



SCIENTIFIC RESEARCH OF THE SCO COUNTRIES: SYNERGY AND INTEGRATION

上合组织国家的科学研究：协同和一体化

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数字化转型对基于时间的薪酬形式的激励效果的影响
**THE IMPACT OF DIGITAL TRANSFORMATION ON THE
MOTIVATIONAL EFFECTIVENESS OF THE TIME-BASED
FORM OF REMUNERATION**

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注解。 本文探讨了国内经济中发生的数字化转型过程。 研究的目的是找出对数字化转型进程产生负面影响的问题，并找到解决方案。 研究表明，在数字化转型的影响下，基于时间的薪酬形式对有效工作的激励作用明显减弱。 在这方面，在数字环境中，分级可以成为激励和激励的有效工具，也可以成为为所有已发现问题提供解决方案的最佳薪酬体系。

关键词：数字化转型、时间工资、劳动效率的激励和刺激、劳动智力强度、分级、劳动成果核算。

Annotation. *The article examines the processes of digital transformation taking place in the domestic economy. The purpose of the study is to identify problems that have a negative impact on the progress of digital transformation, and to find solutions to them. It is revealed that under the influence of digital transformation, the role of the time-based form of remuneration as a motivator for effective work is significantly reduced. In this regard, in a digital environment, grading can become an effective tool for stimulating and motivating, as well as well as an optimal remuneration system that provides solutions to all identified problems.*

Keywords: *digital transformation, time wage, motivation and stimulation of labor efficiency, intellectual intensity of labor, grading, accounting for labor results.*

Russia is currently moving steadily towards a digital economy, and a national program and a number of national projects on digitalization and digital transformation have been launched at the national level.

Digital transformation implies “the introduction of modern digital technologies into the business processes of socio-economic systems at all levels. This ap-

proach implies not only the installation of modern hardware or software, but also fundamental changes in management approaches, corporate culture, and external communications. As a result, the productivity of each employee and the level of customer satisfaction increase, and the company acquires a reputation of a progressive and modern organization. In practice, this means “creating a system of cross-functional business processes that can be called the digital business ecosystem.” [1]

Despite the significant advantages of digitization, the new reality is accompanied by a number of economic problems, the lack of solutions to which can significantly hinder digital progress and the associated growth in economic efficiency.

For example, a number of problems are related to changes regarding the factor of time. By using a remote workplace, an employee saves time on commuting to the office and gains additional time resources for performing production tasks. When working “from home”, the time of performing labor functions becomes the entire daily time fund, which the employee, being outside the control of the administration, disposes of at his own discretion, performing labor functions not during the working hours established by the work regime of the enterprise, but based on his own plans and personal employment. The problem becomes the organization of accounting of the real time of labor activity of an employee. It seems that in order to solve this problem it is necessary to create new tools to record the time of work, linked to the specific task performed.

It is also possible to note the problem of accounting for results, the difficulty of assessing the labor efficiency of individual employees and the lack of objectivity of personnel remuneration in the conditions of digital transformation, caused by the fact that the level of remuneration often depends on factors relevant to the previous period of existence of enterprises and not related to the current digital transformation.

In the context of the mentioned problems, the object of the study is modern economic systems, primarily referring to enterprises in the real sector of the economy. The subject of the study is the systems of organization and remuneration of labor used in modern enterprises, their features and key characteristics.

The development of the digitalization in society contributes to key transformations in economic systems and processes, both at enterprises and within specific production chains. All this entails the emergence and actualization of new methods and ways of motivation to improve labor efficiency. [2] In order to implement digital transformation, domestic enterprises need to undergo a serious transformation of their entire internal management concept, implement up-to-date management accounting and controlling methods, and conduct extensive work to restructure all internal connections and management logic across all functions and aspects of business activities. The need for transformation fully affects the area of

labor organization and remuneration, including in connection with the issue of the adequacy of the application of time-based remuneration to employees working in the digital environment.

This became especially evident in the spring of 2020, when the coronavirus pandemic lockdown due contributed to the acceleration of digitalization and the active adoption of new forms of organizing business processes, with the creation of remote workplaces and the remote implementation of employees' work functions. Many enterprises faced a new problem of working time accounting in the conditions of uncontrollability of a remote worker. The peculiarity of the problem lies in the fact that not only the enterprise is interested in determining the time worked by the employee in order to identify underwork and unproductive time losses, which can be a serious problem if the employee's labor is paid with the use of a time-based system of labor remuneration. The worker is also interested in a fair account of the time worked because in the remote work setting, many performers find that their job functions take up significantly more time, essentially turning into a "24/7" workday.

Thus, one of the most widespread forms of remuneration of labor - the time-based form - in the conditions of digitalization of the economic environment loses its universality and does not allow objectively assessing and paying for the employee's work according to the actual time worked, due to the lack of the possibility of its accurate accounting. No less relevant is the loss of the motivational nature of labor remuneration due to the fact that the calculation of wages in the timebased form is carried out by multiplying the tariff rate by the norm of time, which, in turn, depends on the qualifications and working conditions of the employee. In the case of remote work, significant changes in working conditions can be observed: the workplace of some employees becomes more equipped and furnished through the reserves of home digital technology, while for others, the home workplace is either absent or lacks the necessary digital equipment to perform assigned job functions.

It can be assumed that the time-based form of remuneration as a tool to motivate effective work does not correspond to the conditions of the digital environment and cannot be applied to employees who realize their labor functions remotely, contrary to the practice of most domestic enterprises, where this form is used for seventy and more percent of personnel [3].

Maximization of labor efficiency can be achieved by an optimal combination of various forms and methods of incentives. To date, the world practice has gained considerable experience in reflecting the qualifications of an employee in labor remuneration. In particular, the system of labor remuneration called "payment for qualification" (PQ), the essence of which is that "the level of payment depends not only on the complexity of the work performed, but also on the set of specialties

that the employee is able to use in his activities. In this case, it is paid not for what he does, but for what he knows, i.e. it is not the labor itself that is paid, but the growth of qualification and, first of all, the number of mastered specialties” [4]. [4]. Various bonus systems are widely spread, as they allow to evaluate not only the labor of an employee, but also his knowledge and competence [5]. The considered systems of labor remuneration are fundamentally similar in the differentiated approach to the value of a position, its assessment in terms of belonging to the level of management, significance, responsibility and importance. However, the replacement of the time-based form of labor remuneration with a more progressive approach using the grading system (or grading) seems to be the most promising.

“A grade system is a salary scale (wage scale) of a company, developed on the basis of expert assessments of positions according to predetermined factors. The essence of the method lies in the fact that the weight of not only each position in the structure of the organization is taken into account, but also each employee occupying the same position, but having additional characteristics. The grading system is most often based on such characteristics as the complexity of the work performed, the level of responsibility and independence, the intensity and working conditions, the level of qualification required to perform the work. The grade system evaluates all types of jobs, which makes it an extremely valuable tool in the formation of the remuneration structure. The criterion for evaluating positions is the level of influence the position has on the company as a whole and the impact on the final result.” [6]. The methodology of grades was created by the American scientist Edward Hay (E. Hay). The grading methodology was created by American scientist Edward Hay. Currently, thanks to its mathematical model foundation, this methodology can be easily adapted to the needs of any enterprise with a workforce of more than 300 people, regardless of the industry and prevailing working conditions.

Thanks to the transition to a grading system, the employee’s interest and responsibility in the fulfillment of planned tasks is formed and fairness and objectivity of remuneration is ensured, taking into account the employee’s real contribution to the company’s activities. The influence of various, far-fetched factors caused by different modes of work (“in the office” or “remotely”) is minimized as an unimportant parameter, since the main volume of tasks performed by the employee does not actually change.

