
- dividends from securities;
- reserve fund of the company.

To mitigate the effects of risk, enterprises can create reserve funds. They are created in accordance with the charter of the enterprise and the applicable laws. There is a deduction of funds in them with the established frequency. Creating a reserve for unforeseen expenses helps to manage the ratio between potential risks affecting the preservation of the solvency of the enterprise and the amount of funds needed to eliminate the consequences of the risk. The reserve of funds allows the company to regulate the negative effect of losses [4].

The advantages of the method are: the absence of the need to attract third parties to eliminate the risk, low costs for the activities of the enterprise, but the method is ineffective to cover losses from risks with significant losses.

3. Risk transfer is its transfer to a business partner or to a third party. The use of such methods is advisable if economic entities that accept the risk can manage it more efficiently than the company that transfers the risk. Next, we consider the method of transferring risk by concluding contracts:

- conclusion of a factoring agreement. In this case, by transferring the predominant share of credit risk to the bank or factoring company, the company minimizes to a large extent the negative consequences of credit risk;
- conclusion of a contract of guarantee. Through the use of this contract, the company attracts borrowed funds, and at the same time bears responsibility to the guarantor for the clear execution of the contract of guarantee;
- conclusion of an agreement on the transfer of risk to suppliers. In this case, the subject of the transfer is the financial risks associated with raw materials, their transportation, loss or damage [6].

In general, risk transfer occurs if there is a specific provision in the contract concluded by the parties regarding the transfer of specific (or all) financial risks to the counterparty.

4. The next possible method to neutralize the financial risks arising in the financial activities of the company is insurance. This is also a risk transfer, only in this case the insurance company assumes all risks. With the help of insurance, some financial guarantees for the stability and profitability of production are created. In the event of various kinds of adverse situations in which sooner or later every business structure falls, insurance is not only a way of protecting against various destructive natural factors, but also a means of overcoming adverse situations in the market environment [2].

Insurance is carried out in the following cases:

- bankruptcy;
- production stop;
- investment in projects;
- unexpected expenses;
- other expenses.

The method allows to minimize catastrophic risks. Thus, events for insurance, in which a huge amount of financial loss can occur, however, not all types of risk can be insured, for example, the method is not used for companies that are mastering new technologies.

5. Another way to neutralize financial risks that should be highlighted is risk pooling. In this case, responsibility is distributed among several economic entities. Having united, several companies can divide between themselves both profit and possible losses. For this, joint-stock companies can be created, financial and industrial groups of enterprises can acquire or exchange each other's shares, join various consortia, associations, and concerns [1].

6. Diversification involves the distribution of capital between unrelated investment objects. Diversification helps reduce deposit, foreign exchange, investment and credit risks.

The main types include:

- diversification of a company's securities portfolio;
- diversification of the program of real investments made by the company;
- diversification of the company's financial activities;
- diversification of customers;
- diversification of the currency basket;
- diversification of the company's deposit portfolio;
- diversification of the financial market.

Diversification is an important means of managing financial risks due to the fact that losses in one area of activity can be compensated by making

more profit from the sale of products of other strategic business units, it also allows the company to obtain a synergistic effect, thereby increasing its efficiency [3].

7. Hedging is insurance of risks from negative changes in the prices of tangible assets under contracts for the delivery of goods in the future. There are two hedging operations: increase hedging; hedging for a fall. A hedger seeks to mitigate risk caused by uncertain market prices by buying or selling derivatives contracts. This makes it possible to fix the price and make income or expenses more predictable. At the same time, the risk associated with hedging does not disappear. It is taken by speculators, i.e. entrepreneurs taking a specific, pre-calculated risk [5].

Depending on the type of derivative securities used, several types of hedging of financial risks are respectively allocated:

- hedging using options;
- hedging using futures contracts;
- hedging using the swap transaction.

The advantage of this method is the elimination of the uncertainty factor, the growth of risk predictability. The disadvantages include: rejection of possible bonus profits, extra expenses for conducting hedging transactions, exchange restrictions.

Summarizing, each of the above risk reduction tools has both certain advantages and disadvantages. Therefore, certain combinations of these risk mitigation tools are commonly used. The final step in the analysis of risk reduction tools is the formulation of a general enterprise risk management plan. This plan should include: the results of identification of all risk areas for the enterprise, a list of the main risk identifiers in each area; rating results of risk indicators; statistical risk analysis results, recommended risk reduction strategies in each area of the enterprise.

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THE APPLICATION OF GRAMMATICAL FORMS AND CONSTRUCTIONS WHEN STUDYING RUSSIAN AS A FOREIGN LANGUAGE

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Abstract. This article discusses the principle of selection of grammatical material required in the study of Russian as a foreign language. Accounting for the volume of the lexical minimum in the selection of grammatical material reflects the complex-concentric and situational-thematic principles of the methodology [1. p. 24-30]].

Examples of the passage of two voluminous topics are shown: “Verbs of motion” and “Use of types of verbs in Russian”.

Keywords: grammar, verb, study, understanding, morphological forms, syntactic constructions.

Mastering the Russian language as a means of communication is impossible without knowledge of the grammar of the language.

When selecting grammatical material, the following must be taken into account: 1) the pervasiveness or frequency of phenomena, 2) their stylistic neutrality, 3) exemplariness, 4) the need to exclude synonyms, 5) the limited lexical minimum, 6) features of the native language, 7) the specific goals of learning the Russian language .

Pervasiveness refers to the prevalence of a given grammatical structure or form in spoken and written language. Stylistic neutrality suggests the inclusion in the grammatical minimum for the initial stage of training only those grammatical forms and constructions that do not have an emotionally expressive connotation. By exemplary is understood the possibility of using one or another grammatical form or construction as a standard, a sample for the formation of new forms by analogy. Synonymous forms and constructions are usually excluded from the grammatical minimum for the initial stage in order to avoid difficulties when students choose the necessary option. Accounting for the volume of the lexical

minimum in the selection of grammatical material reflects the complex-concentric and situational-thematic principles of the methodology. Particular attention in the selection of the grammatical minimum must be given to morphological forms and syntactic constructions that are absent in the students' language or partially coincide with the phenomena of their native language.

Minimization of grammar material can be shown by the example of such a large in volume and difficult topic for students of all nationalities, such as "Verbs of movement". We can recommend the following procedure for studying this topic.

1. The gradual accumulation of individual elementary examples of the use of verbs of motion (идти — ехать, differentiation of the meanings of movement on foot and in transport, conjugation of these verbs).

2. When proceeding to a detailed discussion of this topic, the allocation of 8 pairs of movement verbs from the existing 14 (идти — ходить, ехать — ездить, бежать — бегать, лететь — летать, плыть — плавать, нести — носить, везти—возить, вести—водить); distinction between verbs нести — везти and носить — возить (on foot and by transport); distinction between verbs нести — носить (in hands, on hands) and вести — водить (by the arm); some examples of the use of these verbs can also be accumulated preliminarily.

3. The use of verbs of group идти to indicate movement occurring in one direction: Вы не знаете, куда он идёт? — Он идёт в университет; Когда он шёл в университет, он купил газету; Когда я пойду в университет, я куплю журнал.

4. Use of verbs of group ходить (ездить, бегать, летать, плавать, носить, возить, водить) to indicate:

a) movement, occurring in different directions (Мы много ездим по стране; В воскресенье студенты долго ходили по городу);

b) repetitive movement (Я часто хожу в кино; Лётом мы всегда ездили на дачу);

c) movement back and forth indicating stay in a specific place (Вчера я ходил в театр; Летом брат ездил на море; Где ты был на прошлой неделе? — Я ездил в Батуми).

In the process of training, students learn the meaning of these verbs and gradually master the forms of their conjugation.

5. Comparison of the use of verbs ходить (there and back) and the verb быть in the past tense in a synonymous construction: Я ходил в театр. — Я был в театре.

6. Use of verbs of group идти with prefixes

а) по- to indicate the start of movement: После лекций все пошли домой; Спортсмены побежали; to indicate the intention to visit a certain place in the future: Завтра я пойду в театр. In this case, it is advisable to compare sentences of the type Я иду в театр. — Я пойду в театр. — Я буду в театре and draw students' attention to the widespread use of идти group of verbs in the form of the present tense to indicate an action that is necessarily forthcoming in the near future;

б) в- (во-) to indicate inward movement: Мы вошли в комнату; Машина въехала в гараж; Птица влетела в окно;

с) вы- to indicate movement directed from the inside: Я вышел из комнаты;

д) при- to indicate the presence of a subject in a given location: Я приехал в Тбилиси в сентябре (i'm in Tbilisi); Он принёс на лекцию словарь(he's here);

е) у- to indicate the absence of a subject in a given place: Его нет дома, он ушёл. It is advisable to compare the meaning of prefixes в-(во-) and при-, у-и вы-: Он вошёл (to the room from the corridor).— Он пришёл (he is here); Он вышел (from the room to the corridor). — Он ушёл (he is not here);

ф) под- in the sense of approaching to something or to someone: Он подошёл к другу; Он подошёл к окну; Машина подъехала к дому; Мальчик подбежал к матери;

г) до-, indicating approach to the target: Он быстро дошёл до метро. It is recommended to compare the use of prefixes при-, под- and до-: Он пришёл к другу (he is visiting him); Он подошёл к другу (he approached him); Он дошёл до дома очень быстро (reached the target of movement). It should be noted that usually the target of movement is an inanimate object;

а) про- with the meaning of moving past something: Я проехал мимо кинотеатра; для обозначения движения на определенное расстояние: Он прошёл пять километров.

7. Comparison of the use of prefixes and prepositions in the expression of spatial relations: Он пришёл (where?) в институт, в университет (premise), к врачу (to a person); Он был (where?) в институте, на работе (in a premise), у врача (with a person); Он ушёл (where from?) из института, с работы (from a premise), от врача (from a person).

8. The use of verbs of movement of a perfect form to indicate the completeness of an action (Он пришёл на занятия вовремя) and an imperfect form - to indicate the repeatability of an action (Когда он приезжает в Тбилиси, он всегда приходит к нам; Когда он приезжал, он всегда звонил) and a process (Когда он подходил к дому, он встретил товарища).

It is recommended to pay attention to the following specific pairs: входить — войти, выходить — выйти, подходить — подойти, приходить — прийти, уходить — уйти, проходить — пройти.

Second big grammar topic — "The use of verb types in Russian"— at the initial stage can be represented as follows.

1. The formation of specific forms of the verb in Russian. The material can be given as a commentary on the observed examples of the use of various verb forms.

2. The active use of the perfect and imperfect form of the verb to convey a single and repeated action. The material is given and fixed on the comparison of examples with two opposite meanings of the type Сегодня я встретил его по дороге на работу. — Каждый день я встречал его по дороге на работу. When commenting, it is advisable to pay attention to the ways of designating time in both cases.

3. Active use of specific forms of the verb when designating the process and the result of the action of the type Он читал книгу целый день. — Он прочитал книгу за день. When commenting, it is advisable to pay attention to constructions with a time value.

4. Designation by verbs of an imperfect form of two or several simultaneous actions and designation by verbs of a perfect form of two or several consecutive actions: Я читал и выписывал из текста новые слова. — Я прочитал книгу и сдал её в библиотеку. Examples are given in comparison.

5. The meaning of stating the fact of action in verbs of imperfect form is given for observation and awareness in comparison with the meaning of the result: Что вы делали вчера? — Я сдавал экзамен. — Сдали? — Сдал. Получил шестьдесят баллов

Grammar material should be rationally organized and introduced into the educational process. In the practice of teaching Russian as a foreign language, all morphological forms are introduced on a syntactic basis and presented to students in the form of a sentence, which serves as the minimum unit of instruction. The principle of organizing language material on a syntactic basis opens up the possibility of more fully realizing the communicative orientation of learning by taking into account the processes occurring directly in speech activity, and combining in the educational material the semantic characteristics of the phenomena studied and the linguistic factors important for the formulation of the content of the statement.

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**THE CONNECTION BETWEEN THEORY AND PRACTICE
IN THE PROCESS OF STUDYING RUSSIAN AS A FOREIGN
LANGUAGE**

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Abstract. In order to master the language as a means of communication, a person must have at least a minimum knowledge of the language, since the process of teaching a foreign language is naturally associated with linguistics.

Being the goal of teaching this language as a foreign language, the description of the language should show students how any language phenomenon is used in an informal language or in literature in other language phenomena, as well as in their interaction.

Keywords: theory, practice, functions, visual aids, understanding.

Teaching a foreign language, like any other, is based on the general principles of didactics: 1) the principle of visibility of learning; 2) the principle of consciousness of learning; 3) the principle of the connection of theory and practice in the learning process; 4) the principle of consistency and continuity in training; 5) the principle of accessibility of education; 6) the principle of taking into account the individual characteristics of students and some others [1.p.20].

The principle of visibility means that all training is more effective if each theoretical position or rule is illustrated by an example. In relation to the study of a foreign language, this means that each new foreign word will be better learned if when the student hears it separately or in context, each specific subject corresponding to the new foreign word is shown directly or at least in the picture, and every difficult language phenomenon will become more clear if explained with a table or diagram.

The principle of consciousness of learning means that learning is more successful if the student well understands the meaning of what he learns, and does not repeat the new material mechanically.

The principle of the connection of theory and practice in the learning process in relation to the study of a foreign language means that for successful mastery of the language, a minimum of theory, which should be formulated in the form of short rules, and a maximum of practical communicative exercises are necessary.

The principle of consistency and continuity of learning means that the material offered to students should be arranged according to the degree of increase in difficulty, the subsequent educational material should be logically connected with the previous one, representing not scattered information, but a certain system of knowledge.

The principle of access to education means that the educational material should not be too difficult for the student, otherwise he will not only not learn it, but may lose interest in learning at all.

The last of these principles - taking into account the individual characteristics of students - means that in the learning process it is necessary to remember the age of students, the features of their memory, the level of general development and linguistic experience.

The process of learning any foreign language is based on the laws of psychology, since this is the process of learning a certain mental activity. The basis for teaching Russian as a foreign language is the general theory of activity developed by L. S. Vygotsky and his school: A. N. Leontiev, S. L. Rubinshtein, A. R. Luria and others, and the theory of the gradual formation of mental actions, developed by P. Ya. Halperin.

According to psychologists, any activity, including speech, consists of separate actions, and each action - of separate operations. In speech activity, as in a separate speech action, four main stages can be distinguished: 1) the orientation stage; 2) the stage of developing a plan based on orientation; 3) the stage of implementation of the plan; 4) stage of control.

Consider the example of a single speech action, or act.

The foreigner had the need to say something: to inform or ask, ask someone about something, agree with something or refuse something. For example, he wants to say: "Мне надо купить эту книгу". If he began to learn Russian recently, it is difficult for him to say it right away.

First, he will select the necessary words: я, надо, купить, эта, книга. Then he will recall the rules for the use of words and morphological forms, the rules for constructing sentences and the rules for Russian pronunciation and intonation, which are an indicative basis for the operations he performs. This is the first stage, or orientation stage.

Remembering the necessary rules, he mentally formalizes his statement in the form of a sentence. This is the second phase, or planning phase, based on orientation.

Then he must pronounce this phrase in the correct form, with the correct articulation of sounds and corresponding intonation. This is the third stage, or stage of implementation of the plan.

In conclusion, if he can, he must test himself. This is the fourth stage, or stage of control.

A person who does not have sufficient command of a speech in a foreign language performs a speech action (building a separate utterance) in slow motion, with awareness of each individual operation (selection of words and execution of the syntactic structure of the sentence, pronunciation of the sentence and self-control).

As you master a foreign language, intermediate operations are automated and cease to be understood by the speaker. The action becomes curtailed, shortened, and the pace of speech in a foreign language accelerates and gradually approaches normal. The ability to build a statement at a given pace determines the level of speech skill formation.

Speech activity arises when individual statements are combined into simple dialogues and brief monological statements. The ability to produce such a combination determines the level of formation of speech skills.

Obviously, the ability to build the simplest dialogical unity, consisting of a line stimulus and a line reaction, short dialogues of 4-6 lines or small monological texts of 7-10 sentences should be considered the maximum limit in mastering a foreign language speech activity at the initial stage of training.

The concept of "speech activity" is closely related to such concepts as "speech skill" and "speech ability", which are widely used in psychology and teaching methods of foreign languages. Based on the definition of skill and skill in general given by A. A. Leontyev [1.31], the following definition of speech skill and speech ability can be proposed.

Speech skill — is the ability to optimally perform one or another speech action based on automated operations.

Speech ability — it is the ability to carry out one or another type of speech activity according to the optimal parameters of this activity, i.e. in the best way that matches the goal and the conditions of its course.

The formation of speech skills and abilities can only be successful if the system of exercises in teaching speech activity will maximally correspond to the stages of formation of mental actions and take into account the features of a particular type of speech activity.

Usually, four types of speech activity are distinguished: listening, speaking, reading and writing. In the practice of teaching a foreign language, they are closely interconnected and complement each other, but in the

methodological literature, in order to better show their features, each type is considered separately.

When listening and reading in a foreign language, the student perceives hearing or visually foreign speech, only being aware of the information received, therefore listening and reading are called receptive types of speech activity. If a person learning a foreign language speaks or writes in it, he creates his own speech product, and therefore speaking and writing are called productive types of speech activity.

To master a language as a communication tool, at least a minimum of information about this language is necessary, therefore, the process of teaching a foreign language is directly related to linguistic science.

Language material at all levels (phonetics and intonation, morphology and syntax, vocabulary and phraseology) should be carefully selected, minimized, grouped in a special way, described and presented in the classroom so that the theoretical information becomes an indicative basis for speech activity or speech practice.

The description of a language for the purpose of teaching it as a foreign language should show students how a particular phenomenon of the language is used in live speech or in the text among other linguistic phenomena and in interaction with them. Such a description is called functional. The idea of creating functional grammar was first expressed by L. V. Shcherba.

One of the main features of a functional approach to the description of a language is the analysis of language phenomena in the direction from their function in speech to the form of expression or from meaning to form. For example, if you indicate that in Russian the regular repeatability of actions over time is transmitted in several ways (Каждый вечер он смотрит телевизор; По вечерам он смотрит телевизор; Вечерами он смотрит телевизор), then such an organization and such a description of the language material will be functional. If we say that the syntax "preposition из+ noun in the genitive" means: 1) feature of an object by material (сумка из кожи); 2) starting point of movement (приехал из города); 3) reason (сделал из страха) - this will correspond to a linear description of the language in which individual morphological categories (noun, adjective, verb, etc.) and individual syntactic constructions are successively described, and their analysis is conducted from form to meaning.

A linear description is used in language textbooks when this language is native to students and they practically speak it.

A functional approach to the description of the language is also manifested in a special grouping of language material based on the distinction between opposite and similar phenomena within the system of the lan-

guage being studied, in this case Russian, for example, when comparing the use of prepositions *через* and *после* in sentences Приду через два часа; Приду после обеда; or verbs *начать* — *начаться*, *продолжать* — *продолжаться*, *кончать* — *кончаться* in sentences Преподаватель начал лекцию в 9 часов утра; Лекция началась в 9 часов утра.

The functional approach is reflected in the fact that the phenomena of the Russian language are grouped taking into account the characteristics of the native language of students. For example, in some languages the meaning of verbs such as *знать* — *уметь* — *мочь* does not differentiate, in other languages — only *знать* and *уметь*. Accordingly, the description of the use of these verbs in Russian for speakers of different languages must be built in different ways.

Functional approach to the description of the language is also manifested in taking into account the stylistic correlation of a particular language phenomenon, for example, when comparing the use in speech of such verbs and phrases as *быть где-либо*, *навестить кого-либо*, *посетить кого-либо*, *что-либо*, *нанести визит кому-либо*, related to colloquial and official-business style of speech.

So, studying foreign languages and Russian as a foreign language is learning one of the varieties of mental activity, or speech activity. Speech activity consists of a series of speech actions, and they, in turn, consist of a number of operations, which are based on special rules that reflect the functional approach to the description of the language and are the approximate basis of speech actions.

In order to successfully master a speech activity in a foreign language, students must firmly master the phonetic, grammatical and lexical rules, i.e. an indicative basis for speech actions, and to automate as much as possible the operations that make up each individual speech action. To do this, in the learning process, special exercises are used, which in the methodological literature are sometimes called training, and more often - language. Exercises, the tasks of which bring students closer to the conditions of real communication in a foreign language, are called pre-speech and speech or exercises with a communicative orientation.

It has long been noticed that adult learning is more successful if they master the subject consciously, and do not memorize the material mechanically. The psychologists who created the theory of activity emphasized the importance of the orientation phase, or the indicative basis, i.e., the rule indicating how to rationally carry out this activity. To better understand the need for an indicative basis of activity, we can imagine two people who are doing the same job. One of them knows how to carry it out, and the other

does not know, that is, it has no indicative basis. It is clear that the first will work faster and better than the second. The same thing happens when mastering a foreign language. A selected minimum of theoretical information about the language - specially crafted rules - greatly facilitates this process.

The rules that serve as an indicative basis for speech activity in a foreign language should be operational rules, or brief instructions so that the theory does not take up more than 15% of the time in the lecture and the rest of the time is devoted to practice.

A minimum of theoretical information about the studied foreign language allows the student to get an idea of his system and, on this basis, improve his language skills, transferring the formed speech skills and abilities to slightly changed conditions.

Reliance on consciousness is especially important when mastering such a foreign language as Russian, with its developed morphological system and many irregular changes. When studying English with a relatively simple grammar system, the main attention can be paid to expanding the lexical stock and almost excluding the theory, relying mainly on memory. But when mastering the Russian language, a minimum of theory is necessary, even at the initial stage, otherwise the learning process will turn into a mechanical memorization of several standard dialogs that cannot be used with even a slight change in the communication situation.

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**MOTIVES FOR LEARNING A FOREIGN LANGUAGE
FOR STUDENTS OF INSTITUTIONS OF HIGHER EDUCATION
IN RUSSIA**

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Abstract. Based on the results of a survey of first and fourth year students of the Department of Regional Studies of the Faculty of Foreign Languages and Regional Studies of Lomonosov Moscow State University an analysis of the motives of learning the English language and their transformation in the learning process was conducted. The result of the study is to identify the main areas of motivation that contribute to the successful development of the training program and the formation of professional and cultural competences.

Keywords: motive of learning, learning English, student survey, motivation in education.

The motive is one of the basic factors of educational activity, its role in this process is actively studied by Russian teachers (Avdeev A. P. [1], Bozhovich L. I. [2], Skorokhodova N. Yu. [9], Fufurina T. A. [10] and others). The motive lies at the basis of any conscious activity of the individual, associated with the satisfaction of his needs, provides energy for activities to achieve the goal, determines the selectivity of attention to the topic, determines the reaction of the student himself. The second is due to external factors, circumstances that force the student to complete the training program. However, it is intrinsic motivation that “provides a successful learning activity, causes satisfaction with the learning process itself, the results of one’s labor and acquired skills” [10, p. 4-5]. Obviously, the motives of students from different countries, diverse areas of education, different age groups pursuing dissimilar personal and professional goals in the learning process are different.

Researchers distinguish two types of motives: internal and external. The former develops under the influence of internal needs - "conscious internal necessity". To determine the essence of these motives in the study of English and their transformation in the learning process, as well as the main areas of motivation that contribute to the successful development of the curriculum and the formation of professional and general cultural competencies, a survey was conducted among first and fourth year students of the regional studies department of the faculty of foreign languages and regional studies of Lomonosov Moscow State University. In total, 80 people took part in the survey: 45 first-year students and 35 fourth-year students (more than 85% of students in each year of study).

The survey results showed that when learning English, internal motives prevail. The overwhelming majority of first-year and fourth-year students as the main goals of learning English primarily noted their desire to communicate freely with representatives of other cultures (> 85%), not to experience a language barrier while traveling (> 77%), and to achieve a career growth (> 75%), get the opportunity to work abroad (77%), become a highly educated, cultured person with a broad outlook (72%). External motives associated with the organization of the educational process, final certification and obtaining a diploma were not decisive in the process of learning a language. The obvious fact was that in the first year students showed more of their desire not to experience problems with their studies - 14% of respondents, while by the fourth year their number dropped to 6%. At the same time, the number of those who declared their desire to successfully pass the final exam increased: from 27% in the first year to 36% in the fourth year.

The survey showed that by the fourth year, the internal motives for learning English are becoming increasingly important for students. A conscious idea of one's goals and the desire to achieve them is taking shape. First of all, this concerns free language proficiency and the desire to get a prestigious job here or abroad. 94% of the fourth-year students surveyed identified excellent knowledge of the language - one of their main goals in the learning process, 87% - linked their goal to career advancement in the future. At the same time, the proportion of those for whom the purpose of training is the need to become a highly educated person has significantly decreased: from 73% in the first year to 57% in the fourth year. A clear concretization of the motives for studying English by fourth-year students was clearly manifested in their desire to improve well-defined sections and skills of the English language. Compared to freshmen, fourth-year students gave greater preference to speaking skills, namely: participating in

discussions, answering teacher questions, giving presentations, and wanting to freely understand native speakers' speech. In addition, more than half of them noted their desire to improve grammar, which indicates the importance of this aspect at all stages of training. The same applies to work on pronunciation. As we can see, 58% of first-year students and 50% of fourth-year students expressed the need to improve their pronunciation. One of the most preferred forms of work on language learning has become translation. This was stated by more than 50% of all respondents. At the same time, if in the first year students to a greater degree gave translation from Russian into English, then in the fourth year it is vice versa - from English to Russian, which is quite justified at the more advanced stages of mastering the language. High-quality translation from a foreign language into a native language is always a more difficult task.

A separate subject of study was the interest of students in individual lexical topics. It turned out that in the learning process, it is changing. At the initial stage, cognitive interest in the surrounding world is manifested to a greater degree. Rather, preference is given to cultural, historical and social development issues. At the stage close to the completion of training, the desire to learn more applied economic, legal and technological issues is clearly increasing. The percentage of students interested in topics related to culture fell from 73% in the first year to 54% in the fourth year, history - from 44% to 18%, geography - from 27% to 6%, tourism - from 50% to 42%, education - from 37% to 15%, hobbies and leisure - from 32% to 12%. At the same time, the number of people wishing to understand the organization and operation of the business increased from 52% to 70%, law - from 29% to 45%, the development of new technologies - from 20% to 36% (Table 3).

The results obtained allow us to more effectively approach the process of modeling a foreign language teaching program, while increasing the motivation of students. The predominance of an internal motive contributes to the formulation of specific development tasks, primarily communication skills and overcoming the language barrier. This is also confirmed by the fact that more than 60% of the students surveyed expressed their desire to participate in discussions as the most priority type of activity in English classes.

Despite the importance of the internal motive in the educational process, one cannot underestimate the role of external factors in the process of mastering a foreign language, which is a competently organized process of mastering knowledge, which aims at maximizing the role of the positive effect from educational activity and leveling the negative. And here, not

only the teacher's qualifications, his knowledge of the subject, but also the methodically correctly composed curriculum, the availability of a scientific and technical base, a clearly structured system for controlling knowledge sections, the prudent use of new educational platforms, the use of individual, group and game forms of training play an important role.

Summing up the analysis, we can draw a number of conclusions. First, when studying a foreign language, in the students of the Department of Regional Studies and International Relations of Lomonosov Moscow State University, the internal motive for learning prevails. Secondly, the recommended priority tasks in the development of training programs are the development of communication skills and overcoming the language barrier, which will undoubtedly be facilitated by conducting discussion forms of classes involving the subject areas of study for regional students, which will allow for taking into account the main internal motives of training, leveling the negative effect of external motives and, as a result, strengthen positive motivation in the study of a foreign language and the formation of professional and general cultural competencies. Thirdly, at all stages of learning a foreign language, the important aspects of work are still studying/repeating grammar rules, improving pronunciation and interpretation and translation skills from both a native language to a foreign language and from a foreign language to a native language.

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THE ROLE OF FORMING COMMUNICATIVE COMPETENCIES OF FUTURE HISTORY TEACHERS

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Abstract. The essence and content of the role of forming communicative competencies in future history teachers are thoroughly analyzed in the article. The structure, characteristics, functions, aspects, and components of developing communicative competencies in a history teacher are explained. The role of communicative competencies in the professional expertise of a history teacher is demonstrated.

Keywords: communicative competencies, educational competencies, professional success, competency-based approach, modern training.

The modernization of the education system in Azerbaijan is characterized by fundamental changes and entails the development of innovative processes, the essence of which is associated with qualitative changes in the organization of the educational process. Today, increasing attention is paid to the formation of educational competencies of future teachers.

The term “competency” has widespread use. In his work “Competence in Modern Society,” J. Raven gives a detailed interpretation of competence and notes that many of the competencies are relatively independent of each other and even provides a generalized list of 37 types of competencies. (1, p. 281–296).

Competence-based education (CBE) was first formed in the general context of the concept of “competency” proposed by N. Chomsky (University of Massachusetts in 1965), which was applied to the theory of language in grammar. As noted by N. Chomsky, “we draw a fundamental distinction between competence (speaking and listening to one’s own language) and use (actual use of the language in specific situations). Only use is a direct reflection of competence” (2, p. 9).

The formation of the necessary competencies for future teachers in the learning process is facilitated by the use of modern educational technologies. The competency-based approach to learning involves shifting

the learning process from transmitting to students a certain amount of knowledge to mastering their ability to extract information from various sources.

The keywords in the description of competencies are the following words:

1. think: be critical of the information received, be able to establish relationships with events of the past and present; develop a position in discussions, etc.
2. cooperate: be able to make decisions; work in a group; carry out their duties, etc.
3. get down to business: to be included in the work of a group or collective; organize your work, etc.
4. adapt: the ability to use ICT; find new solutions, etc.

All these functions of educational competencies are ideally implemented in the interactive teaching of history.

Doctor of Pedagogical Sciences, academician of the International Pedagogical Academy A.V. Khutorskoy, identifies the following types of key competencies in education:

1. value-semantic;
2. general cultural;
3. educational and cognitive;
4. information;
5. communicative;
6. social and labor;
7. competencies of personal self-improvement (3).

Considering the key competencies in education, we can especially note the communicative term, which includes a complex of knowledge that allows you to communicate with people. Communicative competence is not only knowledge and skills that allow you to interact with other people, but also personal abilities, competent speech, which is necessary to establish contact, oratory, etc.

Communication translated from Latin is understood as the interaction of two systems, in the course of which a signal is transmitted that carries information. Communication - is an individual form of intercommunication in which information is not only transmitted, but also specified, formed and even developed.

Communicative competence is the ability to navigate and freely participate in interpersonal communication, which is achieved through contact skills. Communicative competence is acquired in the process of socialization of a child.

There are universal communicative competencies that every person should possess, regardless of their profession, social status and interests. These communicative competencies include:

- knowledge in the field of communicative disciplines (speech culture, knowledge of history, pedagogy, psychology, conflictology, etc.);
- ability to spoken and written communication, both in the native language and in other languages;
- ability to build communication in accordance with language and speech standards;
- ability to interact correctly and effectively with people, groups and collectives;
- ability to empathy (compassion for the emotional state of another person);
- ability to self-control and other abilities (4, p.23).

The modern school today dictates the implementation of significant changes in the content of the psychological preparation of future history teachers at the university. This is necessary to overcome the limitations of communicative competence of teachers.

