

**The Strategies
of Modern Science
Development**

**XVI International
scientific–practical conference
Proceedings**

North Charleston, USA

24-25 October 2018

Scientific Publishing Center «Discovery»
otkritieinfo.ru

The Strategies of Modern Science Development: Proceedings of the XVI International scientific–practical conference. North Charleston, USA, October 24-25, 2018. - North Charleston: CreateSpace, 2018. - 88 p.

The materials of the conference have presented the results of the latest research in various fields of science. The collection is of interest to researchers, graduate students, doctoral candidates, teachers, students - for anyone interested in the latest trends of the world of science.

ISBN-13: 978-1729801093

ISBN-10: 1729801099

Your book has been assigned a CreateSpace ISBN

@ Authors, 2018

@Scientific Publishing Center «Discovery», 2018

CONTENT

SECTION I. Physical sciences

Gulkanov A. G.

THEORETICAL AND APPLIED STUDY OF ANTI-TURBULENT ADDITIVES5

SECTION II. Engineering

Kibeko A. S., Kashpur O. I., Pankrasheva A.F., Sembayeva A.S.

ANALYSIS AND SYNTHESIS OF TECHNOLOGICAL OBJECTS' CONTROL
SYSTEMS WITH INTERVAL PARAMETERS BASED ON ROOT QUALITY
INDICATORS.....8

Kovalev O., Portnaia M. Ilin I., Akulshin Y., Portnoi M.

DESIGN OF BIONIC SHOULDER PROSTHESIS WITH ELECTROMYOGRAPHIC
CONTROL SYSTEM 12

SECTION III. Agricultural science

Koriakina V.M., Neustroev A.N., Bardeev I.F.

UNIQUE VARIETIES OF PERENNIAL GRASSES IN THE PERMAFROST REGION
WITH A SEVERELY CONTINENTAL CLIMATE 16

Vassilina T.K., Umbetov A.K., Kalzhanova G.K.

EFFECT OF FERTILIZERS ON YIELD AND QUALITY OF FODDER BEET
IN THE SOUTH-EAST OF KAZAKHSTAN..... 20

SECTION IV. Economics

Mantsaeva A.A.

DEFINITION THE INDUSTRIES FOR APPLICATION
OF CLUSTER ACTIVATION..... 24

Matveeva A.I.

PHILOSOPHICAL AND ECONOMIC ANALYSIS OF EURO-CONTINENTAL,
RUSSIAN AND EASTERN MODELS OF COMPETITION..... 28

SECTION V. Philology

Gorbachyova I. A., Kononova M. S.

PHONOSEMANTIC MANIFESTATIONS IN ENGLISH ADVERTISING 31

Gorbachyova I. A., Zuza E.A.

ALTERNATIVE WAYS OF DEPICTING FOREIGN ACCENT VARIATIONS
IN FICTION TEXT 38

Zhuravleva O. M., Finionova N. I.	
THE USE OF ADVERBS IN FICTION: A GENDER APPROACH	42
Zubchenko V.V.	
LINGUISTIC OVERVIEW OF RUSSIAN EPIGRAMS OF XIX-XX CENTURIES.....	46
<i>SECTION VI. Educational Sciences</i>	
Danilova M.V.	
THE ESSENCE OF SOCIAL AND PEDAGOGICAL WORK WITH MIGRANT STUDENTS IN THE CONTEXT OF THE CONTEMPORARY MULTICULTURAL SITUATION	51
Konsulova S., Dimitrova M.	
PREPAREDNESS OF STUDENTS TO DEAL WITH CHALLENGES IN THE MULTICULTURAL CLASS ROOM.....	55
<i>SECTION VII. Architecture and Construction</i>	
Kutliyarov D. N., Kutliyarov A. N., Tuleuzhanov B. B.	
MODERN CONSTRUCTION MATERIALS FOR BUILDING FACADES.....	58
Kutliyarov D.N., Kutliyarov A.N., Mustafin R.F., Amanov A.D.	
SYSTEM ARCHITECTURAL PLANNING	61
<i>SECTION VIII. Psychological science</i>	
Rukina M. V.	
TEACHERS' PSYCHO-EMOTIONAL BURNOUT AS A PROBLEM: APPROACHES, PERSPECTIVES.....	65
<i>SECTION IX. Social sciences</i>	
Khashaeva A. B.	
ABOUT RESEARCH METHODS OF STATE/MUNICIPAL SERVICES AT THE PRESENT STAGE (BY THE EXAMPLE OF THE REPUBLIC OF KALMYKIA).....	70
<i>SECTION X. Political science</i>	
Palavandishvili M. . Gilauri N.	
SITUATIONAL LEADERS OF GEORGIA	74
<i>SECTION XI. Ecology</i>	
Gorbachevskii V.P., Popova A.D., Panfilova M.I., Zubrev N.I.	
ACHIEVING ENVIRONMENTAL SAFETY OF COMPOSITE SOLUTIONS THROUGH THE INTEGRATION OF PRODUCTION WASTE.....	85

SECTION I. Physical sciences

Gulkanov Aleksandr Georgievich

National Research Moscow State University of Civil Engineering

THEORETICAL AND APPLIED STUDY OF ANTI-TURBULENT ADDITIVES

In the middle of the XX century B. Toms established that introducing a polymer additive to a liquid reduces energy losses caused by friction arising between the flow and the pipeline. Until the 70s the fact had had no perspectives of its practical use, however after laboratory experiments carried out in the Central Asian Gas Industry Research Institute this technology was first tested on the Trans-Alaska Trunk Pipeline in 1979.

Anti-turbulent additive (ATA) once being dissolved is composed of long threadlike molecules which reduce the flow turbulence and break up in the process of flowing in a pipe. ATA molecules are heavy (10^5 – 10^6 a.m.u.) linear polymers.

The intended use of anti-turbulent additives is to guarantee the laminar fuel flow regime during its transportation through the pipeline.

The operating principle of such additives resides in their effect on the turbulence in the near-wall region of the pipeline as well as the reduction of energy losses caused by a sudden hydraulic resistance jump (up to 80%). The relative reduction of hydraulic resistance (the effectiveness of an additive) is to be found by the use of the equation:

$$DR = \frac{\Delta P_S \cdot Q_P^2 - \Delta P_P \cdot Q_S^2}{\Delta P_S \cdot Q_P^2} \cdot 100\% = \left(1 - \frac{\Delta P_P \cdot Q_S^2}{\Delta P_S \cdot Q_P^2} \right) \cdot 100\%$$

Where DR - drag reduction (%)

ΔP - pressure difference on the measured length

Q - fluid flow rate, and P and S indices are relevant to the solution and the solvent correspondingly .

The effectiveness of an additive may also be calculated by way of comparing the coefficients of hydraulic resistances of the oil pipeline which have been calculated before and after using the additive.

$$DR = \frac{\lambda_S - \lambda_P}{\lambda_S} \cdot 100\%$$

Where λ_S and λ_P – coefficients of hydraulic resistance before the introduction of the anti-turbulent additive and after its use, subsequently.

The effectiveness of an additive lies within limits from 0,001 % to 0,01 %. It is determined by the fact that given particularly weak concentrations the molecules will be found in a solution like separate globules which in its turn will have no effect as expected from the additive. At strong concentrations of ATAs molecular interactions may be observed which will disturb the operation of the anti-turbulent additive.

In general, ATAs are used to increase the fluid flow rate in pipelines. An equation has been obtained that determines the coefficient of the flow capacity increase and includes such parameters as the characteristics of the pumping station and the pipeline as well as the effectiveness of the additive.

$$\chi^{2-m} = \left(\frac{Q_P}{Q_S}\right)^{2-m} = \frac{na(fL + nb) - \Delta z(fL + nb)}{na[(1 - DR)fL + nb] - \Delta z(1 - DR)fL - \Delta znb}$$

f - hydraulic gradient,

m – coefficient of the fluid flow regime,

a and b – coefficients of vertical lift performance,

L – the pipeline section length,

n – the quantity of pumping units operating at the station

Δz – difference of geodesic marks on the section of interest.

If Δz is negligible, this equation is simplified to this form:

$$\chi = \left(1 - \frac{DRfL}{nb + fL}\right)^{-\frac{1}{2-m}}$$

For reaching the maximum value of the coefficient χ , it is necessary for the pump discharge head to reach its maximum value, and the anticavitation boost should be minimal when entering the next station. In this case the equation for the maximum possible value of χ will take the following form:

$$\chi = (1 - DR)^{-\frac{1}{2}}$$

When choosing the ATA certain aspects should be taken into consideration such as the commodity form (CF) (generally, for reducing the *DR* of the oil gel and disperse forms are used), and the dissolution rate of the additive in the fluid.

In the gel commodity form the high-molecular polymer is dissolved in the hydrocarbon solvent, the examples of such additives are CDR-102, Necadd-547 (One of the additives is allowed to be used on the territory of the Russian Federation).

In the disperse commodity form the additive is in the form of carbon- or water-based suspension. This commodity form allows to obtain a composition with a 25% concentration of a polymer, and at the same time such a composition will contain other chemical additives and inhibitors in the amount of 10-15%.

As an example let us examine one of suspension additives - PT FLYDE. Once entering the turbulent flow this polymer starts to be affected by the hydrocarbons thus causing the ATA to start forming long chains, the chains extinguish the turbulent vortices in the near-wall regions which spread from the edges to the centre. This allows the fluid to flow in a more directional and rectilinear way.

References

1. Churikova L.A., Ramazanov M.M. The effectiveness of applying the anti-turbulent additives when pumping the natural gas liquid through the trunk pipeline, *Young scientist*, 2015, No.7, pp. 213-216. (in Russian)
2. A.F. Barkhatov, P.E. Nastepanin. «Anti-turbulent additive as one of the means of capital and maintenance costs cutting».
3. P.V. Menshov. «Anti-turbulent additives to oil and petroleum products».
4. Marijonas Bogdevicius. *Journal of Vibroengineering* 15(1), March 2013. «Mathematical Modeling of Oil Transportation by Pipelines using Anti-turbulent Additives».
5. M. I. Valiev, I. I. Hasbiullin, V. V. Kazakov. Specifics of using drag reducing additives based on polyalphaolefins at various temperatures.

SECTION II. Engineering

Kibeko A. S.

undergraduate 2 course, specialty «Mechanical engineering»

Kashpur O. I.

undergraduate 2 course, specialty «Mechanical engineering»

Pankrasheva A.F.

undergraduate 1 course, specialty «Mechanical engineering»

Sembayeva A. S.

undergraduate 1 course, specialty «Mechanical engineering»

Karaganda state technical University

Kazakhstan, Karaganda

ANALYSIS AND SYNTHESIS OF TECHNOLOGICAL OBJECTS' CONTROL SYSTEMS WITH INTERVAL PARAMETERS BASED ON ROOT QUALITY INDICATORS

The creation and operation of automated process control systems (APCS) requires the formalization of the stages of their research. Here both structural and parametric studies are important. In the first case, it is necessary to have information about individual elements and how to organize them into a single system. Analysis of the elements and connections of control systems (CS) allows, at the structural research stage, to talk about some properties of the system that determine the quality of its functioning. Parametric studies allow you to select system parameters that satisfy the specified properties.

The stage of structural studies involves the transformation of the structural schemes of the SU in order to obtain the required transfer function. And if for single-loop systems these rules are fairly simple, then for multi-loop systems, a number of additional rules are used related to the transfer of elements and nodes of the structural scheme. The transfer functions found by means of structural transformations make it possible to determine the time and frequency characteristics and obtain qualitative and quantitative estimates of the dynamics and statics of the MS.

These transformations are rather cumbersome and, in the absence of appropriate formalized methods, can lead to subjective errors. To eliminate these shortcomings, special mathematical methods have been developed that allow one to find the value of the transfer function of the MS without performing the necessary

structural transformations. One of these methods is the Mason formula, with the help of which one can obtain an expression for the transfer function of both the system as a whole and its individual subsystems, represented as a graph.

In modern conditions of operation and research of control systems, the latter are subject to the requirements of effective functioning in a wide range of variation of their parameters and characteristics. The implementation of these requirements causes certain difficulties both in theoretical and in practical terms. The study of MS in this relation is of great interest, since the above operating conditions for real systems are quite common. In addition, the complexity of the analysis of control systems in this case is due to the incompleteness and heterogeneity of information about the properties of the system. This is due to the fact that information on the functioning of its elements has various sources. Some of the information is acquired as a result of expert evaluations and in most cases is of an interval nature. The other part is acquired as a result of statistical tests and is probabilistic in nature. Information can also be obtained as a result of a small number of observations for which it is impossible to construct exact probabilistic estimates. The analysis of control systems in this case involves the use of methods that correspond to one or another description of the system.

There are several types of such descriptions: stochastic, probabilistic, fuzzy, interval, or a combination of certain forms of description. The first three types of descriptions of MS are well researched and reflected in the literature. The greatest interest is the interval form of the description of systems, namely, the form that includes interval averages. In this case, the model is described by intervals of average values of system characteristics. Such a description is based on the theory of interval means. The mathematical apparatus used in this theory allows us to consider arbitrary types of uncertainties that have various sources. From this point of view, the theory of interval averages is the most universal and promising tool for analyzing systems, in the description of which there are usually all types of uncertainties.

The analysis of systems when describing its characteristics with interval averages as applied to the theory of automatic control (TAC), the study of such systems for stability and the construction of transient characteristics at the present time are almost not reflected in the literature. This is due to the fact that the mathematical apparatus of the theory of interval averages itself is fairly new.

Unlike stationary systems at APCS, the roots migrate along the complex plane, forming areas of their localization. It is obvious that along the boundaries of these areas, one can find the root indicators of robust quality: the degree of robust stability and the degree of robust oscillation. The degree of robust stability is determined by the minimum distance from the imaginary axis to the nearest boundary of the region of localization of the poles. The degree of robust oscillation is determined by the minimum angle in which all areas of localization of the ISAU poles are located.

The robust quality root indices correspond to the worst operating conditions of the system (with the minimum degree of stability and maximum variability) when its parameters change in the given intervals. Such indicators are used in . Consider the definition of root indices of robust quality of APCS by mapping interval parameters $q_t \in [q_{tmin}, q_{tmax}]$, i.e., t to three different forms of their inclusion in IHP coefficients on the root plane of the polyhedron M . There are 4 types of ICP uncertainties, whose coefficients can be either intervals or functions of intervals [1, 18, 163]: - interval uncertainty - the polynomial coefficients are interval parameters ($q_3s^3 + q_2s^2 + q_1s + q_0$, $q_t \in [q_{tmin}; q_{tmax}]$) - affine uncertainty - the polynomial coefficients are formed by the sum or difference of interval parameters ($(+ \alpha_3Y + (+ 4Y^2 + (+ 2? 2 + 2q_3 - 3q_2, q, \epsilon [q_{tmin}, q_{tmax}]$) - polylinear uncertainty - the coefficients of the polynomial depend linearly on each parameter, if the other parameters are fixed ($(12b + 2i + + (3 - 4H\alpha_{3ii} 2 + (ad^2 + 6b + 2A2LAz - 6Ia Chge [Chishn Ltgsk]$); - polynomial uncertainty - the coefficients of the polynomial depend polynomially at least on one parameter ($(4 + ChIU + (q^{-2} 2 + (10qlq^2) s + 7q_1, q, \epsilon [q_{tmin}, q_{tmax}]$). Let an ICP of arbitrary order be of the form $A(s, q) = a_n(q) s^n + a_{n-1}(q) s^{n-1} + \dots + a_1(q) s + a_0(q)$. For various types the uncertainties of the coefficients $A(s, q)$, their polyhedron M is mapped onto the complex plane differently. Possible options for displaying the faces of M are presented in Figure 1.3. Here V is the vertices of the polyhedron, $U, I = 1, t$ are the edges of the polyhedron, the face of the polyhedron is $G, i = \setminus, m, j = \setminus, t, i \Phi j, q$ is the ordinal number of the vertex, t is the number of interval coefficients, $U, RSf, GSfj$, respectively, their images on the complex plane.

In the case of interval uncertainty, to analyze the degree of robust stability and the degree of robust oscillation of the system, it is enough to know those vertices of the polyhedron M in which the ISAU has the worst root quality indicators.

In the case of affine uncertainty, to determine these same indicators, it is necessary to build the images of the edges of the polyhedron M . At the same time, the boundaries of localization areas are not determined by all edges, but only by external, defining the edge costal route. In the case of multilinear or polynomial uncertainties, which most closely correspond to real situations in control systems with interval parameters, the points defining robust quality indicators may not be located at the vertex or edge.

A review of the types of uncertainties and the corresponding methods for analyzing the robust quality of interval ACS shows that the most time-consuming (with large computational costs) is the analysis and synthesis of an automated control system with multilinear and polynomial uncertainties. From this point of view, interval uncertainty is the simplest. The transition to it is possible on the basis of the rules of interval mathematics. It should be noted that the resulting re-limitation of the region of uncertainty contributes to an increase in the stability of the ISAU, which is important in the case of unmodeled system dynamics.

Note that with interval uncertainty, the task of determining root indices at all vertices of the polyhedron M is rather laborious, since it is necessary to check all 2^m vertices, where r is the number of interval coefficients. Such a problem of reducing check vertices was solved. However, in the indicated papers, the number of found check vertices V for the general case also turned out to be rather large. In this connection, it seems expedient to solve the problem of determining check vertices for particular cases of low-order interval systems by presenting an ISAU model of second and third orders. A small number of check peaks will allow the designer to easily determine the degree of robust stability and the degree of robust oscillation of the ISAU.

If the use of simplified models of ACS is undesirable, then in this case it is proposed to carry out an estimate of the robust quality of interval systems of the highest order on the basis of algebraic conditions connecting the coefficients of the ICP with the root quality estimates. The basis for this can be sufficient conditions for a given degree of stability and a given degree of oscillation. With their help, the lower estimate a and the upper estimate of the root indicators of the quality of stationary systems can be determined. The task consists in the interval expansion of the indicated conditions and the obtaining of sufficient conditions for the degree of robust stability and the degree of robust oscillation of the ISAU determined through the interval coefficients of ICP.

Literature

1. Shatihin L. G. structure of the matrix and their application to the study of systems.- 2nd ed., pererab. I DOP. - m. mechanical engineering, 1991.-256 p.: Il.

2. Practical method of systematic approach to solving complex organizational problems: (method of structural matrices)/State. a plan. clod. The USSR, Ukr. Institute NTI UkrNIINTIZ, 1984.21 p.

**Kovalev O.^{1,2}, Portnaia M.³, Ilin I.³,
Akulshin Y.⁴, Portnoi M.⁵**

¹ Federal State Budgetary Institution the Turner Scientific Research Institute for Children's Orthopedics Under the Ministry of Health of the Russian Federation; ²Peter the Great Saint-Petersburg Polytechnic University, department of «Theoretical mechanics»;

³ Peter the Great Saint-Petersburg Polytechnic University, scientific research laboratory of «Bionic systems»;

⁴ Peter the Great Saint-Petersburg Polytechnic University, scientific research laboratory of «Nano-microsystem technology»;

⁵Saint Petersburg Electrotechnical University "LETI", department of «Theoretical electrical engineering»

kovalev.oleg.o@gmail.com

DESIGN OF BIONIC SHOULDER PROSTHESIS WITH ELECTROMYOGRAPHIC CONTROL SYSTEM

Introduction

The man-made world around us is completely adapted for anatomy of human hand. Routine life, self-care, using of household appliances, communication in the network - all this is unbelievable without hand manipulations. The loss of a hand leads to large difficulty in routine so the returning of hand function for person has great relevance for modern science.

The idea of creating electromechanical prostheses is not new [1]. The main directions of research and design in this field are divided into studies in the field of mechanic and control system of prosthesis [1, 2]. To be useful for user the prosthesis should be easy in control and should be able to create the base grips of human hand. All grips should be strong enough, speed and quiet. Also the manufacture

of prosthesis should be easy and cheap, to make prosthesis available to needed persons.