From the perspective of view of solving the problems voiced in the introduction of this article, grading appears to be one of the universal tools to be used at the stage of digital transformation in order to adapt the system of results accounting and motivation of effective personnel work in the digital economy.

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增强市政府经济潜力的主要方向
**THE MAIN DIRECTIONS OF INCREASING THE ECONOMIC
POTENTIAL OF THE MUNICIPALITY¹**

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抽象的。 本文考虑了城市经济潜力的本质和要素，对斯塔夫罗波尔边疆区各城市的经济潜力进行了比较分析，按人口分为两组，确定了通过社会经济指标实现潜力的主要问题 并提出了改善领土经济潜力管理的总体方向。

关键词：城市形成、经济潜力、城市形成经济、城市形成属性。

Abstract. *The article considers the essence and elements of the economic potential of a municipality, carries out a comparative analysis of the economic potentials of municipalities of Stavropol Krai, allocated in two groups by population, identifies the main problems of realizing the potential through socio-economic indicators and general directions for improving the management of the economic potential of the territory are presented.*

Keywords: *municipal formation, economic potential, economy of municipal formation, property of municipal formation.*

The basis for stable urban development is an efficient economy, focused on meeting the needs of both internal and external markets, increasing the rate of development of small and medium-sized businesses, primarily aimed at the development of industry, expansion of services, as well as maximizing the use of the potential of the territory. It should take into account the specifics of the municipality, existing indicators of economic development, the possibility of influence of non-economic potentials, as well as its ability to respond to changes and adapt to new conditions.

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In order to assess the economic potential, it is necessary to understand the current situation, conduct regular analysis and economic and mathematical modeling, and engage independent experts for evaluation and further development planning.

However, a municipality cannot develop on its own, autonomously, only in conjunction with the development of other settlements we can talk about the sufficiency or insufficiency of the economic potential of the municipality, and for this purpose it is necessary to conduct a comparative analysis of territories, and by the same indicators. By comparing the main economic indicators, it is possible to obtain a general characteristic of the use of economic potential relatively quickly and easily [1].

To analyze the economic potential of municipalities of Stavropol Krai, we have selected 10 municipalities with different population sizes. For the study, we have chosen 5 municipal entities: large ones with a population of over 100,000 people, and small ones with a population of less than 100,000 people. The analysis was conducted over a five-year period from 2018 to 2022 [2].

The level and condition of economic potential were determined by the level of such indicators as retail trade turnover, investment in fixed capital, the number of economic entities per territory of the studied municipality, as well as the volume of shipped goods of own production and average wages.

The first group of analyzed municipalities of Stavropol Krai includes large municipalities - Stavropol District, Pyatigorsk Resort City, Nevinnomyssk City, Georgievsky District and Predgorny District.

The dynamics of the growth rate of economic indicators of large municipalities of Stavropol Krai for 2018-2022 are presented in Figure 1.

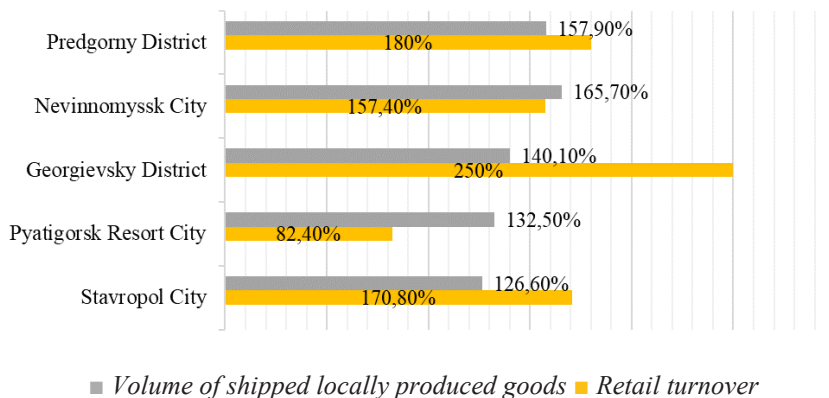


Figure 1. Dynamics of the growth rate of economic indicators of large municipalities of Stavropol Krai for 2018-2022 [calculated by the authors]

For the analyzed period we saw a fairly good dynamics of the growth rate of trade, shipped goods of own production and completed works and services by large municipalities of Stavropol Krai for the period 2018-2022. The largest retail trade turnover for the period 2018-2022 has the urban district of Stavropol - 76,351,199.3 thousand rubles. In 2022, more than 90% of retail trade turnover in these municipal entities was generated by trade organizations and entrepreneurs, with less than 10% coming from retail markets and fairs, totaling 268.8 billion rubles.

4 out of 5 municipalities under review have a positive trend in this indicator, with a minimum growth rate of 57%. Only Pyatigorsk Resort City has a negative trend, retail trade turnover decreased by 17.6% over the period from 2018 to 2022.

The largest volume of shipped goods for the period 2018-2022 was shown by the Stavropol Municipal District, it amounted to more than 159 billion rubles. The Predgorny Municipal District has the lowest value by this indicator - 9 billion rubles.

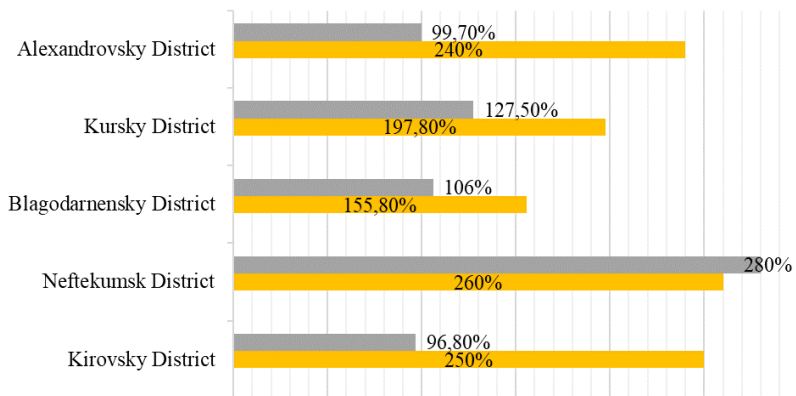
According to this indicator, all the municipalities under consideration have a positive trend, with the share of manufacturing enterprises in the structure of the volume of shipped products amounting to more than 25%.

Investments amounted to 53.3 billion rubles in fixed capital for the period under review in the selected group of municipalities, with the share of the city of Stavropol in 2022 accounting for about 29%. The main sources of investment financing are own funds, accounting for 49.2%; budget funds - 38%; loans from credit organizations - 1.7%; other - 10.5%.

The second group of analyzed municipalities of Stavropol Krai are small municipalities with a population of less than 100 thousand people - Kirovsky, Neft-ekumsky, and Blagodaronsky districts, as well as Kursky and Aleksandrovsky municipal districts.

The dynamics of the growth rate of economic indicators of small municipalities of Stavropol Krai for 2018-2022 are presented in the form of Figure 2.

Analyzing the presented indicators, we can conclude that the Kirov Municipal District has the highest retail trade turnover - 2,246,298.3 thousand rubles. The lowest value by this indicator is Kursk Municipal District - 689,981 thousand rubles. The largest volume of own shipped goods and services performed by own forces for the period 2018-2022 belongs to the Blagodanensky urban district - 19 billion rubles.



■ Volume of shipped locally produced goods ■ Retail turnover

Figure 2. Dynamics of the growth rate of economic indicators of small municipalities of Stavropol Krai for 2018-2022 [calculated by the authors]

Kursk Municipal District has the lowest value by this indicator - 2 billion rubles. Neftekumsk and Blagodanensk urban districts, as well as Kursk municipal district have a positive trend in this indicator. In Kirovsky District and Alexandrovsky Municipal District the indicator decreased by 3.2% and 0.3%, respectively.