The effectiveness of the professional activities of future history teachers depends on many factors, among which communicative competence occupies a special place.

It should be noted that it is communicative competence that forms the core of the professionalism of a future history teacher. This include the ability to listen and take into account the opinions of other people, to teach participation in discussions and to defend one's position, make decisions, establish and maintain contacts, speak in public, work in a team and collaborate.

The professional competence of the teacher includes cognitive (professional knowledge), activity (professional skills and experience) and professional-personal components. It largely depends on communicative competence, which consists of a combination of cognitive, emotional and behavioral characteristics of a person.

The structure of the communicative competence of a history teacher is made up of the following skills:

- interpersonal perception and assessment of the communication situation (perceptual component);
- introspection and self-assessment of behavior in the process of communication (reflective component);
- management of the process of communication and regulation of one's own behavior (behavioral component) (5, p. 9).

In the professionalism of a history teacher, two components can also be distinguished: objective and subjective. The objective component includes historical, pedagogical, psychological and didactic knowledge, which reflects the reference system of professional activity. The development of teacher professionalism is a long process, the foundations of which are laid down when choosing a profession in a school environment.

The subjective component is directly related to the personality of the teacher and reflects his personal qualities. The personal and professional qualities of the teacher show the following qualities: he accepts the student as a subject of the learning process and sees the prospects for its development; the educational process is organized taking into account the individual characteristics of students; works in an innovative mode; independently develops new education programs; demonstrates patterns of behavior of a cultured person.

Everyone is familiar with a situation where students, having a set of theoretical knowledge in history, experience difficulties in using this knowledge in answering a problematic question, or in extracting the main thing from what they have read.

For the proper organization of teaching, the teacher must understand that the information on the subject that he passes to the student in the lesson is only information, i.e. raw materials for the formation of knowledge or skills. The success of the learning process depends on the formation of students' ability to transform the information received into knowledge.

As you know, communication basically performs three functions:

- information exchange, i.e. - communicative;
- provides for the organization of interaction, i.e. - interactive;
- reflects the process of perception and establishment of interaction, i.e. - perceptive (6, p. 11-12).

Since the teacher is the subject of pedagogical activity, and controls the educational process, he is a personal example. His communicative competence involves the ability to express his thoughts in a language accessible to students, to argue, persuade, prove, make judgments, analyze, establish interpersonal relationships, choose the optimal form of communication in various situations, organize and maintain a dialogue.

Modern education requires the development of students' knowledge, skills, competencies that can be used in life situations. We must prepare children for life, so we need to cultivate a readiness for change in them, developing such qualities as constructiveness, the ability to know the world and learn.

The teacher should be critical of his communicative abilities, since it is his speech that directly affects the development of the child's communicative abilities and the formation of his inner world. Therefore, the teacher needs to master the necessary means and methods of communicative activity.

A history teacher with communicative competence knows how to freely enter into communication, communicate, and even avoid undesirable effects to achieve the desired results in organizing communication of a group or the whole class. Such a teacher has mastered the techniques of professional communication and collective professional activity.

The professional competence of a history teacher, as an indicator of the development of a communicative component, is the following aspects:

1. motivational aspect, i.e. willingness to show competence;
2. cognitive aspect, i.e. knowledge of competence content;
3. behavioral aspect, i.e. experience of competence in different situations;
4. value-semantic aspect, i.e. attitude to the content of competence and the object of its application;
5. emotional-volitional aspect, i.e. emotional-volitional regulation of competence (7, p. 42-45).

A teacher who does not have sufficient communicative competence, cannot implement the process of training and education, is also not able to promote mutual understanding, and use communicative technologies.

Communicative competence is a professionally significant personal quality of a teacher, which is formed in the process of his self-development. Broad opportunities for the formation of a communicative culture of future history teachers open up the organization of training forms of work. It is such practical experience that gives the future teacher the opportunity to look at the features of relationships with children from the outside, helps to increase his psychological competence, and teaches to put the acquired knowledge into practice.

The development of the communicative competence of a history teacher is one of the ways to improve the quality of education and therefore it is considered especially important to develop the communicative competence of each teacher. The formation of the following components among future teachers of history is considered important:

1. The motivational component of communicative competence is the teacher's readiness for professional development and reflects his desire for professional growth.
2. The cognitive component contains knowledge of the essence of communicative competence, reflects knowledge of its essence and includes the ability to effectively solve problems that arise in communication.

3. The operational-activity component contains the experience of the teacher's competence in preventing and resolving conflicts, maintaining emotional balance, competent in oral and written speech, oratory, in the ability to organize joint activities of students to achieve specific goals, as well as in the ability to objectively assess the situation and predict the result of the effectiveness of the interaction.

All these components of communicative competence are closely interconnected. The development of the communicative competence of the teacher involves the comprehensive development of all its components, the possession of communication techniques and their application in practice.

Indicators of the development of communicative competence of a teacher are:

1. Motivational component (motives of labor behavior),
2. Value-semantic component (assessment of needs for development and self-development),
3. Emotional-volitional component (determination of empathic tendencies),
4. Cognitive component (communicative competence),
5. Behavioral component (assessment of self-control in communication, the level of communicative characteristics of a teacher and the level of communicative features of a teacher) (8, p. 290-292).

The communicative competence of a history teacher is a combination of theoretical and practical readiness and the ability of a teacher to apply communicative knowledge, skills, as well as personal qualities for successful activities in the pedagogical field. The professional communicative competence of a history teacher is formed at the university when studying special historical and pedagogical-psychological disciplines and is improved in pedagogical practice.

The communicative competence of the teacher forms the basis of the teacher's professionalism and consists of a certain system of scientific knowledge and practical skills.

Thus, a history teacher is a professional who is interested in the continuous improvement of his personal, spiritual and professional growth, which is associated with the mastery of the facts of the historical past and historical laws. His duty is to educate citizenship, instill moral principles and respect for the past, to form the necessary life positions, skills and critical thinking and expression of ones thoughts.

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RESEARCH ON THE DEVELOPMENT OF COGNITIVE FUNCTIONS OF OLDER PRESCHOOLERS

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Abstract. A study of the psychophysical development of children of senior preschool age. It was revealed that fine motor skills at this stage of child development reflects speech development. The assessment of the development of cognitive functions of preschoolers was carried out using tests that determine the simple and differentiated sensorimotor reactions and the degree of formation of visual perception. It was revealed that the centers responsible for the thinking of children 5-6 years old at this stage of child development functionally develop faster than the zones responsible for movements.

Based on the research results, tools were proposed for optimizing lagging functions: a specially developed massage and exercises for the fingers, accompanied by sound pronunciation or recitative, will develop speech, thinking and the psyche.

Keywords: psychophysical development, senior preschool age, health, speech, fine motor skills, simple and differentiated sensorimotor reaction.

The problem of children's speech development today remains relevant, since more than 70% of older preschoolers have various functional deviations in the development of speech, which in most cases is due to a lag in the development of the motor sphere. This manifests itself in the form of insufficient coordination of complex movements, inaccuracy, motor awkwardness, reduced pace of movement, violation of plasticity and amplitude of the performed movements in exercises for showing and verbal instructions [4].

M.M. Koltsova believes that "there is every reason to consider the hand as an organ of speech - the same as the articulating apparatus. From this point of view, the projection of the hand is another speech area of the brain. " In children with a delay in speech development, it should be stimulated by training finger movements, which is a powerful way to increase the working capacity of the cerebral cortex [2].

The level of mental processes of a preschooler is directly dependent on the degree of formation of fine motor skills. The development of speech and, therefore, thinking will be slowed down until the movements of the fingers become free. In corrective work with children with general speech underdevelopment, fine motor skills of the fingers, motor skills of the articulation apparatus are much more efficient to develop in parallel with general motor skills. Special exercises should be used to develop general motility, to improve coordination of movements, develop a sense of rhythm, overcome motor awkwardness [3].

The purpose of this work is to analyze the scientific literature on the identified problem and conduct research on the state of speech development and the child's cognitive processes.

To determine the formation of fine motor skills of the fingers in children 5-6 years old, a test was conducted, the results of which revealed how quickly children can collect 20 matches in two boxes. The test showed that only 24 children out of 76 examined met the control norm - 15 seconds. In rest of them, the motor skills of the fingers were significantly worse, which affected their result.

M.M. Koltsova in her works showed a high correlation between the indicators of fine motor skills and the formation of the child's speech. To determine the degree of correspondence of these functions, the level of speech development of the group of examined children was determined. The level of speech development was determined by the method of "Compilation of a story" described by N. Ya. Semago [3]. The child was invited to consider a series of pictures, united by a single plot, and make a coherent story.

The level of speech development was evaluated by the coherence and meaningfulness of the compilation of the story, the correctness of sound pronunciation, expressiveness and emotionality of speech. The results of the study showed that the level of speech development of the examined children is below average. Only 27% of the examined preschoolers are classified as children with a high and very high level of speech development, 36% have an average level and 37% belong to the category of children with a low level of speech development. A very low level of development has not been identified.

Comparing data on the development of fine motor skills and speech, we note a high positive correlation of these functions (the correlation coefficient is + 0.78). This once again confirms that fine motor skills at a certain stage in the development of the child reflects speech development.

Speech and fine motor skills, no doubt, reflect the level of development of thinking and the psyche. However, the tests described above can only

qualitatively determine the state of these functions, since this process is evaluated by subjective parameters.

A quantitative assessment of the development of cognitive functions, according to N.A. Bernstein [1], can give tests that determine the sensorimotor reactions.

To study cognitive processes, a computer multimedia program was used. This technique made it possible to record the reaction time of the child to objects of various shapes and colors that appear on the display in random mode. The same technique allowed us to determine the degree of formation of visual perception.

The test data (Table 1), reflecting the differentiated sensorimotor reaction, showed that the response time to a moving object of a certain shape of both the left and right hands is not statistically different for boys and girls. Although, it can be assumed that with a larger sample, these differences could be present, since the tendency of reduced motor functions of the right hand in girls takes place. It should be noted that in boys the results of the motor reaction of the right hand are significantly better than the left. In girls, no significant differences were found. Differences between simple and complex visual-motor reactions average 200–300 milliseconds.

Table 1
Temporal parameters of sensorimotor reactions
in children 5-6 years old

Test group	Differentiated sensorimotor reaction				Simple sensorimotor reaction	
	Right hand		Left hand		M±m	p
	M±m	p	M±m	p		
Boys (n=36)	645±32	< 0,5	804±34 P*	<0,2	571±31	< 0,4
Girls (n=38)	711±30		782±41		593±28	

Note: reaction time was measured in milliseconds using a computer technique. P* - indicates that the differences are significant between the data of the right and left hands ($p < 0.05$).

Girls performing a differentiated test make from 0.6 to 0.8 errors, which is significantly less than boys. It can be assumed that the concentration of attention in girls is slightly higher. Perhaps this is what determines the increase in the latent period in their motor functions when performing a differentiated test.

Simple and differentiated reactions differ primarily in the duration of cognitive processes. The contribution of thought processes to differentiated reactions in the studied population takes almost 30% of the time.

The data of a simple and differentiated sensorimotor reaction in children 5–6 years of age are almost two times worse than in adults. This suggests that the functional formation of the centers responsible for motor functions is not complete.

When studying the dynamics of the sensorimotor reaction of preschoolers during the year (Table 2), it was found that the simple visual-motor reaction did not change over a period of 10 months, while the differentiated reaction to a moving object of the right arm became noticeably better by the end of the year.

Table 2
Dynamics of changes in sensorimotor reactions in children 5–6 years of age throughout the year

Month	Test group	Differentiated sensorimotor reaction		Simple sensorimotor reaction
		Right hand	Left hand	
		M±m	M±m	M±m
September	(n=78)	746±31	854±39 P*	580±27
December	(n=76)	758±24	833±33 P*	586±30
March	(n=77)	711±28	797±34 P*	567±32
June	(n=75)	652±30 1,2*	780±27 P*	559±34

Note: reaction time was measured in milliseconds using a computer technique. P* - indicates that between the data of the right and left hands, the differences are significant (p <0.05). 1.2* - indicates that between the summer period and the autumn-winter differences are significant (p <0.05).

The improvement of differentiated visual-motor functions with the constant results of a simple visual-motor reaction is due to the improvement of cognitive processes with the state of motion control centers unchanged. This indicates that the centers responsible for the thinking of children 5-6 years old at this stage of development of the child are functionally better developed than the neurons responsible for movement.

Speech, according to many researchers, reflects the psychic and mental development of the child. In our studies, it was found that almost 27% of the examined preschoolers were classified as children with a high and very high level of speech development, 36% were of average level, 37% belong to the category of children with a low level of speech development.

Comparing the data on the development of fine motor skills and speech, we note a high positive correlation of these functions (the correlation coefficient is + 0.78). This once again confirms that fine motor skills at a certain stage in the development of the child (up to 7-8 years) reflects speech development. It can be assumed that for children whose motor functions of the hand are not well developed, specially designed massage and exercises for the fingers, accompanied by sound pronunciation or recitative, will develop speech, thinking and the psyche.

When studying the dynamics of the visual-motor reaction of preschoolers during the school year, it was revealed that the simple visual-motor reaction did not change over a period of 10 months, while the differentiated reaction to a moving object of the right hand became noticeably better by the end of the year. The improvement of the differentiated visual-motor functions with the constant results of a simple visual-motor reaction is most likely due to the improvement of cognitive processes in the unchanged state of the motion control centers. This indicates that the centers responsible for the thinking of children 5-6 years old at this stage of development of the child functionally develop faster than the zones responsible for movement.

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COMPETENCE PARENTING DEVELOPMENT IN THE CONTEXT OF NEW TIME CHALLENGES

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Abstract. In the paper, the author reflects on the phenomenon of competence parenting, which in the context of new time challenges is actualized in the international scientific and pedagogical discourse and educational environment. The potential of social and pedagogical support of this parenthood in the format “lifelong learning” is considered. It allows concretizing the analytical dominants in the characteristic of the phenomenon, which in the discursive and co-existential senses reflect its pedagogical essence. This knowledge contributes to the development of a new quality of interaction between parenthood and the pedagogical communities in the new digital educational environment.

Keywords: competence parenting, parenthood, pedagogical discourse, social and pedagogical support, educational environment, digital educational environment.

Currently, the orientation of the international scientific and pedagogical discourse in the field of family, childhood and education towards *competence parenting* and the justification of its pedagogical potential is due to the need of the participants in the educational space for more fruitful and constructive relations between family and school. Despite the fact that the study of this phenomenon has a history of more than half a century, its scientific interpretations as a pedagogical category in the discourse of education and upbringing continue to evolve, differ and vary in the studies of scientists from different countries, demonstrating the variety of scientific directions and research approaches.

The phenomenon of competence parenting unites “a constellation of ideas, images and terminologies” [6, p. 145], foreign studies are devoted to its study [1; 2; 7; 8] and Russian [3; 4; 9]. Parenting competencies or com-

petence parenting are the sociocultural product of a particular society. The presence of diverse ideas about the role of parents, the essence of competence parenting in the education and upbringing of children in different socio-linguistic communities contributes to the creation of real sociocultural practices in the educational space aimed at developing competence parenting. Their multidimensional palette in parenting education does not allow us to consider the phenomenon of competence parenting as a fixed phenomenon, because it is caused and interconnected with demographic changes, historical events and patterns, cultural norms and values, the existence of various family models and their transformations in their social structure in each particular country. Such parenting is dynamic, changing, and depends on the circumstances of the life of the family, on the socio-educational contexts in which parents and their children live in a particular society.

“Transforming people's lives through education” is the goal of education of the 21st century, fixed by the Incheon Declaration of UNESCO and the Framework for Action on the implementation of Goal 4 in the field of sustainable development [10, p. 6]. This truly historical commitment until 2030 orients countries to a new vision of "lifelong learning", stimulates innovative actions in the diverse directions of lifelong education, and focuses on the target audience - adults in their social role of parents. The social request for the provision of educational opportunities for people of any age contributes to the solution of global and national problems, opens up new prospects for the sustainable development of society in every country in the world, it takes on an increasingly distinct form and energy of a positive and competent challenge aimed at personal and professional development of a person.

Parenting, acting as a subject of the modern educational space, determines the direction of the child's socialization paradigm, either by forming and opening, or by creating obstacles and closing the paths of life structure for children's development and personal growth. And therefore, considering parenting exclusively through the crisis paradigm, the standardized approach to the practices of parenting education, which still remains the leading one in the national educational systems of many countries, loses its relevance and distorts the real ideas about modern parenting and parents.

In this aspect, it is the “lifelong learning” format that focuses on a new understanding and comprehension of the quality of parenting, prospects for its improvement to stimulate positive relations between parents and children, parents and teachers, which will allow them to fully reveal their potential in modern society. It allows you to determine the role and place of each of the subjects of upbringing (family and school) in the process of

developing competence parenting, denotes the search for new ways and forms of development of competence parenting, parenting education models, improving parenting support policies as important social and pedagogical tasks in every country in the world.

In the face of new challenges of the time, the development of competence parenting as “lifelong learning” is dominant in ensuring the sustainability of families in the world, and its social and pedagogical support is a sociocultural reality. It focuses on the involvement of each subject of education in the educational space, on expanding the access, equality and socio-educational integration of parents through the development of their competencies as a social component of the development of modern education, which is moving towards achieving the goals set until 2030.

Modern competence parenting requires not only the goodwill of the parents, it is determined not only by parenting involvement in the process of their own development in the social role of the parent, it is also dependent on the availability and quality of educational mechanisms for the development of competence parenting and on the possibilities and prospects of interacting with “third parties”. This perception and understanding focuses on the social and educational contexts of competence parenting. In them, family support requires social institutions related to the sphere of family, childhood and education, rejection of stigmatization of parents and families, standardization and various prescriptions regarding modern parenting, and education subjects - to be ready to live and work together in a rapidly changing world, in which the competencies of each are expressed in real actions.

It is the reality of actions in the development of competence parenting that determines the priority of social support, which is expressed in any form of interference from social institutions and authorized structures (help/support/accompaniment) of parents (families) in the implementation of their competencies to satisfy all vital, emotional, educational, cultural, social needs of children. Pedagogical support in the development of competence parenting involves real joint actions of professionals and parents in a specific educational context to fulfill a specific social and educational mission in raising and educating children. It not only creates diverse educational contexts for parents, but also broadens their expressed intention - to become competent, realize their parenting mission, reduce the asymmetry of power between them and professionals in the field of family, childhood and education. Such parents accepting pedagogical support participate in various forms of parenting education, perceive it as “lifelong learning” and as a source of development of their own educational vision and competence parenting.

Today we can say with certainty that competence parenting is a pedagogical phenomenon in the modern educational space. We define the following analytical dominants that reflect the pedagogical essence of this phenomenon:

- value-educational is aimed at developing the personality of the parent in the “lifelong learning” format, focuses on a new quality of family-school relations, recognizing the uniqueness of competence parenting experience in the educational space;

- subject-pedagogical reflects, on the one hand, the universality of the phenomenon in question in the international educational space, expressed in the general discourse of institutional communities in the sphere of family, childhood, and education. On the other hand, it demonstrates the specifics of social and pedagogical support for the development of competence parenting, which is being improved and modified depending on the national educational context and professional beliefs of educational subjects and missions of educational institutions in each particular country;

- instrumental-applied represents the existing pedagogical tools and practices of development of competence parenting in parenting education in each particular country. In national systems of family support, we observe interesting and different pedagogical initiatives in the educational community in this area, which are of common interest for pedagogical science and practice in the face of new challenges in the main directions of social and family education, parenting education.

So, those modern challenges faced by all spheres of human life in many countries of the world related to the situation of forced self-isolation, and education was no exception, showed that the connection between the school and the family was preserved, it switched to a different format - digital. And already this can be assessed as a positive phenomenon. Yes, this remote connection between parenting and the pedagogical community in the digital educational space was different, accompanied by mutual misunderstanding and mutual recognition, but it did not stop and did not break. Of course, experts in the field of family, childhood and education in different countries have yet to assess both the prevailing socio-educational situations and their consequences, as well as the prospects for updating and remodeling the entire education system, given its digital context, the needs and demands of modern parenting, transformations occurring in the family and outside of it. Therefore, the new challenges of the time determine the recognition of the phenomenon of competence parenting and the prospects for its development, contribute to the creation of a new quality of relations between parents and teachers, forming a common understanding of the importance of their own competent actions in the interests of the well-being of children.

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THE LEXICAL-SEMANTIC AND GRAMMATICAL PROPERTIES OF THE MODAL VERB 敢 (GǎN) IN CHINESE

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Abstract. This article is devoted to the study of the Chinese modal verb 敢 (gǎn). The authors attempt to systematically describe the grammatical and lexical-semantic features of the indicated lexical unit from the standpoint of highlighting possible language situations in which the word in question is found. The verbal lexeme 敢 (gǎn) in Chinese functions in two situations: 1) the speaker expresses courage and determination to act; 2) the speaker expresses confidence in the reliability of his own judgment. In this study, we select the equivalent words from the Russian language that most accurately reflect the specifics of using the studied modal verb in a given situation. So, in the first case, the Russian words equivalent to the modal verb 敢 (gǎn) are the words "решиться", "осмелиться". In the second case, the Russian equivalents of the studied lexical unit are the phrases "взять на себя смелость", "позволить себе". The authors also examine in detail the grammatical features of the use of this modal verb.

Keywords: category of modality, modality, modal verb, language situation, desire field.

The study of modality as a linguistic category at different times involved many domestic and foreign linguists. At the present stage of development of comparative linguistics, the study of this universal category acquires new practical and theoretical significance. The study of the functioning mechanisms of the modal system of a foreign language through the prism of the laws and specifics of the native language can significantly expand the boundaries of understanding of the phenomenon under study. The purpose of this article is to comprehensively study the modal verb of the Chinese language 敢 (gǎn). The objectives of this study are, firstly, a systematic description of language situations in which a given lexical unit is used, secondly, the identification of the full range of its semantic meanings and the selection of equivalent words in Russian, thirdly, the presentation of

grammatical features of the use of the specified word within the framework of modern Chinese. The results and materials of this study can be used both to expand theoretical ideas about the category of modality, and to teach Chinese as a foreign language to representatives of other language cultures, including native speakers of the Russian language. The attempt by the authors to systematically describe a specific modal verb from the perspective of grammatical analysis and systematic description of possible language situations is an urgent task, characterized by undoubted novelty.

For the first time, C. Bally, who is rightly considered one of the founders of the theory of the category of modality, turned to the study of modality from the point of view of linguistics (Bally, 1955). Following him at different times, such prominent scientists as V.V. Vinogradov, V.Z. Panfilov, G.V. Kolshansky, T.V. Shmeleva and others.

In the writings of these authors, the category of modality is described from different perspectives. Nevertheless, the general idea contained in the works of these scientists is the idea of modality as a category expressing the speaker's attitude to reality (Vinogradov, 1975; Panfilov, 1965; Plungyan, 2011; Kolshansky, 1961; Shmeleva, 1984).

In modern linguistics, there is an increase in interest in the study of the modality problem, which is associated with the development and increase in the volume of international communications, during which an unambiguous interpretation of the language situation could smooth out the difficulties that arise.

One of the prototypical means of representing the category of modality is a modal verb. Modal verbs as a lexical means of expressing modality in a wide variety function in the Chinese language (Davletbaeva, Fatkullina, 2019; Fatkullina, Davletbaeva, 2020).

This article explores the modal verb 敢 (*gǎn*), which belongs to the category of modal verbs expressing desire. The Chinese scientist Liu Yuehua in his study notes two possible meanings in which the lexical unit we are studying is used: firstly, in the sense of courage or courage to take action, and secondly, in the sense of confidence and desire to communicate something (Liu Yuehua, 2004)

In the first case, the lexical-semantic plan of the modal verb 敢 (*gǎn*) contains shades of courage or bravery. This language situation is characterized by the fact that the subject of speech wants to do something, even having a pessimistic forecast or expecting negative consequences, in some cases it means overcoming internal barriers or fears. This lexical unit can be translated into Russian using such words as "решиться", "осмелиться", "дерзать".

(1)没有人敢顶撞他，而周恩来是第一个敢反对李德的人。(Méiyǒu rén gǎn dǐngzhuàng tā, ér zhōu'ēnlái shì dì yī gè gǎn fǎnduì lǐ dé de rén).

No one dared to argue with him, but Zhou Enlai was the first to dare to object to Li Dae's people.

(2)(周恩来为长征胜利所做贡献将永存史册/陈立旭, 2019年08月05日, 18:24, 来源: 人民网-中国共产党新闻网, <http://zhouenlai.people.cn/n1/2019/0805/c409117-31277107.html>).

我们谁也不敢把这个残酷的消息告诉爷爷。(Wǒmen shéi yě bù gǎn bǎ zhègè cánkù de xiāoxī gàosù yéyé).

None of us dared tell grandfather this terrible news.

(张富清同志先进事迹报告会报告/(选摘)/胡成 刘海伦 田文莉 李甘霖 张然, 2019年08月01日, 09:02, 来源: 光明日报, <http://cpc.people.com.cn/n1/2019/0801/c426778-31269167.html>).

Along with the negation “不敢” (*bù gǎn*), there is also the grammatical form of the negation “没敢” (*méi gǎn*). For instance:

(3) 他走的时候, 没敢看女儿一眼。(Tā zǒu de shíhòu, méi gǎn kàn nǚ'ér yīyǎn).

When he left, he did not dare to look into his daughter's eyes.

(这个警察有“面子”——全国“人民满意的公务员”李树干的故事, 2019年07月15日, 16:32, 来源: 新华网, <http://cpc.people.com.cn/n1/2019/0715/c427544-31235423.html>).

The interrogative sentence can be formed both with the help of the interrogative particle 吗 (*ma*), which is put at the end of the sentence, and with the help of the affirmative-negative form of the verb. For instance:

(4) 这样的基金你敢不敢买?(Zhèyàng de jījīn nǐ gǎn bù gǎn mǎi?).

Will you decide to buy such a fund?

(兴业基金闹笑话 份额发售公告两只基金代码弄错/刘庆华, 2016年05月26日, 08:09, 来源: 金融投资报, <http://money.people.com.cn/n1/2016/0526/c42877-28380334.html>).

In the second case, the lexical-semantic plan of the modal verb 敢 (*gǎn*) contains shades of confidence in making a judgment. This language situation is quite close to the one described above, however, when translating, such Russian equivalents as "взять на себя смелость", "позволить себе" are used. It often functions in first-person statements and is combined with significant verbs according to a principle similar to the principle in Russian. For example, "позволить себе заметить, спросить, уточнить" or "взять на себя смелость гарантировать, заявить, рекомендовать" etc.

(5)至于网上的一些风言风语, 我敢保证, 没有发生过。(Zhìyú wǎngshàng de yīxiē fēngyánfēngyǔ, wǒ gǎn bǎozhèng, méiyǒu fāshēngguò).

As for some rumors on the Internet, I can guarantee that this did not happen.

(老马还打吗? 两周内见分晓, 2017-04-19, 08:00:51, <http://sports.people.com.cn/cba/n1/2017/0419/c22150-29220317.html/>)

(6)但它的市值是否配得上超过苹果, 我不敢肯定。(Dàn tā de shìzhí shǐfǒu pèi dé shàng chāoguò píngguǒ, wǒ bù gǎn kěndìng).

But I do not presume to claim that its market value may exceed that of Apple.

(微软市值两度超越苹果 再度恢复“双雄竞争”状态, 2018年11月30日, 08:42, 来源: 环球网, <http://capital.people.com.cn/n1/2018/1130/c405954-30434052.html>).

The grammatical form "不敢不" (*bù gǎn bù*), which is also widely represented in modern Chinese, deserves special attention. The modal verb 敢 (*gǎn*), functioning in the indicated form, can be translated into Russian with the words "несомненно", "обязательно", "непременно". In this situation, an involuntary, forced action is expressed within the framework of certain circumstances.

(7)情况下一定不敢不来开会, 不来一定是身不由己。(Qíngkuàng xià yīdìng bù gǎn bù lái kāihuì, bù lái yīdìng shì shēn bù yóujǐ).

In these circumstances, I will certainly come to the meeting, if I do not come, then certainly not of my own free will.

(6次参两会请假5次闾丘露薇称不赖刘翔, 2013年03月05日, 07:16, 来源: 广州日报/<http://www.people.com.cn/GB/24hour/n/2013/0305/c25408-20675528.html>).

(8)我们学生根本没有选择, 即使再大的抱怨也不敢不来补课。(Wǒmen xuéshēng gēnběn méiyǒu xuǎnzé, jíshǐ zài dà de bàoyuàn yě bù gǎn bù lái bǔkè).

Our students have no choice at all, and even if they complain a lot, they still come to additional classes.

(地方领导留言板·湖北省留言回复/湖北家长质疑在校托管涉嫌补课 当地责令暂停托管, 2016年12月29日, 08:03, 来源: 人民网-地方领导, <http://leaders.people.com.cn/n1/2016/1229/c178291-28984728.html>).

Thus, the modal verb 敢 (*gǎn*) is a modal verb of desire, expressing two lexical and semantic planes: firstly, courage and bravery to perform any action contrary to the situation, secondly, confidence in one's own words, in the judgment made regarding any event. The grammatical form "不敢不" (*bù gǎn bù*) expresses a forced action in the context of circumstances that have developed contrary to the will or desire of the speaker.

The modal verbs of the Chinese language are complex linguistic phenomena that should be considered from the perspective of situational application practice, since they contain multifaceted lexical and semantic meanings and shades that must be taken into account when forming speech statements that are adequate to the communicative situation.

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NATIONAL LANGUAGE OF THE PEOPLE AS A CULTURAL ASSET

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Abstract. In this article the poem «Native language is the golden treasure» («Ana til – altyn hazna») of Dagestan famous Kumyk poet Akhmad Dzhachayev is analyzed. The artistic originality of poetic texts is considered. There are a problem of preserving the Kumyk language and poetics of the work in the focus of attention.

Keywords: A. M. Dzhachayev, poetry, literary tropes, native language, Dagestan, multinational republic, foreign languages, Kumyk people.

At all times, the Russian Federation has been famous for being a multi-ethnic, multi-confessional and multicultural country and historically formed as a multi-ethnic one. Consequently, the new generation in many regions of the Russian Federation is growing in a bilingual environment since the birth.

Today, the Republic of Dagestan is a unique land where more than a hundred peoples and ethnic groups live in peace and creative activity. We often rely on our native language in the process of the learning of foreign languages. British politician Frank Smith stated that «One language sets you in a corridor for life. Two languages open every door along the way». The national language in which children are brought up and educated is also a linguistic tool for the foreign language study. Speaking about the spiritual, moral and educational aspects of native languages, we mean the huge role of the influence of literary material that is used in the teaching and learning of a particular native language.

The Kumyks are the largest Turkic-speaking people of the North Caucasus, living on the territory of Dagestan, Chechnya and North Ossetia. Works of Kumyk poetry for children instill love for their native language, for their small Homeland, and contribute to the upbringing of young people in the spirit of patriotism and devotion to their mother's language.