The aim of this work is to design an affordable bionic prosthesis of the shoulder. It should be able to compensate the main functions of a lost limb and also should be controlled by system based on the registration of muscle activity.

Design of bionic shoulder prosthesis

Prosthesis in this work was designed for a real person, who lose hand at shoulder section. This prosthesis is shown on fig. 1.



Fig. 1: Design of prosthesis

Shoulder prosthesis has six degree of freedom: each finger can move independently and prosthesis can bends at the elbow. Prosthesis has 3D-printed shell and fiberglass laminate mechanics for low weight.

The mechanic of fingers is shown on fig. 2.

The finger consists of two movable joints and one non-movable (the distal and middle phalanges are combined in one piece). In motion, the finger is driven by one motor. The force transfer from the motor shaft to the pin is accomplished by a screw gear.

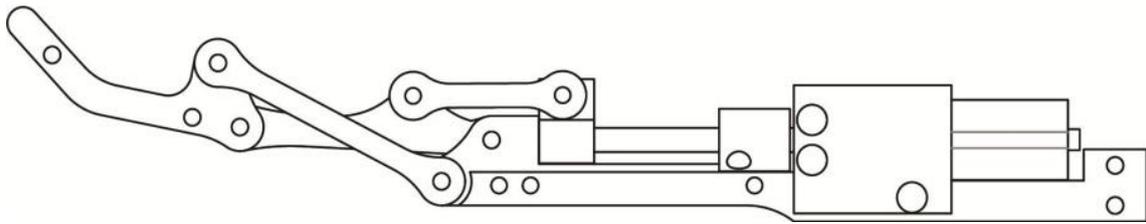


Fig. 2: Mechanic of finger

Electromyographic control system

For implementation full functions of the prostheses, it is necessary to make its control by user intuitively, without performing any external manipulation. Control based on recording the activity of the preserved muscles is the most promising, non-invasive method.

To register muscle activity, in this work was used electrical potential sensors called EPIC Sensors [3]. These sensors have the following characteristics: area of electrode $\sim 1 \text{ cm}^2$, dry contact with the skin is enough to get signal. These electrodes are designed so that the amplifier is located directly near the electrode, which greatly increases the noise immunity of the system.

The signals recorded by the sensors are amplified by an instrumentation amplifier and then go to the microcontroller, where the signal is filtered (10-100 Hz bandpass filter and 50Hz notch filter) and analyzed (formation of prosthesis commands). Figure 3 shows the assembled sensor system. Figure 4 shows the resulting electromyographic signals.

The control of the prosthesis is implemented as follows: when biceps contracted the prosthesis makes elbow flexion; when triceps contracted the prosthesis makes elbow straightening; for two short contractions of biceps or triceps the prosthesis makes a grasping movement or opens.

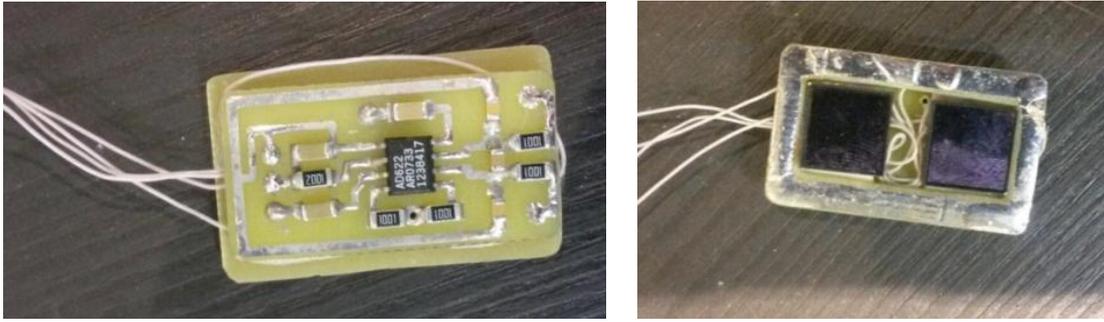


Fig. 3: Electromyographic signal sensor

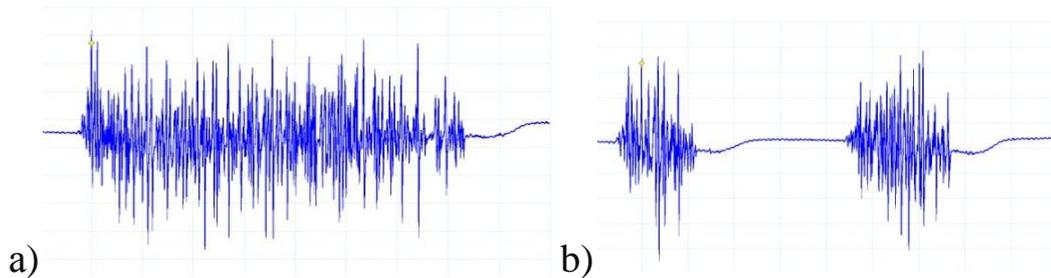


Fig. 4: Examples of signals received.

a) Prolonged muscle contraction, b) two short muscle contractions

Conclusion

The design of bionic shoulder prosthesis proposed. The prototype of finger mechanic designed and tested. The control system based on electromyographic signals designed, tested and analyzed. The future steps are manufacturing the designed prosthesis and using massive of electrodes for control system.

Reference

- [1] Joseph T. Belter, Jacob L. Segil, Aaron M. Dollar, Richard F. Weir. Mechanical design and performance specifications of anthropomorphic prosthetic hands: A review // *Journal of Rehabilitation Research & Development*. 2013. P. 599-618.
- [2] Christine Connolly. Prosthetic hands from Touch Bionics // *Industrial Robot*. 2008. P 290-293.
- [3] C J Harland, T D Clark, N S Peters, M J Everitt and P B Stiffell. A compact electric potential sensor array for the acquisition and reconstruction of the 7-lead electrocardiogram without electrical charge contact to the skin // *Physiological Measurement*, 26 (6). 2005. P. 939-950.

SECTION III. Agricultural science

Koriakina V.M.

post-graduate student, junior research associate

Neustroev A.N.

research associate

Bardeev I.F.

master's student, senior assistant

Yakut Research Institute of Agriculture named after M.G. Safronov

UNIQUE VARIETIES OF PERENNIAL GRASSES IN THE PERMAFROST REGION WITH A SEVERELY CONTINENTAL CLIMATE

Yakutia is one of the northernmost agricultural regions of the Russian Federation.

It is situated in the area of complete development of permafrost rocks. Their thickness in Central Yakutia amounts to approximately 200-500 meters. During the short summer the soils thaw out only on the surface reaching the depth of 1.5-2.5 meters. Distinctness and uncommonness of the climate and natural conditions of Yakutia are determined by its high-latitude location and its relevance to the region with maximum continentality [1].

Central Yakutia is the most reclaimed part of the republic in the agricultural sense. Most of the rural population live there as well as 89% of hay meadows, 99% of arable lands, 90% of cattle stock and 80% of horses are situated there [1].

Central Yakutia has a severe and long (more than 6 months) winter. Cold weather sets from the beginning of winter, the average winter period temperature is 35-45°C. The duration of the cold period is about 215-220 days. Soil freezing starts in the first decade of October. In the winter time there is light precipitation (50-70 mm). Steady snow cover settles in the end of the first or the beginning of the second decade of October and stays until early May. The snow cover depth grows slowly during the winter reaching the highest point by the end of February (30-40 cm) and stays on this level during the whole March. The winter period is distinguished by the fine dry calm weather, a short light day that gradually increases by spring.

Spring here is very short and may be characterized by the quick temperature rise and dynamic snow melt. Spring field work may be carried out only after the snow cover melting and thawing of soil to the depth of the top soil. The snow cover breaks on April, 25 on average. The top soil thaws out in the first half of May. During the soil thawing in spring there has been observed the maximum moistening of soil due to the melting snow. However there occurs a considerable moisture loss due to the quick rise of air temperature. Timely quick early-spring work helps to keep the principal moisture reserve for plants vegetation during summer. When mean daily temperature goes above 5°C, spring crops sowing may be carried out.

The point of permanent change of mean daily temperature to the values above 10°C, which is considered as the beginning of summer period with the dynamic growth of most crops, falls on the end of the third decade of May. The period with the effective temperature above 10°C lasts for 90-100 days – from the end of May until the half of the first decade of September. Starting on the second decade of June until the end of the second decade of August there comes the warmest part of summer – the period with the mean daily temperature of 15°C and above. The mean daily temperature of the warmest month, i.e. July, amounts to 18.7-18.9°C. There are no such temperatures anywhere at the same latitude as Central Yakutia is situated at. In the territory of Yakutsk the main growth period of the plants with mean daily temperatures above 10°C is 98 days, with accumulated temperature of almost 1600° which also may not be observed in the regions located in similar latitudes. Abundance of warmth and daylight during summer period provides for accelerated development of plants, the long-day ones in particular.

Thermal environment for crops cultivation is favourable, but precipitation in summer amounts to only 110-130 mm, 60% of which occurs by the middle or the end of this period.

Persistent fall of mean daily temperature lower than 10°C, i.e. the beginning of fall period, starts in early September. In this period it is the time when crop harvesting begins in Central Yakutia. Starting from the second decade of September the air temperature suddenly drops. By this time autumn agricultural works are completed, including fall plowing. By the end of September or the beginning of October soil slightly freezes. In the beginning of the second decade of October it starts to snow.

Thus, the climate of Central Yakutia is characterized by the cold long winter with a little precipitation, short hot dry summer (especially, early summer), and short spring and fall seasons. Mean annual precipitation accounts for 250-260 mm.

In such rough environment local population carries out farming activities. Potato, cereal crops, vegetable crops and cucurbits are cultivated there. However, the main course of the region's agriculture is dairy and beef cattle breeding. This activity is closely related to fodder production and nowadays it is being expanded and improved. Livestock is expanded, highly productive breeds are brought in, and selection activities with existing breeds are carried out.

Further development of livestock farming will require conserving even more fodder. Natural hay and range lands will not fully provide that.

The most realistic solution to this problem is reclamation of these lands using highly productive varieties of perennial grasses that survive our severe winters well. Yakut Research Institute developed unique varieties of perennial grain and legume grasses of various usage types, 9 of which are included in the National Register of Plant Varieties of the Russian Federation.

For developing cultural haylands the following varieties have been selected:

Variety *Elymus sibiricus* L. "Amginskiy" with productive longevity of 3-4 years, with hay yield of 4.0-5.0 t/ha. Variety *Roegneria mutabilis* (Drobow) Tzvelev "Lenskaya", drought-resistant, with high winter hardiness, resistant to slightly saline soils, hay yield is 3-4 t/ha. Variety *Bromus inermis* Leyss "Erkeeni" may be distinguished by hydrophily but at the same time it is quite drought-resistant, it is highly resistant to long-standing spring meltwater flooding (up to 45-50 days), productive longevity is up to 7 years, having effective agricultural technology it may last more than 10 years, hay yield is up to 5.0 t/ha. Variety *Elytrigia repens* L. "Toybokhoyskiy". This unique variety may grow in both, dry and wet, habitats. Hay yield is up to 4.5 t/ha.

For sown pasture lands:

Variety *Festuca rubra* L. "Miuriunskaya", is characterized by high winter hardiness, it forms a hard elastic sod layer, is highly resistant to horse winter grazing, early-growing in spring, salt-resistant, medium-drought-resistant, during the growing season two mowing processes give up to 23.0 t/ha of herbage. Varieties *Psathyrostachys juncea* (Fish.) Nevski "Manchaary" and "Bootur"

have been selected for arid regions, their productive longevity is more than 10 years.

High-protein varieties of legume grasses:

Variety *Medicago falcata* L. “Yakut yellow” is a reference variety in the aspect of winter hardiness among lucerne varieties of Russia, it is a good precursor for agricultural crops since it increases the available biological nitrogen in the soil. Herbage yield is up to 24 t/ha, with irrigation up to 36 t/ha. The concentration of crude protein in herbage is up to 28%. Variety *Melilotus albus* Medik. “Nemiugiunskiy” Donniki is a biennial plant, a good meliferous plant. The named variety is drought- and salt-resistant. In yielding years it gives up to 51 t/ha of herbage with crude protein level of 17-27%.

All the above-mentioned varieties easily survive severe winters of Yakutia and they are unique in the aspect of winter hardiness, which is the main factor constraining the distribution of cultivated perennial grasses in the region. Moreover, the varieties of perennial grasses selected in Yakutia may serve as a source of this characteristic valuable to plant breeders from northern countries all over the world.

In 2018 Yakut Research Institute of Agriculture started the activities on development of a new valuable drought-resistant grain variety *Agropyron* Gaertn since up to this day there was no winter-hardy variety of such kind that would be adaptable in the environment of Yakutia.

Based on the foregoing it may be concluded that there is a true perspective of consolidation of the fodder base of northern livestock farming, and the listed perennial grass varieties may play a key role in finding the solution to this task.

References

1. Koniukhov G.I. Agriculture in Yakutia, Russian academy of agricultural sciences, Siberian department, Yakut research institute, Novosibirsk, 2005, pp. 350. (In Russian)

Vassilina T.K., Umbetov A.K., Kalzhanova G.K.
Kazakh National Agrarian University, Almaty, Kazakhstan

EFFECT OF FERTILIZERS ON YIELD AND QUALITY OF FODDER BEET IN THE SOUTH-EAST OF KAZAKHSTAN

Annotation. Studies have been conducted to study the effect of mineral and organic fertilizers on the quantitative and qualitative indicators of feed beet varieties Tulpar 530. It is established that the yield of fodder beet increases significantly with the application of fertilizers and the increase in the yield of green mass was from 60% or more of the non-fertilized control variant. The use of mineral fertilizers had a positive impact on both the yield and the quality of the studied culture. The quality of fodder beet depended more on doses and ratios of mineral and organic fertilizers than on biological characteristics of varieties and conditions of the year.

Keywords: fodder beet, fertilizers, recommended dose NPK, yield, protein, fat, nitrates

Introduction

Fodder beet is a high-yielding crop, consumes a significant amount of nutrients and makes great demands on the level of their content in the soil. It is characterized by high nutritional value, relatively good keeping quality of root crops. A wide variety of varieties allows it to be grown both in the southern and northern regions [1].

In all climatic zones there is a high responsiveness of beet to manure and fertilizers. However, the cultivation of this crop is often constrained by the lack of high-quality seeds and the low level of mechanization in its cultivation. Therefore, it is important to consider the features of nutrition and fertilizer of fodder roots [2].

In this regard, the studies devoted to the study of feeding characteristics of fodder beet cultivated on chestnut soils of the South-East of Kazakhstan, the influence of various types of mineral and organic fertilizers on its productivity are very relevant.

Materials and methods

The program and methodology of research was approved by the scientific and technical Council of the research Institute of agro innovation and ecology at the Kazakh national agrarian University in 2015.

The object of the study was the variety of fodder beet – Tulpar 530, cultivated on irrigated meadow-chestnut soil in 4 full rotation,

deployed in space and time with alternation: 1-corn; 2 – soybean; 3 – rape; 4 - fodder beet.

The following scheme of fertilizer application is studied for fodder beet:

1. Control (without fertilizers)
2. Recommended dose $N_{110}P_{70}K_{30}$
3. 1,5 Recommended dose NPK
4. Biohumus 6 t/ha
5. Cow dung 30 t/ha
6. Cow dung 60 t/ha

The area of the experimental plot is 54 m² (3.6 x 15), the repetition of the experiment is 3 times.

Nitrogen - ammonium nitrate with 34% N content, phosphorus - superphosphate with 19% P₂O₅ content and potassium - potassium chloride with 50% K₂O content were used as fertilizers.

Mineral fertilizers (ammonium nitrate, superphosphate, potassium chloride, biohumus, cow dung) were introduced according to the treatments, sowing works were carried out using appropriate agricultural machinery, soil samples (48 samples) were selected from all fields of crop rotation for the analysis of the initial content – humus, general and mobile forms of NPK. The content of nitrogen, phosphorus and potassium in organic fertilizers was respectively in the cow dung: N – 0,52%, P – 0,225%, K – 0,635%; in the biohumus: N – 2,8%, P – 1,6%, K – 1,5%. Cow dung, biohumus and phosphorus fertilizers were introduced under the main tillage, nitrogen – in the spring under presowing cultivation.

Soil moisture in the experiments at the level of 60-70% of the least moisture capacity was supported by 1-2-5 irrigation with a irrigation norm of 800-850 m³ / ha, taking into account rainfall and crop characteristics.

Accounting for the yield was carried out separately, manually. The mathematical processing of the yield data was carried out according to the well-known method of the program "Statistics" (author of the program, Professor K. A. Akhmetov). Crude protein was calculated by multiplying the total nitrogen content by 6.25, determination of crude fat by the method of fat-free residue, raw ash-by dry ash sample.

Results of the experiment and their discussion

Increasing the yield of fodder beet and improving the quality of seed oil can be achieved only by establishing optimal fertilizer systems in crop rotations and directly under the crop. It is necessary to

study the reaction of fodder beet to different types and combinations of mineral fertilizers, in order to create favorable conditions for the growth and development of fodder beet, taking into account its biological characteristics and in relation to specific soil and climatic conditions of the zone.

In our studies, the regularity of the action of fertilizers is clearly traced and the value varies widely depending on the conditions of nutrition. As can be seen from table 1, the feed beet reacts strongly to the improvement of the nutritional regime. The use of fodder beet under 1.5 Recommended dose NPK has provided an increase of yield of green mass in the range of 45 t/ha, which is the yield in the control (70.6 t/ha) 63%. A lower increase was obtained from the action and aftereffect of biohumus 28.3 t/ha.

Table 1 – Effect of fertilizers on the yield of fodder beet, t/ha (2015-2017)

Treatments	Yield, t/ha	
	Average	Addition to the yield from fertilizers
Control	70.6	-
Recommended dose NPK	109.0	38.4
1,5 Recommended dose NPK	115.6	45.0
Biohumus 6 t/ha	98.9	28.3
Cow dung 30 t/ha	102.2	31.6
Cow dung 60 t/ha	112.0	41.4
LSD _{0,05} , t/ha	5.51	

According to the research data, the content of raw protein of fodder beet varied slightly from doses of organic and mineral fertilizers and amounted to 17.5% in leaves and 11.3% in root crops. Maximum values were observed during the introduction of 60 t manure of 22.8% in the leaves, 13.7% in roots, but in comparison with mineral fertilizers, a significant difference was not.

The results for raw ash indicate less accumulation from organic fertilizers relative to mineral. Mineral and organic fertilizer system with increasing doses increased ash. So, at entering of recommended dose ash content in the roots accounted for 10.9%, in leaves – 20.1%, at the 1.5 recommended dose of 11.4% in the roots, 22.8% in the leaves.

Fodder beet does not belong to feeds with high fat content – 1.05-1.19% (root crop). Organic fertilizers did not change crude fat (2.53-2.56% in leaves, 1.03-1.14% in roots). The introduction of

biohumus even slightly reduced the concentration of fat in the roots-1.03%. The maximum values of fat were found on the version of the recommended doses of mineral fertilizers. The highest concentration of sugar in the roots was observed on the inconvenient version. The application of NPK and 1.5 of NPK reduced the sugar content by 1.06% and 1.26%, respectively. Organic fertilizers resulted in the decrease of sugars: biohumus – on 0.61%, 30 tonnes of cow dung – 0.61%, 60 t cow dung – 0.88%.

Analysis of roots and leaves on the macronutrient composition indicates a slight fluctuation of phosphorus and potassium in the leaves and roots, depending on the level of nutrition. The use of mineral and organic fertilizers increased the nitrogen content in the leaves of fodder beet, in root crops the concentration of this element increased slightly – 1.9-2.2% relative to the control option – 1.8%. The phosphorus concentration for the control was 0.20 per cent in the leaves, and 0.19% in the roots. The maximum values of potassium in root crops were observed when applying manure 30t and 60 t / ha-4.7% and 4.8%, respectively.