The analysis of the economic potential of municipalities has revealed the presence of intra-regional differentiation in economic indicators in Stavropol Krai. The existing problems in the economic sphere have a serious impact on the overall development of municipalities. This is particularly true for small municipalities, where there are problems with jobs and wages.

Significant differences between municipalities are expressed in population, wages, available resources and tax base. Among the most pressing problems, stand out:

- insufficient financial resources to ensure the solution of local issues. This situation is primarily due to the uneven distribution of financial resources between the levels of public authority, and, consequently, between municipalities;
- staffing of local self-government bodies, on which the efficiency of the municipal economy depends, especially when it comes to newly established municipalities.

Thus, we can conclude that the development of municipalities is carried out within the framework of a unified system of strategic planning, which is regulated

by the executive authorities of the region, as well as local government. Acting jointly, both levels of government carry out mutually coordinated actions that ensure in the long term the creation of state and municipal infrastructure, the development of measures to support the development of priority areas of the economy of municipalities. In order to obtain a synergistic effect of investment attractiveness, the promotion of a positive image of territories and improvement of their infrastructure, as well as maximum consolidation of efforts of the municipal and private sectors should also be components of the success of economic development.

In order to solve these problems, let us consider general proposals to improve the efficiency of economic development of municipalities in Stavropol Krai, implemented by joint efforts of regional and municipal authorities.

- to intensify economic growth of the municipality and strengthen social stability in the municipality;
- support for small and medium-sized businesses, self-employment, assistance in bringing businesses out of the shadows through effective incentive tools and competent measures to prevent economic crimes;
- monitoring the efficiency of funds utilization under state (municipal) contracts. [3]

An important part of activities to legalize the tax base is monitoring the level of wages and employment of workers at local enterprises. For example, it is advisable to conduct regular activities to identify wage arrears, underreporting of wages and number of employees, to identify and suppress cases of hiring former full-time employees to perform work as self-employed before the expiration of a period of two years after dismissal, etc.

When defining the division of competences, it is important to make the most effective decision about which competences can be left at the level of exclusive execution and which ones can be made common for different levels of government. As for the cases of shared responsibility, it is necessary to appoint a participant who would be able to coordinate the efforts of the authorities to solve the problem common to different sectors.

Since citizens' appeals are increasingly moving to the online format, it is advisable to create a common remote platform to attract a large part of the population to discuss the need to pay taxes and fees on time, as well as to continuously monitor the work of municipal enterprises. Part of the appeals, especially those that appear regularly, should be obligatory for explanation by the authorities. It will also be possible to assess citizens' satisfaction with the work of municipal enterprises, to conduct their rating and to see systemic and one-time mistakes. Based on the results of the conducted ratings, it will be possible to put the issues of privatization and commercialization of inefficient municipal enterprises to a vote before the residents. [4]

It is also necessary to increase the level of publicity of information on property, including the property of bodies responsible for the activities of institutions and the use of various resources, and whose property was previously not public. In general, the tasks of property management should be closely related to the issues of economic development of the territory and its investment attractiveness. The image of experts and project initiators will attract investors and increase the level of investment attractiveness of the municipality.

As part of the fight against the “shadow” economy, it is necessary to increase the level of interdepartmental cooperation between all regional and municipal authorities. The inevitability of punishment for dishonest ways of doing business should become obvious, but in parallel with this, attractive tools to stimulate legalization of business should be developed.

The price for the provision of municipal services should be transparent, and the mechanism for its calculation should be well thought out. Somewhere this price can be based on market principles, somewhere on the cost mechanism, the main thing is that these tools should be simple and easy to understand, even if they entail certain costs and make the price less profitable. [5].

Measures that contribute to the local economy are presented in Figure 3.

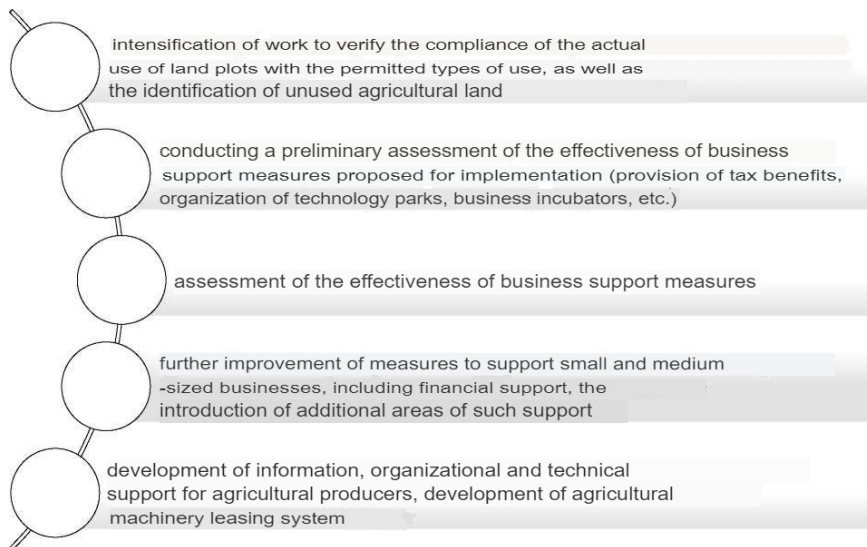


Figure 1. Measures contributing to local economic development [compiled by the authors]

The proposed measures aimed at developing the economic potential of the territory can have an impact on many areas of activity within the municipality. It is also important to regularly assess the effectiveness of measures to support business and investment in the economy of the municipality.

As a result of the implementation of measures and proposals, the Krai will become one of the economically developed subjects in the near future. By implementing measures for economic development, increasing the financial and tax bases, as well as creating comfortable infrastructure facilities, a modern, comfortable economic environment will be created in the Krai.

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二、现阶段区域经济体系的本质和发展特点

**THE ESSENCE OF REGIONAL ECONOMIC SYSTEMS AND
FEATURES OF THEIR DEVELOPMENT AT THE PRESENT STAGE**

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抽象的。本文对“区域经济体系”概念研究的理论方法进行了回顾。科学流派对此研究课题提出了不同的观点。该研究的基础是 2020 年至 2022 年期间的科学著作。

关键词: 区域; 区域经济体系; 区域经济体系的本质。

Abstract. *This article provides a review of theoretical approaches to the study of the concept of “regional economic system”. Various points of view of scientific schools on this research topic are given. The basis of the research is scientific works for the period 2020 – 2022.*

Keywords: *region; regional economic system; essence of regional economic systems.*

The essence of the regional economic system lies in the unity of opposite relations of power and property in the structure of the national economy [2; p.252].

Features of regional economic systems are territorial determinism and basic functions of subsystems [2; p.252].

Regulation of the activities of regional economic systems is carried out:

- at the macro level (within the framework of the current federal strategy and federal development programs);

- at the micro level (within the framework of interregional and intersectoral interaction within the framework of regional strategies and programs of socio-economic development).

Factors of the socio-economic and political nature of the development of the regional economy do not contribute to the creation of conditions for the effective functioning and development of regional economic systems due to existing risks operating in the region. The cause of internal risks is explained by such factors as: low level of social infrastructure; insufficient economic potential; weak interaction

with other regions. External risks are expressed in the presence of state-political, monetary, financial, foreign trade and other macroeconomic factors.

The study of the features of the influence of the external environment on the development of regional economic systems is presented in the scientific works of Tatarin A.I., Sukharev O.S., Klimanov V.V., Kuznetsova O.V., Leksin V.N., Moskvitina N.A., Pazyuk Yu.V., Porfiryeva B.N., Semechkina A.E., Shvetsova A.N. These studies diagnose the effectiveness of managing social and economic systems under the influence of external influences on the economy of Russian cities and municipal areas [1; p.41].