In the era of globalization, it is vital to preserve a nation's cultural and linguistic uniqueness. The article analyzes the problems of the native language in the modern society on the example of the work of the modern Kumyk poet and journalist A. M. Dzhachayev, whose poems evoke love for the language and demonstrate its huge role in the life of its people:

*Nalatlasa ana tilde natlatlar,
Ana tilde mak"tar meni mak"tasa,
Mag"a geler balag'lany aldynda
Ana tilim tok"tar, bir zat tok"tasa* [1, c. 139].

If I am cursed, then curse me my native language too,
If I am praised, I will also receive praise from my native language,
Before the troubles that will overtake me
Only my native language will defend ¹.

People's poet of Dagestan A. M. Dzhachayev is the author of the poem «Native language is the golden treasure» («Ana til – altyn hazna», 2009) is a kind of encyclopedia in which the reader will find answers to any questions concerning the importance of preserving their native language. The epigraph to the poem is a quote of the famous Kumyk poet Abusupyan Akayev: « The problem of language is comparable with the problems of life and death ...» («*Til mas"alasy – zhan berip zhan alag"an bir ullu mas"ala ...*»). Thus, Dzhachayev leads the reader to the fact that he will not immerse him in a fairy-tale world where a person is in complete harmony with himself, does not have any spiritual and moral problems and his native language is always in honor. This poem is a real reflection of the state of the Kumyk language, its position in the Kumyk society today.

From the very first stanzas, the work is repleted with rhetorical questions, forcing the reader to think about the global problem that will arise for its people if their native language disappears: «What kind of talk is it that my language is dead? – *Ana tilim o'lgen degen ne habar?*; «Without the native language, what will happen to our history, / Won't shame us for that story?» – *Ana tilsiz tarihibiz ne bolar, / Tarih bizge artda ajyp salmasmy?* etc.

The author's tone makes the reader blush, be ashamed of the fact that today the people face the problem of preserving the language, which had been preserved for thousands of years by his ancestors who lived on the land where he was born. Everyone knows that there are seven deadly sins, ignorance of the native language according to the poem of Dzhachayev can be called the eighth. According to him, those who betray their native language are not worthy to belong to the human race and should be punished for this:

¹Here and below is a subscript translation of the author of the article.

*Allag' geche gyunag'lany kyobyusyyn,
Ajtyp bitmes rag'musu bar Allag'ny,
Ana tilni bilmej o'lyup getgenden
Allag' gechse tamasha sho gyunag'ny* [2, c. 32].

Allah forgives many sins,
Allah has infinite mercy,
Who left this world without knowing their native language,
It is unlikely that Allah will forgive him this sin.

Personification is a popular literary device used by the author of this poem. It gives special expression in addressing the reader: «When they say that languages are dying, the heart constricts» – «*Tiller o'lse dese, yurek k"ysyla*».

*Ana tilni tereginden sen bizin
Butak"lardaj majyrmag"yn, Dag"ystan,
Dag"y neden ajyrsang da k"ajyrmas,
Ana tilden ajyrmag"yn, Dag"ystan* [2, c. 17].

From the native language tree
Like branches do not tear us off, Dagestan,
It doesn't matter what else,
But don't separate us from our native language, Dagestan.

Throughout the poem, A. M. Dzhachayev personifies Dagestan, its majestic mountains, the waters of the Caspian sea and, undoubtedly, his native language, to which he repeatedly refers, openly expressing his confusion. The author also uses different types of epithets (lyric-epic, lyrical, metaphorical): «A day spent without you is a false day, a mendacious day» – «*Sensiz gyunyum meni – k"alp gyun, yalg"an gyun*»; open and hidden comparisons: «A heart that doesn't love its native language is just a piece of meat – «*Ana tilni syujmes – et gesek*»; trails, including the popular metaphors: «A hundred songs are born when you light my heart» – «*Yuz jyr tuva yuregimni sen yak"sang*»; hyperboles: «One language dies every week in the world» – «*Bir til o'le dyun'yada dyun'yada g'ar zhumada*»; metonymies: «On the one who turned away from the native language, / The native land should spit!» – «*Ana tilge art bergenni betine / Tyukyurmek bar edi ana toprurak!*» etc.

A. M. Dzhachayev's excitement is not connected only with the problem of the extinction of the Kumyk language: the poet fears that the same fate awaits other languages too. As an example the author writes about Russian language: «This is also a danger for the Russian language» – «*Rus tilge de sholaj k"rk"unch yok" tyugyul*».

A. M. Dzhachayev raises the problem of the excessive use of foreign words in the Russian and native languages. The use of words of foreign origin, according to Dzhachayev, alienates the people not only from the language, but also from the culture that has been formed for centuries on the Dagestan land. A person who loses his language will lose his people, lose his national identity. The Kumyk folk proverb says: «If the language becomes impoverished, then the people will become poor» – *Ana til azsa, halk" azar*.

The poem «Native language is a Golden treasure» («*Ana til – Altyn khazna*») is addressed to high school students and representatives of the older generation. Patriotic feelings, love of language and his native land also permeated the poetry of such poets as A. A. Adzhamatov («Tarki-Tau is the mountain of the brotherhood» – «*Targ"u tav – dosluk"nu tavu*»), A. A. Medzhidov («The smell of the village» – «*Yurtnu ijisi*»), A.-V. Suleymanov («Dnepr») and many others. Undoubtedly, each author shares these feelings with the reader in different ways, influenced by the personality of the poet, the time of creation of the work, as well as the age characteristics of the readership. Their works do not make us to be patriotic, but revive this feeling at the level of emotions. «This is a big and responsible task that faces the poetic community of the literary world» [3, c. 567].

A. M. Dzhachayev acts not just as the author of a poetic work, he empathizes with the problem of the people together with them. As a native speaker of the Kumyk language, he feels an irreparable loss if his native language ceases to exist. Each stanza and each line is permeated with deep emotions: love, awe for the Kumyk language, anxiety, indignation at its «offenders». As long as there are patriots of our native language such as A.M. Dzhachayev in the world where «gadgets» control our minds, we still hope that his efforts will have some result and we will not lose our language and our multi-ethnic history.

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**TERMINOLOGICAL PRECISION AND PROBLEMS
OF TRANSLATING BASIC TERMINOLOGY OF THE COVID-19
PANDEMIC**

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Abstract. The present article discusses the process of modifying the COVID-19 conceptual and terminological apparatus in the context of the 2020 pandemic. Dealing with basic terms reveals how misinterpretation of fundamental concepts or meanings of a term can lead to the formation of misunderstanding and cause misinforming of the global community. The article focuses on a specific status of term formation process and translation during the pandemic, the unprecedented speed and global scale of the processes in science and society currently reflected in the global language.

Keywords: terminology, translation of terms, medical terms, COVID-19, SARS-CoV-2.

The translation of terms in any science has always depended on a number of basic characteristics typical for these lexical units. The latter may include their tendency for unambiguity, regularity of repetition in different sources (sufficient to state a lexical unit has been apparently fixed and become recognizable), reaching a collective agreement on the phenomena they denote, the wordings of their definitions, the verbal marks etc. The same is true about medical terms.

Sudden natural disasters or human activities that have an explosive and destructive influence on the life and health of people (for example, major accidents at nuclear power plants), new epidemics or major military conflicts always cause the appearance of many objects (denotations) and terms to name them. Their number is growing rapidly; in the languages of translation, almost at the same speed, they are producing equivalents and analogs.

Since the beginning of 2003, international SARS (Severe Acute Respiratory Syndrome¹) studies have laid the foundations of a conceptual and terminological apparatus for the clinical and epidemiological description of

¹Severe Acute Respiratory Syndrome (SARS). WHO guidelines/recommendations/descriptions. URL: <https://www.who.int/csr/sars/guidelines/en/>. Retrieved 29 May 2020.

this type of virus. The World Health Organization (WHO) has developed the Preliminary Clinical Description of Severe Acute Respiratory Syndrome and other documents containing a basic description of SARS. It seems logical that the vocabularies that describe the three most dangerous diseases of different severity levels, with a high risk of death (such as MERS-CoV 2012, SARS-CoV 2002 and the current SARS-CoV-2 as the reason for COVID-19 found at the end of 2019), have an extensive common core. They generally serve to indicate the symptoms, course, risks, methods of diagnosis and treatment of lethal respiratory infections, the fields of activity of the relevant medical personnel, personal protective equipment, technical equipment, and so on.

At the same time, the new type of SARSr-CoV (Severe Acute Respiratory Syndrome-related Coronavirus) is referred to in the sources as 'novel'², that is, revealing fundamental differences from the previous ones. Its outbreak was quickly recognized by WHO as public health emergency of international concern (PHEIC), later a pandemic³. This makes certain adjustments to the formation of an international and multilingual terminological vocabulary in this sphere.

Firstly, the active nature of the pandemic determines the rapid expansion in the number of terminological units as well as their consolidation. In particular, the present article addressed most often the data of credible online resources not for the lack of materials on the problem of translating medical terms, but because of the processes taking place in society, the healthcare system and languages. Easily found in a great number of up-to-date materials, including official and scientific ones, they have not yet appeared in paper versions.

Secondly, the modern speed of information transfer over the Internet makes terms quickly at the disposal of the world community. Terms are borrowed or used in their initial forms (SARS-CoV-2, COVID), in the original language, transliterated and transcribed ('lockdown' – «локдаун», as adjusted for the COVID-19 pandemic), or provided with a descriptive translation ('flatten the curve').

²David S. Hui, Esam I. Azhar, Tariq A. Madani, Francine Ntoumi, Richard Kock. The continuing 2019-nCoV epidemic threat of novel coronaviruses to global health — The latest 2019 novel coronavirus outbreak in Wuhan, China // *International Journal of Infectious Diseases*. — 2020-02-01. — Vol. 91.

³Statement on the second meeting of the International Health Regulations (2005) Emergency Committee regarding the outbreak of novel coronavirus (2019-nCoV)". World Health Organization (WHO). URL: [https://www.who.int/news-room/detail/30-01-2020-statement-on-the-second-meeting-of-the-international-health-regulations-\(2005\)-emergency-committee-regarding-the-outbreak-of-novel-coronavirus-\(2019-ncov\)](https://www.who.int/news-room/detail/30-01-2020-statement-on-the-second-meeting-of-the-international-health-regulations-(2005)-emergency-committee-regarding-the-outbreak-of-novel-coronavirus-(2019-ncov)). Retrieved 30 January 2020.

Thirdly, the increase in terms is often local in nature, since a number of countries offer their own options for possible vaccines, devices, and alternative treatments. At the same time, the role of the so-called 'off-label use' of medicines and technologies can hardly be overestimated. This term can be literally interpreted as "use not according to the instructions", which often explains its meaning. Though, in this form, it seems not quite adequate for patients in the RF, for instance, since it has a negative meaning in the Russian language: "not according to the instructions" means using something inappropriately, not following the doctor's instructions and prescriptions, synonymous with uncontrolled self-medication. It should be added that since popularization of the knowledge and accessibility of information about COVID-19 among the world population is now given great importance, and any daily news reports touch on this topic, the crucial task is to correctly explain the terms in an unscientific language (plain English or Russian, in our case) that is comprehensible for ordinary citizens. Any mistake that leads to the emergence of negative connotations can provoke panic, mistrust and chain misinformation about SARS-CoV-2 in social networks, which is classified as an offense, now a criminal offense in certain cases. The life of victims of the pandemic around the world, as well as the possibility and efficiency of finding a vaccine or alternative means capable of destroying a nucleic acid and blocking the ability of the virus to reproduce, directly depend on the latest scientific breakthroughs and competent handling of terminology.

Fourth, although any term tends to be unambiguous, it can still demonstrate the phenomenon of polysemy, and its translation options have too subtle differences, elusive for common people. In particular, communicating with students of the Kutafin Moscow State Law University in English on topics related to the pandemic and its legal consequences revealed the same difficulties that are appearing now in everyday communication. For example, these are some concepts and terms that are usually mixed up in a conversation: 'quarantine', 'voluntary quarantine', 'self-isolation', 'isolation', 'lock-down', 'social distancing', 'sheltering in place'. Another example concerns the question of how to describe the characteristics of a new virus – 'infectious', 'contagious', 'communicable', or several of these options at the same time, due to the difference in the shades of their meanings. People are experiencing the same problems with Russian terms ("изоляция", "самоизоляция", "карантин"). The same process can be observed among visitors of city polyclinics, people possibly having the COVID, people who contact qualified information services of a corresponding kind. The interpretation of the terms (both foreign and translated) in everyday speech and language should be controlled and corrected to make them sound as unambiguous as possible. Adequate

translation of newly appearing terminological units forms social attitudes, moods and the correct understanding of the existing threat and has a strong impact on the psychophysiological state of COVID-19 confirmed individuals.

Fifthly, when assimilation into another language takes place, the term begins to acquire flexions, paradigms and characteristic common to the words of this language, and to form neologisms through contamination. Specifically, terms such as 'coronapocalypse' ('corona apocalypse') and 'coronageddon' ('corona armageddon') appeared are currently being fixed by various online dictionaries⁴.

To illustrate the abovementioned, several basic terms and their applicability to the description of the new type of coronavirus have been studied. The Merriam-Webster dictionary, a comprehensive source provided by a well-known American company of the same name specializing in publishing reference books and dictionaries, makes the following distinction: '*Contagious* diseases are spread by contact, while *infectious* diseases are spread by infectious agents. Something "contagious" is by default "infectious" because contact exposed you to the infectious agent, but something infectious isn't always contagious. You can be infected with food poisoning, which itself is not contagious.'⁵ Thus, at present time, COVID-19 can be characterised by the both terms, since it is reasonable to assume that the virus demonstrates the ability to be transmitted both directly from person to person ('contagious') and through the environment (through objects, surfaces, aerosol), similar to the way other microorganisms penetrate the epithelial cells. At the same time, the ability of a new virus to be transmitted through aerosol (the so-called airborne transmission) has been repeatedly questioned.⁶ Its ability to remain on surfaces, varying in duration, is also still under study. If it were found, for example, that the risk of such an infection is negligible, and the disease is transmitted through direct contact of a sick person and a healthy one, then the disease would be characterized more frequently as 'contagious'. As for the term 'communicable', all diseases with this characteristic are 'infectious', but not vice versa (tetanus, for example, causes infection, but cannot be transmitted to other people). Also, this term refers more to a 'person-to-person' level than to the transmission of this disease from other living things ('zoonotic diseases') or from a person to them.

⁴New Words We Created Because Of Coronavirus. Dictionary.com. URL: <https://www.dictionary.com/e/s/new-words-we-created-because-of-coronavirus/#1>. Retrieved 29 May 2020.

⁵Is That Cold 'Contagious' or 'Infectious'? Merriam-Webster. URL: <https://www.merriam-webster.com/words-at-play/gesundtheit-is-that-cold-contagious-or-infectious>. Retrieved 29 May 2020.

⁶Is the coronavirus airborne? Experts can't agree'. Nature.com. URL: <https://www.nature.com/articles/d41586-020-00974-w>. Retrieved 29 May 2020.

When translating these terms into Russian, it will be necessary to choose a more descriptive way, especially if the style of the translation is not scientific proper (for example, the aim is to inform the local population), since the words «контагиозный», «заразный» in the Russian language do not reveal such subtle shades of meanings. With a more detailed explanatory translation, it will inevitably be necessary to indicate unambiguously and explicitly the main source, method and mechanisms of spread of the virus.

As we can see, it is already at the simplest initial stage of describing a new virus with basic terms that first terminological and translation difficulties are revealed. At this stage, when much data on COVID-19 is not yet available, comprehensive glossaries have not been formed, the lists are being regularly updated with new terms, and the existing terms in this area specify their meanings in connection with the particular characteristics of the new virus and the unprecedented pandemic conditions, the attitude to the terminological basis requires special emphasis. This applies not only to their use in the health sector, but also to their interpretation in the media, in educational organizations, when working with the public or forming understanding and proper attitude among the younger generation.

Great emphasis should be placed on using an accessible, non-professional language to present the essence of a new term or a unit that has acquired a more specific meaning in the current circumstances; translators in the sphere of professional communication are facing an increased responsibility and burden. Particular attention should be focused on maintaining, as far as possible, the compliance of the COVID-19 multilingual terminological basis with the high standards imposed on the terms of such important areas of life as the healthcare sector.

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THE SELF-PRESENTATION OF A PUBLIC PERSON IN THE INTERNET COMMUNICATION: A PERSONAL WEBSITE

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Abstract. The paper discusses the self-presentation of a public language personality, whose wide popularity is largely determined by the presence of an official website in the Network that reflects the personalized nature of Internet communication. It is noted that the pragmatic meaning of a web page is created not only by verbal, but also by non-verbal components. It is concluded that the implementation of the presentation function in the biographical texts of a personal site provides not only the representation of a public person, but also the impact on the target audience.

Keyword: verbal, impact, Internet communication, non-verbal, personal website, public personality, self-presentation.

The specificity of the communicative interaction in the Network is the subject of the Internet linguistics, intensive development of which is due to the increased attention of scientists to information, communication and cultural environment, creating virtual reality (N.G. Asmus, E. I. Goroshko, O. V. Lutovinova, I. N. Rosina, M. Yu. Sidorov, L. S. Schipitsyna, etc.). A new area of linguistic research, studying online communication from the point of view of different approaches, acts as a multiparadigm discipline, the concept of which is the result of the changing scientific priorities. The paradigm of Internet linguistics " does not mean that the history of linguistics will have to be rewritten. Rather, the current situation will fit the position of L. Elmslev, who believed that linguistics, like other science, periodically experiences classical and critical epochs [1: 7]. <... > Just the emergence of a new direction in linguistics can indicate the build-up of new knowledge on the already built Foundation" [2:26].

The experience of the study of linguistic identity in the Internet-anthro-

pocentric linguistics is correlated with the vector of development of modern linguistics. "Due to the actualization of the problem of the human factor in language, which occurred at the end of the last century, the interest in the human as a language personality has significantly increased in Russian linguistics" [3:148].

At the beginning of the XXI century, one of the most popular methods of studying the language personality is discursive analysis, which allows us to consider the properties of personality in the communicative and activity aspect (A. A. Asheva, L. V. Kushnina, O. V. Iutovinova, etc.). Having described a virtual language personality based on the model developed by Yu. n. Karaulov, O. V. Iutovinova comes to the conclusion that this type of language personality is a specific type of addressee [4:17].

The nature of Internet communication, which is carried out in the absence of visual contact, contributes to the importance of the analytical function, which includes the presentation function. In the conditions of free and liberated communication, a person strives to realize his creative potential and arouse interest in himself. "Self-presentation as the goal of personal Internet discourse is a human need for self-expression, self-identification, publicity, obtaining approval / disapproval or recognition by society of personal achievements of the language Internet personality" [5: 53].

The personified nature of communication in the Internet space is especially noticeable in such a genre of the Internet as the official website, whose media and structural-textual features reflect the value-oriented behavior of the language personality, its social status, activities and evaluation. Sharing M. Y. Sidorova's opinion, we also refer this genre to personal Internet discourse, which is formed at the intersection of institutional and virtual types of discourse. "The communicative purpose of the genres of personal discourse is an expression (*italics mine* – W. H.) and find like-minded people in various online communities and, of course, the ability to obtain and exchange information" [5: 54].

If social networks position private Internet users regardless of their position in society, then a personal website, being a special communication channel, represents a public person in the Internet space – well – known politicians, actors, writers, and journalists. Self-presentation of a public person is primarily carried out through a web page, where information transmitted not only by linguistic but also by paralinguistic means acquires a pragmatic meaning. Thus, the official website of the politician and businessman Mikhail Prokhorov has a typical structure for this genre and consists of various content and design blocks: "Biography", "Achievements and failures",

"Interviews", "Interesting facts", "Career", "Personal life", "Family", "Colleagues and friends", "Hobbies", "Programs", "Photos", "Videos".

The personal websites of political figures are dominated by verbal elements, in contrast to the sites of mass culture stars, where non-verbal components, such as screensaver photos, which are constantly dynamic due to flash animation, occupy a very significant place. It should be noted that units of the iconic language (drawings, photos, graphics, etc.) can also be used as hyperlinks. "The role of the visual component increases precisely in Internet texts, including hypertexts. Sites, being a kind of network, creolized texts, in contrast to the texts of print media, on the one hand, are not limited in space for publication, on the other - they assume a scanning nature of reading. This, in turn, leads to the appearance of iconic elements in such texts that perform a variety of functions" [6: 88].

A personal website is characterized by a single communicative and pragmatic attitude that ensures the integrity and connectivity of all components, despite the hypertextuality. The conceptual idea of the site is conveyed not only by its structure, category titles, etc., but also by its color design. Thus, the official website of M. Prokhorov is distinguished by the dominance of gray, which symbolizes moderate conservatism. Against this background, the image of the author himself stands out, dressed in a black suit, which is considered a kind of marker of political activity.

In Internet communication, an indicator of the popularity of a creative personality is interaction, which allows you to maintain feedback with readers / viewers / listeners. For example, the interactivity of the official site of the actor Eugene Mironov is provided by the presence of a guest book containing reviews, ratings, thanks, etc.: greetings from Yaroslavl! We are fans of Your creativity. We have been watching you closely since the movie "the Muslim", which has not yet been appreciated. Thank you for your creative work [<http://emironov.ru/gostevaya-kniga/>].

A public person declares himself not only in the biographical text, but also in the dialogue that he conducts with Internet readers. On the website of the journalist and TV host V. Posner, a communication and pragmatic role is played by the hyperlink "Communication", referring to which readers can find out his opinion about certain events and - what is also very relevant in this case - a civil position, since the position of a well-known authoritative journalist has a significant impact on the audience. On its website, an interactive dialogue with the Internet reader, which always somehow characterizes the participants of both sides of communication, opens with the heading "Ask your question to Posner", followed by "Posner's Answers".

The questions addressed to the TV host cover a wide range of topics related to various spheres of life, but first of all - political. Internet readers

who make up V. Posner's audience are actively interested in his creative plans, attitude to popular works of art, movies, etc.

The linguistic and stylistic features of a personal website, which includes various thematic blocks connected by hyperlinks, indicate the identity of a public person. In Internet linguistics, linguostylistic analysis is based on a systematic approach that involves the consideration of language units at different levels. The personality of a person reflects not only the lexical, but also the phonetic level, and above all, the rhythmic and intonation pattern of the biographical text, which attracts and holds the attention of the target audience.

So, the biography of the Russian singer Dima Bilan is sustained in a melodic manner of narration, reminiscent of a story in the spirit of "once upon a time": on December 24, 1981 in the city of Ust-Dzheguta (Karachay-Cherkessia) in the family of Nikolai and Nina Bilan, there was an addition - they had a boy. Neither the doctors of the maternity hospital, nor the happy parents then even suspected that a new star was born. The baby was named Victor, as if to determine his future fate – after all, in Latin, this name means "winner" [<http://h.120-bal.ru/doc/11672/index.html>].

Language units that contribute to the task of self-presentation are closely related to the category of personality, the formal means of expression of which are personal pronouns 1 persons who take on emphatic stress: Hello Everyone! I Am Ksenia Sobchak. This is my personal website [<http://ksenia-sobchak.com/>].

Another way to Express the category of personality in biographical texts published on official websites is the personal pronouns of the third person. From the biography of three time Olympic champion figure skater E. Plushenko: His ascent continued during 1998-1999, but the real breakthrough came in the following season, when Eugene won 7 out of 9 competitions and established himself as a force to be reckoned with. He was already a current and two-time Russian champion, won the Grand Prix final for the first time and his first European title [<http://evgeni-plushenko.com/about/>].

Lexico-pragmatic units actively participate in the implementation of the strategy of self-presentation, which are aimed at increasing the assessment of the individual's activity and, accordingly, strengthening the pragmatic effect: From the biography of TV presenter Ksenia Sobchak: Perhaps Ksenia's great future was predetermined - the girl was born in an original family. <...> But independent character, irrepressible energy and curiosity were shown from an early age: the girl with interest and a certain talent mastered various directions – fine art at the Hermitage, the basics of

ballet at the Mariinsky theater and successfully graduated from the school at the Herzen state University [<http://ksenia-sobchak.com/biografiya>].

From a stylistic point of view, the texts of biographies of creative personalities may differ significantly from biographical texts of political figures, in which the self-presentation of the individual is built in accordance with the requirements of the official business style, which determines the stylistic neutrality. However, in both cases, the orientation of the public personality on status-role relations with Internet readers remains.

The implementation of the presentation function in a personal site provides not only the representation of a public person, but also the impact on the target audience by the conceptual setting.

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SPIRITUAL POTENTIAL OF THE USSR AND GERMANY IN THE 1930S - 40S AS THE BASIS OF POLITICAL DICTATORSHIP

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Abstract. The article gives a comparative analysis of the cultural development of the USSR and Germany, who fought against each other in the Second World War. It is noted that the political regimes established in them in the designated period had a different ideological basis and set different goals and objectives. At the same time, it was established that the dictatorial essence of the state system that has established itself in these countries predetermined the similarity of a number of features in their cultural development. It is concluded that the spiritual potential of the USSR and Germany was comprehensively controlled by the state apparatus of administration, purposefully and effectively used for the indoctrination of society in order to suppress dissent and strengthen the dominant power.

Keywords: dictatorship, spiritual potential, control, repression, realism, neoclassicism, monumentalism, nationality, patriotism, heroism

In the Second World War, 61 states took part. Moreover, their roles in this "human meat grinder" were significantly different. Some fully experienced all the military hardships, others limited themselves only to economic assistance to the belligerents, while others generally only declared their participation [1, p. 190]. Of this motley palette of participants, a special place belongs to the USSR and Germany. It was their mortal battle that became the core of the war and in many ways predetermined its outcome. During the military clash, political regimes prevailed in both countries, professing different ideological views, setting different goals, but very similar in forms and methods chosen for their achievement and implementation in the public consciousness.

Both political regimes, which had a dictatorial nature, sought in domestic politics to completely subordinate the individual to the state, and in foreign policy to establish world hegemony. The leaders of the Soviet Union wanted to realize their plans by spreading the so-called world revolution, the leaders of the Third Reich wanted to achieve the plan conceived by the Germans to conquer world domination.

The functional similarity of the political regimes of the two states that fought among themselves in 1941-1945 largely predetermined the internal similarity of their spiritual potentials. The Soviet and Nazi cultures, being the moral foundation of each of the warring parties, had many common features and signs. First of all, in both states the basis for the development of culture, its essence and tasks were interpreted and determined almost identically. The basis of Soviet culture was Marxist ideology, some traditions of art and cultural values of the Bolshevik leaders. Something similar took place during the formation of German culture during Hitler's rule. Its soil was "fertilized" by Nazi ideology, mixed with the personal artistic tastes of the leaders of the Third Reich and some German cultural trends of previous decades.

In both countries, culture was given almost the same role. By all available means, it was supposed to help strengthen political regimes and exalt their leaders. Culture was obliged to speak with the people only in the language of power; therefore, both in the USSR and in Germany, it was introduced into an ideological superstructure and placed under the strict control of various leading, directing, and organizing authorities. In the Soviet Union, the ideological normativeness of ideological values was achieved by the activity of original social institutions. Centralized Unions of Writers, Artists, Composers, Theater Workers, Journalists, etc. under the strict supervision of party-state structures, they should have worked to achieve the goals defined by the command and administrative system that has strengthened in the country.

In Germany, supervisory functions were assigned to the imperial chamber of culture, 30 thousand members of which were obliged to create only on the instructions of the relevant authorities [5]. Creative Unions in the USSR and the imperial Chamber of Culture in Germany possessed the possibilities of total control. In their hands focused not only tracking the ideological orientation of the works, but also the entire process of their creation and further use. These organizations were in charge of publishing literary works, distributing orders, selling art materials, holding exhibitions, selling artworks, etc. The loss of membership in them meant for any cultural figure in both countries the deprivation of the opportunity to engage in professional work.

The political regimes of the USSR and Germany clearly defined the general line of cultural development, in which literary and art workers pledged to create with their works the illusion of harmony in social development. This tendency to forcible harmonization caused yet another striking similarity in the development of the two cultures - all-encompassing repression against "dissenters," whose work did not fit into the boundaries defined by the general line. It is no accident that in the USSR and Germany almost simultaneously legislative acts were introduced prohibiting the activities of free art groups.

In the Third Reich, repressions against cultural figures were carried out under the banner of the struggle against "degenerate art." The "false Germans", "the molesters of culture" were persecuted. As a rule, these were Jewish artists, anti-fascists, and creative workers who continued their professional activities in spite of the state ban. In the "state of workers and peasants" punishments were carried out under the then traditional calls for the fight against "espionage", with "counter-revolutionary activities", with "conspiracies", and "terrorist acts." The massacres were carried out mainly against the old intelligentsia, classified as "class enemies".

In Germany, measures to "reject alien spiritual material" included the burning of books of authors objectionable to the regime, the removal from use or the destruction of works by "degenerate" artists and sculptors. In the course of the struggle with the "scum from art", more than 20 thousand masterpieces that do not meet Nazi tastes were removed to special stores, more than 4 thousand were destroyed, a large number were sold at auction abroad. The operations of "rejection" of the "degenerates" themselves took place. Thousands of masters were expelled from the imperial chamber of culture, the Academy of Arts, and from teaching places. Among the persecuted were world-famous artists, sculptors, writers, poets: K. Kolwitz, O. Dix, M. Beckman, M. Lieberman, etc. The case came to direct violence. Hitler stormtroopers killed the famous figures of German culture E. Musam, K. Osetsky, G. Mayer-Tour [5].

In the "first country of socialism", despite the different content of political slogans, punitive campaigns against dissidents were carried out no less extensively. The persecution of people from "alien classes" led to the destruction and expulsion of the best representatives of Russian culture abroad, the prohibition of works of Russian and world classics, the looting and destruction of temples, which most negatively affected the gene pool of the Russian people. Thousands of "old-regime intellectuals," among whom were the executed poet N.S. Gumilyov, exiled on a "philosophical ship", along with the 160th outcasts of the new government, philosopher

N.A. Berdyaev, who was repeatedly arrested and died in a transit camp, O.E. Mandelstam, who was not allowed into the USSR after the foreign tour, singer F.I. Chaliapin. Under the pressure of political circumstances, the writers I. A. Bunin, E.I. Zamyatin, A.I. Kuprin, composer S.V. Rachmaninov, aircraft designer I.I. Sikorsky and others were forced to leave their homeland [4; 7].

It should be noted that terror, quite comparable in scope, against cultural workers in the USSR and Germany was distinguished not only by its "ideological content", but also by its organizational methods. Thus, the Hitler police car reacted mainly to the concrete resistance of the existing government, and the Stalinist repressive apparatus worked in advance, implementing preventive measures that did not even allow its occurrence. Therefore, in Germany, prudent conformists had the opportunity to survive, and in the Soviet Union no one had a guarantee of security, even completely devoted to the regime.

It is interesting to emphasize that despite the ideological and political differences that determined the dissimilarity of goals and objectives, the conditions of the dictatorship in which the spiritual potential of the Hitler and Stalinist states developed, determined the coincidence of a number of its style attributes. The core of all works of art born in these countries in the 30s and the first half of the 40s was total realism. In the USSR, it manifested itself in the form of "socialist realism", which claimed that art was an adequate reflection of revolutionary reality, and in Germany - in the form of "heroic realism", promoting art as a manifestation of a certain higher being. Of course, both variants of total realism had many differences. However, in the main they were similar. Both in Germany and in the Soviet Union, realistic artistic means were used only to copy the ideal that had already arisen in society and to prevent the development of "small art" that did not correspond to the greatness of the era.