Thus, according to the results of the analysis of the quality of the studied culture, it can be noted that in the system of resource-saving technologies, the rational use of fertilizers, which contributes to not only the yield, but also the quality of products is an important lever of agricultural production management in the cultivation of forage crops in crop rotation.

References

1. Bondar V. I. Productivity of fodder beet depending on sowing date in the conditions of the Kaluga region//Scientific and production journal "Forage production", September 2012, P. 13-15.
2. Aitbaev T.E., Amirov B.M. Technology of growing potatoes and vegetables in the South and South-East of Kazakhstan (recommendations for spring field work). Astana, 2011. P. 42-44.

SECTION IV. Economics

Mantsaeva A.A.

Researcher Department of Economic Research BNU RK
«Arid Territories Integrated Research Institute»

DEFINITION THE INDUSTRIES FOR APPLICATION OF CLUSTER ACTIVATION

Increasing the efficiency of managing the regional socio-economic development puts the task of cluster activation for the state authorities. Cluster activation is an accented and concentrated policy of stimulating the creation and development of clusters by the authorities in order to accelerate social and economic development and enhance the competitiveness of the region. Cluster activation is carried out through a clear set of measures and direct incentive mechanisms by a specially created cluster's development institution.

In fact, we are talking about the artificial creation of economic clusters which is quite a costly and lengthy process. Therefore, the selection of industries in the region for which the formation of a cluster will be effective becomes an important and indispensable stage of cluster activation. In recent years this problem has been solved using a combination of multivariate analysis of statistical data and qualitative research based on the collection of expert information.

To determine the industries of application of cluster activation in one of the Russian regions - the Republic of Kalmykia, we will use the methodology for assessing the investment attractiveness of industries in the region. This technique was developed by Ph.D. Associate Professor of Tambov State Technical University L.V. Minko and is based on the calculation of total ratings of industries for several indicators. At the same time, the methodology will be adapted for the types of economic activity (further - TEA), which will somewhat simplify it (in the system of national accounting, TEA - foreign economic activity is a set of all homogeneous establishments having the same basic type of activity). This measure is compulsory, since the indicators of Russian statistics, reflecting the sectoral structure, are limited. Also, the original methodology will be supplemented with indicators characteristic of cluster-forming industries.

At the first stage of the study, indicators were proposed and calculated that characterize (Table 1):

- 1) the dynamics of development of the TEA;
- 2) the efficiency and feasibility of the TEA;
- 3) entrepreneurial activity.

To level the sharp fluctuations practically each of the indicators was averaged over 3 years (data from official state statistics for 2014–2016).

Table 1. The indicators used to identify in the region TEA for the application of cluster activation

Group of indicators	Indicators included in the group	Legend
Indicators of the Dynamics of development TEA, %	$X_1^i = Q_t^i / Q_{t-1}^i$ - growth rate (fall) of GRP for i-th TEA; $X_2^i = Q_t^i / Q_t \div Y_t^i / Y_t$ - localization factor for i-th TEA; $X_3^i = Q_t^i / Y_t^i \div H_t^{reg} / H_t$ - coefficient of per capita production for i-th TEA; $X_4^i = Org_t^i / Org_{t-1}^i$ - average growth rate (reduction) of new organizations for i-th TEA.	Q_t^i – GRP by the i-th TEA for the last year; Q_{t-1}^i – GRP by the i-th TEA for the previous year; Q_t – GRP for the last year; Y_t^i – cumulative GRP of all subjects of the Russian Federation in terms of the i-th TEA over the last year; Y_t – cumulative GRP of all subjects of the Russian Federation for the last year; H_t^{reg} – population of the region over the last year; H_t – population of the country over the last year; Org_t^i – number of organizations by i-th TEA in the last year; Org_{t-1}^i – number of organizations by i-th TEA in the previous year;
Indicators of Efficiency and Technical-Economic status of TEA	$X_5^i = Bal_t^i / Inv_{t-1}^i$ – profitability ratio, equal to the ratio of the net financial result to the volume of investments for the previous year for i-th TEA; $X_6^i = Bal_t^i / FA_t^i$ – return on equity ratio, equal to the ratio of the net financial result to	Bal_t^i – balanced financial result of organizations of the i-th TEA for the last year; Inv_{t-1}^i – volume of

	<p>the value of fixed assets for i-th TEA;</p> <p>X_7^i – depreciation of fixed assets for i-th TEA;</p> <p>X_8^i – share of unprofitable enterprises in i-th TEA.</p>	<p>investments in the i-th TEA for the previous year;</p> <p>FA_t^i – the cost of fixed assets of the i-th TEA for the last year;</p> <p>TR_t^i – turnover of small enterprises of the i-th TEA in the last year;</p> <p>TR_{t-1}^i – turnover of small enterprises of the i-th TEA in the previous year;</p> <p>TR_t – cumulative turnover of small enterprises;</p> <p>N_t^i – number of individual entrepreneurs of the i-th TEA in the last year;</p> <p>N_t – total number of individual entrepreneurs.</p>
Indicators of Entrepreneurial Activity	<p>$X_9^i = TR_t^i / TR_{t-1}^i$ – growth rate of turnover of small enterprises for i-th TEA;</p> <p>$X_{10}^i = TR_t^i / TR_t$ – share of turnover of small enterprises of the i-th TEA in the total aggregate volume;</p> <p>$X_{11}^i = N_t^i / N_t$ – share of individual entrepreneurs of the i-th TEA in the total number</p>	

The next step of the study was the ranking of indicators and the calculation of average ranks for each group of indicators. The total rating of each TEA in the Republic of Kalmykia revealed (Table 2):

— firstly, extremely low clustering potential of the mining and manufacturing industries;

— secondly, one of the last places in the ranking belongs to the foreign economic activity "Production and Redistribution of Electricity, Gas and Water." This indicates a strong energy dependence of the region and the need to increase energy and economic development;

— thirdly, the third place in the ranking is taken by "Wholesale and retail trade; ...", however, the trade cluster, in fact, is a set of interacting and competing trade enterprises and organizations aimed at obtaining value added. The trade cluster serves as an intermediary between producers and end users. Thus, "Wholesale and retail trade; ..." is not cluster-forming TEA, but only complementary;

— fourthly, feasibility of forming clusters in agriculture and hotel-entertainment complex.

Table 2. Ranking of TEA in the Republic of Kalmykia

№	TEA	Dynamics of development	Efficiency and Technical-Economic status	Entrepreneurial Activity	Sum of ratings	TEA rating
1	Agriculture	1,75	3,75	2,00	7,5	1
2	Fishing, fish farming	6,5	-	7,33	13,83	6
3	Mining	8,25	5,75	8,00	22	10
4	Manufacturing industries	7,25	6	5,33	18,58	9
5	Production and Redistribution of Electricity, Gas and Water	6,75	5,5	5,33	17,58	8
6	Building	5,5	4,25	6,67	16,42	7
7	Wholesale and retail trade ...	4,75	5,5	2,67	12,92	3
8	Hotels and Restaurants	4,75	2,75	4,33	12,83	2
9	Transport and Communication	2,25	4,75	6,67	13,67	5
10	Education	3,75	3,75	5,50	13	4

Indeed in the Republic of Kalmykia the agricultural sector is traditionally the main component of the economy. It is based on livestock: beef cattle, meat and fine-wool sheep. And thanks to Eastern culture and Buddhist religion, unique to the entire European part and southern Russia, the region has significant potential for the development of the ethno-confessional tourism. Thus, the use of multidimensional assessment allowed us to prioritize the TEA of the regional economy from the point of view of cluster formation.

Alla Ivanovna Matveeva

Doctor of Philosophy, professor
Ural State Economic University, Yekaterinburg, Russia

**PHILOSOPHICAL AND ECONOMIC ANALYSIS
OF EURO-CONTINENTAL, RUSSIAN AND EASTERN
MODELS OF COMPETITION**

Annotation. In the article authors, it is argued that instead of psychology of individualism and philosophy of personalism, characteristic, for the Anglo-Saxon interpretation of the essence of competition, in the Russian model there are ideas of the Union of labor, social, Spirituality, determinism. Unlike the Russian economic science, oriental researchers allocate in competition as its sense and purpose formation of ability of the person to constant self-education.

Key words: Competition models Anglo-Saxon Euro-Continental, Russian, Eastern, personality, modality, economic science

In general, it can be stated that at the beginning of the XXI century there were several basic theoretical and methodological approaches to interpreting the essence of competition: The Anglo-Saxon model of competition; Euro-continental model of competition; The Russian model of competition; Eastern model of competition. For the Anglo-Saxon model is characterized by the identification of the concept of competition with the struggle of its participants-the essence of this model is that in the competitive struggle survives strongest. A somewhat more correct is the Euro-continental model of the essence of competition, which is based on the notion of rivalry. Rivalry implies a certain structured and regulated (law and morality) system of social interaction. In other words, the rivals are not all allowed. For example, they exclude one-sided (monopoly) control over the price (or, what is the same, control over the supply). And not only that. Therefore, in order to understand the true difference between the concept of rivalry and the concept of wrestling, you need to change the approach to the analysis of social relations, or, as it was once e. Chamberlin, «Change your Outlook», and «This is something completely different than...»[3, p. 256].

But in the euro-continental model of the essence of competition there is a flaw associated with the fact that it is based on organizational fetishism [1, p. 30]. To many supporters of this version it seems that it is enough to develop «rules of the game» for rivals, establish orders and enact laws, as the rivalry will become

automatically perfect, i.e. adequate established rules and procedures. This is a naïve idea, because competitors can know the rules well, but do not follow them. The same applies to the State itself, on whose behalf the «rules of the game» can be set by both moral and immoral officials. Corruption, political rent, racketeering and many other manifestations of immoral behavior of such officials at all on hearing. And, by and large, it does not matter that the modern state – «This is not the executive committee of the bourgeoisie, rather it is the Executive Committee of the technical Structure» [1, p. 223]. Modern managers, as shown by scandals related to the activities of a number of large corporations, can also be just as immoral subjects, as well as government officials. Hence the conclusion of a sufficiently speculative and superficial understanding of the essence of competition by Western European researchers, who do not cease to be surprised by the fact that, with all the necessary legal or administrative conditions Competition even in their countries is still imperfect.

One should pay special attention to the fact that it was in Russian science that a peculiar and very perspective interpretation of the essence of competition as a social phenomenon developed. At the end of the XIX century the Russian philosopher P. B. Struve first introduced in the scientific lexicon the notions of «fair competition" and "unfair competition» [2]. Starting from the famous concept of «personal shelf life» developed by P. B. Struve, Russian philosophers and economists began to consider competition as a form of moral (based on values of conscience and justice) relations between Participants of the economic process. To denote this understanding of the essence of competition, the word competition was used, which implied joint activity of the participants of the economic process to achieve the overall best result. Instead of the psychology of individualism and the philosophy of personalism characteristic of the Anglo-Saxon interpretation of the essence of competition, in the Russian model there are ideas of union of Labor (collegiality, cooperation), social justice (social Responsibility, mutual assistance), spirituality, determinism. The specificity of the Russian interpretation of the essence of competition is precisely the understanding of the key value of the spiritual and moral basis in its structure and content. And it is not accidental that the judgment, according to which «the people who are honest, thus strong not only morally, but also economically» [5, p. 418].

One can also highlight the eastern theoretical and methodological model of the essence of competition, based on the ideas and mentality

of the eastern Sociums-ethnoses. At all differences in religions, culture and mentality of the East people it is possible to find a general understanding of essence of competition as phenomenon of a market economy. And this understanding is connected with the fact that competition is considered as a phenomenon subordinated to the spiritual life of man. But, unlike the Russian economic science, oriental researchers allocate in competition as its meaning and purpose (namely in such parameters only and it is possible to speak about essence of any phenomenon) formation of ability of the person to constant Self-education [4, p. 14]. This is in some way consistent with the interpretation of the essence of competition as a system of social interaction on issues of production and knowledge, which at one time was given by F. Hayek.

The intensity of modern competition in different areas of human life is uneven. In this regard, we note different variants of relations between competitors, based on criteria 1) compatibility of objectives, 2) the need for exchange of experience and (3) the existence of common interests.

Their correlation allows to distinguish different modality of competition and to estimate its efficiency in the general system of social interaction. At the same time, the analysis of these modalities can give the researcher valuable information about the level of personality socialization, character and degree of such socialization. If we consider multilateral relations of competition, i.e. a system in which not two but several participants are included, this diversity will increase accordingly to the growth of the number of competitors. In the «marginal» case, when all members of society are hypothetically competitors, the competition ceases to be a good (value), because in this mode of social interaction there is an incompatibility of the goals of each and every one of Competition participants. And this circumstance, even if to allow an objective necessity of exchange of experience (or, in the interpretation of Aristotle, the exchange of results of activity) demands the refusal from competition and concentration of efforts on development and perfection of relations Cooperation. The most superficial and «transient» (from competition to cooperation) Form of social interaction, in which the socialization of the person takes place, is a system of partnership relations. Within the framework of this system there are institutional changes that allow to combine different goals of different participants of social interaction to varying degrees, while preserving the difference of their interests. Since there is no complete convergence between goals and

interests in partnership, it is clear that such a system can only be temporary and has no signs of integrity and completeness.

List of used literature

1. Gellbraith J. K. Economic theories and goals of society. M.: Progress, 1979.
2. See: Struve p. B. Patriotica: Politics, culture, religion, socialism/sost. V. N. Zhukova, A. P. Polakova. M.: Republic, 1997.
3. Chemberlin E. Theory of Monopolistic competition: per. in English. M.: Economics, 1996.
4. Shabatura L. N. sociogenesis tradition. Yekaterinburg: Uргу, 2003.
5. Yanzhul I. Economic value of honesty: forgotten factor of production//Yanzhul I. Selected works. M.: Nauka, 2005.

SECTION V. Philology

Gorbachyova I. A.

Cand. Sc. in Philology, Associate Professor of English Philology and Methods of Teaching Department, Orenburg State University

Kononova M. S.

Student of English Philology and Methods of Teaching Department, Orenburg State University

PHONOSEMANTIC MANIFESTATIONS IN ENGLISH ADVERTISING

Maintaining a stable state of the global economic system, being a prerequisite for the successful socio-economic growth of any country, is carried out through the rapid development of industrial, economic and manufacturing spheres. Competent use of language means contributes to the solution of many problems in terms of the development of sustainable market relations. The relevance of the appeal to the advertising industry is determined by the fact that today it is one of the most actively developing sectors of economic activity, aimed at establishing and maintaining mutually beneficial relations between the producer and the consumer. Consideration of the publicity leading functions helps to more fully represent its significance in the development of global economy [1].

Thus, the communicative function of flack is primarily fulfilled by the language, and close relationship of our unconscious with the perception and speech production processes confirms its special significance in the development of economic, industrial and consumer relations. The proficient applying of linguistic tools to the advertising message determines the success of any product promotion and the comprehension of the way it affects the consumer and his subconscious is the issue of the day. The above determines the purpose of our research - the study of phonosemantic exhibition in English publicity as a means of stimulating the development of the industry.

The study set and solved the following tasks:

- making a brief survey of the steps that determine the formation of Phonosemantics as an independent science;
- getting acquainted with domestic and foreign research in this area;
- conducting phonosemantic analysis of advertising messages.

Disputes and controversial opinions about the conformity between sound and meaning eventuated between scholars of ancient Greece, such as Plato, Hermogenes, Cratylus [5, p. 9]. Alongside with it the problem of the connection between sound and meaning derives its interpretation in the works of St. Augustine, Thomas Aquinas, J. J. Rousseau, R. Descartes. M. Lomonosov also pointed to a certain content of sounds, noting that in Russian the frequent repetition of the letter A can contribute to the depiction of magnificence, great space, depth and height [7, p. 8]. However, the formation of Phonosemantics as the branch of linguistics, studying the “sound-visual system of language” from the “spatial and temporal standpoints” [5, p. 4] as a substantive science, originates from the language genesis theories and sound symbolism, in the evolution of which several stages can be distinguished [5, p. 10-12]:

1). Sound symbolism and onomatopoeia study in the framework of the language genesis theory (R. Paget, A. Johanneson, A. G. Spirkin and others).

2). Consideration of sound symbolism in terms of the linguistic sign theory (F de Saussure).

3). Independent theoretical investigations of sound-symbolism initiated by O. Jespersen.

The most important works on this topic belong to such Russian scientists as A. A. Leontyev, V. V. Levitsky, A. P. Zhuravlev, S. V. Voronin . A new stage in the development of science was marked by

the emergence of the method of "semantic differential", developed by the American psycholinguists Charles Osgood, G. Suci and P. Tannenbaum [4]. According to the essence of this method the informants were to evaluate certain words using definite scales, the number of which was reduced by H. Osgood to three main ones: the opposition scales of "assessment" f. ex. *good // bad, beautiful // repulsive*; "strength", f. ex. *mighty // frail, gentle // rough*; "activity", f. ex. *mobile // sluggish, active // passive, etc.* In the course of the experiment, each informant estimated a word according to a particular attribute, noting its strength on the scale and thereby assigning it a specific numeric value. This theory laid the foundation for a large-scale study of the Russian scientist A. P. Zhuravlev, the results of which resulted in compiling a table of the phonosemantic Russian sounds significance. It consisted of 346 sound-letters, 25 scales and 1150 ratings. A special formula was deduced allowing calculating mathematically the significance of lexical units [7, p. 10-17]:

$$F = \frac{\sum f_i k_i}{\sum k_i}$$

According to it "*F* is the phonetic significance of the word; *f_i* - the phonetic significance of the consequent sound of the unit; *k_i*— coefficient for the following sound; \sum - summation sign" [7, p. 32].

Subsequently, the involvement of computer technology has allowed exploring the phonetic significance of words and texts automatically. Furthermore, poetry was of particular interest for the study. Word Processing programme opened up new possibilities of Phonosemantics: the formulation of hypothesis explaining the creation of the sounding tone of the poem, and a new theory named *sound-color*. The demonstration of concordance between sound and color in Blok's poem "Gamayun – the Bird of Prophecy" was manifested in the following notation correspondences: "*/a/ is red*", "*/b/ is dark*", "*/y / is dark green*" [7, p. 116-118]. The attempt of the artist L. Mistratova to depict the sound-color gamut of the poem on the canvas came up amazing. The shades of the image created by L. Mistratova and the original picture by V. M. Vasnetsov have a lot of matching, experimentally confirming thereby the method of sound-color analysis developed by the outstanding linguist.



Fig. 1. - L. Mistratova
«Gamayun, a bird of prophecy»



Fig. 2. - V. Vasnetsov
«Gamayun, a bird of prophecy»

It can be assumed that phonosemantic properties of the language can be applied to the industry of producing commercials, aimed at creating informative advertising messages which are supposed to be fixed in recipients' memory. Creating a trademark, manufacturers turn to the semantic, phonetic and morphological attributes of the language. It is necessary to take into account that the aesthetic perception of the phonosemantic features is carried out subjectively and subconsciously. The consciousness of a preprepared reader only is able to fully perceive the "semantic connotation information" transmitted by sounds and their combinations [3, p. 82]. Yet, it does not deny the possibility of using Phonosemantics when creating or advertising a brand in order to profitably promote one or another product. The company's logotype is exactly what the customer instinctively draws attention to while choosing a specific product from the variety presented on the market. It is the simultaneous appeal to sound symbolism and semantics that allows achieving the greatest effect in creation of a brand. The research conducted by Richard Klink - American professor at the School of Business and Management named after Joseph A.- showed a direct relationship between the

congruent use of certain sounds (front // back vowels, occlusive // fricative consonants, etc.) in brand names and their evaluation by informants according to certain criteria (“fast”, “soft”, “feminine” and others) [6, p. 16-19]. The investigation of the effect produced by companies’ logos on the choice of customers, conducted by Professor Eric Yorkston and the Dean of the Faculty of the New York School of Business Jetta Menon is of great concern. It was found that:

1) sound symbolism influences the perception of particular product features;

2) the use of sound symbols in creating a brand is mostly an unconscious process;

3) the phonosemantic features of the brand name are not recognized by consumers as leading factors influencing the decision to purchase goods [6].