Depending on the limit, the risks of regional economic systems are classified into the following types:

- acceptable risks (average risk level);
- critical risks (exceeds the average risk level within the maximum permissible risk values);
- catastrophic risks (exceeds the maximum risk level).

The main tools for managing regional economic systems, taking into account types of risks, can be identified as follows:

- development of a regional development strategy;
- formation and implementation of government programs and projects at the regional level (project management).

The development of methodology in the management of regional economic systems consists of developing mechanisms for describing the business processes of regional systems, their interaction, modeling, increasing the competitiveness of regions [6; p.35].

The process approach is the main one when modeling regional economic systems and increasing the competitiveness of regions.

The process approach is the theoretical basis for the development of management concepts, such as:

- digitalization of the regional economy in accordance with the Digital Economy Program;
- focus on meeting the needs of the population in services provided, work performed, and delivery of goods;
- regulation of business processes.

At the present stage, it should be noted that we can consider examples of the practical application of the process approach in certain areas of public administration.

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了解英国议会主权及其与法治的关系
**UNDERSTANDING PARLIAMENTARY SOVEREIGNTY IN THE
UK AND ITS CORRELATION WITH THE RULE OF LAW**

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抽象的。 本文致力于研究英国宪法中的议会主权及其与法治原则的关系。所分配的任务是通过运用辩证的、系统的、形式的法律和经验的方法来完成的。研究的结果是，笔者从议会主权的理论基础和在英国执法实践中的运用角度对议会主权进行了全面的分析。 文章的结论是，议会主权是一种以议会为中心的国家权力组织模式，其行为一般对所有人都具有约束力，无一例外，并且只能由议会本身取消、改变或中止。 同时，分析表明，现阶段法治原则能够影响议会政治意愿的落实，进而影响议会主权。

关键词：议会主权、法治、英国宪法、议会、司法。

Abstract. *The article is devoted to the study of parliamentary sovereignty in British constitutional law and its relationship with the principle of the rule of law. The assigned tasks were achieved through the use of dialectical, systemic, formal legal, and empirical methods. As a result of the study, the author conducted a comprehensive analysis of parliamentary sovereignty from the point of view of its theoretical foundations and implementation in UK law enforcement practice. The article concludes that parliamentary sovereignty is a model of the organization of state power in which parliament is given a central place, its acts are generally binding for everyone without exception and can be canceled, changed or suspended only by parliament itself. At the same time, as the analysis shows, at the present stage the principle of the rule of law is capable of influencing the implementation of the political will of parliament and, as a consequence, parliamentary sovereignty.*

Keywords: *parliamentary sovereignty, rule of law, British constitution, parliament, judiciary.*

Parliamentary sovereignty, along with the principle of the rule of law, shapes the modern appearance of the UK constitution. Like the rule of law, the basic

parameters of parliamentary sovereignty¹, for the most part, which have not lost their relevance to this day, were identified by A.V. Dicey, who regarded it as one of the most important elements of the British constitution and “the corner-stone of all our [British] public law”².

Parliamentary sovereignty itself, as a constitutional and legal principle, implies the construction of a model of organization of state power in which parliament is given a central place, its acts are generally binding for everyone without exception and can be canceled, changed or suspended only by parliament itself. Like the principle of the rule of law, parliamentary sovereignty has largely received its formal expression in a number of significant judicial precedents and the legal positions formulated in them. Taking into account the current judicial practice, at the present stage it seems possible to identify four key manifestations of parliamentary sovereignty.

So, firstly, parliament has the right to adopt legislation on any issue. The legal order in this regard does not provide for any restrictions regarding its subject competence. As Lord Reid noted in this context in *Madzimbamuto v. Lardner-Burke*, situations where certain acts of the British Parliament may be considered by the public, for certain moral, political or other reasons, as unconstitutional or incorrect, arise quite often, but this does not mean that the corresponding parliamentary acts, which in any case should be respected by the courts, cannot be accepted³.

In this context, the position of the famous British constitutionalist A. Jennings is noteworthy, who saw as an integral characteristic of parliamentary sovereignty the right of the legislative body to adopt legal regulation on any issue, limited solely by political expediency and constitutional agreements⁴. Explaining this thesis, he additionally draws attention to the fact that the sphere of constitutional relations is not associated with facts as such, but with legal principles and legal structures and fictions⁵.

Secondly, no one, including the court, has the authority to influence the legal force of parliamentary acts - to cancel, change or suspend their effect. This legal position has been repeatedly expressed in judicial practice. Thus, in a number of

¹ The doctrine of parliamentary sovereignty, its essence and content have been the subject of detailed research by a number of domestic and foreign researchers. See, for example: Marchenko N.M. Rule of law and civil society (theoretical and legal research). Tutorial. M.: Prospekt, 2015. P. 208-221; *Sedley S.* Lions under the throne. Essays on the History of English Public Law. Cambridge University Press, 2015. P.143-169; *Parpworth N.* Constitutional and Administrative Law. 7th ed. Oxford University Press, 2012. P. 71-103; *Bradley A.W., Ewing K.D.* Op. cit. P. 99 – 103; Goldsworthy J. Parliamentary sovereignty. Contemporary debates. Cambridge University Press, 2010. P. 106-141.

² *Dicey A.V.* Fundamentals of public law in England. M.: Typograph. Partnership I.D. Sytina, 1907. P. 81.

³ *Madzimbamuto v. Lardner-Burke* [1969] 1 AC 645.

⁴ *Jennings I.* The Law and the Constitution. 5th ed. University of London Press, 1959. P. 170–171.

⁵ *Ibid.*

cases in which applicants sought to challenge the validity of Acts of Parliament allegedly adopted in the context of misleading the British Parliament or failure to comply with the necessary parliamentary procedures, the courts consistently assumed that the necessary judicial powers to do so were lacking, as well as the impossibility of non-compliance with the existing statutory law⁶.

In turn, in the case of *Pickin v. British Railways Board* Lord Reid, taking into account the peculiarities of the development of British constitutionalism and the current constitutional legislation, expressed doubts about the admissibility of the very idea of the possibility of non-compliance by a court with a particular parliamentary act⁷. When considering this case already in the House of Lords, Lord Morris explicitly concluded that the courts can consider various aspects of the interpretation of an Act of Parliament, but not decide what should constitute its content⁸. Similar conclusions were made by the court in cases such as *Madzimbamuto v. Lardner-Burke*⁹, *Cheney v. Conn*¹⁰, *Manuel v. Attorney General*¹¹.

Thirdly, an integral manifestation of parliamentary sovereignty is the lack of binding of the UK Parliament by its own decisions. This implies that any legal regulation established by an act of parliament may be subject to change or repeal by the legislature in the future, depending on certain circumstances. The corresponding approach has been firmly established in established judicial practice, in particular in cases such as *Vauxhall Estates v. Liverpool Corporation* and *Ellen St Estates v. Minister of Health*¹².

Fourthly, the principle of parliamentary sovereignty presupposes the freedom of the UK Parliament to exercise its powers in both spatial and temporal aspects. Thus, he is authorized to adopt legal regulation of both a prospective and retrospective nature, extending the effect of legal norms to social relations that arose before the entry into force of the corresponding parliamentary act¹³. In addition, the competence of parliament is not limited by spatial restrictions. The British Parliament can extend legal regulation to public relations, including those outside the territorial jurisdiction of Great Britain. An example of such parliamentary acts

⁶ *Lee v. Bude & Torrington Junction Railway Company* (1871) LR 6 CP 576, *Edinburgh and Dalkeith Railway Co. v. Wauchope* (1842) 8 Cl & F 710, *Pickin v. British Railways Board* [1974] AC 765.

⁷ *Pickin v. British Railways Board* [1974] AC 765.