A striking sign of total realism, established in the USSR and Germany, was monumentalism. Monumentality was considered the highest aesthetic value of a work of any genre, but it was especially pronounced in architecture. J. Stalin and A. Hitler were well aware that only this kind of art can most clearly express the power and greatness of the state, completely suppressing everything individual and isolated. In the pursuit of monumentality, ideological differences were also visible in both cultures. The National Socialists of Germany believed that it better expresses the idea of world domination, strikes the imagination and inspires fear. The communists of the USSR saw in monumentalism the opportunity to more accurately reflect the values of socialism, to demonstrate the correctness of the chosen

path. However, despite the difference in shades, both Germanic and Soviet monumentalism symbolized megalomania and a certain messianic role of both dictatorial states. Architecture with its monumental grandeur was conceived in the Soviet Union and Germany as the most important area of agitation and ideological art.

The strength of the Bolshevik party in the USSR and the Nazi party in the Third Reich was affirmed in the guise of new administrative buildings, in the construction of public buildings, grandiose obelisks, introducing the masses to fascist or communist ideology. It is significant that many projects of grandiose architectural structures, embodied or not implemented in practice in Germany and the USSR, had significant similarities. This primarily refers to the development of master plans for the reconstruction of Moscow, which the Bolsheviks sought to turn into "the center of all progressive mankind" and Berlin, which the Nazis wanted to transform into the "eternal capital of the world." As a concrete example, we can cite the projects of the giant House of Soviets (architect B. Yofan), which they proposed to erect in Moscow, and the People's House (architect I. Thorak), which was supposed to become the central point of the whole architectural complex in Berlin [3, p. 36]. The proximity of style is clearly visible in the architecture of the pavilions of the USSR and Germany, erected at the world exhibition in Paris 1937. The above examples show not only the stylistic similarity of architectural structures, but also demonstrate the tendency of obvious rivalry between two totalitarian states, striving to surpass each other in the pomp of their undertakings [5].

Monumentalism, encouraged by the authorities of the USSR and Germany in the field of architecture, was also clearly manifested in the field of sculptural art and painting. A feature of these genres was that they practically did not possess independence, they were a phenomenon of a purely ideological order, aggressively integrated into architecture. In Germany, these were huge personification statues installed on administrative buildings, city memorials dedicated to the fallen during the First World War. The naturalism of these works, embodied in ideal proportions of the human body, the hypertrophied power of the muscles, was supposed to exert a psychological effect on the contemplators, to educate in them a "ubermensch", a "true Aryan".

In the Soviet Union, sculptural art and painting were also distinguished by a pronounced ideological orientation. But here the idea of uniting the party, leader and people prevailed to overcome all difficulties and build a "bright future". Moreover, the main canon was so ritualized that the picturesque portraits and sculptures of the leaders, not to mention the "typical

workers and collective farmers", were completely faceless and devoid of any psychologism. The artistic merits of such works did not matter. The main thing was that the monumental fetish was installed in the right place and had an ideological and psychological impact on others [2, p. 56].

Monumentalism, as the basis for the development of the Soviet and German culture of the era under consideration, determined the commonality not only of the style and technique of artistic works, but also their thematic focus. The main theme of the "creative product" of the cultural figures of the USSR and Germany was patriotism, party policy as an expression of the aspirations of the masses. Such a theme was so widespread that it was present even in still lifes: artists often introduced busts of leaders or books written by them among the subjects. The theme of love for the motherland was embodied to a greater extent in the image of a woman as a symbol of motherhood and fertility. In the works of Soviet and German artists and sculptors, the image of peasant and industrial labor was very popular. Some works of this subject, created in Germany and the USSR, are so similar to each other that the impression of a single authorship is created. Such are the sculptures by I. Kambarov "The Collective Farm Girl" and K. Speer "The Toiler of the Village", the paintings by G. Melentyev "The Brigade at the Power Press UZTM" and A. Kamph "Rollers".

At a time when the two countries waged a fierce war among themselves, the reflection of popular collectivism, the heroism of the front-line soldiers and home front workers was widespread in their art. For example, the poster of I. Toidze "Motherland is Calling" and the picture of A. Deineka "The Defense of Sevastopol" were very popular in the Soviet Union. In Germany, similar themes and plots were also welcomed. Moreover, the coincidences in the works of Soviet and German artists were so great that they can even be traced in the names. So, during the war in the Third Reich, the works of G. Mann "The Motherland Calls" and G. Schmitz-Wiedenbruck "The Fighting People" were very famous.

An important feature that emphasizes the commonality of cultures of the Soviet Union during the Stalinist era and Germany of the Third Reich was neoclassicism. On the one hand, it continued the traditions of an idealized past, and on the other, it imposed a new utopia, a naive faith in the coming perfection. In both states, neoclassicism opposed avant-garde, sought to counter the "subjective quests" and the "degenerate vacillations" of the stable canons of "true" culture.

The stylistic features that determine the similarity of the cultures of Germany and the USSR of the 1930s-40s should include nationality. In both states, the people were seen as a legitimate authority, a global comple-

ment to power. Culture was obliged to emphasize its common sense, simplicity, clarity of thinking, unspoiled taste, etc. This led to the demands and calls of the political regimes of J. Stalin and A. Hitler for cultural figures to create “for the people”, to be “understandable to the people”, and to struggle with “anti-people’s art”. However, constant appeals to the people created only the appearance of their involvement in cultural values. In fact, all cultural means were used to praise the leaders and the political systems they created. The figure of the leader, who was the personification of the people, was at the same time the creator of the new culture and the main subject of its image.

Another indicator that brings together works made within the framework of a culture established in the Stalinist Soviet Union and Nazi Germany is heroism. At the center of any Soviet or German work of the designated era was to be the figure of a human hero, ready at any moment to accomplish a feat. The hero’s ability to exert all spiritual and physical strength in order to achieve the goals drawn by the leaders was equally appreciated in both countries. The difference was only in the name of such behavior. In the USSR, this behavior was called enthusiasm, in the Third Reich fanaticism was more disposed to the term. In both cultures, the character of the hero was mainly associated with iron or steel symbolism. But if in the Soviet Union iron will and steel determination were considered the main and determining hero of the Bolshevik, in Germany national socialist heroism was expressed mainly through the steel muscles of the soldier’s body [6].

Thus, the cultures of Germany and the USSR who fought among themselves in 1941-1945 corresponded to the goals and objectives of political regimes, which had a different ideological orientation. Nevertheless, they possessed a number of identical features determined by the typologically general nature of the dictatorial state. Both cultures were used by the state machines of the USSR and Germany as important links in the purposeful ideological treatment of society, achieving significant efficiency in this process.

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INITIATIVES OF A.N. BEKETOV IN THE FORMATION OF HIGHER FEMALE EDUCATION IN RUSSIA IN THE SECOND HALF OF THE XIX CENTURY

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Abstract. The article is dedicated to Andrei Nikolaevich Beketov, a gifted scientist, teacher and public figure in the second half of the 19th century. A.N. Beketov was a very active figure in the reforms of the 1860s of the XIX century in the field of university projects. It was his participation in the transformation of universities that was distinguished by great initiative. Issues of Russian education and enlightenment were in the center of public attention. For A.N. Beketov's public education, from primary to higher, is the basis for building a progressive society and the prosperity of Russia.

Keywords: A.N. Beketov, reforms, education, discussions, university project, Bestuzhev women's courses.

Andrei Nikolaevich Beketov, one of the most outstanding figures of the second half of the XIX century, is not only a brilliant scientist, teacher, publicist, but also a public figure. It is the public sphere of activity of A.N. Beketov what was extremely little studied.

A.N. Beketov, of course, "was not a theorist, but a"practitioner", so the question of the need to "return to the roots" [1, p.5] and to trace the evolution of the formation of his political and public views is very relevant.

For the first time, an attempt to comprehend the place and role of A. N. Beketov in Russian science and public life was made during the life of S. Beketov. Vengerov, when he worked on his "Dictionary of Russian Writers and Scientists." The importance of this small work is indicated by the fact that the editor wrote the article about Beketov, and it is thanks to this article that we have the first generalized data on the biography of the scientist and public figure. The value of this article lies also in the fact that it was created with the direct participation of Beketov and can also be attributed to the sources. [2]

Historiography of life, scientific and especially social activities of A.N. Beketov is represented by a very small number of works. In 1958, the only monograph about Beketov written by A.A. Shcherbakova. [3] In this study, for the first time, an attempt was made to comprehend the political activities of Beketov, but the author was under pressure from ideological barriers, and in this case there is no need to talk about a full and comprehensive study of this issue. On the one hand, the personality and activity of A.N. Beketov's works are extremely poorly studied, and on the other hand, there are certain historiographic studies that allow a comprehensive review of Beketov's contribution to the creation and organization of higher women's courses in Russia in the second half of the 19th century. Given this fact, we can also talk about the significant interest that the memories of students in the courses present. These include the memoirs of O.K. Bulatova-Trubnikova, V.P. Tarnovsky and some others. [4]

Only at the turn of the 1990-2000s, researchers again turned to the study of the personality of A.N. Beketov, putting in the center the question of the formation and evolution of his political views.

Worldview of A.N. Beketov began to form very early. "In the blood, thanks to M. Furnier's upbringing, partly reading French books and university life ... there was always some desire for equality, for putting himself on the same level with each and every one", he recalled in his old age [5, p.199]. Already in childhood, the future scientist condemned the cruelty of serfdom and was imbued with sympathy for serfs.

Russia entered a new era. He enthusiastically accepted A.N. Beketov's great reforms of the 60s of the XIX century. The political regime of Nicholas I he met with categorical rejection. After many years of the painful Nicholas regime in the country, a socio-democratic rise began. Beketov fully shared the public sentiments of the advanced people of his time. He repeatedly tried to express his thoughts in a fiction form. Deprived of any significant artistic value, his literary attempts are extremely interesting for elucidating the scientist's worldview positions.

Thanks to his inherent public temperament, according to the scientist's daughter, "the publicity was in his blood" [6, p.656], even Beketov's special works on natural science help to understand a lot in his socio-political views.

He considered the term "struggle for existence" to be inaccurate and even incorrect, preferring to speak not about struggle, but about "life contest". In nature, he saw, first of all, the desire for balance, harmony, the interaction of forces [7]. And to this opinion he remained faithful to the end.

With the faith in man, education, citizenship inherent in enlighteners, the scientist insisted on the beneficial effects of civilization, objecting to those who complained about the desecration of nature by man.

A.N. Beketov was a very active figure in the reforms of the 1860s of the XIX century: his participation in the transformation of universities was notable for his great initiative. The issues of education and Russian education were then - along with peasant and other major problems - in the center of public attention. Beketov considered public education, from primary to higher, to be "the main basis of all progress" [8, p.208], connecting the fate of his native country with his state.

At the time of the heated discussion on the university issue, Beketov made a polemic article on the pages of the liberal "St. Petersburg Gazette" [9]. It dealt with one of the most pressing issues - the student one, around which heated debates then raged, conflicting opinions clashed.

Beketov spoke on the side of the younger generation. "...Many people think that Russian students should have special responsibilities without special rights." The author had in mind compulsory attendance at lectures, passing exchange exams, and obeying the established rules. The need for such orders their defenders explained by the low degree of development of civilization in Russia. The need for educated people, in the absence of a serious desire for science among young people, required, from this point of view, certain disciplinary measures.

Beketov had a different opinion. He believed that strict custody of education turns universities into higher schools, and students into a "class of students". "The question is, is it possible, is it logical to force people using the most essential civil rights to be taught by school pedagogical means: I can participate in the administration of the state, I can buy and sell property, and I must study by direction! The transformation of adults, although young men, into children, the transformation of a citizen into a schoolboy, is the source of all university unrest, and as a result, the main reason for stopping education", the professor said [10].

In the spirit of the liberation impulses of the 60s, the author compared compulsory doctrine with serfdom. He rejected any compulsory pedagogical means at universities.

In essence, Beketov supported the project put forward by historian N.I. Kostomarov: "an open university for everyone, freedom of teaching and freedom of listening" [11]. In the conditions of the state system of Russia, the existence of a student corporation is unrealistic, Beketov believed. The optimal option, he considered the full accessibility of university lectures for everyone "without distinction of age and gender." Admission and

course exams were considered unnecessary. The fee for lectures - "if it is charged" was proposed to be determined depending on the number of subjects that the student is going to study at the university. The level of scientific preparation of students will be determined by strict final exams. The right to attend them must be granted to all those with academic degrees and engaged in scientific activities. Thus, the society will have the opportunity to control professors and examiners with the help of the press.

In the history of national education, the formation of female education and the activities of the Bestuzhev courses opened in 1878 are a bright, complex and dramatic page in history. "Bestuzhev courses were one of the largest achievements in the struggle of progressive social forces in Russia for the equal rights of women and the development of female education, in the struggle of Russian women themselves for the right of access to higher education" [12]. It is known that it was secondary women's educational institutions in the 60s and 90s of the XIX century that became the key link in the whole system of female education in post-reform Russia. They created the necessary prerequisites for the organization of higher education institutions for women.

A.N. Beketov was the initiator of the creation of the Higher Women's Courses in St. Petersburg, which from the very beginning were the subject of his continuous cares and custody. He led them until their transformation in 1889. He was a supporter of women's education.

Invaluable merits of A.N. Beketov in the formation of higher female education in Russia is a remarkable phenomenon of the 60s. The initiative in establishing the St. Petersburg women's courses belonged to women themselves. But it could not have been realized without the assistance of a professor. Scientists provided the women's circle with moral support, business and organizational assistance. A.N. Beketov. Name of "Bestuzhev" - courses received thanks to the choice of the minister. But, as S.A. rightly noted Vengerov, "if you give them a nickname for the amount invested by the founders of the initiative and energy courses, then they should be called "Beketov's" with great right [13].

The implementation of the plan met a lot of barriers and obstacles on its way, to overcome which the course organizers required a maximum of effort, persistence, perseverance. The course of business is set out in detail by V.V. Stasov in his book about his sister Nadezhda Vasilievna - one of the main organizers of the movement, the manager of the Higher Women's Courses. A.N. Beketov helped the women's circle as he could. N.V. Stasova called him "the strongest competitor, employee and assistant" in all matters concerning the organization and activities of courses - from the

first steps to the end of the 80s [14, p.136, 278]. It was to him, as secretary of the First Congress of Russian Naturalists (1876), that E.I. Konradi proposed her famous "petition", which proved the need for women to obtain higher education. Under the chairmanship of Beketov, in the spring of 1868 a commission of professors at St. Petersburg University examined the application of women addressed to the university rector K.F. Kessler, expressing full sympathy for their aspirations. Beketov served as a link between the women's circle and the university. He helped women meet and agree with professors. The university authorized him to negotiate with the Minister of Education Count D.A. Tolstoy (along with three women deputies). He explained to the minister the program outlined by the professors, and more than once later he defended before him the idea of creating a higher educational institution for women. Despite all the efforts, at first it was only possible to get permission to open public lectures for people of both sexes on a common basis. Beketov stood at the head of them [15, p.269]. On the opening day in January 1870, 900 people gathered (including 800 women). These public lecture courses existed for six years, not having their premises and wandering from place to place.

Finally, in 1876, Alexander II signed a decree on the creation of university courses for women in university cities - but exclusively private ones. The authorities took this step forcibly: the outflow of young women and girls to study abroad and their involvement there in revolutionary circles forced the government to take measures to counter such an undesirable phenomenon, and for this it was necessary to give them the opportunity to graduate in Russia.

September 20, 1876 higher women's courses opened in St. Petersburg. As their founder D.A. Tolstoy recommended Professor K.N. Bestuzhev-Ryumin. Beketov, in the same year elected rector of the Petersburg University, continued to take an active part in the affairs of women's courses. Not a single important issue was resolved without his advice and assistance. As the chairman of the pedagogical council of courses, he continued to lead the entire educational part there. He devoted a lot of effort to financially providing courses, being an honorary member and then chairman of the Society to deliver funds to courses. In 1881, after Bestuzhev-Ryumin left the post of course leader, Beketov took over the management of them. In the fall of 1885. Higher women's courses, with his active participation, finally found their own premises with funds raised by the public. However, after some six months, Minister of Education I.D. Delyanov ordered the termination of admission to the Higher Women's Courses on the pretext of considering the general issue of female education by a special com-

mission. The courses were irreparably damaged, their budget was undermined, and meanwhile, they were under debt obligations undertaken during the construction of the house. Business established with dedicated work was about to collapse: by the summer of 1889, there would not be a single student left on the courses. After repeated unsuccessful applications for the resumption of admission to the courses, it was finally possible to obtain such permission, but under the condition of a radical reorganization: self-government was liquidated, people appointed by the ministry were led, and the creators of the courses were removed from their brainchild.

The role of Beketov in the formation of higher woman education was highly appreciated by the public. Since the beginning of the 80s of the XIX century, there was a scholarship in his name on the courses. In honor of the 50th anniversary of the scientist's scientific and social activities, a portrait by a talented student-artist was posted in the assembly hall of the Higher Women's Courses. In 1902, the courses established the annual award to them. Beketov for the best work in botany.

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THE DEOBANDI SCHOOL AND ITS INFLUENCE ON THE IDEOLOGICAL ATTITUDES OF RADICAL ISLAMIC GROUPS (ON THE EXAMPLE OF THE "TALIBAN" MOVEMENT)

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Abstract. The article examines the ideological attitudes of the "Deobandi" school and their influence on the formation of the ideology of the "Taliban" movement. The analysis allows us to argue that the "Taliban" ideology was formed on the basis of the fundamentalist theories of the Deobandi school and the radical attitudes of the "Jamaat Tablig" movement. The discrepancies between the ideology of the "Taliban" and radical Salafism revealed during the study allow us to adjust the fight against extremist groups in the territory of the modern Central Asian region.

Keywords: Deobandi school, religious fundamentalism; Taliban, Jamaat Tablig; political extremism

The "Taliban" movement (activity is prohibited on the territory of the Russian Federation), having arisen in 1994, was considered by its founders as an Islamic reform movement. Throughout the difficult history of the Muslim world, reform movements have changed both the foundations of the Islamic faith and the political and social life of Muslims. Moreover, in the opinion of A. Aleksiev: "Until the appearance of the Taliban, Islamic extremism was never successful in Afghanistan" [2]. Indeed, even representatives of Salafism, including Osama bin Laden, found a small number of followers among the Afghan tribes, mainly Pashtuns, only thanks to promises to provide more modern weapons and significant amounts of money.

At the same time, the Taliban's interpretation of Islam fundamentally distinguished them from Wahhabis and from radical Islamists from the "Muslim Brotherhood" organization, and even more so from traditionalists who advocate the path of Sufis or Hanafi Sunnis. It is safe to assume that the "Taliban" represent only their idealized version of Islam, that is, in some way an interpretation of Deobandism (and, as its later development, "Jamaat Tablig"), a radical trend in Hanafi Sunism. Therefore, the goal of

our work is to study the influence of the Deobandi school, as well as the religious movement "Jamaat Tablig" on the formation of the worldview of the "Taliban" movement.

Deobandism arose in British India at the end of the XIX century as a movement for reform and the unification of the Muslim Ummah under the conditions of colonial rule and government by non-Muslims. The founders of this movement were Mohammad Kazim Nanotavi and Ahmad Gangohi, who founded the first madrassah in Deoband, in the Delhi region. The founders considered the opening of the madrasah an important step for the upbringing and education of young Muslims, who would revive the former glory of Islam, based on Sharia law, spiritual experience, Sufi practices. The deobandists, trying to protect the Islamic faith from any innovations, rather rigidly interpreted the provisions of traditional Islam - rejected other directions, accusing their adherents of unbelief, seriously limited the position of women, demanded strict observance of Islamic rites, prayer practices, etc.

At the same time, adherence to the Hanafi madhhab contributed to the growing popularity of the views of the Deobandists and the spread of their teachings, especially in South Asia. Many Deobandi madrasahs arose in Pakistan, after its creation in 1947. Graduates of the madrasah were engaged in the propaganda of their views in various provinces of Pakistan, including in Afghan refugee camps. The Tal-Taliban leadership had a significant impact on the Dar-ul-Ulum Hakkania madrasah, which was completed by many leaders and some Taliban field commanders.

It was in such madrassas that the future Taliban got acquainted with the Deobandi tradition associated with the non-recognition of the tribal, communal, feudal hierarchy and the desire to create a single Muslim state. Hence the Taliban's hostility towards the leaders of Afghan tribes and clans. Experiencing deep hostility to Shiites and Iran, the Taliban, at the same time, borrowed the idea of the Iranian Islamic revolution, and found the justification for it in the theories of such an ambiguous organization as the "Jamaat Tablig" movement (translated as "The Calling Community"), which became the connecting link between the teachings of Deobandi and the "Taliban".

The "Jamaat Tablig" movement was founded in 1926 in colonial India by an active supporter of deobandism, Muhammad Ilyas al-Kandahlyavi [6]. By the 1980s, it was most common in India, Pakistan and Bangladesh. One of the reasons for the emergence of this movement was the financial problem with the organization of Deobandi madrassas. Therefore, Muhammad Ilyas al-Kandahlyavi decided to conduct missionary activities by the

preachers of the "Jamaat Tablig" movement, combining them into groups of ten people and obliging them to engage in preaching activities, mainly among ordinary Muslims. This practice soon bore fruit - the organization began to grow numerically and became widespread in various regions of Asia.

Despite the prevalence of the ideas of deobandism, the "Jamaat Tablig" movement did not become monolithic, dividing into moderate and radical parts. The watershed was the idea of jihad and its interpretation by members of the movement. Representatives of the moderate part believed that jihad was a personal struggle against their own passions and vices, while the radicals advocated armed jihad as a struggle against infidels.

As R. Bilalov notes: "The radical followers of the "Jamaat Tablig" subsequently formed their own paramilitary organizations. Some of them fought on the territory of Chechnya in the 1990s. It is, in particular, about the "Kharakat ul-Mujahidiin" faction [3].

Preachers from among the radical Tabovites-deobandists actively conducted their activities in Pakistan, especially visiting the Afghan refugee camps. It was under the influence of the "Jamaat Tablig" and the Deobandi madrasah that the worldview of the "Taliban" was formed.

Before proceeding to the analysis of the ideological attitudes of the "Taliban" movement, it should be noted that the teaching of the Deobandi school itself is by no means obviously extremist, it is rather a manifestation of religious fundamentalism. In our opinion, "religious fundamentalism" is a religious ideological system that justifies the need to preserve unchanged the traditional foundations of a particular religion.

The essence of the ideology of fundamentalism is to prevent fundamental changes, both in religious doctrine and in confessional organization. Religious fundamentalism itself is not a political phenomenon, but can be used for political purposes. That is, the desire to make religious norms directly political legislation and leads to the emergence of religious and political extremism. Consequently, religious fundamentalism and religious-political extremism are interconnected. Since the use of the ideas of religious fundamentalism in politics gives rise to religious and political extremism, which manifests itself as ideologically justified activity, consisting in the use of illegitimate political violence to achieve the goals. Thus, religious and political extremism is precisely a commitment to extreme views and measures in the desire to rebuild the world in accordance with religious fundamentalist views. It was precisely the subjects of religious and political extremism that became the paramilitary radical groups "Jamaat Tablig" and then - the "Taliban" movement.

All of the above, in our opinion, allows us to analyze the worldview of the "Taliban" and present them as the ideology of a religious and political extremist association based on the following principles:

1) The idea of dealing with manifestations of "universal disbelief." According to the ideologists of the Taliban, any person who has adopted a religion other than Islam is considered infidel - kafir. Moreover, "the one to whom Islam was brought, but who did not accept it - is stubbornly denying kafir or rejecting kafir, and the one who did not reach Islam is an unaware kafir" [1, p. 12]. Therefore, all infidels are enemies of Islam, against which every Muslim has a duty to wage an ongoing war (jihad) until either infidels accept Islam (or pay tribute - jizyah) or are physically exterminated.

Hence the enemies of "true" Islam are numerous: firstly, non-believers (atheists, communists, etc.); secondly, representatives of the Western world interfering with the affairs of Muslims; thirdly, believers of other religious faiths (Christians, Jews, etc.); fourthly, Muslim apostates (converted to Christianity, Judaism, worshiping idols, graves of the righteous, believing in witchcraft, astrology, amulets, etc.); fifthly, the so-called "Muslim hypocrites", i.e. those who do not share the Taliban's ideas, hide "unbelief" (do not pray, do not fast, etc.); sixth, those who reject Sharia as the only possible source of law. Thus, literally everyone can fall into the category of enemies of the Taliban movement, no matter whether he is a Muslim or an atheist.

2) The idea of creating a national Islamic state. The Taliban's ideologists on the question of the state system generally reject any secular form of government, believing that such a state strengthens unbelief, weakens religious norms, promotes a lifestyle similar to the godless West. Thus, the Taliban claim that the Islamic world has declined because it deviated from the righteous path, and in order to restore the glory and grandeur of the Golden Age, one should return to the true faith and traditions of the predecessors, especially the Prophet Muhammad and his companions. Therefore, the Taliban's leadership contrasts the atheist secular state with theocracy (like the Caliphate under the first righteous imams), based on religious laws (Sharia), a strict internal hierarchy and the absence of any democratic institutions. However, in his sermons, the head of the "Taliban" movement, Mullah Omar, like other representatives of the Taliban elite, constantly pointed out that an Islamic state should be created on the territory of Afghanistan and a number of border provinces of Pakistan and should have the character of a nation state like Saudi Arabia, Iran, etc. This provision, on the one hand, speaks of the national character of the Taliban movement, and, on the other hand, indicates the existence of an

irreconcilable contradiction between the "Taliban" and the "Islamic State" (prohibited on the territory of the Russian Federation). The fact is that the Islamic State stands for the "return" of Islam to the "Golden Age", i.e. the abolition of the nation states in the Islamic world and the restoration of the former greatness of the Islamic world in a single Caliphate, stretching from Morocco to the Philippines. The divergence of views on this basic issue, as well as on a number of others, led to the refusal of the Taliban to take the oath of allegiance to the leader of IS Al-Baghdadi and the tough armed confrontation between the IS cells and Taliban units in Afghanistan. In our opinion, these contradictions can be used to combat a tougher adversary (directly threatening the national security of Russia), the "Islamic State" international extremist organization, actively hindering the strengthening of IS cells on the territory of both Afghanistan and Central Asia as a whole.

3) The idea of active armed struggle - jihad. According to K. Khanbaev: "To justify the possibility of violence against everyone who disobeyed the will of Allah, the radical Islamists use the well-known idea that the Muslim is obliged to encourage everyone to follow what is prescribed by Sharia and prevent the commission of what is forbidden by it" [5, p. 106]. At the same time, it should be noted that a moderate portion of "Jamaat Tablig" supporters reject the armed struggle, while the radicals and then the "Taliban" consider jihad one of the pillars of Islam, i.e. it is the worship and duty of true Muslims, right up to Judgment Day, and therefore Taliban ideologists see jihad as an termless battle with the "infidels" in this world.

4) The idea of a conservative Islamic revolution. According to the Taliban, this revolution should put an end to the Western version of modernization (which the modern leadership of Afghanistan is accused of) and return Afghanistan to a medieval order based on strict implementation of Sharia norms. So, according to B. Raman: "The Taliban forbade watching TV and video, introduced Sharia executions, killed Shiites, forced women to dress according to the Taliban's instructions and lead an appropriate lifestyle" [7].

5) The idea of the intransigence of "true Islam." The Taliban have moved away from the Deobandian tradition of scholarship and theoretical controversy, since for them all doubt is tantamount to heresy or a distortion of the norms of "original" Islam. Therefore, while scholars of the Deobandi school, when resolving controversial religious and legal issues, turned to the legal norms of the Hanafi madhhab, then the Taliban should be guided by the decisions of Mullah Omar and his interpretations of Islamic dogma. By virtue of this, the Taliban deny following religious and legal schools (madhhabs) and are irreconcilable opponents of any other areas in Islam.

According to A. Rashid: "The Taliban brought to light a new Islamic fundamentalism of the coming millennium - uncompromising and not recognizing any other political system than its own" [4, p. 132-133]. In principle, agreeing with the opinion of this researcher, it should be noted that, firstly, the "Taliban" leadership developed its ideological system, relying largely on the teachings of the Deobandi school, as well as on the views of the radical part of the "Jamaat Tablig", which ultimately led to the formation of an ideology of religious extremist persuasion. And, secondly, the Taliban's worldviews, which do not recognize any other views, contrast the "Taliban" movement with so far scattered small groups of the "Islamic State", based on the ideas of radical Salafism, and trying to gain a foothold in various regions of Central Asia. The armed conflict that erupts between these extremist organizations, not only weakens the Taliban and ISIS, but also provides the leadership of Central Asian countries in alliance with interested parties (Russia, China, etc.) to actively counter the activities of extremists in the Central Asian region.

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**SOCIAL AND CULTURAL CONCEPT OF «AUDITORIUM SPACE»
IN THE SYSTEM OF MUSIC EDUCATION AND CONCERT
ACTIVITIES**

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Abstract. This article discusses deals with the formation and development of the category «Auditorium space» and its practical application in the field of music enlightenment and concert activities. The theoretical question is based on the research of major representatives of the sociology of music: T. Adorno, C. Seeger, A. Zilberman, B. V. Asafiev, Y.A. Kremlev, A.A. Allswang, R.I. Gruber, A.N. Sohor, B.L Yavorsky. No less important is the author's personal experience with various audiences in the field of cultural, educational and concert activities as a musicologist and university teacher. As a result of the author's scientific and practical work, this article allowed creating a flexible system of classification of modern audiences in the system of musical enlightenment and concert activities.

Keywords: sociology of music, classroom space, enlightenment and concert activities, public phenomenon, audience classification.

I. Introduction

«Auditorium space» is the most important structural component of the system of musical education and concert activity, the scientific and theoretical apparatus of which was formed in the sociology of music of the twentieth century. As you know, the works of the largest German philosopher and sociologist Theodor Adorno (1902-1964) are devoted to the study of the phenomenon of the audience visiting concert halls, its age and social groups. By his definition, «Auditorium space» is «... a mass of listeners who perceive musical information» [1, p. 78]. The inclusion of this concept in modern musicology is an extremely important and promising fact of studying the theory and practice of «concert performing» and «music enlightening» activities. It is related to the analysis of the typological structure of the concert audience, the criteria for its classification, and the effectiveness of the impact of music on listeners.

II. Materials and discussion

In essence, the discussion on the problem of determining the nature of the phenomenon of the «Auditorium space», its nature, essence, specific manifestations and other individual properties, is part of the consideration of this article. Based on the studies of psychologists, sociologists and musicologists noted above, it is worth noting the most important of them, which determined the development of modern sociology of music. First of all, these are the fundamental works of T. Adorno, whose translations and publications without cuts and abbreviations became possible only at the present time (2015-17). Research publications C. Seeger, A. Zilberman are still waiting for their turn.