Thus, producers are able to a certain extent influence the phonosemantic perception of the brand or PR name. But they cannot fully control this process. The analysis of a number of English-language advertisements confirms the hypothesis regarding a phonosemantically relevant combination of sounds, which allows enhancing the effect of perception of auditory or visual information about the product. The experiment itself assumed the identification of words with a strongly marked phonetic meaning, their analysis in the “VAAL-mini” system (created within the framework of Phonosemantics, psycholinguistics, NLP, content analysis), as well as singling out the most frequent and impressive combinations of phonemes with the subsequent analysis of their allophones. The use of occlusive and constrictive strong consonants, affricate and sonant phonemes, along with the frequent use of tense vowels, as well as diphthongs, formed an additional sound-symbolic meaning of words. In the course of phonosemantic research of the lexical block of one commercial, advertising article and radio advertising in the system “VAAL-mini” 34 words were analyzed. Their sound-and-symbolic characteristics revealed the correspondence of the chosen lexemes to the nature of the advertising product. For example, the clusters of strong occlusive / k /, / p / and oral sonorous / r /, / l / in the words created a sound-symbolic impression of something “rough” and diphthongs / ei /, / ai /, / əʊ / were estimated as denoting something “good”, “rounded” and “majestic”.

Table 1. Phonosemantic analysis of English advertisement

BRAND OF ADVERTISED PRODUCT	TYPE OF ADVERTISING MESSAGE	WORDS WITH PRONOUNCED PHONETIC MEANING	PREVAILING PHONOSEMANTIC CHARACTERISTICS OF WORDS ANALYZED IN THE VAAL-mini PROGRAM	ALLOPHONES OF PHONEMES AND THEIR COMBINATIONS	
				CONSONANTS	VOVELS
«OREO»	promotion video	«prefer» «cream» «oreo» «crazy» «part» «cookie»	good, rough, slow, rounded, light	[p ² r [□]] [k ² r [□]] [p ¹] [k ²]	[i ⁻] [a ^v] [ɜ ⁻] [eɪ] [əʊ]
«KRISPY KREME DOUGHNUTS»	promotion video	«cream» «cake» «cry» «lie-in» «glazed» «line» «lighting» «really» «fluffy» «sugar» «precious» «pleasure» «delicious» «drunk» «drink» «drive» «krispy» «kreme» «key»	grungy, hot, gentle, smooth, beautiful, good, stately, bright, rounded	[k ² r [□]] [s [→]] [←s] [k ²] [k ¹] [p ^{x1} □] [p ² r [□]] [g ^{x1}] [l] [dr [□]] [ŋ ^v]	[i ⁻] [eɪ] [aɪ]
«TWINING ENGLISH TEA»	radio advertising	«steamed» «beaten» «special» «fresh» «refreshing» «pleasurable» «twining» «tempting» «brighten»	simple, beautiful, majestic, smooth, bright, rounded, large	[t ²] [ŋ ⁻] [←st ^x] [t ^x y] [←ʃ] [br ^{1f}] [p ^{x1} □] [←sp ^x] [t ^o w]	[i ⁻] [eɪ] [aɪ] [e ^v]

Thus, knowledge of history of the development of phonosemantic science and the methods of phonosemantic analyses of

poetic and prosaic texts determines the appeal to the practical results of their use by foreign researchers in promotion industry. Due to the simultaneous use of traditional methods of phonetic analysis and native development projects, it was found out that phonosemantically significant combinations of English phonemes can constitute the impressive character of the publicity message, which in its turn can have a direct impact on the recipient and the subsequent promotion of the advertised product on the market. The possibility of using the results of this study in composing advertising messages of various kinds determines the relevance of further investigating the degree of influence of the phonosemantic potential of a sound on a person's mind leading to the creation of a mighty subliminal advertising.

References

1. Advertising Industry. Information and reference portal. Available at: <http://adindustry.ru/>
2. Allen M., The Influence of Phonetic Symbolism on Memory for Advertisements. Available at: <https://scholarship.tricolib.brynmawr.edu/bitstream/handle/10066/18748/2016AllenM.pdf?sequence=1> (in English)
3. Gorbachyova I. A. Jeksplikativnost' fonosemanticheskoj informacii prozaicheskogo teksta V. Vulf [Explication of Phonosemantic Information in V. Vulf's prosaic text]. *Materialy Mezhdunarodnoj nauchno-prakticheskoj konferencii. Filologicheskie chtenija* [The Materials of International scientific-practical conference Philological Readings], 2017, pp. 82-87, ISBN 978-5-4417-0669-8 (in Russian)
4. Osgood Ch., Suci G., Tannenbaum P., The Measurement of Meaning. *Jenciklopedija Krugosvet* [Encyclopedia «Krugosvet»]. Available at: http://www.krugosvet.ru/enc/gumanitarnye_nauki/lingvistika/OSGUD_CHARLZ.html (in Russian)
5. Voronin, S. V. Fundamentals of Phonosemantics. Moscow, LENAND Publ., 2006, 248 p. (in Russian)
6. Yorkson E., Menon G., A Sound Idea: Phonetic Effects of Brand Names on Consumer Judgments. Available at: <https://web.stanford.edu/class/linguist62n/yorkston.pdf> (in English)
7. Zhuravlev A. P., *Zvuk i smysl* [Sound and Meaning] Moscow, «Prosveshhenie» Publ., 1991. 160 p. (in Russian)

Gorbachyova I. A.

Cand. Sc. in Philology, Associate Professor of English Philology and
Methods of Teaching Department, Orenburg State University

Zuza E.A.

Student of English Philology and Methods of Teaching Department,
Orenburg State University

ALTERNATIVE WAYS OF DEPICTING FOREIGN ACCENT VARIATIONS IN FICTION TEXT

Graphic means is one of few ways of conveying the author's concept necessary for recreating the holistic integrity of the text. To create an artistic effect the writer chooses as a mode of expression such literary deviations as dialects, colloquialisms, slang, argot, gibberish, occasionalisms as well as children's and foreigners' speech submitted in writing exclusively graphically: changing the font, using italics, deforming the shape of the word and dialecticisms [3, 324].

All above is extant in fiction either qua the main linguistic tools like slang in the novel «The Catcher in the Rye» by J. Salinger or individual speech characteristics used in the form of scattered inclusions for creating specific nuances [1, 196].

Foreign accent is considered to be a particular type of deviance from the literary norm, which reveals itself in a bilingual situation characterized by the translocation of the native language pronunciation rule over the norm of a foreign language [2, 28]. Accented speech is the result of imperfect foreign language speaking skills and is manifested not only in the distortion of its pronunciation standard but also in the desire of bilinguals to simplify the resources of the pronunciation system of the acquired language by reason of insufficient fluency in it. This simplification leads bilinguals to using a limited set of phonetic and other language options in non-native speech and results in strengthening the effect of that divergence. At the same time, this intrinsic interference of the native speaker's pronunciation occurs in a foreign language ignoring the standards of the latter [4, 153].

The lack of congruence with the pronunciation norms of the speaker brings in additional meaning to speech messages allowing the listener to define certain individual, cultural, social, geographical, class divisions and national peculiarities of an interlocutor. Foreign accent serves to create a proper image of the hero and his

identification by belonging to a certain national, social and ethnic group.

Since the interference fluctuations in foreigner's pronunciation are the most impressive social markers, the grade of his accent is associated with the level of his education, intelligence and partly with self-reliance. It is also influenced by such factors of the speaker's psychological state as tension, strain, fatigue or a negligent frivolous attitude to the verbal organization of characters' speech.

There are six gradations of insufficient knowledge of foreign language pronunciation scale worked out by the American Council [5]:

1. Strongly expressed accent abnormality: the listener is only able to comprehend separate words.

2. Strong accent deviations which make it difficult to understand what people say even for those listeners who are accustomed to foreign speech.

3. Moderate strength accent degree: the speech content is more or less clear for a native speaker who is used to communicating with foreigners.

4. Medium accent degree: pronunciation mistakes occasionally prevent the perception of speech from identification.

5. Weak accent degree: it is heard and paid attention to but never interferes with understanding.

6. Very weak degree of accent – «Near-Native Pronunciation» (NNP).

The research of graphic tools with the help of which different nationality accents (Jamaican, Spanish, Italian and Russian) are conveyed in the text of the novel "White teeth" by a contemporary British writer Zadie Smith is being carried out [6].

All these accent types can be referred to the fourth gradation group (medium accent degree) for they never break comprehension of heroes' narration content. The above mentioned accent markers deviations manifest themselves not only on the segmental (phonemic) level, but also in the field of prosody - accentuation, rhythm and intonation.

The author makes use of the particular set of techniques defining the choice of graphic means for representing foreign accents of "multinational" conversations.

- Graphic convenience depiction method operates when the author uses convenient means of spelling for depicting accent pronunciation variations.

- Word recognition method operates when strongly modified word form can provoke perception distortion.

In the process of analyzing the vocabulary, it has been noted that throughout the whole novel the author uses similar graphic techniques to depict accent irrespective of person's age, gender and ethnicity:

1. Replacing a phoneme which doesn't exist in the native language system by the other one possessing common articulatory and physiological features in both languages. For example:

- replacing a phoneme transmitted by a combination of *th* with letters *d*, *t* and *f* in Jamaican accent: *dey* (they), *boddrin* (bothering), *mudder* (mother); *tink* (think), *mout* (mouth), *nuttin* (nothing); *toofs* (tooth), *nuff* (nothing), *troof* (truth);

- *i – ee* in Spanish accent: *meester* (mister);

- *oo – u* in Russian: *bloo* (blue);

2. Sound omission is sometimes marked by an apostrophe: *exackly* (exactly), *ol'* (old), *expec'* and even *spec* (expect), *'im* (him), *tol* (told), *wan'* (want), *d'Lord* (the Lord), *d'you* (do you), *'adn't* (hadn't);

3. The change in the graphic shape of the word, reflecting the distortion of phoneme structure of the word:

- in Italian accent: *take-a*, *make-a*;

- in Jamaican accent: *gen'russ* (generous), *arks* (ask), *bwoy* (boy), *yo* (your), *nat* (not), *marnin'* (morning), *hol'* (whole), *kyan* (can), *kyant* (can't), *bruk-up* (break-up), *ya* (you), *gwan* (going), *biznezz* (business);

4. Merging of two words: *justabout* (just about), *farrit* (for it)

5. Adding a native language lexical unit:

- in Spanish accent: Kitchen sink, *si'?*

- in Italian accent: He take everything, *capisce?*

The markers of foreign speech in the novel are used in the form of scattered inclusions throughout the text. They vanish the moment the character corrects and perfects his pronunciation. The sequence indication of these markers contributes to better identifying the character and his accent by a reader.

The correlation between personages' dispositions, the accent singularities and even the scene of action in the novel is established in the long run.

Graphic means of the accent depiction allow the reader to observe the process of language competence formation with the main

heroes. Finally it leads to rectifying the English pronunciation deviations.

Speech contains a lot of information about a speaker. A certain peculiarity of speech with a weak degree of accent can contribute to better communication. The speaker's voice characteristics represent a real source of information for communicants and play a crucial role in ensuring the successful intercultural communication. Most often the accent is negatively estimated by a native speaker since the perception of bilingual speech obtaining a wide range of accent errors and norm divergences constitutes the complex of barriers which leads to a decrease of a native speaker's interest in communication act.

The investigation of graphic ways with the help of which different nationality accents are conveyed demonstrates also the differences between prosodic systems of the English, Jamaican English, Spanish, Italian and Russian languages. They testify to the level of characters linguistic competence and reflect the peculiarities of the phonetic accent formation of an individual who belongs to a particular ethnicity.

The analysis of alternative potentiality for conveying English speech accents peculiar for different nationalities is supposed to go on. The tasks that need to be addressed in the short term are: the necessity of figuring out the reasons for foreign accent formation, considering ways of depicting grammatical features of an accent. The research essentials are: conducting a comparative analysis of graphic options of depicting accent capability in the original text and in its translation into Russian aimed to collate the pragmatic potentialities of the two texts. The statistical processing of personages' accented utterances in all their manifestations will help the researcher to get deeper into the essence of the aspect under study.

References

1. Alekseeva I. Introduction to Translation: Textbook for Students of philological and linguistic faculties of higher educational institutions. St. Petersburg: Faculty of Philology of St. Petersburg State University. Moscow, Academy, 2004, 352 p. (in Russian)
2. Vinogradov V. To the problem of foreign accent in phonetics, Linguistic aspects of language learning. Moscow, 1976, 62 p. (in Russian)
3. Vlahov S., Florin S. Untranslatable in translation. Moscow, International relationships, 2006, 343 p. (in Russian)
4. Rephormatsky A. From the history of Russian phonology. Moscow, Science, 1970, 176 p. (in Russian)

5. American Council on the teaching of foreign languages: proficiency guidelines. – Hastings-on-Hudson; New York: ACTFL, 1986.
6. Smith, Z. White Teeth [electronic source] – Access mode: <http://booksonline.com.ua/view.php?book=17579>

**Zhuravleva Olga Mikhailovna¹,
Finionova Natalia Igorevna²**

¹Associate professor, PhD, associate professor of the department of foreign languages, St.Petersburg Electrotechnical University, St.Petersburg, Russia
zhuralena@gmail.com

²Senior lecturer of the department of foreign languages, St.Petersburg Electrotechnical University, St.Petersburg, Russia
n_finionova@mail.ru

THE USE OF ADVERBS IN FICTION: A GENDER APPROACH

It has already been stated by several linguists who work in the interdisciplinary field of psycholinguistics that men and women speak differently [1, 2, 3]. That means that the fiction they write should be classified as “men” or “women” literature. Definitely there are some features that can help attribute a novel or a story to one of the two groups.

Taking into consideration that the difference does exist there was made a suggestion that the use of adverbs in fiction written by men and women might differ as one of the elements that contribute to the mentioned peculiarity. They play a great role in oral and written speech being used to create the image of characters, show their personalities and emphasize their main features. Adverb is a very important part of speech, as the one that may combine both the objectivity of characteristic description and the subjectivity of evaluation. It is very difficult to interpret it out of the context as it is extremely stylistically active. Thus enables to observe adverbs as elements of evaluation lexical structures to transfer the author’s opinion into the text.

The suggestion that women are more emotional provides the hypothesis that the novels written by woman should contain considerably more adverbs than the novels written by men. Together with the fact that the use of adverbs is the personal feature of the

writer there are likely to be at least some common elements of gender writing peculiarities. This analysis aims to identify if the use of adverbs may be the element that can distinguish female literature from the male one.

To analyze how differently writers use adverbs and compare common and distinctive features there were chosen six fiction texts written by men and women novelists in the 20th century. There are “Rebecca” by D. Du Maurier [4], “Mrs. Dalloway” by V. Woolf [5], “A severed head” by J.I. Murdoch [6] to be compared with “Lord of the Flies” by W. Golding [7], “Tender is the Night” by F.S. Fitzgerald [8] and “The Ebony Tower” by J. R. Fowles [9]. In every text the extract of 2000 words was analyzed.

In the extracts from the novel of D. Du Maurier different adverbs were used 99 times, which makes 0.5 % of all the words. Most of them (79) realize their function in word partnership with verbs as in this example:

laughed a little awkwardly; frowned very slightly; spelt correctly; reply immediately.

In 9 cases the author used the same adverb – *suddenly*. That provides a bit different figure if to calculate adverbs not the cases of their use. Taking into consideration all the repeated adverbs (only with verbs, as there was no adverb used twice with adjectives or other adverbs) the number of different adverbs used by D. Du Maurier in the chosen extract equals 88.

In the extract of the novel by J.I. Murdoch there were found out 242 adverbs, which is more than twice as many as in the text of D. Du Maurier and makes 1.2 % of the total word use. In partnership with verbs there are 170 of them, such as:

sat up abruptly, briefly contemplated, said sharply, etc.

Other 72 adverbs were used by the author in word partnerships with adjectives and participles. Comparing with the text by D. Du Maurier not only the number of adverbs is different but also some peculiarities of their use. The amount of partnerships with verbs is comparatively low (2.5:1 against 4:1) altogether with the high use of participles with adverbs (twice as many as in the extract by D. Du Maurier calculated from the overall amount of collocations with the attribute).

In the extract by V. Woolf adverbs were used 178 times, which makes 0.9 % of the overall number of words. Out of the total amount of adverbs there are 133 used in partnership with verbs:

utterly vanished; said audibly, humorously of course; started violently; thought sardonically, etc.

The peculiarity of the author is the group of some “favorite” adverbs – those that she used several times (generally from 2 to 5, however, the adverb *suddenly* was used 13 times) with the attribute as well as with verbs. The ratio of the used adverbs with verbs and the attribute is 1:3.5.

All in all the three chosen women writers used adverbs differently with variable intensiveness and some minor peculiarities. The amount of adverbs varies from 99 to 242, which equals 0.5 to 1.2 % of the overall word usage in the analyzed extracts.

The same analysis of the extracts written by men novelists shows the different results.

In the extract from the novel by W. Golding the author used 124 adverbs from which 112 he used in partnership with verbs:

was clambering heavily, removed carefully, said solemnly, smiled vaguely, hung steadily.

The author used other 12 adverbs with adjectives. The proportion of adverbs in the texts is about 0.6 % and the ratio between those used with verbs and with the attribute is 10:1.

W. Golding as well as C. Du Maurier and V. Woolf has a group of “favorites” (such as *carefully, fiercely, quickly, strangely*) which he uses several times (from 3 to 9). That as in the case of D. Du Maurier makes the total amount of adverbs lower.

In the extract from the novel by F.S. Fitzgerald there was found out that he used adverbs 135 times. This makes the proportion of 0.7 % of the adverbs to the total amount of words. The author used most of the adverbs in partnership with verbs, for example:

spoke cheerfully, talking seriously, moved gravely.

There are only 18 adverbs used with adjectives. As a result the ratio of the usage of adverbs with verbs and adjectives equals 10:1, which is the same as in the case of W. Golding. The difference is that F.S. Fitzgerald does not have any favorite adverbs, there is only “*equally*” that was used twice in the extract.

The last examined extract by J. R. Fowles contains 122 adverbs. The proportion of adverbs to the overall amount of words equals 0.6 %, which is absolutely comparable with the other novelists – F.S. Fitzgerald and W. Golding. However, the use of the adverbs is different. 74 of them the author used with verbs (such as *walked cautiously, moved almost briskly, came obliquely across*) and 48 with adjectives. This peculiarity makes the ratio of 3:2. None of the

novelists, neither men nor women used adverbs in such a ratio. Some adverbs from the first group were used several times while none of the adverbs from the second group was doubled. This type of the use of adverb is closer to the one of J. I. Murdoch rather than studied men novelists.

Summarizing the obtained results it is possible to make some conclusions. Firstly, the use of adverbs is a highly personalized feature of the novelists. Secondly, only few of them use a variety of adverbs that are not repeated. Thirdly, it seems to be a feature of men novelists that in general they use fewer adverbs that is about 0.6 % in the text. Women novelists, whose texts were studied in the article, use different proportion of adverbs, however, only one out of three used the number of adverbs equal to men writers' general use. What is more in all the extracts the use of adverbs with verbs prevails. Most of the writers regardless of the gender have some "favorite" adverbs. As the research shows in two out of three novels of men the ratio of 10:1 does not match the ratio in the novels by women where the proportion of adverbs used with adjectives is much more. The only exception of J. R. Fowles whose use of adverbs is closer to J. I. Murdoch's might be observed as a personal peculiarity rather than a gender feature. However, it is necessary to check the suggestions made in this paper by investigating more novels by more authors to exclude coincidence.