⁸ *Pickin v. British Railways Board* [1974] UKHL 1.

⁹ *Madzimbamuto v. Lardner-Burke* [1969] 1 AC 645.

¹⁰ *Cheney v. Conn* [1968] 1 All ER 779.

¹¹ *Manuel v. Attorney General* [1983] Ch 77, 86.

¹² *Vauxhall Estates v. Liverpool Corporation* [1932] 1 KB 733; *Ellen St Estates v. Minister of Health* [1934] KB 590.

¹³ On the issue of the admissibility of parliamentary adoption of normative legal acts of a retrospective nature, see: *Burmah Oil v. Lord Advocate* [1965] AC 75; *R v. Londonderry Justices, ex parte Hume* [1972] NI 91.

is the *Continental Shelf Act 1964*¹⁴, *War Crimes Act 1991*¹⁵, *Sexual Offences Act 2003*¹⁶.

Taking into account the political and legal nature of the rule of law, implying by this its focus, among other things, on the development of certain ideal (proper) models and principles of organizing social relations, the vector of development of the national legal order¹⁷, its connection and features of interaction with parliamentary sovereignty are one of the key issues of constitutional legal theory and practice. In this regard, it seems that the ratio of the supremacy of the British Parliament within the entire system of state mechanism, which determines the pre-emptory nature of the political will formed by it and the content of parliamentary acts¹⁸, is of utmost importance, with the need to comply with the principle of the rule of law and its individual manifestations.

The question of the existence of restrictions on the supreme power of parliament in the British legal order was raised by A.V. Dicey. As such, in a certain way narrowing the law-making function of the legislative body, he saw the principles of morality, international legal norms, non-interference in the sphere of royal prerogative¹⁹. However, such restrictions, in his opinion, are not significant from a legal point of view and are not capable of having any significant impact on the supremacy of parliament²⁰.

At the same time, such an approach regarding the existence of certain significant restrictions on the activities of the legislative body at the present stage has re-

¹⁴ Continental Shelf Act 1964. URL: <https://www.legislation.gov.uk/ukpga/1964/29/contents> (date of access: 25.04.2023).

¹⁵ War Crimes Act 1991. URL: <https://www.legislation.gov.uk/ukpga/1991/13/contents> (date of access: 25.04.2023).

¹⁶ Sexual Offences Act 2003. URL: <https://www.legislation.gov.uk/ukpga/2003/42/contents/enacted> (date of access: 25.04.2023).

¹⁷ This aspect largely correlates with the existing dualism of the judiciary, the nature of whose powers are not only legal, but also political in nature. As N.M. notes in this context. Marchenko, the presence of legal power allows the court to apply, develop and change the statute within the judicial sphere, while political power provides it with the opportunity to participate more widely in law-making activities and make decisions that are not always consistent with statutory regulation. See: *Marchenko N.M. Rule of law and civil society (theoretical and legal research)*. Tutorial. M.: Prospekt, 2015. P. 217.

¹⁸ As is known, the UK, due to the peculiarities of its constitutional and legal development, primarily the formation of an uncodified constitution and the principle of parliamentary sovereignty, is not aware of the institution of constitutional control, which implies the possibility of recognizing in court a particular parliamentary act or its individual provision as invalid (unconstitutional). See: *Shayo A., Witz R. The Constitution of Freedom: An Introduction to Legal Constitutionalism* / A. Shayo, R. Witz; lane from English D.V. Sichinava and E.A. Zakharova. M.: Institute of Law and Public Policy, 2021. P. 414; *Marchenko N.M. Rule of law and civil society (theoretical and legal research)*. Tutorial. M.: Prospekt, 2015. P. 217.

¹⁹ *Dicey A.V. Fundamentals of public law in England*. M.: Typograph. Partnership I.D. Sytina, 1907. C. 70 – 79.

²⁰ *Ibid.*

ceived a new vector of development. Taking into account the formation of a stable concept of the supremacy of parliament by the British legal order, in constitutional practice there are tendencies towards building certain standards of parliamentary activity based on the principle of the rule of law, without questioning the very essence of the supremacy of the legislative branch.

The adoption of the Human Rights Act of 1998 and the formation of new national standards in the field of protection of human rights and freedoms largely affected the unshakable nature of parliamentary sovereignty²¹. The transformation of legal reality at the turn of the 20th-21st centuries obviously required a departure from such a categorical and conservative approach to the unconditional unlimited power of the British Parliament.

In this context, one should refer to the famous case of *Regina v. Secretary of State for the Home Department*, in which Lord Steyn formed a general rule from which it follows that, in the absence of the clearest provision to the contrary, it should be considered that the British Parliament should not pass laws that conflict with the rule of law ensuring minimum standards of substantive and procedural justice²².

In another judicial precedent, Lord Hoffman, recognizing that the British Parliament, if it has its will, can enact legal regulation that is contrary to fundamental human rights, and the Human Rights Act 1998 will not be an obstacle to this, emphasizes that the legislature must clearly understand the consequences of such a decision and accept its political costs, and at the same time, take into account that the abolition of such fundamental rights cannot be carried out on general and ambiguous grounds²³.

Developing this line of reasoning in a subsequent judgment of the House of Lords, Lord Hope explicitly pointed out the participation of the judiciary, and as a consequence, the principle of the rule of law, in “determining the boundaries of the legislative sovereignty of the British Parliament”²⁴. The courts in this regard act as «the essential controlling factor on which the British Constitution is founded» and «shall not apply unlawful acts of any authority, whether legislative or administrative, which exceed the powers deriving from law»²⁵.

²¹ As K. Ewing, professor of public law at King’s College London, rightly noted in this context, the Human Rights Act 1998 is designed to strike a delicate balance between ensuring the protection of fundamental human rights and parliamentary sovereignty, representing an unprecedented redistribution of public power from the legislative and executive bodies to the courts and thereby a significant transformation of the entire constitutional structure of Great Britain. See.: *Ewing K.D. The human rights act and parliamentary democracy // The Modern Law Review. Vol. 62, № 1. 1999. P. 79.*

²² *Regina v. Secretary of State for the Home Department, ex p. Pierson [1998] AC 539, 591.*

²³ *R v. Secretary of State for the Home Department, ex parte Simms [1999] 3 WLR 328.*

²⁴ *Jackson and others v. Her Majesty’s Attorney General [2005] UKHL 56, para. 107.*

²⁵ *Ibid.*

Thus, the aspects of the relationship between the rule of law and parliamentary sovereignty raised in the mentioned judicial precedents demonstrate the desire of the British legal order to create, within the framework of the current legal regime of the supremacy of the legislative body, conditions for the comprehensive provision and protection of such basic constitutional and legal values as fundamental human rights and freedoms. A key role in this process is assigned to the Human Rights Act of 1998 and its provisions, albeit not directly, due to the designated constitutional features, but indirectly allowing the judiciary to influence the implementation of the political will of parliament. The courts are therefore given special powers to interpret statutory legislation and to declare it incompatible with the Convention, although without directly affecting its validity and continued operation.