The basis of the sociology of music in Russian science was the research made up of Y.A. Kremlev, A.A. Allswang, R.I. Gruber, A.N. Sohor, B.L. Yavorsky, M.I. Royteishtein, V.S. Smirnova and etc.. As you know, domestic science in the field of music sociology has taken the path of developing the social and psychological aspects of musical art, studying the nature of social tastes and interests of society, and the priority of the ideological positions of socialist realism in musical art. Let's go to the memory the prohibition of performance and propaganda (60s of the twentieth century) of music of the Western European avantgarde (V. Lutoslavsky, K. Penderetsky, O. Messian, A. Shenberg, A. Berg, A. Webern, E. Varese, P. Boulez, etc.), the exile in 1974 at the VI Congress of the Union of Composers of the USSR of seven young avant-garde composers (the so-called "black list" of the "Khrennikov seven"). All these events and facts have for a long time hindered the development of the sociology of music as a science of the nature of musical art, its structure and functions. Over the years, the study of the audience of viewers and listeners has also stopped. This process is currently gaining momentum. Among the researchers of recent years, the names L.L. Melnikova, N.L. Savelyeva A.A. Smetanova L.V. Sheiko [5,6,7,9.]. Nevertheless, this is only the beginning of a revival of the traditions of Russian musical science of previous periods.

III. Results

In the 80s of the last century, the famous Russian art critic Y. Kremlev, relying on the theory of psychologist B. G. Ananyev (visual-sound synesthesia), put forward the concept of visual-auditory associativity of music perception, developing it in two directions - formal and substantive [3, p.36-37]. In the first case, it characterizes perception as vague, uncertain auditory sensations, in the second-the listener's ability to perceive a musical work through associative bright imaginative sensations. However he did not take into account the genre-style nature of musical art, which largely

determines the perception of ancient and modern vocal, instrumental and symphonic music. At the same time, his idea of the associativity of musical perception with visual or verbal images was developed and presented back in the 30s by L. Vygotsky, B. Asafiev, B. Yavorsky and, in essence, was revived again in the works of Y. Kremlev and, later found its continuation in musicology of the last third of the twentieth century..

No less striking approach to the typology of audiences offers A. Sohor. His research is based on new principles of musical perception, such as: emotional-rational, focused-scattered, deep-superficial. From this it follows that the system of A. Sohor reflects the principle of intellectual differentiation of the concert hall audience. In the study «The Composer and the audience in a socialist society» [3] the author suggests three main types of listeners:

1. Low-Level («profane»);
2. Average («dilettante»);
3. Highly («expert», «erudite»).

However, this approach can also reveal weaknesses. Based on the listener's level of knowledge about music (the composer's creativity, the content of the work, and even the features of style and language), this approach does not take into account the emotional side of perception, as well as the levels of age and social differentiation. Currently, the development of a typology of modern «Auditorium space» is possible only taking into account the results achieved by both Western European and domestic researchers. Based on sociological research, we will identify several types of audience typical for domestic Philharmonic concert halls.

The first type of audience, by the definition of T. Adorno, is «anti-musical personalities» or «Profans» (A. Sohor). These are mainly young people (in the words of C. Debussy). «With a gray and boring facial expression», which is rarely seen at concerts of symphonic music. For them, music is just an environment, a pleasure and a «party environment». To our satisfaction, they make up a small part of the audience of the concert hall and are not able to change its general emotional and psychological mood.

The second group (the type of listener according to A. N. Sohor's classification is «amateur») is a layer of beginner, inexperienced visitors to concert halls who seek only to show interest in popular and often performed works. Their goal is to keep abreast of current events in musical life. This group of listeners is young people and middle-aged people who do not show interest in the music playing in the hall. They are not interested in the classics of world music; they only care to lightly touch her. The psychological perception of the music of this group of listeners is very passive. For

example, the actions of the conductor are obscure from the point of view of «sound» logic and in no way contribute to the disclosure of the contents of the music performed. It is this small group of listeners who gives out their presence in the concert hall with applause between the parts of the performed symphony, individual arias or duets in the opera.

The third group (in the terminology of A. N. Sokhor - "cultural amateur"). As a rule, it consists of students of special educational institutions at various levels and universities. It is this audience that fills concert and theater halls today. They are also joined by music lovers who have received the basics of music education in a children's music school, creative circles and salons. The behavior of this group is characterized by diffuse listening to music, unwillingness to accept large, long canvases of a symphonic symphony, symphonic poem, etc. An important motive for the behavior of this group is the desire to join the elite of society. This group communicates quite actively and stands out among students of academic concerts.

The fourth group (the type of listener in T. Adorno's terminology is «true listener») includes people who consciously regularly attend concerts and opera halls, receiving an aesthetic sense of satisfaction from «meeting with the beautiful». This type of listeners has a special psychological attitude to the perception of a particular performed work and enters the hall of already prepared and knowledgeable listeners. For them, musical art is the true world of enlightened culture. A meaningful and emotional attitude to symphonic music often gives rise to literary and visual - visual associations. The main motive for visiting symphony concerts by such interested listeners is the conviction that «... every cultural person should know and understand music» [1, p.236].

The fifth group (in the terminology of conductor V. Furtwengler is a «knowledgeable listener») includes regular and well-trained listeners, musicians - professionals of symphony concerts. Listeners of this group prepare themselves for the concert. Their perception is due to prior knowledge of the works performed. This is also the part of the audience that, as a rule, attends a concert of a particular artist or conductor, and also perceives the music performed deeply professionally. Visual-auditory associations arising from viewers-listeners are associated with the individuality of the artistic interpretation of the work. This determines the assessment of the artistic level of the concert as a whole.

Sixth group (in the terminology of T. Adorno «listener – expert»). It is the smallest, for it is associated with professional critics - music correspondents, whose goals and objectives are to form a public point of view and evaluate this work. in the interpretation of a particular artist or conductor.

Experts are musicians - middle-aged and older professionals who are directly related to professional music (conductors - choir musicians, vocalists, performers of orchestra groups of academic and folk orchestras). A fundamental coincidence or a significant difference in the artistic interpretation between the performers and the expert's assessment may be due to a number of reasons, among which the most important are personal subjective priorities (artistic taste, interests, preferences).

Seventh group. According to the terminology of T. Adorno, the seventh group includes

« Puritan Sectarians»), which is a special type of connoisseurs of musical art. It is this group of the public that is «armed» with keyboardists, musical scores, studies, novels on the problems of musical art, etc.). This type of listeners is small, but very important. Scrupulously tracing every step of a musical work and reflecting on «sublime and earthly» (D. Weiss's novel), in music this type of listeners makes it possible to raise art to the heights of absolute beauty and spirituality, so important in the modern world.

So, based on the existing classification of the audience of concert halls created by modern foreign and domestic sociologists, we can state the existence of seven groups of listeners, each of which reflects the individual spectrum of intellectual, emotional and artistic readiness of a modern person to perceive music in conditions of its concert performance. However, despite the clear and logical hierarchy developed by modern researchers in the field of musical sociology, this gradation of the audience of listeners of the concert and philharmonic halls is schematic. Each of these groups, reflecting the pronounced individuality of a person, his temperament and psyche, personal and social needs, does not exist in a «Pure form», since, as one would expect, in this case the law of scientific generalizations and typologies applies. Nevertheless, in real artistic practice, the mechanism of formation of various typological groups of listeners is of fundamental importance for concert organizations, performing groups, cultural and educational activities in general. Working with a large number of concert or thematic groups, each organization forms the future viewer-listener of theaters and philharmonic societies, embodying the policy of forming the spiritual culture of the nation and preserving its cultural heritage.

Conclusion

Summing up, first of all, it is necessary to emphasize the significance and relevance of the problem. Without spiritual needs and interests there is no man. Acute conflicts, disunity and loneliness, the loss of moral and spiritual values more than ever testify to the crisis of modern society, which political scientists, sociologists, numerous representatives of the press,

the media and other areas of science and practice point to. And in these conditions, each stage of interaction with a person, social groups and society as a whole is of fundamental importance. In this regard, interest in the audience in concert halls today requires an ever deeper level of study of the «Auditorium space» in sociological and musical applied research. And, as A.N. Sokhor notes, «... a sociological study of musical art cannot be successful without a preliminary theoretical development of this issue» [3, p.14].

Thus, the solution to the problem identified in this article is possible only with a large-scale and thorough study of the characteristics of a modern audience, the satisfaction of its psychological and spiritual needs in the socio-demographic, cultural and educational transformation of a rapidly developing society. This is precisely the highest idea of the work of the entire sociocultural apparatus of organizations associated with concert, performing, and musical enlightenment activities in various classrooms and modern halls.

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MODERN PROBLEMS OF THEATRICAL EDUCATION

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Abstract. The article discusses the problems of modern theater education. The dominance of the director's theater is noted, which is prone to vivid entertainment, form-creating, sometimes to the detriment of the disclosure of the content; the need to educate an actor that meets modern requirements: with strong energy, a bright and unique personality, expressive plasticity and speech.

The author claims the need for spiritual education of the actor; a more demanding approach to the educational repertoire; the need to provide methodological literature for the educational process.

The article notes the importance of knowledge of the experience of theater schools in the West: American, English. An example of cooperation with the professor of Birmingham University Alexander Dunderovich in the project "Erasmus +" is given. The author emphasizes that the unity of the best traditions and achievements of domestic theater pedagogy and foreign experience will help to successfully solve the problem of education of a modern actor.

Keywords: Director's theater, acting theater, personal education, repertoire, financial and economic problem, foreign experience.

The XX century is recognized as the heyday of directorial theater. From the reforms of the Moscow Art Theater to the end of the millennium, directing has advanced to the first place in the theater. The functions of the director have expanded. He becomes not the administrator, but the expositor and interpreter of the play, "a mirror reflecting the individual qualities of the actor", the organizer of the entire creative process of preparing the performance.

The birth of major actors is associated with a particular school, the system of Stanislavsky, Meyerhold, Vakhtangov, Tairov, Popov, Tovstonogov and others. A high level of professional skill, the basics of which were obtained under the guidance of masters in schools and studios, allows many actors to easily adapt to any director's composition.

The great historical experience of the spiritual, ensemble, preaching Russian theater of the XX century, which gave the world unprecedented artistic results, is today highly appreciated by many prominent theatrical figures of the West.

At the beginning of the new millennium, more and more often the idea arises of the primitive role of the actor on the stage, his self-fulfillment, self-realization, the question arises of the ACTOR'S THEATER. Apparently, a protest has ripened against authorial, authoritarian directing, which is over-saturated with staged techniques, where the actor does not play the main place, directors exploiting acting. In today's directorial experiments, enterprises, despite the busyness of leading actors, there are few discoveries, leaders. Often, one can see rudeness, frank hack, simplification, rejection of psychological theater, a look at the theater only as a spectacular art, not educating, but entertaining the viewer. Therefore, there is a noticeable activation of those actors who are concerned about the decline in the general professional level, there is a need and thirst to work with masters, such as P. Fomenko, L. Dodin or the desire to stage performances themselves. Directing classes by such remarkable actors as M. Kazakov, S. Yursky, O. Yankovsky, O. Menshikov speak of the desire to nominate the actor in the first place, rather than staging techniques, which is the reason for today's directing.

The audience is greatly interested in the unique Theater-workshops created by O. Tabakov, P. Fomenko, L. Dodin, where the actor is the main figure, the exponent of the director's intention, where the formation and education of the actor's personality is carried out continuously. Life, the theater again claimed the actor - the fellows of their era.

Acting - is a continuous work of the soul and mind. Today, the dialectical unity of two principles is decisive in the formation of the actor's personality: preservation of the best traditions, the foundation of the school and continuous experimentation, openness to the world, time. "Creative contacts of youth and maturity, courage and reasonable conservatism are the basis of any school" [4, p. 15].

It is no accident that this problem was discussed at the international scientific-practical conference "Theater Education on the Threshold of the Third Millennium" at the St. Petersburg Academy of Theater Arts.

The rapid change in the social situation, entry into the theatrical art of the market, commercialization, increased self-esteem of the actor's personality, looseness certainly set theatrical universities the task of revising the teaching methods of majors.

Each new student enrollment is dramatically different from the previous ones.

It would seem that the computerization of schools, the expansion of the information space should enrich the intellectual level of the applicant. However, practice shows the opposite. Applicants have little knowledge of history, literature, less developed imagination and fantasy, emotional perception, more rational thinking, individualism. Today, from the pages of newspapers or from the TV screen, calls are sometimes made to think primarily about oneself, and then about others, the great Pushkin is translated into the language of the street, ostensibly to interest young people, to draw attention to the study of his work. Rejecting parenting or bringing up bad examples, we run the risk of getting semi-literate actors and directors, TV presenters who cannot be made out "because of the" mess in the mouth " what they are chirping about."

Education and personality formation of the actor of the new millennium is impossible without studying the artistic world culture. The humanitarian and professional training of the actor must be indivisible.

Studying the methods of working with the actor Stanislavsky, Nemirovich-Danchenko, Meyerhold, Vakhtangov, Mikhail Chekhov should be in the arsenal of the theater teacher today, so that later the actor can choose his way of working on a role close to his personality. Attacks on the spirituality of the theater, the tendency to create a bourgeois theater, oblige the actor to prepare not only for work on the role in the theater, but also for life, to form his spiritual needs. It is important what the actor carries from the stage, how he perceives the play, the role. And for this, you first need to shape your soul, because you need to go on stage with a soul deeply filled with emotions, and the educational repertoire plays an enormous role in this process - an appeal to classical drama, both domestic and foreign, to potent and strong characters who can resist circumstances. Stricter is the choice of a modern play, since there is a lot of openly weak and not intellectually-oriented drama.

At the end of the XIX century, it was said about the unit education of the actor and director. But the collective nature of the theater requires the upbringing and development of the individuality of the actor in a collective creation, the ability to subordinate his creativity to the director's plan. Today, as before, the idea of forming the artist's personality, fostering a sense of the ensemble, ethical standards, and not subordinating the educational process to "promotion of stars" is relevant. M.O. Knebel warned teachers from hasty assessments of vivid talents, which can quickly fade in conditions of independent creativity [2]. One of the most important problems of theater education is to teach self-reliance in working on oneself, the methodology of working on a role in a play of any genre and style. The

more diverse the repertoire, the wider the range of roles played, requiring a different manner of acting in different genres, the sooner and more successfully the actor adapts in independent work, in any director's picture. Brought up on a highly artistic repertoire, the actor grows up as a person, acquires a different, broader view of the world, high taste and flair. A sense of responsibility for their professional skills, brought up at the institute, does not allow the actor to lower the bar below. A true actor is an artist and in the conditions of the market does not change his position;

A very important problem of theater education today - financial and economic - is to provide the educational process with modern technology: computers, video recorders and educational literature. Department of Performing Arts of the TSU named after G.R. Derzhavin, publishing methodological manuals, courses, monographs, somehow solves these problems. Auditoriums, screens, cubes were previously made on courses at the expense of money earned from performances, but did not solve the problem of issuing and preparing a professional educational performance. Most of the performances were made out of auxiliary material conditionally. At each course, one has to show miracles of ingenuity in order to create a visual image of the performance. But lately, the situation has changed and the university allocates money for the design of educational performances.

Experienced educators at the institute educate and cherish actors nevertheless in favorable conditions. The task of modern theater pedagogy is to give the actor such professional foundations that could not break different forms and directorial experiments. And here one could use the experience of Western theater schools. In America, for example, there is no such student custody as ours. Teacher - Master sets tasks for the student, checks and analyzes the work in detail.

So, well-known director and teacher David Chambers, working on Shakespeare's plays, gives a specific task at each screening. On the first - to master the poetic text, on the second - to play in action, on the third - to play *mise-en-scenic*, on the fourth - to include characters. Or, for example, calls up four students and gives the task: to play a Shakespeare play in an hour. This is surprising, according to the reviews of teachers who observed such a "methodology" of actor education, the results are excellent. Actors are brilliantly able to improvise, rehearsals are subsequently very productive.

And before, we heard from theatrical figures staging performances abroad that actors can instantly get involved in the rehearsal process, set up their psychophysical apparatus for work, without spending a single minute to prepare, as is often the case in domestic theaters.

In 2018, Alexander Dunderovich, a professor at Birmingham City University, held master classes on the modern English approach to teaching acting in the framework of the "Erasmus +" project when staging Shakespeare's *Romeo and Juliet* for students of the TSU named after G.R. Derzhavin, direction "Acting art". The modern English method of teaching acting is based on the techniques used by the Royal Shakespeare Theater and the Birmingham School of Acting. The master classes were attended by first-second year students. "The peculiarity of this year's master classes is that we try to get closer to the style of work of acting troupes from the time of the author himself," Alexander Dunderovich said in an interview. " – Back in my last visit, I noted that TSU students are talented, very interested and motivated. It's easy to work with them".

The first two days of rehearsals were devoted to a thorough study of the text, the story of the plot dramatized by Shakespeare. It was first encountered in the story of Mascuccio from Salerno back in the middle of the XV century. Almost a century later, Luigi da Porta, wrote a poetic story "On two noble lovers." In 1554, Mateo Bandello transformed this poem into the short story "The Unfortunate Death of Two Unhappy Lovers." And on the basis of her English poet Arthur Brooke wrote in 1562 the poem "The Tragic History of Romeo and Julia." Shakespeare retained in the play all the events set forth in the original sources, left almost all the characters, changed the play in many ways, enriching the characters, the meaning of the tragedy. If in Brooke's poem, the lovers of Romeo and Julia went against the will of their parents, having committed a sin, then Shakespeare's love triumphs and the death of the lovers reconciles the warring families of Montecchi and Capuleti. Then, at subsequent rehearsals, the main line of action and events were determined, roles were distributed, and students tried with the text and improvising to study the entire outline etude. It ended with a flash mob, a show in the park of culture and recreation, "Stories of Romeo and Julia." In modern costumes to the rhythmic drum beat, the performers, dancing, invited the audience to perform. Then, against the background of the natural nature of the park, they played "The Story of Romeo and Juliet". No music, no scenery, no lighting assistance - there were no components - only the element of acting. Actually the gaming essence of the theater is its main feature as art. And in this, in our opinion, the peculiarity of such an approach in the English acting school is the development of an improvisational beginning from the first steps in teaching the actor's skill and the play essence of the theater. Of course, neither the style nor the creation of deep images were considered.

In a Russian school brought up on the system of K.S. Stanislavsky, work on Shakespeare's drama is considered the highest "aerobatics" for the director and actor. Usually in the repertoire of educational plays Shakespeare appears in senior graduation courses.

At the theater festival named after N.Kh.Rybakov, in the framework of the youth project in 2018, showed the graduation performance "A Midsummer Night's Dream" by students of the acting course of the Yaroslavl Theater Institute. It was an amazingly talented directorial work, rich in interesting acting creations. The actors bathed in the material of the play, so much fiction, imagination, and most interesting devices were in their play. It was a celebration of acting, a demonstration of the play essence of the theater.

Acquaintance with foreign methods of teaching acting, master classes in major disciplines of both foreign and domestic masters of theatrical pedagogy, leading teachers of the directing and acting departments of the GITIS will undoubtedly bring mutual benefit to both students and teachers, enriching the arsenal of new expressive means with new technologies in the preparation of the actor.

Only careful study, unity in theatrical pedagogy, the legacy of Stanislavsky, Nemirovich-Danchenko, Vakhtangov, Meyerhold in the field of work with the actor, the study of the advantages and disadvantages of all acting schools, the application of the best experience of modern domestic and foreign theater pedagogy will help to successfully solve the problem of educating the actor of the third millennium.

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Fortification features «eglises fortifiees» by Tyerash of the XVI-XVII centuries on the example of Saint Martin's church in Burelles.

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Summary. Article is devoted to a problem of development of morphology of the strengthened churches of the region Tyerash (Ena, Ardennes) northern France in the XVI-XVII centuries, on the example of St Martin's Church (Saint-Martin) in Byurel (Burelles). Throughout the XVI century by improvement of firearms and fortification, the strengthened churches of this region gain universal constructional and composite lines that allows historians of art to carry them to typology of "eglises fortifiees" surely. Owing to the historical importance of "eglises fortifiees" of the region even in the XVII century kept dynamics to improvement of the architectural and composite schemes, both in respect of fortification, and in respect of an iconography.

Keywords: the strengthened churches, Ena, Ardennes, St Martin's Church (Saint-Martin), Byurel (Burelles), the Spanish-French wars, fortification, cult constructions

Introduction

Long time among historians the fact that Tyerash protection of the country people which were flown down there on a sound of an alarm and helplessly watching ruin of their huts was the main function of the strengthened churches «eglises fortifies» of the region was considered as conventional. Thus, all fortification and defensive essence of these original constructions, kind of came down only to a passive role. Probably, proceeding from

it a parcel, archeologists and historians absolutely neglected the comparative analysis of defensive systems (fortification) strengthened churches of the region. However, over time to researchers became clear that the construction of so expensive universal constructions of military and cult appointment in rural areas, at enough limited financial and material resources of society of that time, could not have accidental character. Therefore, in many respects thanks to efforts of Pierre Doss, the president of Archaeological society Verven and Tyerash, in 1974 special researches, with the purpose to establish degree of defensive opportunities of fortification constructions of «eglises fortifies» of the region were conducted. As an experimental sample for carrying out such research the most typical and well remained strengthened Byurelya church was chosen. [2., 50] the Group of specialists historians of **GRAT** (*Group of archaeological researches of Tyerash*) conducting these researches executed the exact copy of the plan of all building, its strengthenings and studied a defensive system.

Research objective

The history of France all first half of the XVI century is noted by fierce Italian wars (1494 - 1559). Wars were caused by rivalry of two largest European monarchy: The kingdoms of France and the empire of Gabsburges, including at Charles V, the Spanish king and the German emperor, most part of Europe of that time. [1., 174] Originally French monarchs Charles VIII, his Louis XI receiver in 1494 and Louis XII in 1499 conducted military operations in the territory of Italy. However, the rule of Francis I (1515-1547) celebrated by four «Italian» campaigns (1521-1525; 1527-1529; 1536-1538; 1542-1544), where the main battles with Charles V imperets and British were conducted already in the territory of France. [1., 175] While the English allies of Charles V plundered Picardy, imperial troops sought to occupy Provence and rich Champagne. During the summer of 1536 while Charles V was in Provence, two imperial armies took Picardy and Champagne. In 1542 troops Charles V's emperor once again occupied Picardy and Champagne, moving ahead further deep into to Shato-Thierry, but there imperial armies were stopped by the French troops which are urgently recalled from Italy. [1, 176] in order to avoid similar breaks during military operations of 1542-1543 at the initiative of Francis I, the serious fortification program for modernization of fortresses Giza (Guise), La Catelet and La Capelle and construction of strong points between them was adopted. [2, 13] After Francis I's death 1547 to year, his son Henry II began military operations against the German-Spanish empire in 1552 again. War was waged with variable progress, the Province of Tyerash was occupied by imperial armies, and the city Vervins was completely destroyed and burned

by troops of Maria Vengerskaya, the sister and Charles V ally. In 1557 the Spanish-German army of Philip II, tries to take Rocroi, then through a gap between Chimay and Trelon interferes on the territory of France in Etroeuingt, going through La-Chapel and Giz, besieges Saint-Quentin. [2, 13] Remained detailed memoirs of the notary De Marl who describes the disorders made by imperial landsknechts, Swisses, Spaniards or the king's soldiers in this corner of Tyerash in 1635-1653 [2, 56]

Results of a research and their discussion

St Martin's Saint-Martin in Burelles, is constructed in the form of the turned Latin cross (a foot of the cross on the West towards a church porch), the building of church is very harmonious and proportional, represents two parts, appointment and material from which they are built, differ at first sight. Choirs of church (a sacral part), are constructed of a fine white stone, for today all this that remained from an initial cult part of church which initially had no defensive character. A fortification part of church (actually fortress) which detailed studying interests us, is completely built from a clay brick, and this strengthened part of church represents uniform ensemble from sections cases of various architectural designs, logically connected and complementary each other. Time of construction of this part of church is precisely unknown, however the comparative stylistic research of a part of the building defines existence of a brick part of church at the beginning of the 17th century, approximately in 1610-1620.



Fig. 1 Eglises fortifiees Saint-Martin (Burelles)

The authentic text describing reconstruction of an old part is the contract signed on October 19, 1664 between Byurel's commune and the bricklayer De Silli on carrying out restoration works of a fort church: «... *First of all it is necessary to strengthen a tower, to lift above a wall this to*

prop up the laid roof, and to a binding ... two layings of a brick, and in a stone or a cobble-stone, to the discretion of the contractor. It is necessary to restore a tower in good and satisfactory condition, especially a barbican of the specified tower. It is necessary to make anew or, on extremely measure, to continue to correct the begun fireplace in the above-stated tower and to put up it only up to the height walls and bindings ...». [2., 57] publishing the text of this contract found among protocols of the notary Verven the historian Eduar Pyett specified in 1878: «*The performed works aimed at improvement of external arrangement of church and strengthening of its defensive power ... Whether the proof is it that our strengthened churches really served in the last wars (1635-1658) and remained defenders of their future in consciousness of villagers?».* [2., 57] unity of a plan of all construction (cult and fortification), the quality of its execution and an excellent condition of safety in addition to strict beauty of this religious and military architecture of the 16th century obviously distinguish Byurelya church from all strengthened churches of the region of Tyerash (it is protected, as a historical monument since 1931)

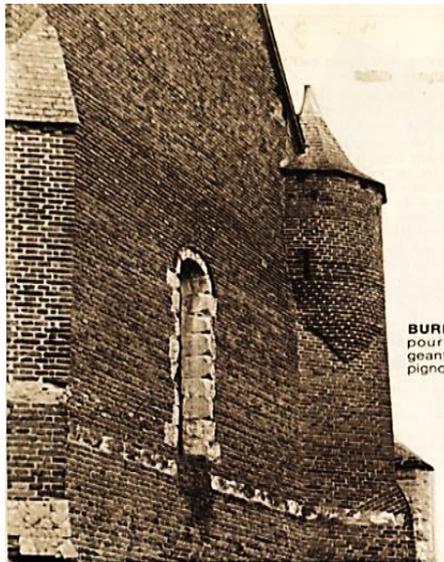


Fig. 2 Bashni-bartizany St Martin's Churches (eglise Saint-Martin) in Burelles the Angular watchtower equipped with the profound loophole towering over a window of the southern cross aisle (according to the book Jean-Paul Meuret)

At external inspection of church, we see only its terrible forms, perceiving them kind of, from a position of the enemies besieging the building. But to understand military opportunities of church it is necessary to investigate church from within to learn the initial organization of its defensive system. And here we to a cut will find elements of active defense as the portico (church porch) located on the first floor of a tower and a cross aisle (crossing) of church are supplied with a series from 17 loopholes located at height of human growth. And, if to take into account visible traces from the loopholes put by the latest laying on outer side of a wall which are hidden by plaster initially the quantity of loopholes was much more. In a bema of church we see 12 more embrasures which are carefully cleared away by the abbot Menar who was the parish cure who shows the fire power of all church ensemble. Climbing a spiral staircase in a tower on the top floors of the building, we see a series from 14 embrasures located at identical distance from each other again.

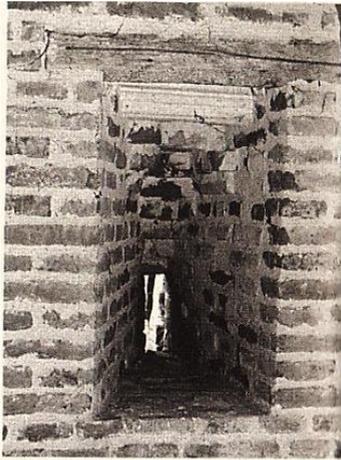


Fig. 3 the Angular loophole over a window of the southern cross aisle (Jean-Paul Meuret)

The arch of the second floor of a tower, as well as tower, is executed from the burned brick. In the second floor the room of the modest sizes (5 m x 5 m) lit with an aperture embrasure overlooking the South is located, and also it is supplied with 4 loopholes distributed on three parties of a tower. [2, 51] Having passed through the bell tower, we get to the top part of a cross aisle where the spacious room (16 x 6 m), probably, a shelter for the population, and so-called «room safe» for storage of values is located. De-

velopment of walls of the room supports highly bearing frame design with the acting hinged loopholes on northern shchipets. From this floor there is also an access to two angular watchtowers. On a southeast tower of church the big room shelter which locals call «the Jewish room» is also located though is authentically unknown what historical event was the cause or the basis for such name. During survey of an interior of church 50 loopholes were revealed, and their arrangement in all parts of construction (in the basis of walls of a cross aisle, in a ladder tower, on all floors of a tower, in angular watchtowers) obviously shows that it is weapon emplacements. The most interesting loopholes embrasures are located in three angular sentry turrets (bartizana). (fig. 2) Constructed at top of a church wall, they seem conceived specially to provide both function of observation, and firing function. Researchers from GRAT specially checked controlled spaces for areas and plotted results of the observations. [2, 53]

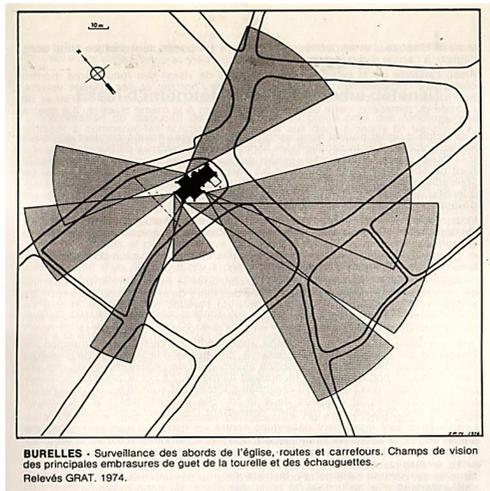


Fig. 4. The scheme of firing of vicinities of church in Byurel. A field of vision and sectors of firing from the main embrasures of a turret and angular watchtowers. (on Jean-Paul Meuret)

The town of Byurel holds especially important position at the intersection of a natural way the East-West - Bryuna's valleys and ways the North-South, conducting from Verven to Lang through Bomon-sur-Ser. Bryuna's valley is noted by the numerous small villages connecting two roads parallel to the valley on both sides of the river. The next villages are Pris, Uriah, Gronar and Arie, and each of them has the own strengthened church. Hav-

ing been located before embrasures of angular watchtowers, it is possible to control fire all above-mentioned parts of a landscape: Bryuna's valley, roads conducting from Byurel in Pris, Gronar, Verven, Arie, Bomon-sur-Ser. Some especially significant «dot purposes», such as intersection it is expensive, along the right coast of Bryuna and the road from Verven in Bomon-sur-Ser, are exposed to fire especially well. The strengthened Pris's church which is a part of the general defensive system of the region is also perfectly visible from an embrasure of a northwest angular watchtower. The most dangerous site of defense - pass from the rural cemetery is looked through and exposed to fire from seven points (embrasures), and 2 embrasures are located in angular watchtowers, 4 embrasures in a «ladder» tower and the last embrasure, is located in church from a southwest corner of the southern cross aisle, behind a buttress. In such way, the analysis of arrangement and sectors of firing of loopholes embrasures of Byureles church accurately shows the areas of observation of the neighboring villages, roads and intersections, vicinities of the church and pass on the parish cemetery which exists four centuries here.