All in all the gender of the novelist does influence the use of adverbs in the written text. Among the gender features there are the proportion of the used adverbs and the ratio of adverbs used with verbs and the attribute. However, gender is not the only factor that influences the author's style; the more important role is played by the personality of the novelist. Though the main suggestion was proved and the amount of adverbs used by women appeared to be considerably higher in two extracts out of three, it does not allow attributing the text as the one written by a man or a woman novelist only based on the use of adverbs.

Literature

1. Kirilina A.V. Gender: Linguistic aspects (Monograph). M., 1999.
2. Nurseitova H.H. Introduction to gender linguistics. Pavlodar: PGU, 2008.
3. Coats J. Women, men and Language: A Sociolinguistic Account of gender Differences in Language. 3rd ed. Routledge, 2004.
4. Du Maurier D. Rebecca. NY: Avon Books, 2008.
5. Woolf V. Mrs. Dalloway. Vintage books, 2016.
6. Murdoch J.I. A severed head. L.: Vintage (Vintage classics), 2001.

7. Golding W. Lord of the Flies. Faber and Faber, 2013.
8. Fitzgerald F.S. Tender is the Night. Penguin Books, 2000.
9. Fowles J. R. The Ebony Tower: A collection of short stories. NY: Little, Brown and Company, 2013.

Zubchenko V.V.

post-graduate student of Kuban State University

LINGUISTIC OVERVIEW OF RUSSIAN EPIGRAMS OF XIX-XX CENTURIES

Abstract. this work presented the features of a Russian epigram of XIX-XX centuries and distinguished that an epigram of the XIX century included a satire, an incisive expressive evaluation, and implicit sarcasm. The XX century was the time of vernacular and vulgar words, including swear words, untargeted epigrams and epigrams stating no authorship were also widely used. The epigrams of that period laid strictures on literary figures; they were also politically motivated and expressed the image of the entire Russia.

Key words: untargeted epigrams, genre, negative and incisive expressive evaluativity, satire

An epigram as a literary genre has a long history. It originated in antiquity in the form of an epitaph and then underwent transformation many centuries later but did not outlive its significance. Modern understanding of an epigram goes back to Martial's body of work. It was the first time when an ancient Roman poet used a satiric topic as a leitmotif.

In the XIX century an epigram was gaining popularity. Among the distinguished epigrammatists there are A.S. Pushkin, E.A. Baratynskiy, P.A. Vyazemskiy, L.S. Sobolev. At that time an epigram presented itself as a short sarcastic poem levelled against some very important person or significant social phenomenon. Being a cartoon of some kind, an epigram often underlines and focuses on particular negative characteristics of an addressee. O.A. Grachkovskya describes this literary genre as the following: '<...> As opposed to a feuilleton, a lampoon or a fable an epigram is distinguished by the utmost brevity and is one of the shortest genres. Modern epigram has been

established as a short, mainly two- or four-line satiric poem with a pointed conclusion in the end expressing the previous implicit idea, i.e. the culmination part of the composition' [2, p. 338].

In terms of composition of verses a Russian epigram may be a conventional couplet (a distich) but often it consists of 4-6 and more verses. Dissimilarity of the expressive and semantic structure of an epigram also correlates with different meters, the structure has diverse expression of negative evaluation. A.A. Rybakova states that 'the basis of satiric and humourous stylistics of an epigram as a genre is the common-literary vocabulary with negative expressive evaluation' [6, p. 120]. Many literary scholars point out a sharp ending as the most essential genre feature of an epigram. Such ending may present itself in different ways; some authors create the ending characterized by incisive expressive evaluativity.

By the middle of the XIX century an epigram started to increasingly address the issue of topicality; a satire, incisive expressive evaluation and implicit sarcasm could be found in epigrams more frequently. Most famous authors of that time were V.S. Kurochkin, D.D. Minaev, M.L. Mikhailov, N.A. Nekrasov. They brought up social issues in their works, expressed criticism against literary and political figures. That is why the major part of extant epigrams are the factor of a literary-social and often sharply political struggle. In his article V.A. Bogomolov wrote: 'Liberty of language, ability to freely name names giving harsh assessment to men alive, freely touching taboo topics, and even a plain freedom to speak one's works without an eagle eye of Glavlit – all of that looked almost impossible at the time of all-round forbiddance' [1, p. 368].

Let us refer to epigrams written in the XIX century. The epigram of 1860 by P.P. Ershov describes Russia as follows: 'Mother Russia hasn't been forgotten // By the heavenly tsar. // Honey rivers have been all over // So have milky seas so far. // Feast is given every hour // To the poor, to the rich. // There's nothing left but our // Idle hands and a spoon to reach'. This epigram is built in the form of an extended didactic story-judgement ending with the author's comment stating that it is the idleness that presents itself as an outstanding feature of Russian people. The epigram's ending is an irony to previous lines characterizing Russia. In his scientific work G.V. Silchenko comments on this epigram as follows: 'A tradition tracing its origin to folklore is manifest in this epigram; the author uses conventional fairy-tale expressions such as 'honey rivers', 'milky

seas'. This emphasizes once again that Russian people in their lives place faith just on a miracle but not in themselves' [7, p. 10].

A big group of P.P. Ershov's epigrams is devoted to moral and ethical themes where he discusses the social values of Russian people and their vices. As the example we may use an epigram expressing an addiction to alcohol: 'So hospitable are the people here // With hearts so thirsty for a drink // That if a donkey comes to visit, he will // Get drunk for joy without batting an eyelid'. By the word «hospitable» the author draws attention to kindness of Russian people meaning that no matter what their guest is (even if it is a donkey), he will be glad to get drunk.

P.P. Ershov's epigrams analyzed above reflect the social and political interests of the poet; they make it possible to clarify his views on the moral and ethical issues. In given epigrams the poet pays special attention to certain characteristics of Russian people and criticizes their negative traits of character such as idleness and passion for alcohol.

Moving on to the epigrams of the XX century we have to mention their incisive negative evaluativity which is expressed by fixed phrases, homonyms, homophones as well as a pan and other lexical units. You may often find vulgar, vernacular words including swear words. A lot of epigrams of private nature were anonymous. In his article L.V. Kuklin gives the following description: 'To my mind, epigrams may be divided into two main types: targeted and untargeted [4, p. 10]. Then he nails his statement down with examples noting that a 'targeted' epigram addresses writers, painters, actors, musicians and political figures while an 'untargeted' epigram addresses literary and political events. In anonymous epigrams authors extensively used various language means with incisive negative evaluation. It should be mentioned that just a few of them were politically and ideologically charged. This is due to the fact that at that time writing about political figures was strictly prohibited. Authors of such epigrams would carry a penalty of a prison term or even an execution.

The following untargeted epigram authored by a Soviet writer L.V. Kuklin may serve as an example: 'Let's soberly ring in the Year of the Snake – // Don't get too deep into the role: // Around you there are your fellow citizens – no matter who you take – // Every single one of them can crawl!'

In the XX century the question of denunciations and political harassment was brought up. Here is L.V. Kuklin's targeted epigram addressing Vsevolod Kochetov, a Soviet writer and journalist: 'Ah,

look, we've come a howler! // The critics have the trots! // We've got just one bestseller – // – What is it?! // – A report!'.

Negative evaluative expressive language used in political epigrams of the beginning of the XX century carried on traditions of the Russian classical (political and literary) epigram which had been developed in the Age of Pushkin. Quite an incisive assessment was given to the tsarist regime and to particular public officials. Thus, during first revolutionary events of 1905 Fofanov K. wrote the following epigram: 'Once people's will gets strong enough to rouse, // They're given right away a direct order: // "You there! Now then, put your lips in order!" // And in a flash a seal's applied to their mouths!'.

It has to be noted that under hard-line censorship, denunciation and repression starting from the 30-s so-called 'kitchen' (underground) epigrams came out; they were articulated in private. As O.V. Grigoryeva states: 'In the epigrams of late post-Soviet period you may observe the expansion of swear words and expressions, caused to certain extent by the fact that under harsh social and political conditions an epigram transformed predominantly into a 'kitchen' genre [3, p. 99]. She also maintains that in 1930-1960-s swear words, when printing, were expressed as one letter and in the post-Soviet time they were printed in full.

The text of the modern poet, critic and journalist E.E. Lesin is a bright example. In his epigram he hints that life in Russia is not good: 'Once the devil guessed right to be born with a soul // And a talent in Russia – to be pitied. // It appeared to us that it all had been well, // It appeared that it'd only appeared.' The poet implies that being born in Russia is not that much of luck. As Pishchulin writes in his article: 'The intent in this epigram is expressed by a pun: 'It appeared that it'd only appeared' [5, p. 283].

Thus, it may be concluded that a Russian epigram of XIX-XX centuries had an incisive satiric orientation; the period was mainly devoted to ridiculing of critics, writers and other people of art; you could often find politically charged epigrams representing particular events. It has been mentioned that starting from the middle of the XX century you could come across the epigrams where authors were dismissive of not only men of importance but also of the entire Russia.

References

1. Bogomolov N.A. From the Soviet epigrams of 1930-1940-s, Modern literary review, 2016, No. 2 (138), pp. 368-373. (in Russian)

2. Grachkovskaya O.A. Epigrams and caricatures: the issue of distinction between the literary genres, Kiev National University of Culture and Arts, No. 4-1, 2014, pp. 337-341. (in Russian)
3. Grigoryeva O.A. Linguostylistic peculiarities of an epigram of the Soviet and post-Soviet period, Culture life of Russia's south, No. 3, (50), 2013, pp. 97-99. (in Russian)
4. Kuklin L.V. Literature is a fun: amusing literature studies (articles, essays, character sketches). Journal Neva, Saint Petersburg, 2006, pp. 7-33. (in Russian)
5. Pishchulin P.S. Genre-forming nature of a pun (as exemplified by an epigram), European journal of social sciences, No. 6 (45), volume 2, Moscow, 2014, pp. 282-288. (in Russian)
6. Rybakova A.A. Genre and stylistic usage of expressive and evaluative vocabulary in Russian epigrams of the XIX century, Journal of Adygei State University, series 2: Philology and Study of Art, No. 2, 2011, pp. 118-123. (in Russian)
7. Silchenko G.V. Distinctiveness of epigrams on moral and ethical topics written by P.P. Ershov, Journal of ISPI named after P.P. Ershov, 2014, No. 1 (13), pp. 9-11. (in Russian)

SECTION VI. Educational Sciences

Danilova M.V.

Head of the Department of Social Pedagogy and Psychology,
Associate Professor, PHD
Vladimir State University named after Alexander
and Nikolay Stoletovs, VISU

THE ESSENCE OF SOCIAL AND PEDAGOGICAL WORK WITH MIGRANT STUDENTS IN THE CONTEXT OF THE CONTEMPORARY MULTICULTURAL SITUATION¹

Abstract: The article provides an analysis of the data of the Federal State Statistics Service in terms of the problem under consideration. It justifies the need to develop a complex model of social and pedagogical work aimed at integrating children, adolescents, and young people into a new socio-cultural environment as part of the implementation of the main provisions of the Concept of Demographic Policy of the Russian Federation for the period up to 2025.

Key words: migration, multicultural situation, migrant students, social and pedagogical work, concept.

The current socio-demographic situation in Russia is characterized by multiethnicity. According to the Federal State Statistics Service, the migration increase in the population of the Russian Federation in 2016 was 2,61948 people, which is a relatively stable indicator over the past 5 years (for comparison: 2015 – 245,384 people; 2014 – 299,990; 2013 – 294859; 2012 – 294930) [1].

The 2010 All-Russian Population Census indicated certain changes in the national composition of the country compared to the 2002 census, but approved the image of the Russian Federation as one of the most multi-ethnic states in the world — more than 180 nationalities (ethnic groups) live in the country [3].

This statement and figures can be treated differently, but this is a real reality, which dictates strategic guidelines in the development,

¹ The article is published in the framework of the RFBR, project No. 18-013-00553 \ 18

including the educational concept, which will allow teachers to determine the priorities of the educational process.

It should be noted that practically the only source of increase of the population of our state since 1992 has been migration, which in turn has affected all spheres of life of Russian society. The influx of migrants from Central Asia, Moldova, Caucasus, the bulk of which is not only the Russian-speaking population, led to a significant change in the ethnic and demographic situation, the overload of the socio-cultural infrastructure, primarily, secondary schools. It is necessary to point out that in recent years, a number of schools and educational organizations have accumulated sufficient experience in the field of solving the priority problems faced by the children of migrants and their families. But such practice, as a rule, does not extend beyond the region and is not known to a wide range of specialists working with this category of children.

The concept of the demographic policy of the Russian Federation for the period up to 2025 confirms the development of the migration component, and in this regard, among the tasks to attract migrants in accordance with the needs of demographic and socio-economic development, among others, are:

- development and implementation of federal and regional programs aimed at creating favorable conditions for the adaptation of immigrants to new conditions and their integration into Russian society based on respect for Russian culture, religion, customs, traditions and lifestyle of the Russians;

- creating conditions for the integration of immigrants into Russian society and the development of tolerance in relations between the local population and people from other countries in order to prevent ethnic and religious conflicts [2].

The Russian Federation, as a multinational state, considers it necessary to create a strategically complex model of social and pedagogical work aimed at integrating children, adolescents, and young people into a new social and cultural environment, which in turn should include consideration of the following areas of activity: legal, socio-economic, psychological and pedagogical. The existence of publicly accessible legal, psychological counseling centers for migrants, psychological and rehabilitation children's institutions, organization of cultural and educational events, clubs, and conversations with law enforcement officials should be an integral part of the socio-cultural life of any region of the Russian Federation.

It should be noted that the problem of integration should not be considered unilaterally. The adoption of "new" members of society, "outsiders", for the majority of native people is not so straightforward. Educating tolerance through the school is at the same time working with parents, which means a significant expansion of the field of tolerance among a significant part of the Russian population.

In the light of the above, it is obvious that there is a need for training specialists to work with this category of children in multi-socio-cultural conditions. Higher education today should produce specialists who are socially and psychologically prepared for cooperation in a modern multinational environment, maintaining their socio-cultural identity and seeking understanding and agreement with representatives of different nationalities. Meanwhile, one should not ignore the problem of retraining, which should be resolved in the work of professional development courses and internships. In our opinion, the solution of this problem field should be extended not only to social teachers, psychologists and educational psychologists, but also subject teachers who implement the educational process and act as class teachers.

The priorities in the thematic construction of training programs include the following: the basics of multicultural education; international acts and legislation of the Russian Federation on migration; content, forms and methods of working with migrant students (legal, psychological and pedagogical aspects); socio-psychological characteristics of this category; foreign and domestic cross-cultural integrated programs.

The effectiveness of the functioning of a multicultural space is determined by certain qualitative parameters: features of the socio-historical lifestyle, the growth of migration processes in the country, the specifics of the subject's living environment (diaspora in a provincial multiethnic city, the metropolitan multiethnic metropolis, a multiethnic city within its homeland), pedagogical potential (realization of multicultural component of education). Therefore, the tendency to search for new forms of interaction between different ethnic cultures within the framework of one space is significantly relevant.

One of the priority tasks is the formation of the all-Russian identity, which is a factor in civil solidarity and consolidation of representatives of various peoples and confessions. Multicultural educational space, focusing primarily on the younger generation, is designed to support the development of regional youth and

community initiatives aimed at the formation of integrative characteristics: ethnic tolerance, culture of interethnic communication, citizenship. It should be emphasized that these characteristics presuppose a dialogue of cultures, a critical understanding of one's own cultural tradition, overcoming ethnocentric fixation, nurturing tolerance through recognizing the equality of all to conscious and responsible social behavior, which leads to the mutual enrichment of the ethnic cultures that make up society.

Thus, the basis of social and pedagogical work with migrant students (internally displaced persons and refugees) is a holistic, multi-dimensional system of measures that takes into account the legal (determination of status and benefits provided by law); socio-economic (housing, financial assistance); psychological (studying the child's personality, his family and guiding his development) and pedagogical (curriculum selection) aspects.

References

1. Демография. Федеральная служба государственной статистики. URL: [//http://www.gks.ru/wps/wcm/connect/rosstat_main/rosstat/ru/statistics/population/demography/#](http://www.gks.ru/wps/wcm/connect/rosstat_main/rosstat/ru/statistics/population/demography/#)
2. Концепции демографической политики Российской Федерации на период до 2025 года. URL: <http://www.demoscope.ru/weekly/knigi/konceptiya/konceptiya25.html>
3. Национальный состав страны. URL: <http://www.statdata.ru/nacionalnyj-sostav-rossii>

Konsulova S., Dimitrova M.

Snejana S. Konsulova - PhD-Associate Professor, PhD, Faculty of Engineering and Pedagogy-Sliven, Technical University-Sofia;
Marina I. Dimitrova - Assistant, PhD, Faculty of Engineering and Pedagogy-Sliven, Technical University-Sofia

PREPAREDNESS OF STUDENTS TO DEAL WITH CHALLENGES IN THE MULTICULTURAL CLASS ROOM

The strategic directions for integrating students from ethnic minorities illustrate the key role of education in building a higher culture of tolerance and inclusion. Concerning the educational structure, one of the main objectives of the Europe 2020 strategy is to improve the educational level of the population, in particular, reducing the share of early school leavers and increasing the share of the population with tertiary or equivalent higher education.

A Strategy for Roma Integration (2012-2020) has been developed and adopted in Sliven region. It was developed as a result of partnership between the responsible institutions and the civil sector, in particular Roma non-governmental organizations. It is in line with international standards in the field of human rights and the rights of persons belonging to minorities to which the Republic of Bulgaria has acceded.

The modern educational environment is diverse and accompanied by many challenges. One of them is multicultural interaction. Future educators, in the process of communication, exchange and sharing face, overcome difficulties of a different nature in the multicultural classroom.

Different cultural groups, each with its own traditions and customs, are a challenge for which they are not always ready. It is necessary to build a new complex of skills for communication and knowledge for others, for acceptance of difference, for tolerance towards others. Intercultural competence is one of the key objectives of modern education.

Working in a multicultural classroom is often difficult, but enriching and fruitful. Although part of a common group - students are different and unique with their abilities, talents and interests. Educators must take account of these differences in order to ensure the learning and development of each student.

This educational environment requires increasing mutual understanding, reducing social exclusion and promoting inclusion. It is related to respect, observance of basic human rights, preservation of the religious, cultural and ethnic identity of learners.

In Bulgaria, the awareness of the ethnic structure is essential. According to data from the National Statistical Institute, the Roma ethnic group in Sliven region is the second largest (about 12%), the third is the Turkish ethnic group (about 10%). In recent years, our country has adopted new ethnic groups, formed by refugees or emigrants in the country.

According to the data of the Regional Education Directorate, in the school year 2018/2019 in the Sliven district (the municipalities of Sliven, Nova Zagora, Kotel and Tvarditsa) there are 71 schools with a total number of pupils - 22141. Most of them predominate pupils from Roma, Turkish and other ethnic groups.

The curricula at the Faculty of Engineering and Pedagogy in Sliven at the Technical University of Sofia are in line with these facts. This requires the preparation of the students pedagogues in disciplines such as *Innovative approaches in multicultural environment; Intercultural education; Integration of children with SE; Methods for work with children and young people at risk, Inclusive education* and others.

The specifics in the training of the students educators about the realities and challenges of the multicultural classroom are expressed in two interrelated and complementary directions:

- Theoretical-methodical (containing instructions for the teacher's work in this environment);
- Practical-applied (related to training and good practices observed in basic schools).

In the training and preparation of the students work is done for the formation of competences, models of behavior and strategies such as: taking into account the ethno-cultural specificity and the cultural identity of the students; effective intercultural interactions; models for student needs assessment; teaching strategies for working with pupils and minority parents; application of basic techniques of learning, observation, listening, understanding, communication, group work techniques; methodological competences for class management and individual approach.

Particular attention is paid to the students' ability to: listen and understand the reasoning of others; clear expression of thought; free participation in discussions; accepting foreign arguments and

changing the point of view; teamwork; intercultural exchange and community dialogue; analysis and adaptation of different programs and study documentation in working in intercultural environment; application of interactive methods and training techniques.