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工作场所的暴力和骚扰：哈萨克斯坦共和国的公司监管
**VIOLENCE AND HARASSMENT IN THE WORKPLACE:
CORPORATE REGULATION IN THE REPUBLIC OF
KAZAKHSTAN**

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抽象的。近年来,大量外国公司在哈萨克斯坦共和国开展业务。这些公司不仅受哈萨克斯坦现行立法的约束,而且由于它们制定了自己的公司法规,因此对法律现实具有独立的影响力。国家境内没有专门的立法来确保保护任何性别的雇员在工作中免受心理迫害或性骚扰的可能性。本文致力于研究外国公司旨在确保其身心舒适的政策,并评估其有效性。

关键词: 暴力; 骚扰; 工作场所; 公司监管; 外国公司; 哈萨克斯坦共和国; 雇主。

***Abstract.** In recent years, a large number of foreign companies have been operating in the Republic of Kazakhstan. Such companies are not only subject to the current legislation of Kazakhstan, but also have an independent influence on the legal reality since they create their own corporate regulation. There is no special legislation on the territory of the state that ensures the possibility of protecting an employee of any gender from psychological persecution or sexual harassment at work. This article is devoted to the study of the policies of foreign companies aimed at ensuring the physical and psychological comfort of their, as well as assessing its effectiveness.*

***Keywords:** Violence; harassment; workplace; corporate regulation; foreign companies; Republic of Kazakhstan; employer.*

Introduction

Kazakhstan is a leading player in the Central Asian region. This state attracts investors with natural resources and a capacious domestic market [6, p. 10], which, in turn, contributes to the economic growth of the country, provides a favorable financial climate, and is an additional source of investment in the national production of goods, works and services [5, p. 10]. Therefore, a large number of foreign companies operate on the territory of the republic, which influence on the

legal regulation of the state, including industry and corporate self-regulation [10, p. 159].

Despite the large-scale presence of foreign companies, from the developed legal order, according to a study conducted in 2022 by UN Women in Kazakhstan, more than 50% of women surveyed confirmed that harassment is present in their environment, and 13 % said they were victims of violence and harassment in the workplace [9]. Additionally, according to a September 2023 poll by the MediaNet International Center for Journalism, supported by the Canadian Foundation for Local Initiatives (CFLI), 43% of survey respondents favored tougher penalties for sexualized harassment [11]. The results of the studies indicate that the level of violence in the workplace in the Republic of Kazakhstan is high.

At the same time, the current legislation of Kazakhstan does not contain norms on the basis of which it is possible to protect an employee of any gender from psychological persecution or sexual harassment during the period of employment [4, p. 633]. In the absence of special legal regulation, victims of violence and harassment at work are forced to either engage in self-defence of their violated rights, or use mechanisms developed by their employers.

This study is devoted to studying the policies of foreign companies located in the Republic of Kazakhstan, aimed at ensuring the physical and psychological comfort of workers in the workplace, and assessing the effectiveness of this corporate regulation.

Main part

The main focus of this study is the analysis of local regulations of companies, which reflect the company's attitude to the problem of violence and harassment in the workplace. Additionally, companies' response mechanisms were analyzed when employees received complaints about the above-mentioned problems¹.

For this purpose, the researcher selected the top 10 companies that are the largest foreign taxpayers in Kazakhstan according to data for 2020:

- Tengizchevroil;
- Karachaganak Petroleum Operating B.V.;
- Kazzinc;
- Mangistaumunaygas;
- JTI Kazakhstan;
- Philip Morris Kazakhstan;
- CNPS-Aktobemunaigas;
- North Caspian Operating Company N.V.;
- British American Tobacco Kazakhstan Trading;

¹ The scientific literature notes that there is some terminological confusion associated with foreign borrowings, as well as the lack of legally established concepts in this area of law enforcement [8, p. 21]. The above is also true for the legal reality of Kazakhstan. Thus, the concepts used "violence and harassment", "persecution", "harassment" are contextual synonyms.

- ArcelorMittal Temirtau [12].

Based on the results of the analysis, the following conclusions were made.

1. All companies studied have their own official websites. Most of them are adapted for speakers of three languages: English, Russian and Kazakh. The exception is for companies whose websites are made only on:

- Russian and Kazakh languages: Mangistaumunaigas [7], SNPS-Aktobemunaigas [6]; ArcelorMittal Temirtau [1];
- English: British American Tobacco Kazakhstan Trading [2].

Thus, the functionality of the websites of 9 out of 10 companies is presented in the state language of Kazakhstan. Only the functionality of the company British American Tobacco Kazakhstan Trading is not adapted for the Kazakh user. The presence of a website and its adaptation to the local language are necessary for a modern employees, since they do not always have quick access to the local regulations of the employer, and the website should contain up-to-date information.

2. None of the companies studied have a special document regulating mechanisms for preventing and combating violence and harassment in the workplace. In most cases, the company adopts general local regulations that regulate a wide range of issues, for example, in the form of:

- business requirement (Karachaganak Petroleum Operating B.V.), which establishes a general requirement of respectful, fair and polite treatment of each other (principle 4 of the KPO business requirement);
- code of corporate ethics (Kazzinc), which states that the company does not tolerate harassment or bullying in the workplace (p. 25 of the code of corporate ethics);
- code of business conduct (Philip Morris Kazakhstan), which establishes that the company maintains fair and respectful relationships in the workplace, free from discrimination, harassment and intimidation (p. 19 of the code of business conduct);
- periodic reports on the implementation of human rights (JTI Kazakhstan); for example, the 2021 report states that the company supports diversity and promotes a safe and inclusive workplace where everyone can be themselves at work without the risk of discrimination or harassment (pp. 39-40 of the 2021 periodic report);
- supplier standards (JTI Kazakhstan), which establish that suppliers must treat their employees with dignity and respect, and also do not condone inappropriate behavior of their employees, including physical punishment, threats of violence, as well as sexual, psychological or verbal abuse (par. 11.1 of the supplier standards).

It was not possible to find statements regarding violence at work from four organizations: Tengizchevroil; Mangistaumunaygas; SNPS-Aktobemunaigas;

British American Tobacco Kazakhstan Trading. The rest of the companies, in one form or another, have a pronounced negative position formed in relation to these phenomena.

3. Special attention is drawn to the attempt of some companies to form a conceptual apparatus among their employees. For example, in the code of business conduct of the Philip Morris Kazakhstan company states that harassment can manifest itself in various forms, including, but not limited to: the use of nicknames, derogatory jokes and remarks, offensive language, unwanted sexual advances, invitations or remarks, etc. (p. 20 of the code of business conduct). In the code of business ethics of North Caspian Operating Company N.V., there is a list of what is unacceptable in the company. North Caspian Operating Company N.V. lists any offensive, intimidating, or hostile acts or behavior and notes that it should be particularly sensitive to acts and behavior that may be acceptable in one culture but unacceptable in another, and to avoid such behavior if it may be perceived as harassment (par. 2.4 of the code of business ethics).

Thus, some companies provide their employees with cues as to what is and is not acceptable behavior in the workplace. For an employee who is in a stressful situation and has doubts about whether he or she is making the right choice (to file a complaint or not to file a complaint about offending behavior), employer tips and case examples can be very helpful.

4. Based on the analysis, companies consider the most important and effective means of combating a hotline that an employee can contact if he or she believes that he or she has encountered harassment or retaliation at work. For example, Tengizchevroil provides the opportunity to make a complaint in various ways: fill out feedback forms in the places where boxes for collecting comments and suggestions are located (8 addresses), provide information via the e-mail specified on the website, or call the telephone line for free at the specified phone number on the website [3].

ArcelorMittal Temirtau suggests reporting any illegal or unethical behavior to immediate supervisor, senior manager, head of the legal department or head of the internal audit department. North Caspian Operating Company N.V. notes that if an employee is afraid to personally ask the offender to stop the harassment, he or she should contact line manager or a member of the Business Ethics Department. This approach raises some doubts, since a conflict situation may involve one of the above-mentioned officials, whom the company advises the employee to contact.

Tengizchevroil has developed information booklets that employees can read, regularly publish anonymized information based on the results of processing received requests.

In addition, such companies as Karachaganak Petroleum Operating B.V., Mangistaumunaigas pay special attention to the fact that the anonymity of the request is guaranteed which can be very useful for a doubtful employee,

Thus, the analysis showed that most companies try to provide employees with the opportunity to give feedback. The most trustworthy approach is one in which the employee is guaranteed anonymity, since the problem he describes may be sensitive or even intimate in nature, and its disclosure to third parties will be especially painful for the person who has already been harassed.