Need to defenders of church fortress to control not only the remote spaces, but also the next approaches to church it was caused by rapid development of firearms throughout all the XVI century. During «the Italian wars» there is a final formation of special divisions of infantry and the cavalry armed with guns, arkebuz, muskets and guns. During this period the artillery finally began to be subdivided into field, directly given to troops, and obsidional. Guns receive wheel gun carriages on horse draft that considerably simplifies their movement and enhances fiery power of infantrymen and cavalrymen. [3, 320] for this reason at construction of fortification constructions special attention was always paid to planning of sectors of firing and protection of so-called «dead zones». In figure 5 crossing (comparison) of fields of vision (sectors of firing) of the loopholes embrasures located at the bottom of walls of a tower and a cross aisle is well visible. Corners of a so-called «dead» zone disappear on cemetery fencing border as if this border formed the first belt of strengthenings or, perhaps, the first line of defense protecting as can be assumed, the cattle driven to one place. During careful inspection of the remained system of defense Byurel it is possible to notice presence of the numerous loopholes directed not towards the space surrounding church, but to closer purposes. For example, gate were always considered as especially vulnerable part of defense which attacking is sought to be taken first of all. Gate are in Byurel under a sight of two embrasures loopholes located from both flanks of a ladder tower and the highest represents obviously expressed parapet

slope providing the exact direction of firing. [4, 54] the System of near defense allows to protect windows of church from storm. The western window of a northern part of a crossing of a cross aisle is exposed to fire from a loophole of the guard house, and the form of this loophole differs from a form of other loopholes. It narrow and high, and its facing possesses a series of the ledges noting the right direction of firing in the direction of a window which it covers from the flank. Over a window of a northern pediment wall the acting hinged loophole of «mashikule» which sector of firing protects approach to the room - to the shelter located over a cross aisle towers. The western window of the southern part of a crossing of a cross aisle is under fire of the loophole located at a foot of a ladder tower. The window of the southern pediment wall is exposed to fire from a loophole at the basis of a wall of a southeast angular watchtower available from the so-called «Jewish room». [4, 55]

In the south the angular watchtower supplied with apertures for posts of visual observation and the notification has a deep loophole; in the north the fortification ensemble more difficult also consists of the angular watchtower performing a hinged turret with two loopholes embrasures located on both of its parties. This location of embrasures seems to us important as it confirms that fact that, if necessary, the role of active defense assigned to a profound loophole of a southeast angular watchtower. But the narrowness of this angular tower does not allow to be in it at all more than one person therefore it is difficult to carry out at the same time both missions. Protection of two opposite walls of a cross aisle is provided with quite different means and it is only possible to be surprised that the same devices were not used though the purposes of defense are identical both in terms of their nature, and in terms of their arrangement in relation to the room safe. Use of vertical cover of the flank which was less developed on the southern part of a crossing of a cross aisle, perhaps is justified by existence of an angular turret of a donzhon which provided the best near defense from this party of fortress. So one means of fortification compensated another and these facts excuse lack of loopholes in the big high hall on South side. The ladder turret supplied with numerous embrasures for firing forms the special place in which all active near defense, especially at the first moments of the attack could be focused, at an entrance at the cemetery. The organization of near defense can be interpreted as application of classical rules of cover of flanks: the turret covers донжон, донжон provides the flank of a cross aisle which, in turn, supports choruses from flanks. Each side of the building is really covered from cross fire, both frontal, and side. The complementarity of various parts of fortress at defense is obvious. It is possible to tell that there is a decrease

in need of protection from flanks of a cross aisle, donzhon and turret as distribution of the loopholes located at height of human growth at the basis of walls accurately indicates this defensive structure. Some of these low loopholes embrasures allow to conduct at the same time frontal, hinged fire and fire with flanks. There was one weak point of defense - face (pediment) walls which close from the South and from the North a cross aisle, they can be protected from the back only by means of frontal loopholes, leaving a so-called "dead corner" not shot site, thus they are most vulnerable. It is unclear for what reason builders of it did not provide. Probably therefore it became necessary to strengthen defense, having liquidated these dead corners. The solution of this problem was found. Installation on top of a wall of defensive devices – the hinged loopholes allowing a message vertical fire for cover of flanks. Therefore presence of the acting hinged loophole from the North of a cross aisle and a loophole for hinged (almost vertical) firing from the South, at the basis of an angular watchtower is logically explainable. This threefold fortification synthesis: topographical (church with people and its natural environment), architectural (defensive works, their type and distribution) and functional (observation, passive and active defense) allowed to define the basic principles of a fortification system of Byurelya church. [4, 56] It is necessary to assume that 3-4 sentries was quite enough to provide full observation of the area, and about 6 people could protect entrance apertures (a door and windows) in case of the sudden attack of the enemy. Competently thought over system of arrangement of embrasures allowed at existence only of 30-40 units of firearms (аркебуз or muskets) necessary defense of the building. There is unresolved only a rhetorical question: whether Byurel's commune had 40 muskets, arkebuza and guns in those days, or there was any royal garrison?

Conclusions

During the analysis of strengthenings we elicited a certainty: the defensive system of the strengthened Byurelya church wholly, is logical, and is original. It provides all functions which are necessary for realization of fighting opportunities of fortress: investigation by observation of the horizon and the roads conducting to the village and church; near defense of vicinities of church and approaches to it; internal arrangement: the shelter, the room – «safe» and the guard house with a fireplace. Attentive studying of a system of fortification of Byurely church shows us the complex and logical defensive system capable to adequately resist to the narrow military contingents in case of their sudden attack. The location of embrasures on choirs of church, a cross aisle, ladder tower, towers – «bartizan» and angular watchtowers obviously corresponds to all rules of protection of fronts

and flanks of the XVI-XVII centuries peculiar to any military defensive works. Tens of embrasures loopholes located at all levels of the church building are at the same time both observation posts, and the weapon emplacements providing visual control and fire firing of the line of the horizon and the next churches, the roads conducting to the village, their intersections, approaches to the church and also provide control and management of the first line of the defense formed by a fence of the church cemetery. Other elements of fortification of church Byurely, such as, the acting hinged loopholes of «mashikuly», cover both frontal, and hinged, cross fire of a collar and window of church. It is also necessary to note the fact that such logical system of strengthening of parish church, not, unique. As we noted in the publications earlier, similar or similar fortification decisions in this or that form meet in most the strengthened churches «eglises fortifiees» of the region Tyerash. [5, 136]

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Cytokine blood serum profile in experimental animals in thyroid operation with the development of hypothyroidism

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Abstract. In recent years, surgery for thyroid disease has been recognized as an acceptable and safe treatment method, which has a low surgical risk and postoperative mortality. Despite the improvement in the diagnosis of treatment of thyroid disease over the past 20 years, the debate remains in the literature about which method is better for benign diseases. The study of the role of cytokines in immunopathogenesis after surgical hypothyroidism remains an urgent problem.

Biological mediators determine local and systemic inflammation and the pathophysiological effects of extra-systemic manifestations of the pathological process in subtotal and hemithyroidectomy. The study of the products of the cytokines IL-1 ra, IL-6, IL-4, before and after surgery on the thyroid gland was conducted in this work. It is shown that the leading role in the formation of the inflammatory process in the remainder of the thyroid gland tissue after surgery belongs to IL-1 ra, IL-6, IL-4. With subtotal thioidectomy with the development of subclinical hypothyroidism, a high level of IL-1 ra, IL-6, and a decrease in IL-4 were statistically significant ($p < 0.05$).

Keywords: cytokines, subtotal thyroidectomy, hemithyroidectomy, hormones, thyroid gland.

Introduction

The protective reaction of the body to tissue damage during surgery on the thyroid gland, aimed at removing the inflammatory agent, its own

damaged tissue and repair the defect, which is observed when performing surgical interventions of any complexity. The response to tissue damage is regulated by a number of protective factors, among which reaction mechanisms due to the action of cytokines are important. They provide a coordinated response of the immune, endocrine and nervous systems and serve to organize a single protective reaction of the body [3]. Within 5-6 hours after the operation, macrophages in the focus of inflammation start the synthesis of cytokines, which activate the function of all immune cells, express their receptors, enhance the synthesis of adhesion molecules and the synthesis of growth factors [4]. Cytokines, providing the development of a full and adequate inflammatory reaction in the body, are also factors in the phase change of the inflammatory process [2]. In addition, cytokines are actively involved in postoperative changes in the body associated with the development of immunodeficiency states [5,].

Purpose of the study

Examine the dynamics of the cytokine process of the body in conditions of surgical intervention on the thyroid gland.

Materials and research methods

The studies were conducted at the Institute of Environmental Medicine of the Dagestan State Medical University for 2 years on 15 healthy dogs aged 2 to 5 years, weighing 5 to 13 kg, who underwent subtotal thyroidectomy for 8 dogs, and the second group of 7 dogs hemithyroidectomy.

Xylazine was premedicated with 5 mg/kg, anesthesia with sodium thiofenate, and postoperative anesthesia with ketanol - 1 mg/kg once a day for three days. The experiments were carried out in accordance with the rule of work using experimental animals and ethical principles established by the European Convention for the Protection of Vertebrate Animals used for experimental and other scientific purposes.

The level of IL-1 ra, IL-6, IL-4 (IL-1 receptor antagonist) in the blood serum was studied as markers of the inflammatory reaction, since the level of these indicators reflects the state of the pro- and anti-inflammatory system of the body. Blood samples were taken from the jugular vein before anesthesia, after surgery, 5, 7, days, and 12 weeks after surgery. The level of cytokines was studied by enzyme-linked immunosorbent assay in blood serum using diagnostic kits "Vektor-Best" (Russia), photometer "STATFAX - 303" (Russia) with a wavelength of $\lambda = 450$ nm.

Postoperative hypothyroidism is a potentially frequent complication after surgery, such as subtotal thyroidectomy, hemithyroidectomy, and total thyroidectomy. To assess the postoperative period, we determined hormones and cytokines after surgery.

We determined TSH in blood serum, total and free fractions of T₃, T₄ using enzyme immunoassays from the company "Hema-Medica" on the apparatus AKN-C-01.

The results of the study

The dynamics of the content of cytokines in the blood serum of experimental animals before and after surgery on the thyroid gland is presented in (Table 1).

In the blood serum of animals of the first group there was an increase in the concentration of IL-1 ra, which is able to stimulate the proliferation of fibroblasts and is a biochemical predictor of the synthesis of prostaglandins and leukotrienes in a postoperative wound.

The rate of increase was established immediately after surgery, 3 days after surgery - 2.5 times compared with the indicator before surgery, after 7 days - 2.6 times, and after 10 days, the indicator did not significantly differ from the indicator before surgery. In animals of the second group, the level of IL-1 ra did not increase during the entire postoperative period.

Table 1

The dynamics of the content of cytokines in the blood serum of experimental animals after thyroid gland surgery

Indicators	Before surgery	During the postoperative period			
		After surgery	After 5 days	After 7 days	After 12 weeks
1-st group after subtotal thyroidectomy n = 7					
IL-1 ra, pg/ml	1219,8±117,3	2981±381,0*	2916,7±368,1*	3166,2±277,1**	1126,4±318,9
IL-6, pg/ml	9,15±2,39	26,91±0,92***	22,18±3,16	16,9±2,69	16,51±1,26
IL-4, pg/ml	15,19±2,19	15,16±1,16	18,16±2,76	13,18±1,56	10,18±1,98
2-nd group after hemithyroidectomy n = 8					
IL-1 ra, pg/ml	1211,6±216,1	10,49±116,9	1118,1±119,6	1119,8±131,6	1098,2±193,6
IL-6, pg/ml	11,6±2,18	16,8±4,79	15,18±4,58	14,8±3,46	13,1±1,99
IL-4, pg/ml	12,18±1,16	13,2±1,28	17,19±2,18	10,36±3,17*	13,16±2,19

Note: * – p < 0,05; ** – p < 0,01; *** – p < 0,001 – in comparison with the indicator before surgery.

After the surgical intervention, the level of IL-6 in the first group increased by 2.8 times, however, after 3 days its level in the blood serum did not differ from the indicator before surgery. After 7 and 10 days after the operation, its level did not significantly change. In the second group dogs, the level of IL-6 during the postoperative period did not change. The increase in the level of IL-1 ra, IL-6 in the blood of animals of the first group is a sign of activation of the inflammatory reaction associated with wound healing. These changes in the second group of animals were not detected.

In dogs of the control group, the level of IL-4 in the postoperative period was not significantly changed. In the first group of animals, 7 days after the operation, the level of IL-4 increased by 88.9% compared with the indicator before the operation, and after 10 days it did not significantly differ from the initial level. Such dynamics of IL-4 in the first group of dogs indicates the activation of anti-inflammatory cytokines and inhibition of macrophage activity in the final stages of the postoperative period and the regeneration of damaged tissues.

Table 2

Dynamics of indicators of thyroid hormones after surgery on day 14

Indicators	Study groups	
	1-st group n = 8	2-nd group n = 7
1. TSH, mME d/l	4,13 ± 0,08*	3,1 ± 0,04
2. T ₃ , nmol/l	2,01 ± 0,03	2,48 ± 0,05
3. T ₄ , nmol/l	87,5 ± 5,05	98,5 ± 2,09

Note: * – p < 0,001 – in comparison with the first and second groups.

Analysis of hormonal status indicators after subtotal thyroidectomy surgery on the 14th day after surgery showed that in the second week after subtotal thyroidectomy TSH in the blood serum was 4.13 ± 0.08 mME d/l, and T₃ - 2.01 ± 0.03 nmol/l and T₄ - 87.5 ± 5.05 nmol/l, respectively.

Conclusion. In the first group of dogs, a significant increase in the level of IL-1 ra was revealed after the operation after 3 and 7 days, as well as IL-6 after the operation. In the second group of animals, only a significant increase in the level of IL-4 5 days after surgery was revealed. Thus, when studying the cytokine profile of blood of dogs after thyroid surgery, differences were found in the severity of inflammation in the postoperative period, depending on the method of operation and subtotal thyroidectomy and hemithyroidectomy.

Subtotal thyroidectomy, a marked reaction is noted with an increase in cytokines, hemithyroidectomy causes a less pronounced degree of inflammatory reaction than subtotal thyroidectomy.

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THE CIRCADIAN RHYTHM OF RESPIRATION AND OXYGEN SATURATION DURING TOXEMIA OF BURN DISEASE IN YOUNG CHILDREN

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Abstract. As a result of studying the data of 29 patients aged 5 months to 3 years with severe thermal burns, the authors revealed a direct correlation between respiratory rate (RR) and oxygen saturation in children of group 1. An increase in RR in acrophase by 18% was found in only the 3rd group at 1 day, remaining more frequent up to the tenth day, which corresponded to pneumonia, which invariably developed in the early stages of toxemia during burn disease. During the day, children in the 3 groups turned out to be critical for 17-18 hours, 1-3 hours, when a moderately expressed negative correlation of RR and oxygen saturation indicator showed a decrease in the compensatory activity of the respiratory ventilation system, while despite the increased breathing rate, the oxygen saturation index remained inclined to decrease.

Keywords: circadian rhythm, breathing, oxygen saturation, toxemia, burn disease, young children

Relevance

It is known that if hemoglobin, using all its reserves, bound all four oxygen molecules, then saturation will be 100%. It is absolutely not necessary that this indicator be maximum; for normal life, it is enough to have it at the level of 95-98%. This percentage of saturation fully ensures the respiratory function of tissues. At an early age (up to 3 years), with an imperfection of the subcortical parts of the brain, a higher metabolism is noted, hypoxia under conditions of a high water content in the brain tissues provokes frequent convulsive reactions, respiratory, cardiovascular and excretory sys-

tems. Immaturity of the autonomic nervous system leads to inconsistency of autonomic reactions, instability of respiration and pulse with the development of complications [1,2,3]. Due to the high risk of complications and mortality, the development of timely corrective measures remains relevant.

Purpose

Study the state of the circadian rhythm of respiration and oxygen saturation during toxemia of burn disease in young children.

Material and research methods

In total, research data was studied from the age of 5 months to 3 years in 29 children. Patients were considered depending on age, duration of treatment in ICU conditions. So, in infancy, the number of children in ICU up to 10 days was 18 (1 subgroup), 11-20 days - 6 children (2 subgroups), more than 21 days (21-40 days –5 infants).

Along with monitoring respiratory rate indicators, oxygen saturation was monitored. A detailed analysis of reliably significant deviations, intergroup differences of the studied parameters was carried out. The results were obtained by monitoring with hourly recording of the studied parameters. The research data were processed by the method of variation statistics using the Excel program by calculating arithmetic mean values (M) and mean errors (m). To assess the significance of differences between the two values, Student's parametric criterion (t) was used. The relationship between the dynamics of the studied parameters was determined by the method of pair correlations. The critical level of significance was taken equal to 0.05. Assessment of the severity of the burn was carried out by calculating the surface area of the damaged skin and using the Frank index. A detailed analysis of reliably significant deviations, intergroup differences of the studied parameters was carried out.

Results and discussion

The characterization of pediatric patients admitted with thermal burns are presented in table1.

Table 1
Characterization of patients under the age of 3 years in groups

Groups	Age in months	Height, cm	Weight, kg	S in %	2-3 A	3 B	IF, cu	n/d in hospital	n/d in ICU
1	19,3 ±6,2	81,6 ±8,8	10,9 ±2,2	32,7 ±9,8	32,7 ±9,8	0,1 ±0,03	33,4 ±10,1	15,4 ±3,5	6,8 ±1,8
2	14,2 ±4,6	79,7 ±5,7	10,1 ±1,9	33,6 ±7,6	24,8 ±7,4	9 ±2,8	48,4 ±11,28	41,6 ±10,2	12,8 ±1,3
3	10,1 ±2,1*	71 ±2,5	9,9 ±0,8	32,7 ±4,9	26,7 ±2,2	6 ±2,7*	71,3 ±8,4*	49,3 ±3,8*	26,3 ±2,4*

* reliably relative to data in 1 group

As shown in table 1, significant differences in height, weight, area of the burn surface, area of the lesion 2-3A degree were not detected. However, a significant age difference was found. Children of group 3 were younger than patients of group 1 by 9 months ($p<0.05$). The area of 3B degree lesion reliably prevailed by 5.9% ($p<0.05$), IF ($p<0.05$) was more than twice as large, which accordingly led to an increase in the duration of intensive therapy in ICU by 20 days ($p<0.05$) and treatment in a hospital for 34 days ($p<0.05$) due to the severity of the condition. Thus, the main factors affecting the severity of the condition of children with thermal burns of infancy were age (the younger the child, the more severe the condition), the area of 3B degree damage to the surface of the skin, IF indicator.

Table 2
Phase analysis of adaptive changes in respiratory rate during toxemia in young children

days	mesor			indicator in acrophase			indicator in bathyphase		
	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3	Group 1	Group 2	Group 3
1	35,0±7,7	35,0±7,7	36,5±2,1	38,6±15,0	34,0±2,0	38,5±1,5	30,9±1,8	31,0±1,3	34,7±2,2
2	30,2±1,7	30,2±1,7	32,6±1,5	31,2±2,2	30,9±3,1	34,7±2,2	29,4±2,0	26,9±2,3	30,7±0,9*
3	30,2±2,1	30,2±2,1	31,9±2,7	31,5±2,1	33,3±3,6	35,0±1,0	29,5±2,3	29,8±1,5	30,0±1,3*
4	29,7±1,9	29,7±1,9	35,6±0,8	30,4±2,4	31,3±2,0	36,7±0,9	29,1±1,7	30,0±2,0	34,0±2,7
5	29,9±1,7	29,9±1,7	34,2±1,3	30,5±2,0	32,3±1,1	36,0±1,0	28,8±1,5	30,2±0,3	32,7±0,9
6	30,2±1,8	30,2±1,8	33,8±1,0	32,0±2,8	33,2±1,2	35,0±0,7	29,0±1,4	30,3±1,2	33,0±0,7
7	30,5±1,3	30,5±1,3	33,1±0,8	31,7±1,9	32,8±1,5	34,0±0,7	29,6±1,3	30,2±1,5	32,0±0,7
8	29,4±1,6	29,4±1,6	33,9±1,4	30,7±1,8	32,0±1,3	35,7±2,2	28,4±1,8	29,3±1,6	32,7±0,9
9	29,5±2,0	29,5±2,0	33,2±1,3	30,3±2,2	30,5±1,5	34,3±2,2	28,6±1,6	28,8±3,2	31,7±0,4
10		30,1±1,5	32,5±0,9		31,5±1,8	34,0±0,7		29,3±1,3	31,3±0,9
11		30,1±1,7	32,5±1,5		31,0±1,7	33,7±1,1*		29,3±1,7	30,7±2,2
12		29,3±12,5	31,2±1,6		31,0±1,0	32,3±2,2*		27,0±2,0	29,7±0,4*
13		31,9±2,4	31,8±1,4		30,0±2,3	32,7±3,1*		24,5±4,5	29,3±0,9*
14		29,1±2,0	30,9±0,9*		31,0±1,0	32,0±2,1*		28,0±3,0	29,3±1,1
15		31,1±1,9	31,2±1,5*		29,0±2,1	32,7±1,8*		24,0±2,0*	29,7±1,6
16			30,3±2,1*			31,3±1,8*			26,7±5,8
17			30,1±2,0*			33,0±2,7			28,0±2,7
18			28,6±0,6*			30,0±2,0*			27,0±1,0*
19			30,7±1,9*			31,7±2,9*			29,0±1,0*
20			29,2±1,2*			30,7±1,6*			27,3±0,9*
21			30,4±1,6*			32,7±2,9*			30,0±1,3*
22			29,8±1,5			31,3±1,8			28,7±0,9
23			31,3±1,9			34,0±2,7			29,7±1,6
24			29,9±1,9			31,3±1,8			28,5±2,5
25			28,0±0,5			32,0±4,0			26,0±2,0

*- deviation is reliable relative to the indicator in the first day

As can be seen from the data presented in table 2, on the first day, there were no significant deviations of the circadian rhythm mesor RR from age standards (normal RR 32.5 ± 2.5 per minute). In children of groups 1 and 2 throughout the entire period of toxemia, there were no changes in the value of the mesor, an indicator in acrophase and bathyphase. Only in children of the 3rd group at 1 day, an increase in RR in acrophase by 18% ($p < 0.05$) was found, remaining more frequent up to tenth days. A decrease in the severity of dyspnea was detected starting from the eleventh day in acrophase and from the 12th day in the bathyphase of the circadian rhythm of RR in group 3. Persistent dyspnea in the first decade can be explained by pneumonia, which invariably developed during the period of burn disease toxemia, according to the severity of the area and depth of the affected skin surface, which is confirmed by the most pronounced deviations of the circadian rhythm RR in children of group 3. Only, starting from the eleventh day, there were changes in the direction of improvement, a decrease in the respiratory rate in acrophase and bathyphase, and a mesor from the 14th day of the toxemia period in children with the most severe burns.

During the phase analysis of adaptive changes in mesor, acrophase, and circadian rhythm bathyphase, the oxygen saturation indicator during toxemia in young children did not reveal any significant changes.

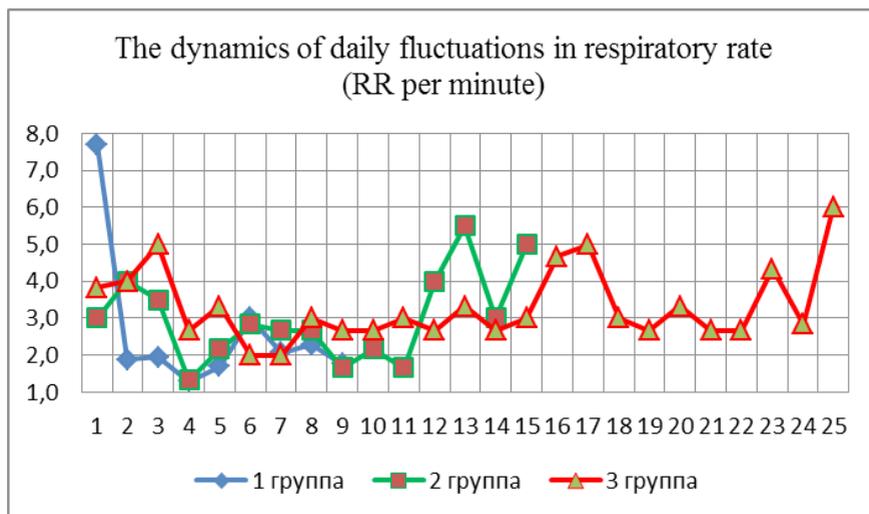


Fig.1

The largest daily RR fluctuations in 1 day were detected in 1 group of children. In the first 11 days, the daily range of RR fluctuations was within 2-3 per minute in all children, regardless of severity. In group 2, daily RR fluctuations increased to 5.5 per minute on day 13, which is consistent with more severe toxemia in children of group 2. In group 3, RR drops of up to 5 and 6 per minute are quite understandable, which have an important compensatory value in severe pneumonia, intoxication, which invariably accompany in the most severe infants.

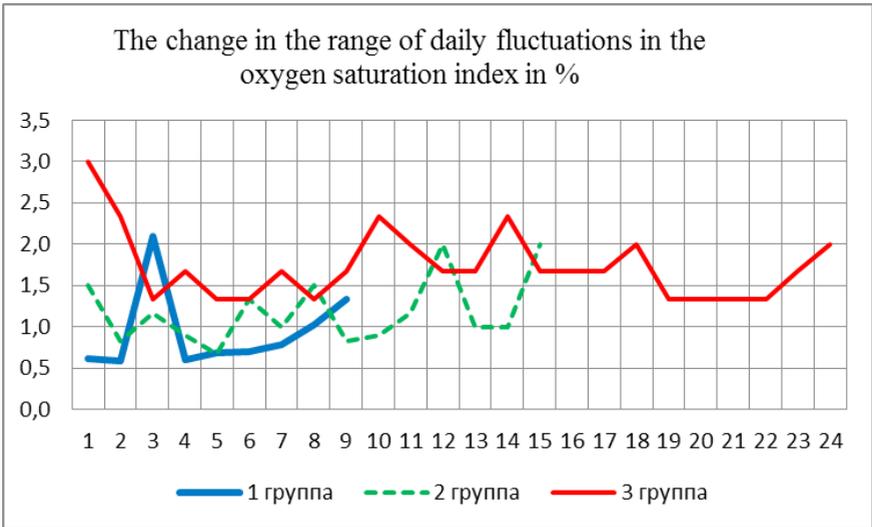


Fig.2

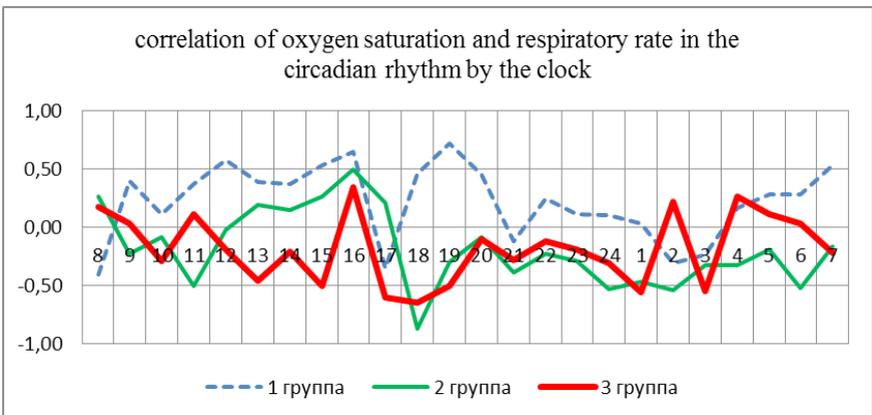


Fig.3

The daily fluctuations in oxygen saturation in the 1st group of children correspond to the inflammatory reaction, when on day 3 the most pronounced stress response was observed, corresponding to the peak of the body's inflammatory reaction during the period of burn disease toxemia. In group 2, oxygen saturation fluctuations occurred within 1-1.5%. The diagram clearly shows the most pronounced tendency to diurnal fluctuations in oxygen saturation in children of group 3, when even the minimum values were about 1.5%, increasing by 10.14, 18.24, 24 to 2-2.4%. Thus, blood oxygenation was also directly dependent on the severity of the burn injury.

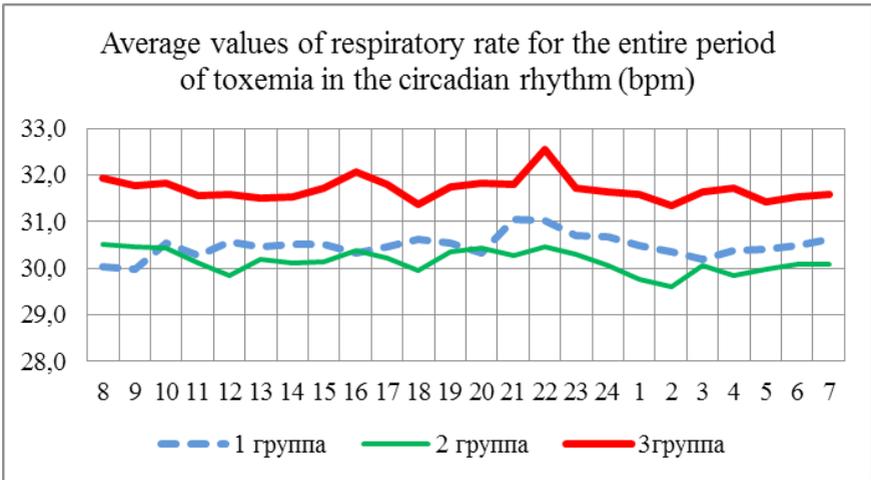


Fig.4

It is well known that the higher the RR, the more pronounced blood oxygenation, that is, the higher the oxygen saturation index. According to fig. Figure 3 shows that during the period of toxemia during the day, the greatest correlation between RR and oxygen saturation was found in children in group 1. The latter characterizes a better state of the respiratory system with a less pronounced inflammatory reaction than in groups 2 and 3. And the worst indicators were observed in children of the 3rd group at 17-18, 1-3 hours, when a moderately expressed negative correlation testified to the mobilization of the compensatory reflex activity of the ventilation system of the breathing, when there should be increased breathing in response to a decrease in oxygen saturation. The latter can be explained by the fact that the increase in the price of respiration, the excessive consumption of oxygen for the work of the respiratory muscles reflexively continues to stimulate the work of the respiratory center, however, the increase

in the obstacle, i.e., the thickening of the alveolocapillary membrane during these hours, appeared to be the largest due to the ongoing infusion therapy, parenteral nutrition, albumin infusion, plasma, blood transfusion.

As can be seen from the 4 diagrams, throughout the entire period of burn disease toxemia in young children of group 3, the respiratory rate, regardless of the time of day, remained significantly greater than in children of groups 1 and 2.