The focus is on intercultural pedagogy, pedagogical interaction and cooperation; educational relationships as a result and condition for effective pedagogical interactions, mutual knowledge, understanding, influence and self-knowledge in communication; quality features of intercultural communication.

The classroom should provide equal opportunities for all students. Very often, students from different ethnic groups face enormous challenges such as learning a new language, accepting their classmates, dealing with stress, fear and even hostility when they are admitted.

In order to integrate students successfully, educators should feel responsible for the success of young people in schools, showing them how to acquire a cultural perspective.

Teachers' Preparedness includes observing certain principles:

- respecting the human rights of all and creating conditions for reducing prejudices;
- Impartiality and equal treatment of each of the participants in the communication;
- Providing conditions for free expression and expression of opinion to all children and participants in the intercultural environment;
- Encourage self-esteem, spontaneity, curiosity and self-discipline;
- Teaching through integrated learning content. [3]

School and teachers must ensure the creation of an inclusive environment in which each student feels calm, confident and safe. This is related to the natural need of everyone to want to belong to a group - to be valuable, protected and guaranteed interests. A multicultural classroom should create a sense of belonging to students from different ethnic minorities and cultures as they have in their family or in their community, where the ties are close and strong. Knowing that students succeed in an environment, where they feel secure and welcome, teachers should ensure that all students feel involved in the classroom and at school.

References

1. Ivanov, I., Problems of Pedagogical Work in the Multicultural Classroom, Diversity without Borders, Ed. Faber, 2008, p. 27.
2. Konsulova S., Dimitrova M. Integrating students from ethnic minorities - strategies, objectives, directions, V international scientific and practical conference, Ukraine, Vinnytsia, 2018.
3. Handbook "Working with children from different ethnicities and cultures" for pedagogues, school leaders, psychologists, pedagogical advisors, Association for Progressive and Open Communication, Sofia, 2015.

SECTION VII. Architecture and Construction

UDN 691

Kutliyarov D. N., Kutliyarov A. N., Tuleuzhanov B. B.

Kutliyarov D. N. - associate Professor, candidate of technical Sciences, the faculty of construction and environmental management;
Kutliyarov A. N. - associate Professor, candidate of economic Sciences, the faculty of construction and environmental management;
Tuleuzhanov B. B. - student, the faculty of construction and environmental management.

Bashkir State Agrarian University

MODERN CONSTRUCTION MATERIALS FOR BUILDING FACADES

In the modern era of the construction industry appearance of the building plays a very important role, as a person primarily relies on the visual perception of the world. Therefore, it is necessary to choose the right finishing materials for the facades of buildings. The perception is influenced by many factors: color, texture, overall architectural style.

Facade finishing is one of the final stages of construction. It is from its harmonious combination with the homestead area and landscape depends on the aesthetic appearance of the entire building.

It is worth saying that the decorative finishing of facades has recently become incredibly popular.

Designers and architects are well aware that if you qualitatively equip the facade of the building, the cost of the house rises and a lot, so talk about the owners of large offices and buildings in principle is not necessary, because for them the facade of the building is extremely important. Actually, for these reasons, the decorative finishing of facades has gained such an impossible relevance.

It is believed that the finishing materials do not directly affect the strength and reliability of the house, but they are quite stringent requirements that should be taken into account in the construction: attractive appearance, compliance with the architectural appearance of the building and surrounding buildings; frost resistance; wear resistance; resistance to ultraviolet radiation; the ability to withstand wind loads; if possible, air permeability, because if you use materials that do not allow air, the building will require an additional ventilation system or frequent ventilation, which can cause inconvenience; compliance with the requirements of heat engineering; resistance to fire, if possible.

Facade materials are of different types and purposes. Each material has its own technical features.

Let's focus on the basic materials and types of finishing works:

1. Decorative plaster. The biggest plus - the maximum possible alignment of surfaces, and minus-the complexity. The most popular mixture - lime mortar, cement-sand mortar and gypsum mixture. Created textured surfaces are easy to paint.

2. Facing brick. Classic environmentally friendly material that does not burn, breathes and retains heat. Begins to invest from a height of not less than 70 cm from the ground level - so as not to absorb moisture.

3. Facade cassettes. Cassette-galvanized steel with polymer coating of various colors. Durable and easy to install material related to the system of ventilated facades.

4. Porcelain stoneware. This facade is characterized by durability and ease of maintenance. There is a complex of four parts: the supporting frame, a layer of insulation, waterproofing membrane and the actual granite.

5. Siding. The easiest material for installation, yet cheap. It is characterized by numerous variants of colors. **Натуральный или природный камень. Отличается долговечностью и эстетической**

привлекательностью. Хотя отделка этим материалом дорогая и трудоемкая.

6. Sandwich panel. Two layers of hard metal, fastened with insulation, provide excellent thermal insulation. Long-lasting and durable option, as used in the manufacture of hot pressing technology. Now the panels are smooth, profiled or decorative.

7. Block house. Today has become a popular trend to decorate their homes with wood and various wood materials. By and large, the block house is one of the varieties of lining, only its outer side has the form of a round log. So your house will resemble a house from a log house.

So, now the construction market offers a wide range of finishing materials for the facades of various buildings. However, despite its diversity, it is necessary to make the right and informed choice, taking into account the requirements of aesthetics, safety, ecology and economy.

Literature

1. Decorative finishing of facades [Electronic resource].- Access mode: <http://wrongmag.ru/2014/03/31/aktualnost-dekorativnoy-otdelki-fasadov-zdaniy-v-sovremennosti/>2. - 05.11.2016.

2. Finishing requirements [Electronic resource].- Access mode: <http://domzastroika.ru/fasad/materialy-dlya-naruzhnoj-otdelki-chastnyx-domov.html#i-5>. - 05.11.2016.

3. Kutliyarov D. N., Kutliyarov A. N. Features low-rise construction // In collection: problems of conservation and transformation of agricultural landscapes proceedings of the International Internet-conference dedicated to the 225th anniversary of the birth of S. T. Aksakov.Ufa, 2016. P. 227-229.

4. Kutliyarov D. N., Kutliyarov A. N. Risk analysis and probability of failure on hydraulic structures of the Republic of Bashkortostan // Bulletin Bashkir state agrarian University. Ufa,2010. No. 2. P. 67-72.

5. Kutliyarov D. N., Kutliyarov A. N. Housing issues in the Republic of Bashkortostan // Materials of International scientific-practical conference dedicated to the 80th anniversary of Bashkir State Agrarian University. State, problems and prospects of development of agriculture Bashkir state agrarian University. Ufa, 2010. P. 189-190.

Kutliyarov D.N., Kutliyarov A.N., Mustafin R.F., Amanov A.D.

Kutliyarov D.N. - associate Professor, candidate of technical Sciences, the faculty of construction and environmental management;

Kutliyarov A.N. - associate Professor, candidate of economic Sciences, the faculty of construction and environmental management;

Mustafin R.F. - doctor of agricultural Sciences, the faculty of construction and environmental management, Bashkir State Agrarian University;

Amanov A.D. - student, the faculty of construction and environmental management.

Bashkir State Agrarian University

SYSTEM ARCHITECTURAL PLANNING

The architecture of the world is beautiful and rich, as well as the nature of our planet. Each individual ethnic group has its own unique style. The history of the World has developed so that more ancient civilizations were formed in the East, it is China and India. Indian architecture is striking in its special colours, never confuse it with any other, its origins date back to III Millennium BC Architecture of India is fascinating in that it is always in the depth of the lies, some meaning.

The traditional Hindu system of architectural planning and design is called Vastu-Shastra. Vastu-Shastra in Sanskrit means: Vastu-place, house, dwelling, room, Shastra — science, treatise. This is a very ancient science of creating a harmonious living space, and this means not only a room, apartment or house, with the help of Vastu-Shastra you can build a whole city. Proof of this is the city of Mohenjo-Daro, which arose in the Indus valley, about 2600 years BC, when it was discovered by scientists, it was amazed, its almost perfect layout. The city was a network of blocks separated by wide streets with a developed drainage system, which were divided into smaller ones, as well as the presence of complex irrigation and religious buildings. In Mohenjo-Daro were found almost the first public toilets known to archaeologists, as well as the system of urban Sewerage [1]. This city has become a legend.

The ancient science of Vastu-Shastra, which came to us through the millennia, has not lost its relevance. People because of the modern way of life, are constantly in stressful situations, and it is the house that becomes the place, coming to which, you want to feel harmony, peace and order. To create a comfortable environment and improve

the living space of Vastu-Shastra, it is necessary to understand what rules and laws it is based on.

Vastu-Shastra is a very difficult science for human perception, as the primary sources were formulated thousands of years ago, and all the laws are explained with the help of religion. Therefore, there is a large amount of literature written by modern masters Vastu, who explain to us this system as an exact science. In turn, it is closely related to such Sciences as mathematics, astronomy, astrology, geometry and philosophy.

When creating a living space on Vastu-Shastra, it is necessary to take into account the position of the house relative to the sun and the cardinal directions. Each side of the world is connected to a certain planet, as the Earth is under the influence of other cosmic bodies. The West is under the influence of Saturn, the North is under mercury, the East is under the Sun, and the South is under Mars. Each of the planets has a certain influence on a person, spiritual and physical well-being depends on it[2].

In ancient India, there was also the concept of the five primary elements, it is water, fire, earth, air and ether. Each primary element symbolizes the verses, and they are all inside the house and located on the sides of the world. Each element carries its own specific strength and energy. Ether-the primary element, the space in which to be, all other elements and flows of cosmic energy. The center of the house on Vastu, is the place where the ether is concentrated. Fire is heat and light, which gives the owners of the house prosperity, so you should try to make room in the house well-lit, South-East of the house to be under the action of fire. Air-movement in the house, its purity is very important, this element creates an atmosphere of freshness and lightness in the house, under the influence of this element are the North-West. Water is a dynamic element in her life began on the Earth, and in the room it brings the energy of expansion and increase. The North-Eastern part is under the influence of this element. Earth is the tangible element, its basic qualities, it is static and the density. It is worth noting that the South-West side of the house, is influenced by this element, the presence of energy in the house of the earth, bring stability. The balance of the five primary elements in the house depends on the correct arrangement of objects symbolizing each of the elements. Thereby creating a harmonious environment for human habitation[3].

When designing a house master Vastu advised to place the entrance on the North side, as it can be on the East side. The Windows facing the North-East bring health and well-being. In the bedroom it is very important to arrange the bed, it is desirable to allocate under her South-Western corner of the room, the opposite corner, the North-East is better to leave empty. Appliances in the bedroom should be located in the South-East corner. The Cabinet is located in the North-West or South-West. Sleep should head East or South, but not North. Just the bedroom itself should not be designed on the North side of the house, it is better to place the living room there. The Southeast corner of the house is a good place for the kitchen, the dining table should be on the Northwest or West side of the kitchen, eat better facing East. It is very important that the space in the center of the house remains free, it should not be cluttered, because it is believed that there is a flow of cosmic energy. So often in ancient India there was a chapel, in modern houses there can be a spacious hall [2].

Creating a house on Vastu-Shastra, we must remember that this science is based on Hinduism, which is considered to be that everything on the planet is residential. A house is not just a building consisting of walls, floor and ceiling, it is something more. The house is inhabited by Vastu Purusha - it is a kind of thin matter, in its appearance is similar to a man as a house, but it's not quite what was considered to be in Russia. It is rather a body that completely covers the space of the house. Therefore, it is very important to build a house, the correct form, for a comfortable location in it Vastu Purusha. Square or rectangular shape, so that all parts of the body fit and were harmoniously arranged. If one of the parts of the Keeper of the house is missing, it is believed that the owners will be in trouble, depending on what it is deprived of the spirit. Vastu Purusha has a direct connection with the primary elements and the sides of the world, it is also worth remembering that his head is always directed to the North-East side of the house, and his feet, respectively, to the South-West. Creating a project of the house, as well as its construction, it is necessary to take into account the features of the existing building, construction and sanitary norms [4,5].

The science of Vastu-Shastra, which came to us through the millennia, keeps the knowledge that helps to understand how important the connection with the universe is for a person. This science seeks to create favorable conditions for life. What a person builds must exist in harmony with the world around, as well as the person himself. The house, which is designed by Vastu-Shastra,

becomes a source of energy, as it takes into account all natural phenomena. The direction of the cardinal points and their connection with celestial bodies, the elements, and with the man himself.

Literature

1. Site property of the planet [Electronic resource]. - Access mode: <http://dostoyanieplaneti.ru/873-mokhiendzho-daro>, free. The title. from the screen.

2. Website VEGETARIAN [Electronic resource]. - Access mode: <https://vegetarian.ru/authors/post/vastu-garmoniya-i-zdorove-v-vashem-dome>, free. The title. from the screen.

3. Website VASTU Chastra-harmony of Your Home [Electronic resource]. - Access mode: http://vastu.3dn.ru/index/garmonija_5_ehlementov_prirody/0-9, free. The title. from the screen.

4. Kutlyarov, D. N. Features low-rise building/ [Text] D. N. Kutlyarov, A. N. Kutlyarov // In collection: Problems of conservation and transformation of agricultural landscapes proceedings of the International Internet-conference dedicated to the 225th anniversary of the birth of S. T. Aksakov. 2016. P. 227-229.

5. Kutlyarov, D. N. Housing issues in the Republic of Bashkortostan / [Text] D. N. Kutlyarov, A. N. Kutlyarov // Materials of International scientific-practical conference dedicated to the 80th anniversary of the Bashkir state agricultural UNIVERSITY. "State, problems and prospects of development of agriculture" Bashkir state agrarian University. Ufa, 2010. P. 189-190.

SECTION VIII. Psychological science

Rukina Maria Vladislavovna

Master's student

Department of social and developmental psychology
Tambov State University named after G.R. Derzhavin, Tambov,
Russia

TEACHERS' PSYCHO-EMOTIONAL BURNOUT AS A PROBLEM: APPROACHES, PERSPECTIVES

Increased scientific interest to the person as to the subject of labor draws the attention of specialists to the changes that occur with the person in the process of performing professional activities. Any profession initiates professional deformations of personality but socionomic professions are considered to be the most vulnerable [1, 7, 10, 11]. This group is represented by individuals who do "people work" of some kind (doctors, social welfare workers, psychiatrists, child care staff, teachers, police officers, prison personnel, psychologists and so on).

Professional activity of teachers is stressful; it requires large reserves of self-control and self-regulation. Emotional stability of a teacher is necessary to overcome possible negative changes, such as a syndrome of emotional burnout.

The burnout syndrome phenomenon was identified for the first time by the American psychiatrist H. Freudenberger in 1974. He described the burnout syndrome as the result of the workers' longstanding exposure to occupational stress. This was the first investigation not only of the workers' feeling about their employment but also of the identification and description of the burnout syndrome as well [12, 13].

Since the term "emotional burnout" appeared, the study of this psycho-social phenomenon has been difficult due to its multicomponents and conceptual ambiguity [14].

There are several scientific approaches to the study of the emotional burnout syndrome: individual, interpersonal, and organizational. However, they do not provide a single system of psychological determinants of this phenomenon [3, 4, 8].

For example, features of motivational and emotional spheres of the personality are observed *in the individual approach* as the reasons of the emotional burnout.

The interpersonal approach finds these reasons in the disharmony of relations between workers and recipients.

Representatives of *the organizational approach* refer working environment factors (e.g. peculiar properties of the organizational structure, extensive field of operations) to the determinants of the emotional burnout.

Regardless, most researchers agree [2, 5, 8, 12, 13, 14] that burnout is a syndrome consisting of a complex of different symptoms:

1. Physical symptoms – lowered immunity, rapid fatigability; exhaustion; reduced or increased weight; insufficient sleep, insomnia; dizziness; arterial hypertension;

2. Emotional symptoms – irritability, aggressiveness; psychic tension; pessimism, cynicism; loss of life ideals and hopes; detachment; depression;

3. Behavioral symptoms – procrastinating, taking longer to get work done; lack of physical exercises; frequent using tobacco, alcohol, medicaments;

4. Social symptoms – lack of time or energy for social activity; sense of isolation; decreased interest in leisure or hobby; feeling of insufficient attention and support from family, friends, colleagues;

5. Cognitive symptoms – reduced interest in new theories and ideas in work; indifference to innovations; non-participation in developmental experiments (training, education).

So, to sum up, the emotional burnout syndrome refers to the complex of various psychological problems arising in the individual's professional activities. Most often, emotional burnout is defined as a phenomenon that can occur due to immense workload, frustration, loss of motivation to work. Moreover, it includes the feeling of emotional exhaustion, negative self-perception, deprivation of professional qualities.

At this point it should be noted that not all symptoms must be present in a "burnt" person. Rather, the name of burnout as a syndrome is used when certain symptoms are present. They do not always have to be the same, and it is not specified how many exactly. Maslach and Jackson, who are best known as the pioneering researchers on job burnout, stress that one can only speak of burnout when all three components – emotional exhaustion, depersonalization and diminished personal accomplishment – are present [13, p.13].

Researches in this field indicate that the emotional burnout syndrome is "infectious": it influences not only the employees but also people who are forced to communicate with these specialists, and therefore they become "hostages of the syndrome" [4], [7], [13].

It is noted that the psycho-emotional burnout is a prolonged process that develops gradually and goes through several stages [2], [8], [13]. As a rule, having appeared once, it has a tendency to gradual and constant development. Studies in this area point out that in case of temporary career break signs of the syndrome are not expressed, but after the resumption of professional duties it is restored to almost the same level [6].

The analysis of theoretical and empirical studies allowed us to identify the factors determining the psycho-emotional burnout of teachers. They can be differentiated into external (objective) and internal (subjective) factors [2].

The origin of emotional burnout cannot be clearly associated with certain factors. This is the result of a complex interaction of the person's characteristics, his communication with recipients and administration, psychological climate in the personnel.

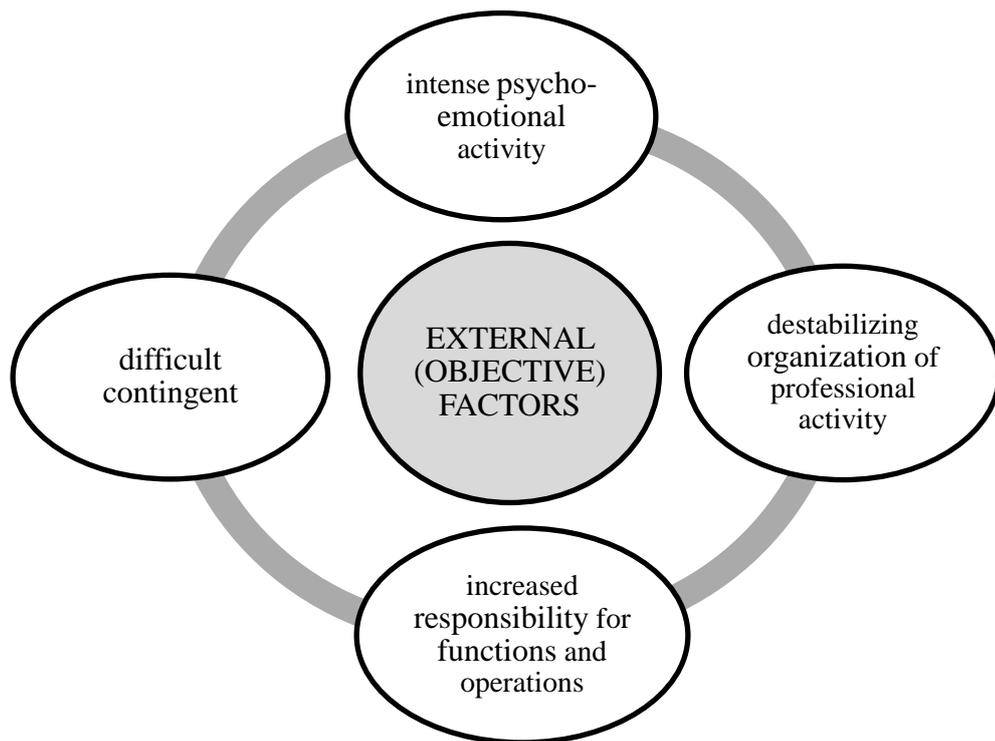
Researches prove the fact that people who consciously care about their physical condition, who are confident in themselves, their abilities and capabilities, are less impacted by the psycho-emotional burnout.