5. Finally, the fact of the existence of liability for unlawful acts plays an important role. Awareness of responsibility directly affects the following:

- understanding by the victim of violence and harassment that the perpetrator or perpetrators will be punished for these actions;
- the offender's understanding of the existence of punishment;
- warning employees against committing such acts.

Thus, Karachaganak Petroleum Operating B.V. establishes personal responsibility for offensive or inappropriate behavior. Kazzinc JSC establishes that for failure to comply with company policy, an employee may be subject to disciplinary, material, administrative and/or criminal liability. North Caspian Operating Company N.V. and ArcelorMittal Temirtau establish that harassment or behavior contrary to the rules developed by the company can lead to disciplinary liability, including dismissal.

Thus, less than half of the companies analyzed mention the possibility of being held accountable for misconduct.

Conclusion

The attempts of foreign companies located in Kazakhstan deserve a positive assessment. The analysis showed that, in one way or another, all the companies reviewed are trying to establish measures to inform, monitor, prevent or combat violence and harassment in the workplace.

However, corporate regulation is not enough to ensure that an employee can feel completely safe, and when faced with the manifestation of these phenomena, receive effective and quick support, as well as bring the perpetrators to justice. That is, it is the state that should be the initiator of the legal regulation of such relations, and the role of corporations is rather additional, auxiliary.

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小学生的政治文化
POLITICAL CULTURE OF SCHOOLCHILDREN

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注解。 本文试图开创学校研究的一个新范畴——学校政治文化。 使用理论荟萃分析。 第一部分，作者解释了她询问学校政治文化的原因。 基于学校作为一个组织的事实，政治文化方法应用于其研究是合理的。 学校作为一个组织是一个独立的活动系统，具有明确的目标、学校社区成员之间的具体分工以及具有一定程度的形式化和权力等级的要素之间的联系。 对学校组织的要素与政治制度的基本要素进行了比较。 第二部分介绍政治文化理论要成为适用于学校环境的理论必须满足的标准。

关键词：欧洲教育学、政治文化、中学、民主制度、荟萃分析。

Annotation. *The article attempts to create a new category in the study of school - school political culture. A theoretical meta-analysis was used. In the first part, the author explains why she asks about school political culture. Based on the fact that the school is an organization, the application of methods of political culture to its study is justified. The school as an organization is a separate system of activity, with clearly defined goals, a specific division of labor between members of the school community and connectivity between elements with a certain degree of formalization and hierarchy of power. A comparison of the elements of school organization with the basic elements of the political system is presented. The second part introduces the criteria that the theory of political culture must meet in order to become a theory applicable in the school environment.*

Keywords: *European pedagogy, political culture, secondary school, democratic system, meta-analysis.*

Introduction. The purpose of the article is to try to answer the question: is the category of political culture applicable to the study of school, and if so, what concept of political culture should be chosen as a basis? The concepts of “school” and “political culture” are unusually broad and difficult to define precisely. The very concept of “political culture” consists of two additional terms that are difficult to define, namely “culture” and “politics”. This introduces many doubts and con-

cerns as to whether the merging of these two concepts will mislead the researcher. Of course, using the structural and methodological approach of theoretical meta-analysis will generally avoid any associated difficulties.

Political culture - in the most general sense - is the totality of beliefs and actions of participants in a certain political system in relation to this system. Its scope covers ideas, values, political standards, customs, traditions, models of political behavior, emotions in relation to political facts and criteria for their assessment [Sarnatsky, 2016]. Classical ideas about political culture extend to the state level; they ask about the attitude of citizens towards the components of the political system of a given state and about the determining factors of this attitude. Depending on the concepts, we will look for signs of political culture in the statements [Almond, Verba, 1963] and/or actions [Blok, 2009] of members of a particular politically organized community. The determining factors of political culture should be sought in the knowledge that individuals possess, in the value system they adhere to, or specifically in the system of organization of the state, which provides each participant with a real field of activity. Some concepts of political culture consider only democratic systems [Ferejohn, Rakove, Riley, 2001]. Others provide an opportunity to ask questions about political culture in other, non-democratic systems. By defining the properties of the behavior of an exemplary citizen, the concepts of political culture can sometimes become a method of political indoctrination. By asking about the determinants of this behavior, they can develop models of ideal systems. The question of assessing the types of political culture remains controversial. Some authors [de Lazari, 2016] consider the question of the presence of a political culture within a certain community or the absence of such a culture to be justified. They define political culture as a personal culture characterized by civic engagement.

Political culture can be studied as a whole, as dominant in a particular society, and as dominant in a particular social group or organization. At the same time, we can ask about the political culture of employees within a particular corporation or the political culture of students, etc.

The intended goal is to become familiar with the political culture of the school and identify ways to analyze it. How to study the political culture of a school defined in this way? Is it possible to apply the idea of political culture to the specifics of a school? Interpreting a school from an organizational point of view, it can be compared to any institution that is governed by its own laws and rules, produces a common product and extends to people bound together by institutional bonds [Dymara, 2009]. While wanting to understand school society, it cannot be divorced from the culture in general, of which the school is a part; We also cannot miss the fact that as an organization it develops its own internal culture, which we encounter when entering school [Dernowska, Tluściak-Deliowska, 2015]. Us-

ing political culture methods in relation to a school requires asking the following questions: Is the school politically organized? Is the system of running a school (as an organization) similar to the political system used to run a government? In search of answers to these questions, the main components of the political system were examined [Zieliński, 1999; Podolak, Żmigrodzki, 2013], trying to find them in the school organization system:

1) an interdependent community made up of groups of similar and opposing interests - the school community has common interests, it consists of so-called groups of similar and opposing interests, for example. student groups, parents, teachers, each of them additionally internally complex;

2) organizations that, by exercising influence, acquiring and exercising power, represent the interests of these groups - in school this role is played by representatives of the student, parent council, school council, perhaps, for example. extra-curricular activity clubs;

3) state institutions that have a monopoly on taking into account group interests, having at their disposal both means of persuasion and means of coercion and power - bodies such as school administration, pedagogical council (?);

4) formal norms and customs that regulate the relationships and functioning of all components of the system, as well as political ideologies and strategies - for schools these are externally defined norms based on the provisions of the relevant ministerial and internal standards included in school charters and other internal school legal acts;

5) international groups and organizations of which a state or party is or may become a member - this component may relate, for example, to the school's membership in the European cooperation network, student exchange program, etc. If the above analogy is considered fair, then it becomes relevant and the question of the school's political culture. Following this line of thinking, to determine the political culture of a school, it is necessary to turn to the ready-made concept of political culture. You can find a great variety of such concepts, and, of course, not every one of them is applicable to the specifics of the school. Analyzing the available literature, one cannot help but notice that the concepts of political culture created at the same time refer to the past or try to reinterpret or analyze classical concepts. When considering the sources, the concepts created by the classics are analyzed: Gabriel Almond along with Bingham J. Powell (1975) and Sidney Verba (1963), as well as Vilfredo Pareto (1935/2017), who, despite writing about types of political thought, and not directly about political culture as such - can be interpreted within the same thinking [Bäcker, 2005]. Given the fact that political culture does not remain indifferent to the broader cultural context of a particular country, internally Polish concepts should also be noted. In this concept, undoubtedly, Zbigniew Blok (2005, 2009) most widely developed the concepts of political

culture. In order to find the concept of political culture that is most suitable for the specifics of the school, it was necessary to develop criteria that such a concept should satisfy. They helped to find a governing concept that could be further adapted and applied to ideas about the school as an organization with specific properties. These criteria are: 1) generality: the chosen concept must interpret the political system in such a way that it can be adapted to the organizational system of the school or that it simply takes into account the possibility of use at levels lower than the nation-state; 2) Detail: the chosen concept must cover the entire spectrum of possible forms of political culture (subjective and objective, material and intangible) and see the relationships between them; 3) Special attention: the chosen concept should indicate specific components of political culture and use criteria to distinguish (but not evaluate) certain types of political culture, considering systems other than democracy; 4) Bilateral relations: the chosen concept should not include the influence of political culture on political structures and the influence of political structures on political culture; 5) Relativity: the chosen concept must take into account the position and relationships of political culture in the general culture; 6) Operationalization: the chosen concept should allow for empirical application.