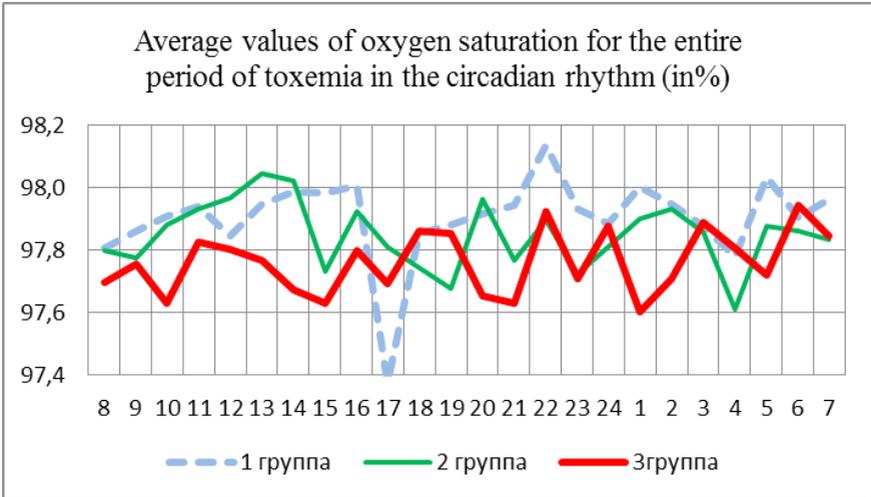


Fig.5

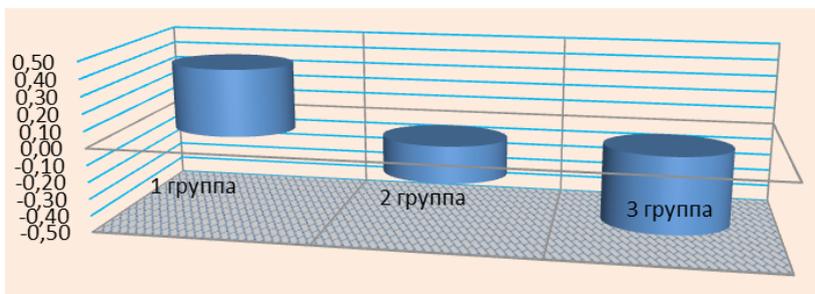
The most significant fluctuations in oxygen saturation were detected at 5 p.m. in children of the first group (Fig. 5). In all children, changes in the oxygen saturation index were oscillatory in nature with an approximate wave period of 5-6 hours in group 1, 7 and 4 hours in group 2, 3-4-hour waves prevailed in children of group 3.

Table 3.

		Respiratory rate		Oxygen saturation	
		day	night	day	night
Group 1	In acrophase	100%	0	100%	0
	In bathyphase	22%	78%	66%	34%
Group 2	In acrophase	80%	20%	80%	20%
	In bathyphase	73%	27%	66%	34%
Group 3	In acrophase	84%	16%	68%	32%
	In bathyphase	60%	40%	68%	32%

The circadian rhythm of the respiratory rate and oxygen saturation rate in children of the 1st group was characterized by the migration of the acrophase peak during the daytime in the entire time span (100%) of the stay in the ICU and the position of the respiratory rate during the nighttime during 78%, and the oxygen saturation during 78 34% of intensive care. In groups 2 and 3, the fluctuations in the displacement of the acrophase RR and oxygen saturation in the daylight amounted to 80% and 84%. The prevalence of bathyphase at night also predominated, accounting for 68% of the duration of intensive care, respectively. Thus, the dependence of the migration of acrophase and bathyphase peaks of circadian rhythms RR and the oxygen saturation index in children during toxemia on the severity of the condition was not detected.

Correlation between oxygen saturation and respiratory rate depending on the severity of the condition in the first 9 days of toxemia



■ корреляционная связь мезоров ЧД и сатурации кислорода

The correlation between oxygen saturation and respiratory rate depending on the severity of the condition in the first 9 days of toxemia in patients of group 1 showed a moderate dependence of oxygen saturation and respiratory rate, in group 2 a weakly expressed negative dependence of saturation on respiratory rate was found. In the 3rd group of children, a more pronounced negative correlation between the oxygen saturation index and respiration rate was observed than in the previous one. The increase in the price of respiration, the excessive consumption of oxygen for the work of the respiratory muscles reflexively continued to stimulate the work of the respiratory center, however, the violation of oxygen diffusion due to the thickening of the alveolocapillary membrane during these hours

was the greatest. Of great importance was the most pronounced damage to the alveolocapillary membrane, violation of the permeability of the capillary wall in a small circle, the more severe damaging effect of toxemia in babies of group 3.

Conclusion

The most pronounced direct correlation between RR and oxygen saturation was found in children of the 1st group. Only in children of the 3rd group at 1 day an increase in RR in acrophase by 18% was found, remaining more frequent up to the tenth day, which corresponded to pneumonia, which invariably developed during the period of toxemia. The most severe damaging effect of toxemia on the respiratory system and blood oxygenation in infants of the 3rd group was revealed.

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**PROLIFERATIVE ACTIVITY AND APOPTOSIS OF GERM CELLS
OF THE TESTES OF THE OFFSPRING OF FEMALE RATS WITH
EXPERIMENTAL DIABETES AT DIFFERENT AGES**

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Abstract. Purpose: analysis of proliferative activity and apoptosis of the offspring of female rats with experimental type 1 diabetes mellitus in different age periods.

Methods: The work was carried out on white laboratory rats of the "Wistar" line and their sexually mature offspring, in which type 1 diabetes mellitus was simulated,. The proliferative activity of spermatogenic testis cells was determined immunohistochemically by counting Ki-67-positive cells. The presence of cells that entered into apoptosis was determined by detecting the expression of the Caspase-3 proapoptotic protein

Results: It was found that in the offspring of female rats with experimental type 1 diabetes mellitus, at different times of the postnatal period, a change in the proliferative activity of spermatogenic cells and an increase in their apoptotic activity were revealed.

Conclusions: The results allow us to conclude that type 1 diabetes of the mother negatively affects the formation of the generative compartment of the testes of the offspring.

Keywords: diabetes mellitus, experiment, offspring, proliferative activity, apoptosis.

Introduction

The prevalence of the male factor in the structure of barren marriage determines the relevance of this study, which necessitates a thorough study of this problem. According to modern concepts, a decrease in male fertility is associated with an increasing effect on the male body of numerous exogenous and endogenous factors [1]. One of the factors determining the development of infertility is extragenital diseases of the mother. Among

them, a special place, due to its prevalence, is occupied by type 1 diabetes mellitus [2, 3]. Moreover, experts from the World Diabetes Association predict that the number of patients with diabetes will increase by 1.5 times by 2030, including among women of childbearing age [4]. Moreover, maternal diabetes mellitus causes dysregulation of reproduction in offspring, primarily in the process of histogenesis, proliferation and differentiation [3]. Currently, such subtle mechanisms of impaired proliferative and apoptotic activity of male germ cells have not been sufficiently studied.

In this regard, the aim of this study is to analyze the proliferative activity and apoptosis of the offspring of female rats with experimental type 1 diabetes mellitus in different age periods.

Material and methods

The object of the study was Wistar white laboratory rats (females) and their offspring at various age periods (newborns, 15, 30, 45 and 70 day old rats). To achieve the goal in adult mature females, type 1 diabetes mellitus was modeled according to the generally accepted method using streptozotocin (Streptozotocin; MP Biomedicals, LLC; France), which was administered intraperitoneally to animals three times with an interval of 7 days [5]. Over the entire course, 10 laboratory animals received 17-19 mg of streptozotocin, under the influence of which diabetes developed, as evidenced by a constant increased level of blood sugar (32.56 ± 2.44 mmol/l), which persisted over at least three months. Replanting to intact males for mating was carried out 1 week after the last injection of streptozotocin. As a result, experimental pups were born. This group (the "test" group) consisted of 47 pups from 21 litters, including 10 newborns (on the 1st day of the postnatal period), pups, 9 pups at the age of 15, 30 and 45 days, 10 sexually mature 70 day old rat pups. The control group consisted of 42 rat pups out of 19 litters, namely 9 newborn pups, 8 pups each at the age of 15, 30, and 45 days, 9 sexually mature 70 day old pups.

Work with laboratory animals was carried out in accordance with the "European Convention for the Protection of Vertebrate Animals Used for Experiments or for Other Scientific Purposes" of 03.18.1986.

First of all, on the serial histological preparations of rat testes, the total number of spermatogenic cells was counted per one convoluted seminiferous tubule [6]. To determine the proliferative activity of spermatogenic cells, Ki-67-positive cells in the visual fields were determined immunohistochemically. When staining, Ki-67 primary polyclonal antibodies were used according to the generally accepted technique [7]. The presence of spermatogenic epithelial cells that entered into apoptosis (programmed cell death) was determined by the expression of the proapoptotic protein Caspase-3. Cell counting was also performed in the field of view [8].

The results obtained were processed statistically on a computer using the "SPSS Statistica 19" program and presented as a median and quartiles. Given a small sample of animals, the significance of the results was determined by a nonparametric method using the Mann-Whitney criterion and the results were considered significant compared to the control at $p < 0.05$.

Results and discussion

One of the most informative indicators of the morphofunctional state of the male genital gland is a characteristic of the spermatogenic layer. First of all, we found that in the process of postnatal development, the total content of spermatogenic cells gradually increases, reaching a maximum value by puberty. At the same time, it is noteworthy that in the offspring of female rats with experimental type 1 diabetes mellitus, at all stages of the study, the parameter in question was reduced compared to the control (table №1).

Of particular interest are the results of immunohistochemical studies aimed at identifying proliferative and apoptotic activity (table №2). So, in animals of the comparison group, the number of spermatogenic cells that entered mitosis gradually increases from the neonatal period until the onset of puberty (30th day). Further, from the 45th day to the 70th (puberty), the number of Ki-67-positive cells gradually decreases. In experimental animals, a different picture is noted. On the 1st and on the 15th day, proliferative activity was higher than the control, then, by the beginning of puberty, it decreased, after which it increased by the 45th and 70th day and was higher than in the comparison group.

Table №1.
The total number of spermatogenic cells of the testes of the offspring of female rats with experimental diabetes (Me (Q1; Q3))

Term	Control	Test
1 day	10.1 (9.89; 11.83)	7.8 (7.2; 8.4) $p < 0,001$
15 days	52.2 (51.7; 57.4)	36.2 (34.9; 36.6) $p < 0,001$
30 days	139.1 (129.0; 152.1)	93.6 (86.4; 98.8) $p < 0,001$
45 days	268.5 (263.6; 276.7)	176.5 (170.3; 182.1) $p < 0,001$
70 days	493.5 (480.3; 521.8)	338.0 (322.0; 350.8) $p < 0,001$

The results of the reaction to detect apoptosis of spermatogenic cells in experimental animals are presented in table №2. In the experimental group, there is an increased number of spermatogenic cells in which the synthesis of the proapoptotic protein Caspase-3 was identified compared to the control in most observation terms.

Table №2.
Morphological characteristics of proliferation and apoptosis of spermatogenic epithelium of the offspring of experimental animals (Me (Q1; Q3))

Term	Parameter	Control	Test
1 day	Ki-67-positive cells	12.05 (7.85; 15.20)	38.40 (30.70; 39.55) p < 0,001
	Caspase-3-positive cells	0.95 (0.85; 1.50)	2.93 (2.60; 3.05) p < 0,001
15 days	Ki-67-positive cells	14.13 (11.85; 18.35)	24.90 (22.45; 28.00) p = 0.001
	Caspase-3-positive cells	0.90 (0.38; 1.30)	1.1 (0.90; 1.25) p = 0.37
30 days	Ki-67-positive cells	21.9 (18.9; 30.8)	11.4 (9.7; 13.1) p = 0,001
	Caspase-3-positive cells	0.63 (0.48; 0.68)	1.35 (0.85; 1.60) p = 0,002
45 days	Ki-67-positive cells	12.1 (10.4; 17.3)	22.9 (19.1; 25.5) p = 0,002
	Caspase-3-positive cells	0.88 (0.80; 1.48)	3.55 (2.65; 3.65) p < 0,001
70 days	Ki-67-positive cells	6.50 (5.85; 8.70)	19.08 (16.80; 23.75) p < 0,001
	Caspase-3-positive cells	1.65 (1.45; 1.85)	4.78 (3.65; 5.90) p < 0,001

A number of clinical observations have established that hyperglycemia and hyperketonemia in type 1 diabetes in women causes hormonal deficiency, which is based on increased opioid inhibition of hypothalamic production of gonadotropin-releasing hormones and damage to the positive feedback mechanism between gonads and the pituitary gland [3]. It is logical to assume that a violation of hormonal homeostasis in mothers with experimental type 1 diabetes mellitus can cause, due to the lack of gonadotropins in the offspring, the loss of the direct stimulating effect of insulin on Leydig cells, and ultimately the production of testosterone. As a result, there are disturbances in the regulation of spermatogenesis, an important role in maintaining which has a balance between cell prolifera-

tion and apoptosis. It can be assumed that it is precisely hypoglycemia and hyperketonemia that can be the main causative factors of the disruption of proliferation and differentiation of spermatogenic testicular epithelium. Considering that spermatogenic cells divide at a high rate, they are very susceptible to the action of prenatal stress factors [9, 10], which include, among other things, extragenital diseases of the mother. In addition, the higher intensity of proliferation of male germ cells in experimental animals at some stages of the postnatal period can be considered as an adaptive reaction. In addition, apoptosis is considered as one of the mechanisms of avoiding attacks of various influences [11, 12], an example of which is maternal diabetes, which leads to activation of programmed cell death. This, ultimately, leads to disruption of the process of spermatogenesis in experimental animals, and manifested in a decrease in the total content of spermatogenic cells due to the predominance of apoptotic activity over proliferative.

Conclusion

In general, the results obtained allow us to conclude that the offspring of female rats with experimental diabetes mellitus have a violation of the formation of the generative compartment of the testes, as evidenced by a more pronounced than in the control, decrease in the total number of spermatogenic cells due to the imbalance between proliferation and apoptosis.

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INDISCRIMINATE CONTROL OF THE INTENSITY OF WEAR OF CYLINDER-PISTON DIESEL PARTS

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Abstract. A new method for determining the iron content in exhaust gases developed and tested in the laboratories of spectral analysis and marine [ICE] is presented, which is used to control the wear rate of components of a cylinder-piston group of a diesel engine for running-in regime.

The need to develop an in-line operational method for controlling the wear rate of parts of a cylinder-piston group (CPG) of a diesel engine during running-in is justified by a well-known fact: wear during running-in can reach 30% of the maximum for the entire period of operation [1]. In-place monitoring of the running-in process and surgical intervention in the running-in ensures not only the failure-free commissioning of the diesel engine, but also the reduction of the initial wear of the CPG parts. As a result of studies on the information content of diesel exhaust gases, conducted in the laboratories of marine internal combustion engines (ICE) and spectral analysis, at Murmansk State Technical University (MSTU), a new express integrated method was developed to control the wear rate of parts of the diesel engine's CPG by iron content [2].

To justify the representativeness of iron in exhaust gases, as the most informative element of wear products of CPG diesel parts, first of all, it is necessary to find out the mechanism of their transfer from working surfaces to the exhaust manifold. The solution of this question is impossible without an analysis of the working conditions of the investigated parts.

It is known that the operation of piston rings and cylinder liners occurs under high specific pressures and temperatures with limited lubrication of rubbing surfaces [3]. In this case, the temperatures of the upper piston ring are in the range of 250-420°C and 200-260°C of the cylinder bore in the region of the top dead center (TDC), the specific pressure of the piston rings on the bushing is 2.5-3.5 MPa [4]. Under such conditions, the wear microparticles of the friction surfaces of the CPG running-in parts constantly interact with cylinder oil, which plays the role of a lubricant and a grinding

medium. When the piston moves down in the piston area of the cylinder bushing, most of the lubricating oil with particles of wear of CPG parts is removed from the cylinder walls into the crankcase.

In the processes of fuel combustion and gas expansion, the lubricating oil remaining on the cylinder bushing above the piston with the CPG parts wear products intensively evaporates under the influence of high temperatures in the combustion chamber. At the same time it should be noted, that when shifting the piston at dead points in proportion to the speed of rotation, alternating strokes are applied to the cylinder bushing. The constant vibration of the unit resulting from these shocks during the operation of the diesel engine is a factor contributing to the separation of wear particles from the working surfaces of CPG parts. In confirmation of what was said, we compiled a program and carried out a mathematical calculation of the rate of oil evaporation from CPG parts according to the cycles of the working process [5]. The calculation showed that the bulk of the lubricating oil in a 4-stroke medium-speed diesel engine evaporates during the period of fuel combustion and gas expansion (from 150 to 270 deg. rev. per cycle).

Hence, it should be assumed that during the considered period of the working process, as a result of the action of a high combustion temperature of $\sim 2000^{\circ}\text{C}$, the lubricating oil containing wear products of CPG parts is evaporated and burned with the formation of an aerosol circulating in the combustion chamber. When the piston moves upward with the opening of exhaust valves, gases with aerosols of wear products from the combustion chamber are directed to the diesel manifold. According to research [15], the sizes of aerosols in the exhaust gases of diesel engines are in the range of 0.001-0.1 microns. A confirmation of this hypothesis is the experimental data of American scientists [6], who managed to determine the quantitative ratio of wear products entering the exhaust gases and lubricating oil into the crankcase using the radioactive isotope method. It was found that at partial loads $\approx 1/3$, and at full loads $\approx 2/3$ the wear products of parts of CPG diesel engines are carried away with exhaust gases. The presence of wear products in the exhaust gases of diesel engines is also confirmed by studies of the Central Scientific Research Institute of the Navy (CSRIN) [7].

In laboratory studies, we found that the quantitative content of wear products in exhaust gases varies in accordance with the parameters of the load-speed mode of diesel operation [8]. From these data, it should be assumed that most of the remaining CPG parts wear products enter the crankcase oil. Such results indicate a high representativeness of the content of wear products of CPG parts in both carrier media (intake gases and crankcase oil) at any load-speed conditions.

Fig. 1 presents a qualitative picture of the process of getting wear products into lubricating oil and diesel exhaust gases.

Thus, the established mechanism for the ingress and quantitative distribution of the wear products of CPG parts in the exhaust gases and crankcase oil of a diesel engine is the basis for the development of an express in-place method for assessing the wear rate of CPG parts, which is especially important for monitoring the running-in process in the running-in mode.

For timely information on changes in the wear rate of CPG parts, the basis should be a rational method of deposition of iron from diesel exhaust gases. In this direction, we made an attempt to experimentally evaluate in laboratory conditions the existing methods of deposition of solid particles from aerosols. Based on literature and in the laboratories of marine ICE and spectral analysis, we evaluated the existing methods for collecting and analyzing aerosol metals from the point of view of their applicability in ship conditions. Gravity deposition method, dry inertial deposition method, electrical deposition and filtration [9].

WET CAPTURE. The essence of this method lies in the fact that a liquid is injected into the gas stream by a sprinkler, which captures solid particles from the stream and, together with them, is sent to the separator. In this form, particle capture, from our point of view, is unacceptable in ship conditions due to the cumbersome and complex design of the capture system, as well as the high consumption of fresh water, which is scarce in marine conditions. In addition, difficulties arise in the process of separating wear particles from a large amount of water.

However, the idea of precipitation of iron on liquid droplets is promising and can be used for water vapor exhaust gases, the quantitative content of which in diesel engines is about 5%. In this case, additional irrigation is not required, but only cooling of the exhaust gases. This method of wet capture is quite feasible for factory and ship conditions.

So, from all the considered methods of deposition of wear products from exhaust gases, we have chosen the wet capture method. In laboratory studies, we found that the content of wear products in exhaust gases varies in accordance with the parameters of the load-speed mode of the diesel engine [10].

So, of the considered methods of deposition of iron, the most appropriate is the method of wet capture, which was adopted by us as the basis for testing the technique on marine diesels.

To study the possibility of using the method of wet trapping of iron particles in the exhaust gases of a diesel engine, we created a laboratory unit

based on a single-cylinder compartment CH 17.5/24 (NVD-24), the appearance of which is shown in Fig. 2.

We developed a method for the deposition of wear products and analysis for iron content according to the proposed scheme is as follows.

The exhaust gases taken from the gas outlet of the cylinder have a temperature in the range 200-150°C before the stopcock. Passing a copper gas supply tube, they are cooled to ~ 100°C and sent to a water glass refrigerator. In the refrigerator, the exhaust products are intensively cooled from the outside by circulating water to 20-25°C. In this case, droplets of the resulting condensate capture the wear particles and settle on the walls of the refrigerator. To slow down the flow and improve deposition, the inner tube of the refrigerator is made of a series of conical constrictions and extensions. Then the condensate flows into the collector. In this method, we achieved the deposition on the walls of the refrigerator up to 10% of the products of wear of CPG parts.

In relation to this device, we have developed a method for flushing and quantifying the iron content. The precipitated iron was washed off the walls of the refrigerator with solutions of several acids. In a laboratory experiment, we tested three acids: sulfuric, hydrochloric and nitric.

Experiments on the dissolution of iron with acids of various concentrations showed that a 20% solution of nitric acid with a minimum flow rate of 25·mg is optimal from the point of view of safety, the shortest dissolution time and subsequent spectral analysis.

The quantitative determination of iron in the resulting solution was tested by well-known physicochemical methods (flame photometry and colorimetric) in order to select the most appropriate of them for use in stand and ship conditions.

COLORIMETRIC METHOD is based on the chemical reaction of the interaction of ammonium rhodonite with a solution containing iron ions Fe^{+3} , resulting in a red color with a brightness proportional to the iron content in the sample.

The colorimetric method for determining iron is quite operational - the time of the analysis of the sample did not exceed 2 minutes.

On this principle, rapid analysis is possible in two ways:

- roughly visually according to standard color scales;
- precisely using a photoelectric colorimeter.

VISUAL METHOD is the most simple, requiring no hardware. In this method, the color of the test $Fe(NO_3)_3$ solution is visually compared with a series of standard color scale stains. Moreover, the accuracy of determining the concentration of iron does not exceed 10% [11]. We tested the

method and, due to its simplicity and efficiency, it was recommended for a rough rapid assessment of the wear rate of CPG parts under ship conditions [12].

PHOTOELECTROCOLORIMETRY METHOD used for more accurate analysis of samples. For this purpose, we tested the FEC-M photoelectrocolorimeter. The sensitivity of the device to the iron content is 0.57 mg/m^3 with a measurement accuracy of 5%, which is acceptable for the quantitative determination of wear products by the iron content in the run-in mode. The device is compact, easy to maintain, and after acquiring a certain skill, it can be used for operational control of the process of running-in a CPG diesel engine in laboratory, bench and ship conditions.

FIRE PHOTOMETRY METHOD based on photometric radiation of elements in a flame. It has high efficiency and accuracy of measurements ($10^{-9}\%$) and is suitable for the quantitative content of iron in samples. To this end, we have tested the flaming photometer "FPM".

Since in this experiment we used a serial "FPM" instrument designed for the analysis of alkali and alkaline earth metals, we used a ZUFS-6 type filter to study samples for iron content in order to isolate the iron spectrum from the flame, determined from the lines (372; 386) 10^{-6} m .

Taking this circumstance into account, we selected nitric acid from the three considered acids to dissolve the iron deposited on the walls of the refrigerator, since the nitrogen spectrum among the other acid residues is farthest from the analyzed region. In this case, interference in the analysis of the iron spectrum is excluded.

For analysis on iron, the "FPM" device was calibrated using a solution of $\text{FeCl}_2 \cdot 6\text{H}_2\text{O}$ in the washing mixture with the construction of a calibration graph depending on the magnitude of the photocurrent recorded by the galvanometer of the device, as well as on the quantitative content of iron in the sample. Using this graph, the quantitative content of iron is easily determined by the intensity of the photocurrent during the combustion of samples obtained by wet deposition from the exhaust products. The duration of processing one sample on a flame photometer did not exceed 5 minutes.

Experimentally, for the developed scheme of wet capture of wear products, the sensitivity threshold for the "FPM" device was determined taking into account the quantitative content of iron. A minimum engine run time of 45 minutes is required for sampling. with simultaneous deposition of wear products in the gas sampler. In this case, the iron content deposited in the sampler per unit time corresponds to the wear rate of CPG parts. By controlling the running-in mode in this way, the running-in of parts of the cylinder-piston group of the diesel engine can be estimated.

As a result, the total time of sampling (45 min.) And analysis (5 min.) Of the sample according to the developed method was 50 min. This duration of determining the wear rate of running-in CPG parts is the shortest among all considered (see 3). So, for example, the known existing method of sampling and analysis of samples by spectral method is carried out for 6-8 hours [13].

At the same time, the advantage of the methodology developed by us in that the sampling from the gas outlet cylinder pipes to the common collector allows you to control the wear rate of the CPG parts of each cylinder should be noted. This technical solution has a significant advantage over the method of analysis of lubricating oil, selected from the circulation system, which includes the wear products of all parts of the diesel engine. This is especially important in the case of running-in after emergency repairs when replacing parts of individual cylinders.

So, the conducted experimental studies allow us to draw the following conclusions:

- for diesel engine running-in modes in ship and stand conditions, the most acceptable method is wet capture of wear products, followed by analysis of samples for iron content using a color scale and photoelectric colorimeter;
- for more accurate analysis of samples and determination of the quantitative content of iron in the running-in regime of diesel engines in laboratory and factory conditions, the method of flame photometry is recommended.

5. Conclusion

So, the results of laboratory studies convincingly show the significant advantages of a new method developed at the university for controlling the engine running-in process of diesel engines based on a comprehensive analysis of wear products in exhaust gases and lubricating oil. The results of visual inspection and weighing of the piston rings confirm the results of the CIP method of wear control. Rapid analysis of samples allows to monitor the wear rate of parts of the cylinder-piston group and quickly make changes to the engine running mode. The criteria for a qualitative break-in are: stabilization of the wear rate of the parts and the achievement of a certain level of total wear (for diesel engines of type CH 17/24 (NVD-24) after replacing the piston rings - $\Sigma Fe > 4$ mg in each cylinder), controlled by method developed by us.

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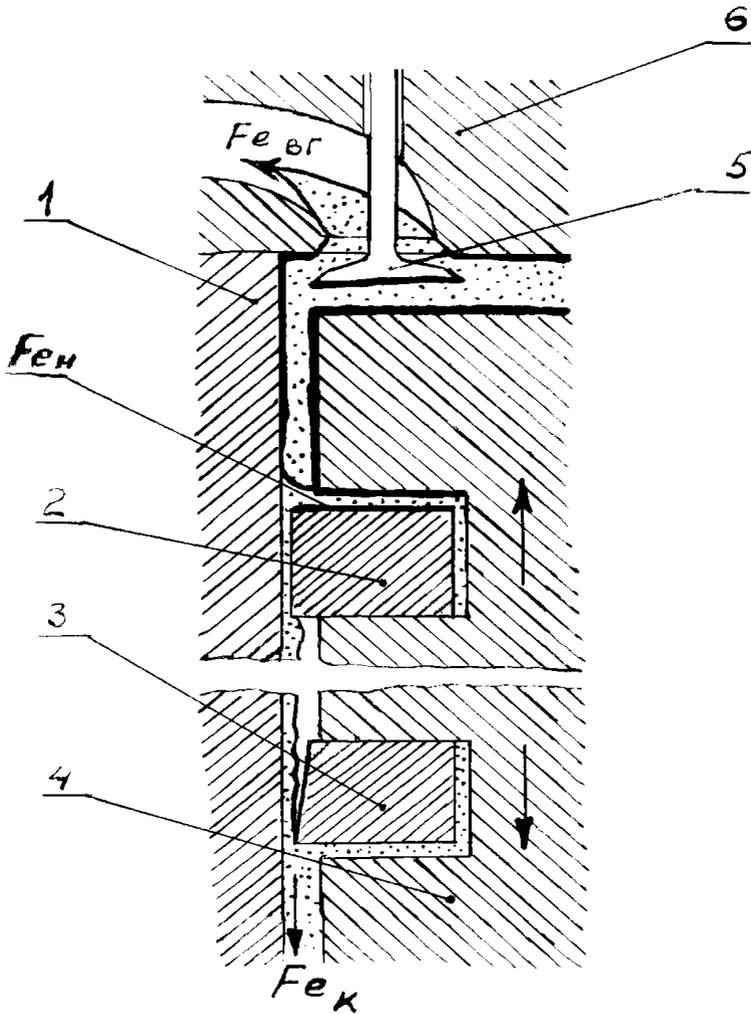


Fig. 1. The mechanism of CPG parts wear products entering the lubricating oil and diesel exhaust

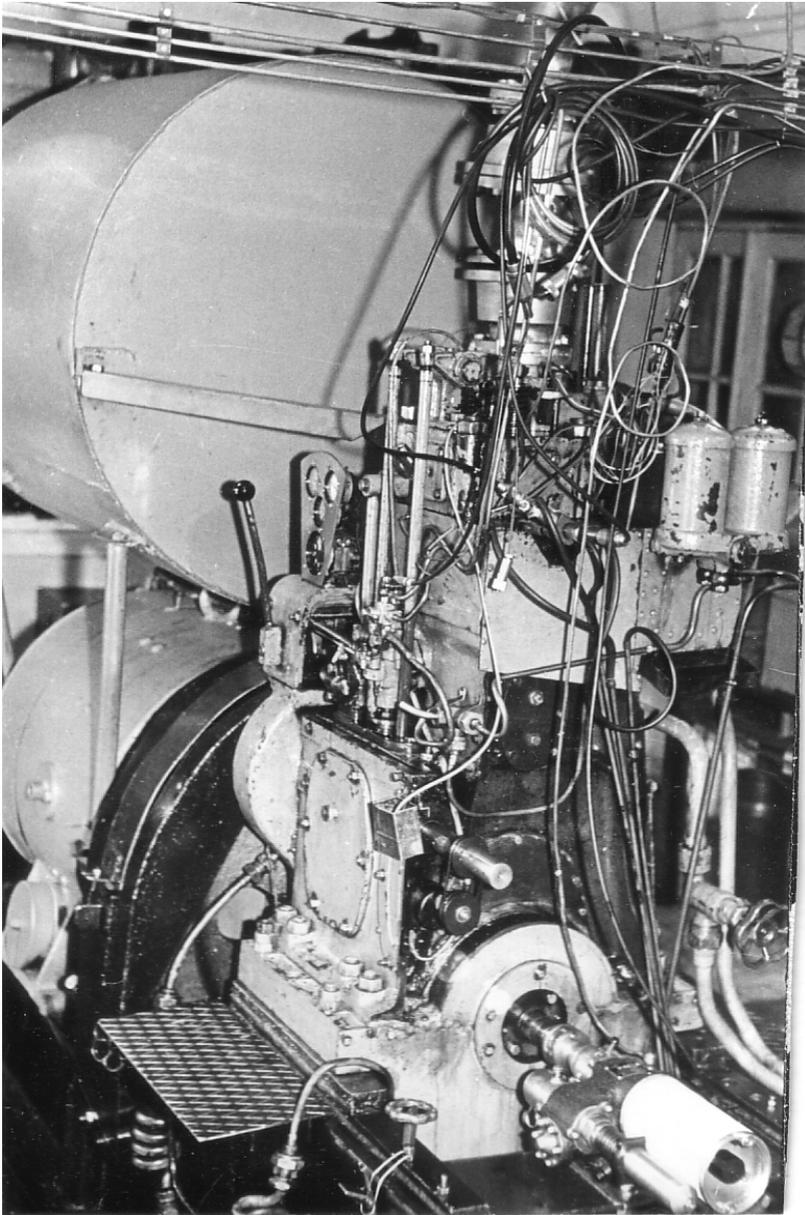


Fig. 2. Laboratory installation based on 1CH 17.5/24 diesel engine (1NVD-24)

**SIMULATIONS OF THE STRESS DISTRIBUTION OF ADHESION
OF ANCHORS BONDED TO THE CONCRETE STRUCTURE
DEPENDING ON THE INCREASE IN THE PULLING FORCE**

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Abstract. The article presents a stepwise increase in adhesion stress with an increase in the pulling force in accordance with the conducted experimental tests. The pull-out force increases according to the programmed experiment is 0.5 kN / s to reach a limit force of 80 kN. The differentiation in the concrete solid elements concerned the depth of anchoring in the structural layer. Anchoring levels in the construction layer are respectively: 2cm; 3 cm; 3.5 cm; 4 cm; 5 cm and full section, i.e. 6 cm. The distribution of adhesion stress at the same time depends on: the class of concrete, the adhesive stress of the contact material, i.e. resin, and the effective anchorage depth. Resin strength parameters have an impact on the distribution of stress trajectories both when conducting experimental tests and during the generation of a numerical model with given material data and load diagrams included in conducting experimental research. Computer simulation is a picture of a phased numerical destruction of a glued joint until it is destroyed

Keywords: engineering, stress distribution, computer simulations, anchors, security

Introduction

Adhesion stress on bonded anchors is the subject of research and numerical analysis of many authors (Hüer, Eligehausen 2007; Eligehausen, Appl 2007; Bajer, Barnat 2012). In this type of systems, it is the transfer of adhesion stress through the contact element in the form of a resin as a result of the pull-out force of the anchor. The boundary stress of adhe-

sion can be determined both through experimental tests, on the basis of which we obtain actual and actual accurate test results. Another way is to estimate the theoretical load-bearing capacity of bonded anchorages and determine the adhesion stress in an analytical manner. Analytical formulas are created on the basis of previously conducted experimental research. Computer simulation of the adhesion stress distribution often gives the answer to the question to what moment the increase in the strength of the pressed material (glued anchor) makes the work of the three-layer element safe.