It should also be emphasized that emotional burnout less concerns people who have experience of successfully overcoming professional stress and are able to change constructively under pressure.

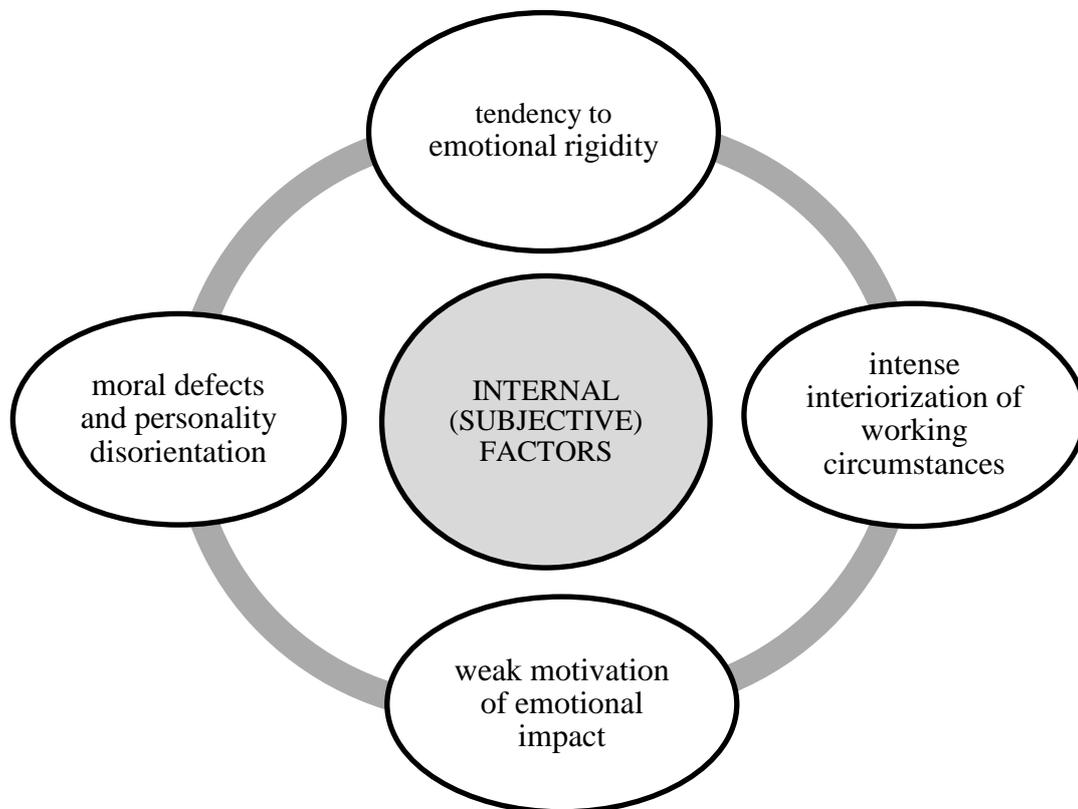
But there is a doubt: do tense situations in professional practice always negatively affect the personality of a teacher?

Canadian scientist H. Selye, who actually conceived the concept of stress, considered stress more positively. He distinguishes two main types of worry— eustress and distress. Distress is always unpleasant, it is associated with harmful stress. Eustress is combined with a desirable effect – mental processes are activated, emotions are asthenic [13, p. 16].

Perhaps stressful situations are an important condition for rethinking oneself and one's activities for further development. Many authors believe that the very job satisfaction is the result of successful work, when the employee overcomes various difficulties arising in his professional activity [9, p. 41].



Pic.1. The external factors determining the psycho-emotional burnout of teachers



Pic.1. The internal factors determining the psycho-emotional burnout of teachers

Thus, in addition to identifying the negative consequences of professional stresses that provoke emotional burnout of teachers, it is necessary to study such difficult working conditions that, on the contrary, would bring special meanings to the work [9], [14]. On this basis, it would be possible not only to develop general psycho-hygienic and medical standards of teachers' work but also to form the willingness of specialists to develop individual boundaries of their working loads at a particular stage of their professional development. This is how we imagine the prospects for further studies of the emotional burnout syndrome.

References

1. Beznosov S. P. Professional deformation of the personality. St. Petersburg, 2008, 371 p.
2. Boiko V. V. Psychoenergetics. St. Petersburg, 2008, 416 p.
3. Borisova M. V. Psychological determinants of teachers' emotional burnout: abstract of dissertation. Yaroslavl, 2003, 29 p.
4. Vodopyanova N. E., Starchenkova E. S. Burnout syndrome: diagnosis and prevention. St. Petersburg, 2008, 336 p.
5. Zeer E.F. Psychology of professions: a textbook for university students, 2nd edition, Moscow: Academic Project; Yekaterinburg: Business Book, 2003, 336 p.
6. Ilyin. E.P. Differential psychology of professional activity. St. Petersburg, 2008, 432 p.
7. Mitina L. M. Psychology of personal and professional development of subjects of education. Moscow, St. Petersburg: Nestor-History, 2014, 376 p.
8. Orel V.E. Mental burnout syndrome: myths and reality. Kharkov.: Humanitarian Center, 2014, 296 p.
9. Pryazhnikov N.S., Ozhogova E.G. Emotional burnout and personality deformations in psychological and pedagogical activity. *Moscow University Psychology Bulletin*, Vol. 14, No. 4, Psychology, 2014, pp. 33-43
10. Rogov E.I. A Handbook of Practical Psychologist: tutorial in 2 books, 2nd edition, Moscow: Humanitarian Publishing Center VLADOS, Book 2: The work of a psychologist with adults. Correctional techniques and exercises, 1999, 480 p.
11. Symanyuk E.E. Strategies for professional self-care. *World of Psychology*, No. 1, 2005, pp. 156-162
12. Chutko L.S., Kozina N.V. Emotional burnout syndrome. Clinical and psychological aspects, 2nd edition, Moscow: MedPress-Inform, 2014, 255 p.

13. Kunz D., Nido M., Burnout im Lehrberuf, FHNW, Kompetenzzentrum RessourcenPlus R+, 2008. 63 p.
14. Schaufeli, W.B., Leiter, M.P., Maslach, C. Burnout: 35 years of research and practice, *Career Development International*, Vol. 14, No. 3, 2009 pp. 204-220.

SECTION IX. Social sciences

Khashaeva Anastasiya Borisovna

research officer of the Department of Sociological researches
of the Budget scientific Institution of the Republic of Kalmykia
«Institute of Complex studies of arid territories»

ABOUT RESEARCH METHODS OF STATE/MUNICIPAL SERVICES AT THE PRESENT STAGE (BY THE EXAMPLE OF THE REPUBLIC OF KALMYKIA)

In modern conditions sociological knowledge finds application in the widest spheres of activity of the society. Competent sociological researches, reliably revealing diversity and essence of various social phenomena, and also regularities of their changes in objective reality, acquire an important role.

Adequacy, authenticity, reliability of results of sociological research directly depends on the choice of purposes and tasks of research, and methods, and tools, application of which will allow to receive them.

Important in the selection of methods of research is the purpose of study, appropriateness and timeliness of its application (i.e. the stage of development of the study and the objectives associated with it should be taken into account), the requirements for the final results. Resource opportunities remain an important factor. With this in mind, you select the most appropriate set of methods.

When choosing a research method, you should consider:

- objectives of research work;
- requirements for the final results of research, their accuracy and reliability;

- time limits, resources, opportunities of researchers and used technical means of research;
- available data on similar studies and actual data, production system and external environment;
- advantages and disadvantages of each of the methods considered.

The field of our sociological activity for many years is the study of the quality of providing state and municipal services to our citizens by the authorities of the Republic.

There are many methods of collecting and analyzing information to obtain objective indicators of quality of provided state and municipal services.

The most frequently used, especially in case of large-scale researches is the questionnaire survey.

As noted above, depending on the goals and objectives of the study selected the most appropriate method. For example, studying the quality of service provision can be used as a method of questionnaire survey, and focus groups, Blitz-poll (contact, postal, Internet, etc.), the method "exitpoll".

When determining the effectiveness of public administration most commonly is used: method of deep interview, expert poll secondary data analysis.

In the analysis of administrative regulations-analysis of documents, content-analysis.

When analyzing the terms of service-surveillance, using a photo- and camcorder.

When revealing the degree of information openness of executive power bodies – questionnaire survey, content analysis, site analysis.

By studying the quality of service provision, we can also rely on the methods used in marketing research: included surveillance; method of control purchase, mystery shopper, "waiting minus perception" algorithm.

The main method in our research is a representative sociological survey of citizens who have addressed to the authorities and institutions providing state/municipal services. The study is conducted according to the unified methodology developed in our country, which clearly spelled out the target values of indicators approved by the Decree of the President of the Russian Federation of 7th May 2012 № 601 "About the main directions of improvement System of public administration".

In parallel in 2014-2015 we have studied the conditions for the provision of state/municipal services. The survey was carried out on the field of receiving services ("exitpoll" method), observation, photo observation in the places of providing state and municipal services [1].

The observation was carried out according to the observation sheet developed by us and included 4 blocks:

- Study of the external state of service delivery objects (condition of signboards, facade, stairs, railings, sidewalks, etc.);
- Territory adjacent to the building of the institution (availability of parking places, ramps at the entrance to the institution, stairs with railings at the entrance to the institution);
- Availability of information accessible to the recipients of services (name of the institution, work schedule, reference stands, information materials, signs on offices, etc.);
- Fixation of the internal state of the building of the institution (lighting, temperature, condition of walls, ceilings, windows, cleanliness, coziness of the premises where visitors are expected).

In 2014, the monitoring was conducted in 10 ministries and departments of the Republic.

The observation showed that the external and internal state of the buildings of the institutions, improvement of the territory adjacent to the buildings of the institutions, is generally satisfactory. In addition to single cases when the unsatisfactory condition (absence of a sign, work schedule, not comfortable premises where visitors are expected) is noted. Not all institutions provide information available to the recipients of services (there are no signs, boards, reference stands, information material, signs on the cabinets, etc.). Weak technical equipment.

According to the results of the questionnaire survey these conditions of provision of state services are satisfied 64,7% (the sum of answers "satisfied", "rather satisfied") of the recipients of services.

These conditions were fixed on the camera.

In 2015, observation was conducted in 11 MFC offices throughout the Republic (2 offices in Elista and 9 district offices). At the time of observation, the multifunctional centres (Iki-Burulskiy, Tselinniy, Sarpinskiy, Oktyabrskiy districts) were not opened in 4 districts.

The observation was conducted according to the previous indicators.

According to observation materials, the external and internal state of buildings of almost all branches of multifunctional centers can

be noted as good. Information block about the provision of state and municipal services is present in each center.

However, it should be noted that all MFC offices, both urban and district, are currently located not in a separate specialized building, but placed in the premises of other institutions, for example, in the building of a district culture house, district museum, in a building of rural municipal education, in the residential house, that is in the adjusted conditions.

88,7% of respondents are satisfied with these conditions of provision of state/municipal services.

In 2016, the method of analyzing sites and analyzing the accessibility of ministries and institutions via telephone channels was used to assess the availability of public/municipal services.

Thus, regardless of the method chosen and used in the future, the greatest effect and objectivity of research work can be achieved by the complex application of methods acceptable for research purposes. At the same time some of them can be effective at one stage of research, and others-on another.

Literature

1. Monitoring the quality of the provision of state and municipal services in the Republic of Kalmykia: Sociological survey, photo observation [was held in 2014-2016, Elista]//Institute of complex research of arid territories; S.E. Lidji-Gorayeva, A. B. Khashaeva, L. N. Sangaeva//Archive of the Department of Sociological researches of Institute of Complex studies of arid territories.

SECTION X. Political science

Maggie Palavandishvili

PhD professor of Georgian State Technical University, Tbilisi

Nino Gilauri

PhD professor of Georgian State Technical University, Tbilisi

SITUATIONAL LEADERS OF GEORGIA

To cover all the material regarding the matter of situational leadership in a small article is really a complicated task and it is a humble attempt on our part.

The word leadership originated from the English verb “to lead”, which means “to head or to conduct/direct”. Leadership comprises the knowledge how to conduct particular groups of people.

The interest in the phenomenon of leadership has been shown in ancient times. Leadership has been mentioned in Old Testament as the skill of conducting people. As the example we should remember what Moses said: “I conduct lessons how to lead people”. Even the Christ himself was the most extraordinary situational leader with thousands and later millions of followers.

In John C. Maxwell’s opinion, who is one of today's top leadership thinkers, “a leader is one who knows the way, goes the way, and shows the way”. He defines leadership as “influence” and people are the object of the leader’s influence that becomes apparent in all spheres of our life starting with official circles and ending with our families. [1]

It is a usual thing that every politician tries to make influence on his followers and in case of success is willing to increase their number. If it, for instance, is a business sphere, the influence should be made on the client, buyer. The same could be said about the advertizing business. This list will go too far as the subject is inexhaustible for today.

There exist a lot of views about the concept of leadership and different notions of the matter. For instance: “a) Leadership is the influence made on a group of people with a view to encouraging their success; b) Leadership is the influence made on people to attain general intent” and so on. [2, 378-379]

Up to the XX century the leadership was considered as characteristics typical for the political leaders and only since the late 40-ies the scientists started this phenomenon investigation.

The first researchers believed that a leader should possess the unity of firm and invariable properties that will mark them out of others. This approach was based on the following notion: “you are not able to become a leader, you should be born a leader”. Though in 2013 the researchers of the University college in London announced about the existence of DNA consistency, which proves that some people inherit genetical possibility to become leaders and they are born leaders. But the approach to our opinion was wrong and gives no practical results. According to our investigation, not a single predecessor of Georgian situational leaders acted like leaders throughout the history.

As it appeared, equally successful leaders “proved various characteristics.” The scientists arrived to a new judgement. They focused not only on the leader and his followers, but the situation itself. They worked out four situational models, which enabled the scientists to view the matter from the different side:

1) Frank Fiedler’s model; 2) Mitchell H.&House R.J. approach – “Path-Goal Leadership Theory”; 3) Hersey, P. and Blanchard, K. H. “The Theory of Life Cycle.” It should be mentioned here that Situational Leadership was developed by Paul Hershey and Ken Blanchard in the late 1960s. 4) Vroom & Yetton “Decision-Making Model” and others.

Based on these models and investigations a new theory of leadership - "situational leadership" evolved, where the leaders have to adapt to the situations they encounter.

Traditionally the scientists define 7 styles of leadership but some of them name even 12: **Charismatic, Participating, Situational, Transactional, Transformational, Quiet, Servant.**

The topic of our article is situational style of leadership.

In case of situational leadership, three factors affect the leader's decisions: the situation itself, the capability of the leader and the capability of the followers. Adaptability is a key point here. The leader needs to be as dynamic, forceful and flexible as the various situations he is faced to.

In accordance with the model of the sociologist Frank Fiedler, who is considered to be the father of situational leadership theory, the efficiency of the team, conducted by the situational leader may be predicted. In critical situations only the most responsible people are

capable to find the solution to the problem, lead the team and take the situation under control in this crucial moment. Exactly such people are considered to be situational leaders. Such leaders should be charismatic and having analytical thinking.

The same issue is considered and discussed by Blanchard K. and Hersey P. who introduced the notion “Situational Leader” and popularized it. [9,9]

There are two main features being necessary for the leader practicing the method of situational leadership - volatility and adaptability.

Blanchard and Hersey as well as Fiedler believe that successful **Situational Leader utilizes 4 types** (styles) of behaviour, action and effect on people. These are as follows:

1. Directing and Telling (orders, instructions, teaching the ways for problem solution). The approach of this style is: “do it this way” and not “tell me what you think. Directing style is good for the subordinates (followers) who “are not capable and do not want”. Here the leader will waste a lot of energy and time, as he is involved in every aspect of problem solution.

2. Coaching and Selling, where the leadership is realized through “selling”. The leader gives instructions, shares his decisions with subordinates (followers) and listens to their opinion. The leader has the prerogative in making decisions. Coaching style is good for the subordinates (followers) who “are not capable but they want”. The leader puts leading questions and gives encouraging remarks in order to develop their self-confidence. He acts in favour of future results.

3. Participating (Supporting), where the leader supports and assists the subordinate. The leader gives instructions required to achieve a certain task, but the subordinate has enough freedom on how to accomplish the task. The subordinate lacks motivation but knows what to do and very often the later is a decision maker. Participating style is good for the subordinates (followers) who “are capable but they do not want”.

4. Delegating (Delegation of tasks) which means: “engage good people and then make way for them”. Delegating style is good for the subordinates (followers) who are capable and want”. The leader needs to delegate his powers to the subordinate (follower) motivating the latter to act independently. Only the final result is controlled. [9]

In view of the aforesaid we may come to the following conclusion:

The model of situational leadership provides for particular style utilization taking into account the situation in which the subordinate (follower) finds himself owing to his skills and knowledge. First the situation should be assessed and then the precise style should be chosen.

It is known that from the very initial moment of its formulating the American military made use of the situational leadership. General George Patton, a high-ranked military leader utilized the situational leadership style. His philosophy how to win the war was based on situation analyses. In his opinion, in order to cope up with the unexpected situation it was necessary to change plans, which means that “the best value of a situational leader is his ability to adjust to what is happening”.

Another specific example of situational leadership is former President George Bush. President Dwight Eisenhower was a brilliant situational leader. To Mike Thureau’s point of view situational leadership has got both strong and weak sides. It is considered to be strong because it is an easily adaptable model of the management. Practically it is the ability to show and utilize various leadership styles that change with the situation. For the situational leader,” there is no single correct way to do something”, and it is perfectly acceptable to change the leadership strategy and the task itself. Situational leaders use the following leadership strategies (styles): **democratic, authoritative or collaborative** and they are adapting themselves to what works best. Though situational leadership can be very flexible, it is not ideally perfect. As Mike Thureau considers, frequent changes can be viewed as a lack of vision or direction. a leader who treats different groups of people differently can be viewed as being unfair, further undermining his ability to lead well. That’s why this type of leadership can be treated as weak and “is not very good for establishing long term stability, and is more suitable to be used when assigned to temporary groupings and projects”.

In our opinion situational leadership is also practiced by doctors and especially by surgeons during the emergency operations, when the surgeon taking into account the patient's condition, has to take decision instantly.

The same could be said about the lawyers. During the court session they should act in compliance with the situation. For instance, owing to fresh evidence given by the witness, the litigation which could have been considered being successful may simply be lost due

to the situation altered. This fact makes the solicitor to instantly change the action plan and tactics.

Also all sports games are connected with constantly changing situation on the playground. The sportsmen should instantly assess the variable situation and react correspondingly.

Situational leadership is justified in educational process, trade, politics and others. In other words, almost in all spheres.

Foreign experts working in the spheres of sociology and politics believe that situational leadership style is an expected role of the presidents. As a specific example they cite the former President George Bush's response and decisions following the bombing of the World Trade Center and Pentagon on September 11, 2001.

Now if we look at the history of Georgia, it becomes clear that the prerequisites of the situational leadership forming should be sought in the period when the Georgievski treaty was signed, which means that the year 1801 should be treated as the initial point of Georgian national movement. Since that date it took a little bit more than 50 years to promote the creation of the suitable situation, facilitating the struggle for the restoration of Georgia's independence, which certainly needed a long period of time and demanded sacrifice from several generations of people living in Georgia, but for the history this period equals to a single moment. Everything was ready for the appearance of a situational leader or leaders on the stage of the history. The situation created promoted the appearance of a famous Georgian writer and publicist Ilia Chavchavadze who, in the opinion of a scientist I. Kveselava, became the leader of national liberation movement of Georgia. [5, 4]

In our opinion I. Chavchavadze used situational style of leadership. Especially in his publicistic essays and articles he practiced the Coaching and Selling type of behavior, where the followers "are not capable but they want". As we have already discussed it above, here the leader puts leading questions to the followers, motivating and stimulating them to find the solution to the given task. Only the final result is controlled.

When using this style (type), it is necessary to explain the task in details, but the leader stimulates the followers to find the solution themselves. In his prose and poetry I. Chavchavadze puts to the reader and, to be more exact, to the nation the questions of this kind. One of the best examples of it is his poem "Lucky nation", where he puts a lot of and gives answers to some of them himself. The involvement of the leader in this type of leadership is very high but simultaneously he

acts in favour of future results, which means that later on the followers will act more independently. I. Chavchavadze was paving the way for the nation to solve the task independently. It was obvious that the whole nation should become matured for the idea of sovereignty and only by the end of the XX century Georgian people were able to realize a dream of long standing.

Publicistic works became a mighty weapon against invaders, though no issue of separation from the Soviet Union was raised at that time. It was a plan ahead, but Ilia Chavchavadze was the one who laid the foundation of the future freedom.

In 1918-1921 Georgia was declared an independent Democratic Republic. Announcement of Georgia's independence and State system restoration internationally, which was in favour of Georgian people, was in close connection with the events launched in Russia. First of all, it took place due to the situation in Russia and the revolution of 1917 was the final point. As it is noted by the professor I. Kveselava "republican structure was being legitimated and it was the pivotal result of the national liberation movement. But the policy of the Soviet Russia posed obstacles to the democratic development of the country. The treaty of May 7, 1920 completed between the two countries practically was similar to those of 1783 (The so called "Georgievsky Tractat"). Later, on February 25, 1921 the annexation of Georgia followed. Wheel of the history rotated backwards. Despite the fact that the whole government of the first republic was expatriated from the country, it initiated an ineffective revolt of 1924. Georgia was "sovietized" forcibly and the country was let the status of a limited statehood within the Soviet Union." [5, 51-54]

The World War II again reminded the society of national movement: the plot of 1942 and detainment of the students of Georgian State University in 1948. Their principal objective was the struggle against the totalitarian regime. The 1940s were followed by events of March 9, 1956. "The tragic episodes of that year were serious claim of the national movement. Exactly that very moment became the starting point of secret anti-soviet organizations forming. Dissident movement being in close contact with Georgian political emigration was launched." [5, 63, 67-68]

The years of 1970-1991 are the most important in recent history. These years paved the way to all the events which successfully were concluded by the bloody episode of April 9 at the very end of the century and the declaration of the country's independence. In the opinion of the scientist I. Kveselava "the political, economic and

social crises of the Soviet Union motivated the stirring up of the national movement. In 1976 two dissidents – Zviad Gamsakhurdia - the future President of Georgia and Merab Kostava set up Georgian “Helsinki Group”, which took an active part on the issue of human rights protection. People were ready for everything. It was the period of revival and the period of awakening. The national movement achieved its first victory in spring of 1978, demanding the introduction into the constitution of Georgia of the item confirming the fact that the Georgian language remained the State language of the country. [5, 69-73]

This complicated situation made for the appearance on the stage of a situational leader – Zviad Gamsakhurdia. The dissident Zviad Gamsakhurdia became the main organizer of all peaceful mass actions. In 1989 peaceful protest riots in Rustaveli avenue of the capital of Georgia grew into a vast mass-meeting. It was obvious that the situation having such favourable conditions will not take place for a century or two in the future. The leaders of the meeting understood it perfectly well. It was the end of the XX century and the beginning of the XXI. And how the nation will meet a new one – yoked in or independent greatly depended on the events that developed on April 9 of the same year. The given situation instantly transformed two dissidents to the leaders of national movement, as the issue could not be solved and completed by anybody else except them.

We believe that both Z. Gamsakhurdia and M. Kostava acted in accordance with the delegating type of the situational leadership where the followers “are capable and want” and are highly motivated and competent to implement the planned task. As we have already mentioned above, the leader needs to delegate his powers to the followers motivating the latter to act independently.

People, in other words the followers, were ready and experienced enough for that period of time. The publicistic works of the writer and poet I. Chavchavadze, poems and novels of A. Tsereteli and later the dissident literature paved the way for the nation. M. Kostava and Z. Gamsakhurdia took a reasonable and decisive step. The Soviet Union was falling to pieces and an unprecedented situation was being created. The possibility to become independent was real but Russia would not be willing to lose “a cutie pie” so simply. She got used to domination over Caucasus.

Peaceful demonstrators in Rustavli avenue went on hunger-strike. This action intensified the demand of freedom, the sweet odour of which was in the air. Noone was going to move away from the

position. The consolidated nation has the only demand – freedom and peaceful withdrawal of Russian occupying troops. This period was unforgettable and unique in the history of the nation and in our opinion all of us were lucky to find ourselves in the epicenter of the events. You may be waiting for the similar moment all your life and will never find yourself in the situation like that. The protest action, organized by Zviad Gamsakhurdia and Merab Kostava came to the end with bloody crowd dispersal on April 9. The tragedy speeded up the discredit of communist administration.

Through press of national movement annexation of Georgia by Russia was officially proclaimed. The communist government left the political arena.

National forces led by a situational leader Z. Gamsakhurdia came at the head of the government. A lot of political organizations and parties were set up and multy-party electoral system was established. Z. Gamsakhurdia fulfilled his intention. Thus on April 9, 1991 the independence of Georgia was declared. The results of the referendum of March 31 were recognized legitimate by an American Congress of № 102 calling (resolution №94).

As the scientist E. Mgaloblishvili notes in her book: “The state independenct has been restored; the illegal formation of the Soviet period, the so-called South Ossetian autonomous region has been abrogated; the Russian troops stationed on the territory of Georgia got status of occupying troops. [7, 485-486]

Unfortunately, the Russian troops are still staying on the territory of Georgia and owing to the method of creeping annexation more and more new lands with Georgians living on them have been captured since then. Not so long ago Georgia has been visited by Chancellor of Germany Angela Merkel, who confirmed the fact that Georgia is an occupied country and it is a horrible inequity. In our opinion, Georgian nation is waiting for a new situation and a new situational leader to change the present situation and make Russia withdraw the troops from the country.

On May 26, 1991 Zviad Gamsakhurdia was elected the President of Georgian Republic by the whole population of Georgia.

We would like to admit that Zviad Gamsakhurdia was really a strong situational leader and the Georgian nation owed its independence to him.

Time and history puts everything into place. Our short research about Z. Gamsakhurdia we would like to finish with the words of the scientist I.Kveselava: “The society can’t be frozen on one and the

same place. The phase of the development of the society consists of four types with various duration: restrained-liberal, anarchistic, dictatorial, democratic, which always occur again and again spirally. The Georgian national movement started its long way with the loss of freedom, independence and statehood and came to the finish restoring everything which had been lost before. [5, 31]

In our article we would like to accentuate the former president of Georgia Michael Saakashvili, who often used the method of situational leadership as well. At first glance he may be assessed as a volatile and hesitant person who changed his mind every other minute but actually he practiced the elements of situational leadership, since the volatility is typical for this model of leadership. Alongside with varying situation, Michael Saakashvili was modifying his way of behaviour. He remarkably controlled the situation, especially when meeting ordinary people all over Georgia. In similar situations he paid the greatest attention to the population of the place he was visiting. But he usually held the conversation in such a way that he masterfully used to avoid unpleasant moments, often he left the question without any response. Skillfully manoeuvring, he used to change the topic. Ex-president was instantly making the analyses of the situation and perfectly understood what the people wanted him to do and say. Along with changeable situation he would change his opinion, thus making an impression of an inconstant person, which was not good for a politician.

As we have already discussed above the scientist Mike Thureau marked that the situational leaders use various strategies (styles) such as democratic, authoritative or collaborative and they are adapting themselves to what works best. In our case the ex-president of Georgia chose a collaborative one in order to govern the state and he successfully utilized it for nine years.

We would also like to note in our studies that when he was going to come to power, he effectively used charisma and the situation formed in the country, when having no other choice despairing people followed him to overthrow E. Shevardnadze's regime.

Bidzina Ivanishvili, the former prime minister who came to the power after M. Saakashvili by elections also seemed to use different situational leadership styles, depending on the development of the situation. Unlike his predecessor, after the collaborative strategy that introduced M. Saakashvili, Ivanishvili chose a democratic one, but there is a great possibility that again a collaborative one will be established again. Leaving the political arena, maybe he

understood, that situational leadership style can not be used for a long period of time. This type of leadership is not good to establish longstanding stability and M. Saakashvili is a good example of it. It should be put in practice in temporary situations and for a short time. Though, it should be taken into account that this type of leadership does not consider the existence of a single correct way to implement something. In order to reach the proper result, the strategy of the leadership should be changed.

In conclusion we should point out that the situational leadership style is a style which is put into practice by presidents.

Summary

In our short article we have focused on the issue and concept of situational leadership and have discussed prominent situational leaders of Georgia. Situational leadership has been considered as the topic of interest not only in the politics, but in trade, business, educational, military and medical spheres, everyday life and etc.

Based upon our humble investigation, we may come to a certain conclusion that we may learn how to conduct and handle people in definite situations. John H. Zenger and Joseph R. Folkman adhere to the same position in their book "The Extraordinary Leader", which became a real bestseller. When the book was first published, it drew the attention of great many readers and especially of those who had great desire of becoming best leaders. The book is the perfect explanation of leadership concept.

Situational leadership is a very interesting style of leadership. Unfortunately in Georgia this style hasn't been studied thoroughly yet. Maybe it is the priority of the XXI century. Situational leadership is less put within certain frames and that's why affords liberty in action. To our opinion, one thing should be taken into account - it is very important not to use this style of leadership for a long period of time.

We may finish our humble attempt to conduct investigations in this field with the following conclusion: "True leader is hidden in all of us and this trait may come to the surface and become realized. Maybe we should remember the concept of leadership itself. "Should the definite situation mature the leader may wake up in everybody enabling us to perform a lot of actions and deeds". Everything depends only on us. The truth is that "leaders are not born" as leaders, they are matured as leaders later based upon the given situation. And though the scientists in 2013 uncover the gene, that may help create natural leaders the idea of the "born leader" is largely a myth. Some

people learn leadership skills earlier than others do and the skills can be learned.

Literature

1. John C. Maxwell, www.inc.com/peter -economy published on June 2015
2. J. Abashidze, Georgian Soviet Encyclopaedia v.XI, Tbilisi, 1987
3. Robert-Alain de Beaugrande & Wolfgang U. Dressler “ Introduction to Text Linguistics ,v. VIII.
4. Igor Kveselava, “Some Issues on the Matter of Economic and Political orientation of Georgia”,Tbilisi 1999. (3)
5. Igor Kveselava – “Chronicle of Georgian History” (1970-1990) Tbilisi, 2007 v.I “The Main Stages of National Liberation Movement in Georgia”. (4)
6. Nikoladze N, “Peasant Liberation in Georgia” v. I, 1962.
7. Eter Mgaloblishvili “Chronicle of Violence: 25 steps to the inferno”- “I Blame” Book I, Tbilisi, 2001. (5)
8. Blanchard K. “Situational Leadership II (SLII)”, 1985 (Internet source) (6)
9. Hersey P. and Blanchard, K. H. (1972). Management of Organizational Behavior. (internet source) (7)
10. Krongauz M.A. “Semantics” Moscow (ПГГУ), 2001. (8)
11. Internet source – Google.

SECTION XI. Ecology

Gorbachevskii V.P.

4th year student of bachelor degree

Federal State Budget Educational Institution of Higher Education Moscow State University of Civil Engineering (National Research University)

Popova A.D.

4th year student of bachelor degree

Federal State Budget Educational Institution of Higher Education Moscow State University of Civil Engineering (National Research University)

Panfilova M.I.

Candidate of chemical sciences, docent

Federal State Budget Educational Institution of Higher Education Moscow State University of Civil Engineering (National Research University)

Zubrev N.I.

Candidate of technical sciences, professor

Federal State Institution of Higher Education «Russian University of Transport» (RUT - MIIT)

ACHIEVING ENVIRONMENTAL SAFETY OF COMPOSITE SOLUTIONS THROUGH THE INTEGRATION OF PRODUCTION WASTE

Annotation. As a result of the activities of industrial organizations, colossal volumes of industrial waste are generated, and therefore the need for their centralized processing arises. This article discusses one of the waste byproducts of hydrogen production - boehmite. The effect of the integration of boehmite to the cement composite solutions is studied. It is established that the introduction of additives of boehmite to the mass of cement entails a change in the strength of the composite. It was revealed that the highest rate of structure formation was detected at a boehmite concentration of 0.208% by weight of the binder. Environmental safety of composite content with the addition of boehmite was proven.

One of the goals of sustainable development (SDG) of the UN and Russia is responsible consumption and production, as well as the preservation of ecosystems. Recycling of industrial waste is an important level of the modern world. Disposal of industrial wastes by using them as secondary resources for improving the ecological state of the human environment. Because of it the goal of a study is the

effect of addition of the production waste – boehmite on the structure formation and toxic effect of the cement-bentonite composite solution.

As a result of the activities of industrial organizations, colossal volumes of industrial waste are generated. By-products of production in most cases are transported to waste disposal facilities, such as sludge storages, landfills, performing the method of storage or burial. The described method of disposal violates environmental safety, and therefore there is a need for centralized recycling. On the way to solving the problem in this work – boemit, one of the waste byproducts of hydrogen production, is studied.[1]

It is known that boehmite is a nanocrystalline and nano-dispersed raw material, similar in mineralogical composition to the cement matrix. These properties make it possible to consider waste as a nano-component of a composite material.

In the process of the study, the properties of the composite material with the integration of boehmite were studied, synthesized by burning aluminum in water. The composite material consists of the following components: bentonite brand P2T2A, liquid glass brand TEKS. The compressive strengths of the fabricated samples were determined on a Controls 50-C0050 / CAL50 hydraulic press with a percentage of boehmite from zero to one by weight of cement. Samples were tested at 7, 14 and 28 days. Testing showed the direct influence of boehmite on the structure formation of a composite solution. The highest rate of structure formation was detected at a boehmite concentration of 0.208% by weight of the binder (Fig. 1). This fact testifies about the compaction of material structure and appearance of additional cantacts between the particles, therefore the layers are compacted by filling the pores in the composite. [2]

The impact of boehmite on the ecological safety of ecosystems was investigated in terms of phytotoxicity of the waste. The biotest reaction of the test culture allowed us to estimate the toxic effect of the composite medium during the integration of boehmite (Fig. 2). In the role of the test culture were the seeds of radish *Raphanussativus*. It was established that in terms of the degree of toxicity, boehmite occupies the last place, after cement and bentonite. The toxicity of the composite solution without modifying with waste more than about two times. It was revealed that the presence of boehmite in the medium slightly affects the growth of plants. [3]

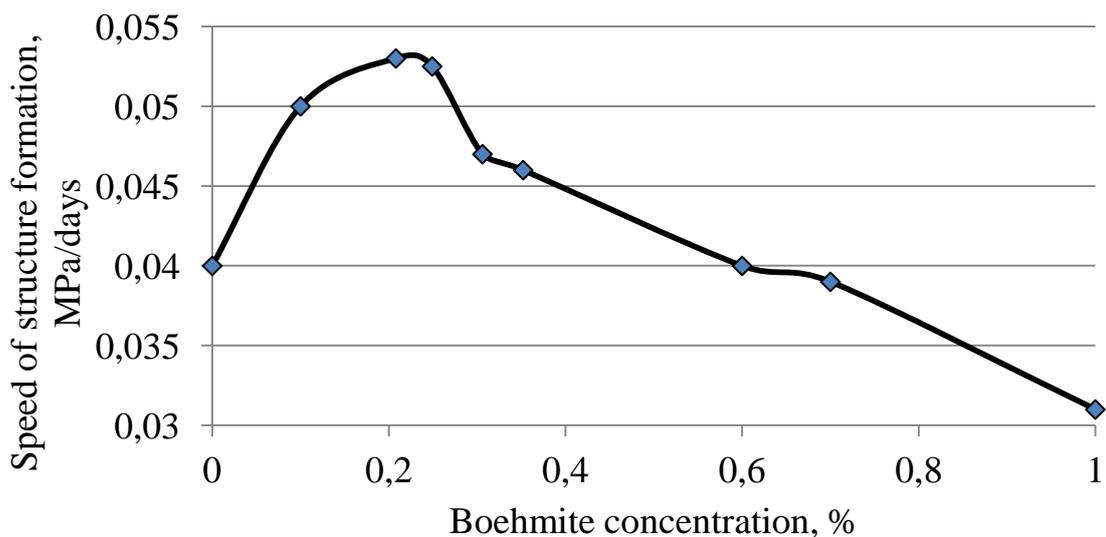


Fig. 1 The diagramm of the speed of structure formation with different concentration of boehmite

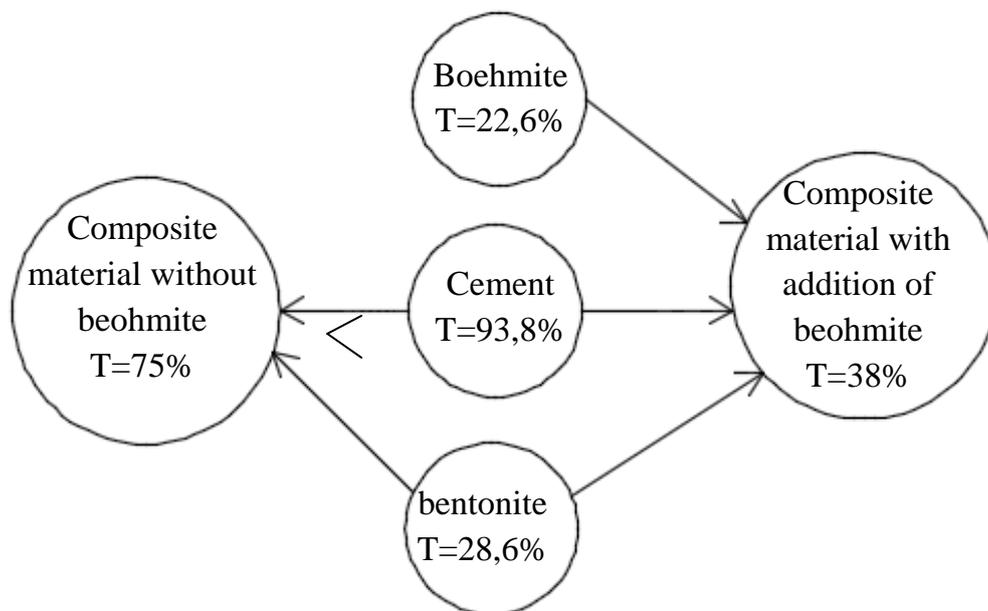


Fig. 2 Toxicity of the composite solution and its components

Therefore, the use of boehmite as nano-additives in composite solutions is the optimal solution to the problem of consumption and production of industrial wastes.

References

1. Marchenko I.N. Synthesis and colloidal chemical properties of boehmite hydrosols and mixed dispersions of AlOOH-ZnO: dis. ... Candidate of Technical Sciences: 02.00.11. - Moscow, 2017. - 13 p.

2. Panfilova M.I., Zubrev N.I., Leonova D.A., Leonov I.A., Korosteleva A.V. Use of by-products of hydrogen production technology to ensure the safety of structures during construction // XXI century: past results and problems of the present. 2018. T. 7. No. 3 (43). Pp. 123-126.
3. Sanitary rules for determining the hazard class of toxic waste production and consumption. Set of Rules 2.1.7.1386-03 (registered in the Ministry of Justice on June 19, 2003 No. 4755).