Stages of stress development in a concrete element

A uniaxial pull-off load test was carried out. The tested models were solid elements 20 x 20 x 17 cm for three-layer elements with anchors glued at 90°, 60° and 45° and a single-layer element 30 x 20 x 6 cm with anchor glued at 30°. Three- and single-layer elements were modeled using 3D finite elements. The simulation of the adhesion stress distribution was performed in the ANSYS program on the ANSYS Workbench platform. Numerical simulation was carried out according to the following procedure: number of steps: 1; current step number: 1; step and time: 1, s; automatic time increase: on; defined by: sub-steps; initial sub-steps: 10; minimal sub-steps: 10; maximum steps: 200

Adhesion stress of bonded anchors can be described in four stages of development (Kijania 2015).

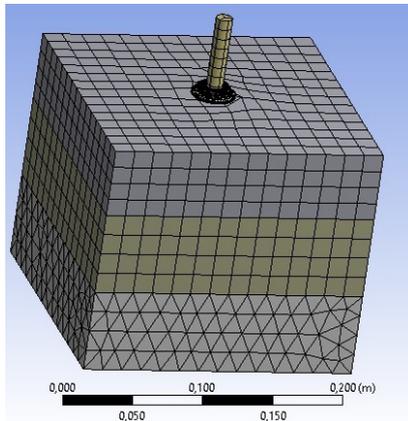


Fig. 1. Discretisation of the solid three-layer model with the anchor pasted perpendicularly to the sample surface

Calibration of the numerical model was based on the analysis of results obtained in experimental studies. The model calibration included changes in stress distribution on contact surfaces and in solid elements.

The results of computer simulations (Pukl et al. 1998) laboratory tests, in addition to the validation of the numerical models used (Marcon et al. 2017), enabled the analysis of stress changes in the structures of surface solid elements (concrete layers) and composite (steel anchors) characterising the response of the anchor breaking force increase.

Shear stress transmitted to the anchor

Adhesion stress is transmitted through the contact zone in the form of epoxy resin directly to the steel anchor interface.

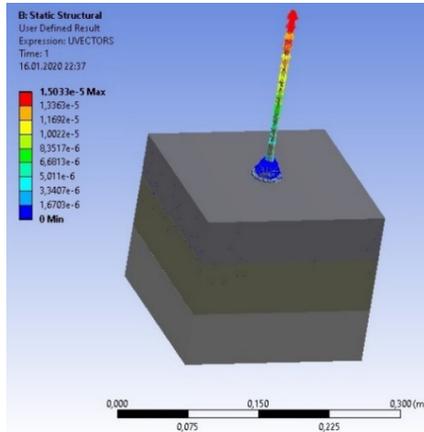


Fig. 2. Stress distribution to the glued anchor

At the initial stage, the increase in joint deformation was at $1.2e + 0.03$ m / m, followed by $2.4e + 0.03$ m / m, while at the final stage it was $6.1e + 0.003$ m / m (Fig. 2).

$$\tau_{anchor} = \frac{P}{\pi \cdot d_{anchor} \cdot h_{ef}} \left[\frac{N}{mm^2} \right] \quad (1)$$

where:

τ_{anchor} – steel anchor adhesion stress, [N/mm²]

P – anchor pulling force, [N]

d_{anchor} – steel anchor diameter, [mm]

h_{ef} – effective anchorage depth in the construction layer of the solid element (bottom solid element).

In the solid model with an anchor stuck at an angle of 90° (perpendicular to the sample surface) shown in Figure 2, the maximum total deformation occurs on the surface of the anchor and is $1.5033e-005$ m, while the minimum total deformation is practically close to 0 and in the initial phase appears in concrete solid elements. In contrast, stress equivalent to Von-Mises reduced stress, the minimum value of $2.8215e-017$ m / m is achieved in the contact zone, i.e. in a resin model with an adhesion stress of 7 N / mm^2 , while its maximum value is $5.1536e-004$ m / m is achieved in the steel nut of the anchor.

In contrast, the maximum plastic deformation at shear reaches its minimum value in the contact layer (resin) at $3.5895e-017$ m / m, while it reaches its apogee in a steel anchor at $7.3426 \text{ e-}004$ m / m. The maximum main elastic stress reaches its minimum value $-1.2014e-005$ m / m in the washer under the steel anchor nut, while the maximum value $5.7621e-004$ m / m is achieved in the nut. Shear elastic deformations their minimum values $-5.9446e-004$ m / m and maximum values $6.7154e-004$ m / m accumulated in the steel nut of the anchor.

Shear stress transferred to concrete

Adhesion stress is the response transmitted from the steel anchor through the contact zone in the form of epoxy resin directly to the interface of the concrete solid element.

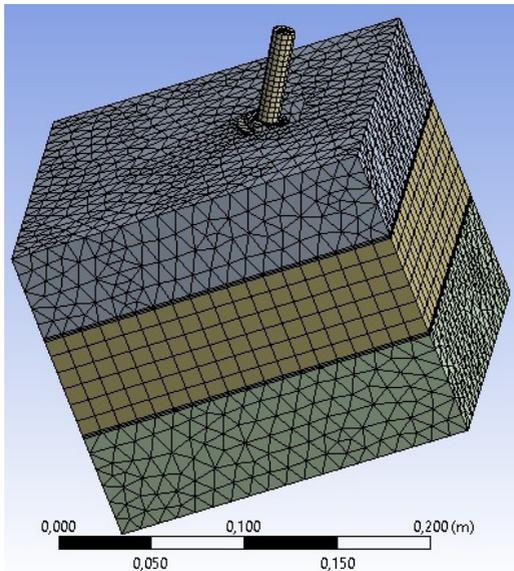


Fig. 3. Discretisation of a solid three-layer model with an anchor pasted at an angle of 60° to the surface of the sample

In the initial stage (Fig. 4a), the increase in joint deformation was at the level of $6.1e + 002$ m / m, in the next stage it reached the level of $1.2e + 003$ m / m (Fig. 4b), and in the final stage (Fig. 4c) was $3.1e + 003$ m / m.

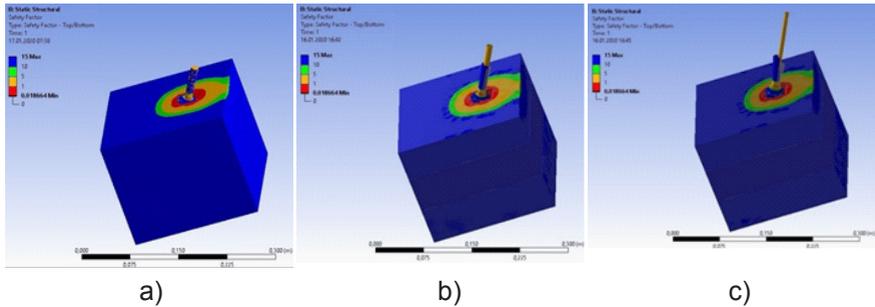


Fig. 4. Distribution of surface and shear stress of the bonded joint in: a) the initial stage of the simulation, b) half of the simulation, c) the final stage of the numerical simulation

$$\tau_{hole} = \frac{P}{\pi \cdot d_{hole} \cdot h_{ef}} \left[\frac{N}{mm^2} \right] \quad (2)$$

where:

τ_{hole} – adhesion stress of the binding agent (resin), $[N/mm^2]$

P – anchor pulling force, $[N]$

d_{hole} – hole diameter, $[mm]$

h_{ef} – effective anchorage depth in the construction layer of the solid element (bottom solid element).

In the solid model with an anchor stuck in at an angle of 60° shown in Figures 3-4, the maximum total deformation occurs on the surface of the anchor and is $3.1759e-005$ m, while the minimum total deformation is practically close to 0 and in the initial phase appears in the concrete solid elements. The Von-Mises reduced stress, on the other hand, reaches a minimum value of $7.4615e-014$ m / m in a concrete block, while its maximum value of $8.3798e-004$ m / m is achieved in the steel nut of the anchor. However, the maximum plastic deformation at shear reaches its minimum value in the concrete block at the level of $9.35558e-014$ m / m, while its maximum is reached in the nut on the steel anchor at the value of $1.2038e-003$ m / m.

The maximum main elastic stress reaches its minimum value $-2.704e-005$ m / m in the washer under the steel anchor nut, while the maximum value $9.4121e-004$ m / m in the nut. Shear elastic deformations their minimum values $-5.547e-004$ m / m and maximum values $8.6935e-004$ m / m accumulated in the steel nut of the anchor.

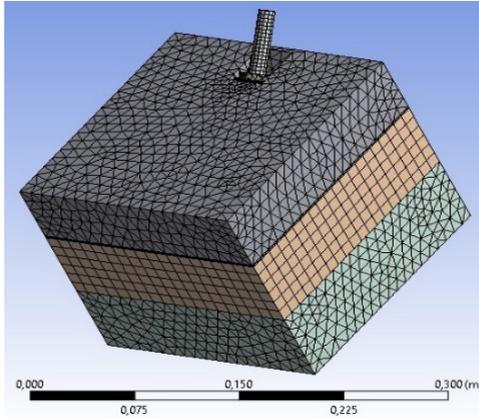


Fig. 5. Discretisation of solid three-layer models with an anchor pasted at an angle of 45° to the surface of the sample

Another solid model (Fig. 5-6), this time with an anchor pasted at an angle of 45° , was characterised by the maximum total deformation occurring on the surface of the anchor and was $1.1945e-005$ m, while the minimum total deformation is practically close to 0 and in the initial phase appears in concrete blocks. The Von-Mises reduced stress, on the other hand, reaches the minimum value of $5.4357e-014$ m / m in the concrete block, while its maximum value $4.9314e-004$ m / m is achieved in the steel nut of the anchor. However, the maximum plastic deformation at shear reaches its minimum value in the solid concrete element at the level of $7.3988e-014$ m / m, while its maximum is reached in the nut on the steel anchor at the value of $7.1532e-004$ m / m. The maximum main elastic stress reaches its minimum value $-5.9679e-006$ m / m in the washer under the steel anchor nut, while the maximum value $5.4187e-004$ m / m in the nut. Shearing elastic deformations accumulated their minimum values $-2.6942e-004$ m / m and maximum values $4.354e-004$ m / m in the steel nut of the anchor.

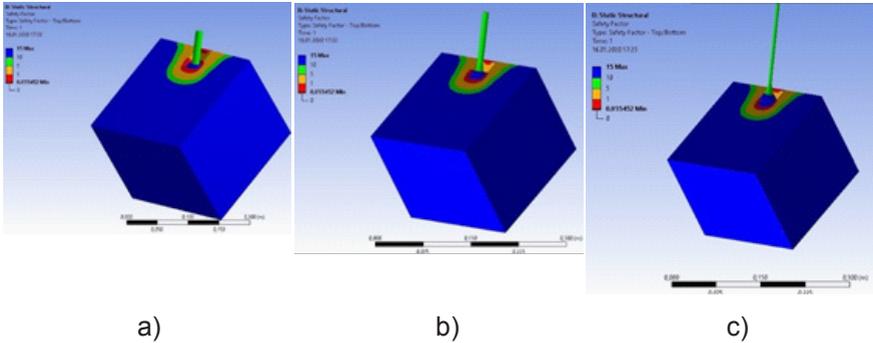


Fig. 6. Distribution of surface and shear stress of the adhesive connection in: a) the initial stage of the simulation, b) half of the simulation, c) the final stage of the numerical simulation

Figure 7 shows the last numerical model in a single-layer concrete element in which the anchor is glued at an angle of 30° .

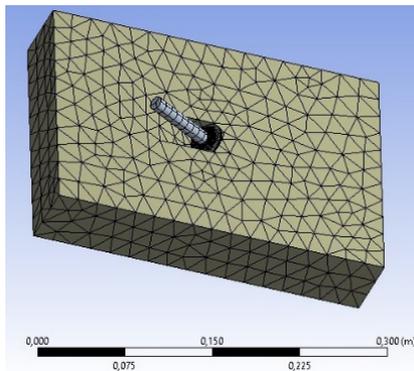


Fig. 7. Discretisation of a solid single-layer model with an anchor glued at an angle of 30° to the surface of the sample

The most stressed stress zones in the first stage of the bolt pull-off load (Fig. 8) are both the anchor itself and its closest area (in red). There are pull and shear forces here (Epackachi et al. 2015).

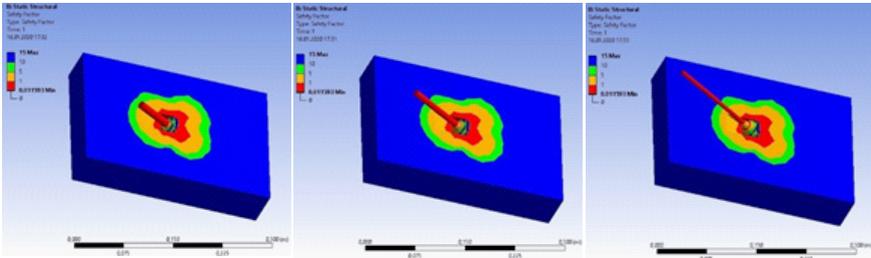


Fig. 8. Distribution of surface and shear stress of the glued connection in: a) the initial stage of the simulation, b) half of the simulation, c) the final stage of the numerical simulation

The last solid model (Fig. 7-8) with an anchor stuck in at an angle of 30° was characterised by the maximum total deformation occurring on the surface of the anchor and was $1.0031e-004$ m, while the minimum total deformation is practically close to 0 and in the initial phase appears in concrete solid elements. The Von-Mises reduced stress, on the other hand, reaches a minimum value of $1.5136e-013$ m / m in the contact zone (resin), while its maximum value of $2.7565e-003$ m / m is reached in the washer under the steel anchor nut. However, the maximum plastic deformation at shear reaches its minimum value in the contact zone (resin) at the level of $1.8394e-013$ m / m, while its maximum is reached in the nut on the steel anchor at the value of $3.9242e-003$ m / m. The maximum main elastic stress reaches its minimum value of $-1.9682e-004$ m / m in the washer under the steel anchor nut, while the maximum value of $3.0309e-003$ m / m is achieved in the nut. Shearing elastic deformations reached their minimum values $-2.1425e-003$ m / m in a steel anchor nut, while the maximum values $3.5629e-003$ m / m were achieved in a washer under the steel anchor nut.

Summary

Propagation and development of both boundary stress stresses as well as stresses in solid elements occurs with the increase of the pulling force. The development of the mechanism of destruction of the adhesive connection is often random and depends mainly on:

- Concrete structures (its class, age, technical condition, i.e. scratches, cracks);
- The quality of the connection (careful cleaning of the hole, even distribution of resin at the connection).

By performing simulation and distribution of both surface and surface stresses, it was confirmed that the concentration of minimum and maximum stresses depends on the size of the modelled solid element, the angle of inclination of the anchor and what is associated with it the effective length of the anchor.

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THE USE OF GEOGRIDS IN THE RECONSTRUCTION OF LINEAR SPORTS FACILITIES

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Abstract. When designing and building flat construction objects, it is necessary to use materials and technologies that increase reliability and reduce costs. The use of technology from other areas allows you to implement the above requirements, as well as create sports facilities with high qualities.

Introduction

In connection with the development and populization of sports, as well as the preparation and delivery of the standards of the TRP, in the Russian Federation are actively carried out repairs, reconstruction and construction of sports facilities. At the same time, a significant role is played by sports tracks, sports grounds, as well as internal roads of sports facilities, which have a wide range of applications. Since 40-60% of the cost of the above objects falls on the foundation device, it is necessary to use reinforcing materials that allow: to reduce the amount of materials used - by including into the work together with the foundation, reduce the time of work and increase the durability of operation - with integrated geogrids.

1. Use of geogrids.

Now, in the construction, reconstruction and repair of roads for various purposes, the use of integrated geogrids is widespread, both in world practice and in the last decade in the Russian Federation. The advantage of using geogrids is the placement of the geogrid on the boundary of the base layers - in the place of the device of the rubble layer, which allows to prevent the mutual penetration of materials, as well as to ensure the spell effect. The resulting pseudo-plate effect.

The spell effect ensures the stability of the base to various types of external influences (loads), both static and dynamic, preventing the occurrence of residual deformations.

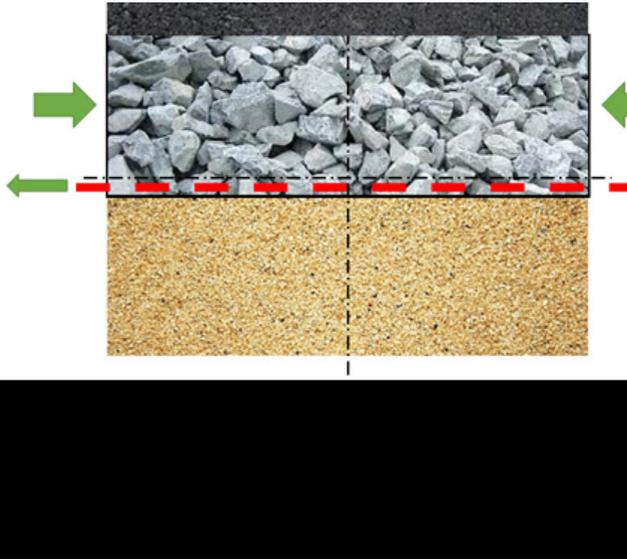


Figure 1. Placement of rubble in the cells of the geogrid, providing the effect of the spear (pseudo-plates).

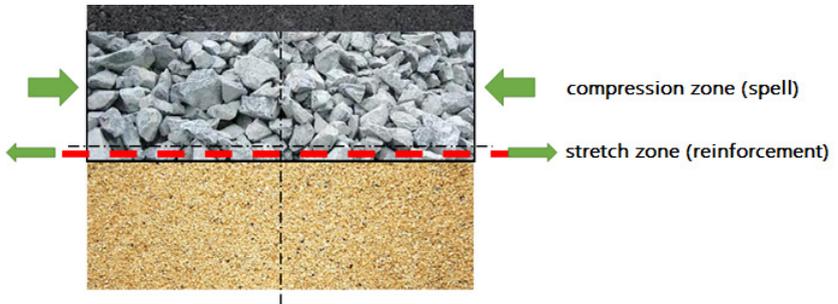


Figure 2. The layout of the integrated geogrid.

Different types of diagnostics are mostly local in nature, based on the visual strength and the process control with the selection of material samples and studying the constructive execution of the individual components by opening nodes, protective layers, and the development of pits for the study of the actual state of the bases. Making local control, estimating fo-

cusing on particulars, you cannot understand the mechanism and the main reason of the object of vulnerability to possible loads. The same local approach exists for the design of buildings, that is, soils and foundations are considered separately from the building itself, there is no single approach to the calculation of the system soil-building as a single system. A large part of software products used in the calculation and numerical simulation of the foundations of buildings and structures allow us to estimate the current state as a result of visual, laboratory and instrumental control, but they do not allow to simulate the dynamic picture, on the basis of which it is possible to make long-term prognosis, and as a result develop most effective recommendations.

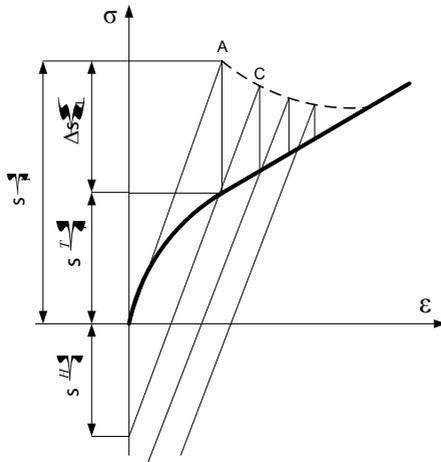


Figure 3. Load shear resistance

At the same boundary conditions of heat and ground water the natural moisture and the amount of moisture in the introduced element when migrating determine the provisions of the amount of water in the soil element. If the natural humidity is the same, the individual for moisture in the element determined thermal characteristics of the ground (this determines the temperature distribution) and suction characteristics - different magnitude of migration flows, corresponding to different types of soils.

In three-dimensional space, the temperature distribution of the process in the range of negative temperatures for transient thermal regime is expressed by the equation

The system of finite-element equations of heat conduction problem can be obtained by minimizing the corresponding functional on the set of func-

tions that satisfy the boundary conditions. From the point of view of the variational solution of 1 with the boundary conditions 1, 2, 3 kind of equivalent to finding the minimum of functional.

Unknown function approximated to the temperature T at time t in the elements and in the whole region under consideration shape functions.

Reinforced base structures, in particular, integrated gratings reduce the vertical pressure on the underlying layer by 27%, due to the partial distribution of vertical stresses in the horizontal.

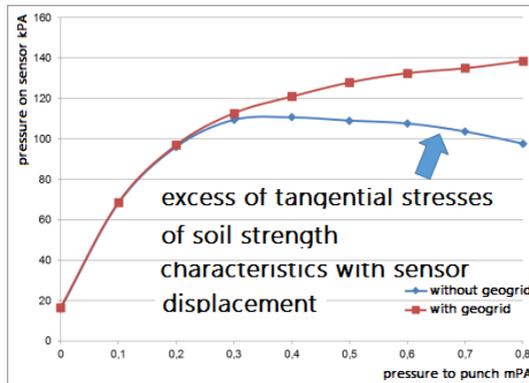


Figure 4. Graph of voltage growth at the base, with increasing load

The effect of the split (pseudo-plates) and, as mentioned above, the distribution of tangential forces, there is an increase in tension in the horizontal, reinforced layer. Due to the uniform distribution of the load in the horizontal direction when reinforcing the base, the overall modulus of elasticity of the latter increases by 49% compared with non-reinforced structures.

Table 1

№ test	total modulus of elasticity	
	without reinforcement	with reinforcement
1,5	162	254
2,6	185	261
3,7	167	271
4,8	190	266
average	176	263

It should be noted that the method of calculation of reinforced bases includes: 1. Selection of a layer of rubble over a geogrid, 15 cm thick; 2.

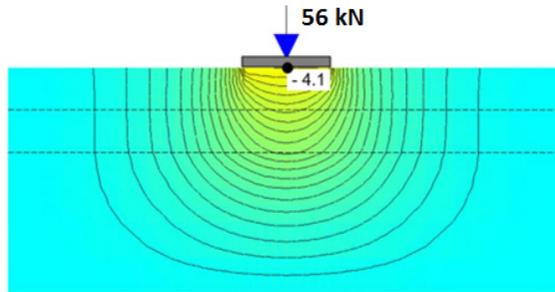


Figure 7. Isolines of base stress without a lattice.



Figure 8. Stress isolines in sonatation with geogrid.

In the framework of studies of the effects of various types of loads affecting the road surface, a loading installation simulating the effects of static and dynamic loads was used. These loads were applied to the traditional design of the road and for the road with the introduction of geogrid in the underlying layers. As can be seen from Figures 7 and 8, a highway with a geogrid introduced into the underlying layers shows the value of the impact of the load is half as much as without a geogrid. To obtain voluminous information, numerical modeling methods were used (Figures 7 and 8).

The use of reinforced bases for sports facilities.

In 2015-2017, in the city of Khabarovsk, work was carried out to repair and reconstruct the stadium named after V.I. Lenin. In addition to reconstruction of the main sports facilities, work was carried out on the repair and reconstruction of internal roads. At the same time, a skating rink device was proposed on sections of pedestrian and bicycle paths. Bicycle

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and pedestrian paths were supposed to be used only in the summer. To do this, it was proposed to carry out a complete reconstruction of the pavement, with the replacement of pavement (underlying layers).

To evaluate the scope of work and make a constructive decision when replacing asphalt pavement with a universal sports pavement, seismic-acoustic and ultrasonic studies of pavement structures and geological conditions of the construction site were carried out. Seismic-acoustic sounding made it possible to establish the physicommechanical characteristics of the soil, and ultrasonic ones to determine the actual thickness of the asphalt pavement, the thickness of the underlying layers, as well as defects that occurred during the operation of the road surface sections, for further design.



Figure 9. Condition of coverage before repair



Figure 10. Condition of coverage before repair

When designing new pavement (underlays) and the pavement itself, the Fem models application program was used. In the program, pavement and underlying layers were calculated in two stages: initially, the calculation was carried out in accordance with the requirements of regulatory documents for the construction of roads without the use of geogrids, the second action was the calculation of pavement and pavement using geogrids. Figure

11 shows the calculation scheme for calculation by numerical simulation methods.

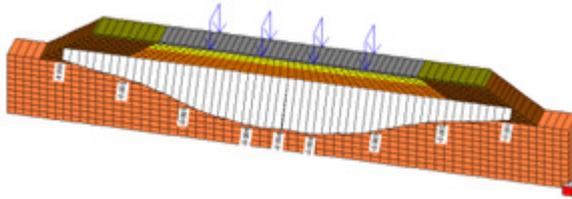


Figure 11 Calculation scheme

In terms of solving the problem by numerical methods, characteristics were laid down that made it possible to take into account all the negative factors affecting the road surface, as well as the underlying layers, which made it possible to select the most effective design measures.

Figure 12 shows the results of the calculation of the road surface with adjacent underlying layers and an interacting soil layer under the influence of maximum design loads.

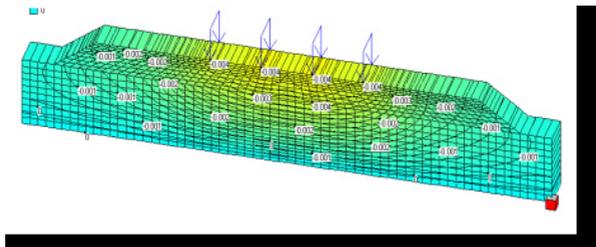


Figure 12. Calculation results

Figure 13 shows the results of calculating the load on the pavement, the underlying underlying layers, as well as an array of soil interacting with the pavement using a geogrid.

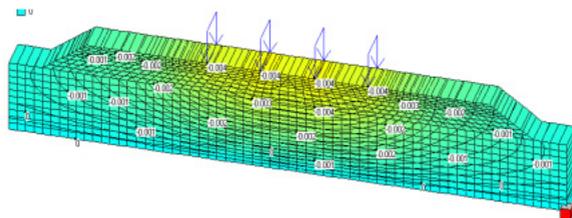


Figure 13. Calculation results

As can be seen from the diagrams shown in Figures 12 and 13, the differences between the resulting circuits are minimal.

Figures 14, 15, 16 show different points on the construction of pavement, paving and asphalt pavement. It is worth noting that Figure 14 shows the laying of paving blocks, which is carried out on the same pavement as the asphalt pavement.



Figure 14. Soilworks



Figure 15. Roadbed and curbstone process



Figure 16. Pavement process



Figure 17. Pavement process

Since the asphalt pavement receives the most damage when exposed to surface water, during the freezing and thawing cycle it is necessary to provide such a design of the asphalt pavement and the underlying layers in order to provide stable resistance to the loads acting periodically. This is taken into account as the load from the work of heavy equipment during snow removal and the organization of an ice rink on a road section.



Figure 18. Skating rink after repair



Figure 19. Skating rink after repair

When installing asphalt pavement, asphalt concrete with a thickness of 70 mm was used, as for road paving. As for the underlying layers, their thickness of the sand cushion was 150 mm instead of 200, in the absence of a geogrid (Figures 17-18). As a geroshka we used a polymer geogrid of the Integral brand - SS30. The thickness of the underlying layer of gravel was 80 mm. As can be seen from the above, geogrids are a structural element that allows to reduce the consumption of building materials, without reducing the strength characteristics of the designed roads for various purposes. At the same time, a significant contribution to the design process is made by the numerical modeling technique, which allows calculating with a high degree of probability for paving and underlying layers of roads for various purposes.

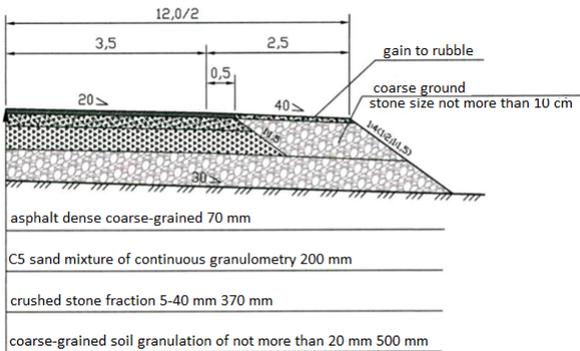


Figure 20. Road surface scheme

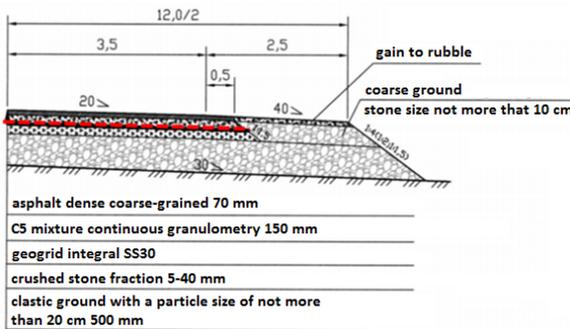


Figure 21. Road surface scheme with geogrid

Findings:

1. The use of integrated geogrids during repair and reconstruction work allows
2. Applying numerical modeling methods allow for a lot of factors at the design stage and to offer effective methods

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