Each concept should be asked the same research questions in order to check whether it satisfies the above conditions: 1) What categories are used to describe political culture? 2) What are the determining factors of political culture noted? 3) What is the function of political culture? 4) What is the connection between political culture and culture in general? 5) What is the proposed typology of political cultures? 6) What verification criteria does it introduce?

At the same time, it will allow us to develop a definition of school political culture, and thanks to the operationalization condition, it will allow us to determine the research method used to classify its types. Below are the results of the analyzed analysis of the following concepts: Gabriel Almond together with Bingham J. Powell (1975) and Sidney Verba (1963), Vilfredo Pareto (1935/2017) in the interpretation of Roman Becker (2005) and Zbigniew Blok (2005; 2009).

The concept of political culture by Gabriel Almond, Bingham J. Powell and Sidney Verba

1) What categories are used to describe political culture?

The authors consider political culture as “psychological attitudes towards social objects” [Almond, Verba, 1963: 14]. The subject of studying political culture here is the relationship of members of a given political system to the objects of policy [Almond, Powell, 1966: 53]. Political attitudes and orientations create the potential political ability for certain behavior and, thus, influence the functioning of the political system itself [Sobolevsky, 2001: 130].

2) What are the determining factors of political culture?

The authors note primarily external determining factors. They point to three main components of attitude: knowledge, emotions and evaluations. Various orientations: cognitive (depending on existing knowledge) - evaluative (relates to a value system) and affective (based on one's own emotions) - suggest different ways of behavior of individuals in the same roles in the political system [Almond, Powell, 1975: 577]. Individual knowledge, emotions and assessments create potential political abilities, tendencies towards certain behavior, thereby influencing the functioning of the political system itself [Sobolevsky, 2001: 130]. At the same time, they depend on the influence of this system: knowledge stems from training and experience, assessments are based on an internal value system transmitted in the environment, leading ideology or media messages.

3) What is the function of political culture?

In their work, the authors did not hide their approval of democratic government. They chose to describe the attitudes conducive to a democratic system by referring to the central criterion of a broadly understood participatory attitude. In their work, considering only democratic societies, they created an ideal model - civic culture - indicating its functions such as supporting and developing democracy. They noted the two-way dependence of the type of political culture on the dominant political system and the stability of the dominant political system on the dominant type of political culture [Sobolevsky, 2001: 130].

4) What is the connection between political culture and culture in general?

It is difficult to find a thorough analysis of what politics is in the writings of Almond and his associates. They rather presuppose a general understanding of it a priori. The distinction between political culture and a more general system of social culture is analytical. Political culture is an integral part of a more general culture, and a person's system of political beliefs is only part of the totality of his beliefs. Moreover, fundamental beliefs and patterns of cultural values that are not related to specific political objects usually play a significant role in the development of political culture. [Verba, 1956: 521] Political culture is perceived from an anthropological perspective as a separate part of general culture. The adjective «political» simply narrows the field of study (of culture as a whole) to that which embraces the political relations of a community, excluding for the purposes of study other non-political aspects of the culture of that group.

5) What typology of political cultures does the concept offer?

Based on the research, the authors identified three ideal types of political culture:

- philistine political culture; it is characterized by low interest in political issues and limited political activity - the correct attitude towards the political system. Society does not assign itself any role in political processes; it also does not see

the importance that politics has in people's lives. The philistine political culture is closed from contacts with the outside world and is often based on stereotypes;

- subordinate political culture. It is characterized by submission to those in power. Despite the fact that society has knowledge about political entities and awareness of their importance in the system, it does not see the need to engage in politics, believing that this task lies with the power elites. It is characterized by passivity in the development of public life, a lack of understanding of how political processes affect people's lives;

- participatory political culture. Characterizes a society with developed and stable beliefs about the role of politics in shaping the lives of individual groups and individuals. Society is characterized by a high level of social activity and awareness of the opportunities generated by active participation in political life [Almond, Verba, 1963]. The political culture of a society is indeed always a mixture of different types, with the dominant type determining the assessment as a whole. The civic culture described by the authors is a mixed type, with the predominance of a participative culture and the preservation and inclusion of components of the types of subordinate and philistine culture. This is a type of culture closer to the ideal, characteristic of the systems of the USA and Great Britain [Wiatr, 1999].

6) What criteria verification when studying types of political culture?

Almond and Verba conducted extensive comparative studies of political attitudes in the societies of five countries: the United States, Great Britain, Germany, Italy and Mexico. The study, *Civic Culture, Political Attitudes, and Democracy in the Five Nations*, lists questions that need to be asked to describe and characterize the political culture of a particular social group:

- what do the participants know about their nation, political system, history, what is their emotional attitude towards the nation?

- what do they know about political institutions, the political game, leaders, what are their feelings towards them?

- what do they know about the mechanisms of politics, political decision-making processes, how do they perceive significant political events, such as elections, and how do they evaluate them?

- how does the participant see himself and his position in the political system, what emotions accompany contact with the system? [Almond, Verba, 1963: 50]. At the same time, this concept is accused of "expiring" its explanatory value. The research proposed by Almond and Verba was based on a comparison of the desired type of civic culture and its two ugly variants: subordinate and philistine. While remaining in the circle of democratic societies, the authors assessed their isolation from the ideal. At the same time, however, it is difficult to imagine democratic societies in which narrow-minded or subordinate types would predominate. Consequently, this concept no longer provides the possibility of empirical application in comparative studies [Blok, Pająk-Pat-kowska, 2016: 26].

Types of social thinking of Vilfredo Pareto and the typology of political cultures.

Political Cultures was created by Roman Becker (2005) based on a modified typology of political thought derived from the classification of types of social thinking described by Vilfredo Pareto (1994).

1) What categories are used to describe political culture?

Pareto derives types of political thinking from three ways of communication between people:

- communication to obtain knowledge: based on analytical logic and testable statements or, conversely, on quasi-science without taking into account the logic and reliability of the final results, statements. The task of this social thinking is to develop a model of truth, to provide a sense of certainty and permanence; communication to satisfy residuals (Pareto, 1994: 165), one's own needs and aspirations. This is carried out through mythological thinking, creating derivatives or beliefs and judgments that should allow both the use of residues and the maintenance of social connections.

- communication during social connections. This is done through communicative thinking, described as «blah blah» or rumors. The goal is solely to satisfy the need to belong by maintaining social connections. The opposite of communicative thinking is vegetative thinking, in which a person's only goal is the immediate and speedy satisfaction of his own life needs, in particular biological ones [Pareto, 1994] personality model. Roman Becker derives from them the type of political thinking and (...) types of political culture. Political culture is a subject of awareness and plays the role of a buffer. Political culture can be described in the category of action-reaction to a political stimulus - depending on the characteristics of this buffer, which is political thinking. Thus, the subject of the study of political culture should be the observable actions of individuals, groups, parties, those in charge and the governed, and not their statements.

2) What are the determining factors of political culture? is determined by modes of social thinking and personality models, remaining compatible with them in the following way: a person's personal model influences his type of social thinking, implying the type of political culture that he represents [Bäcker, 2005: 102]. Pareto shows how strong and how irrational the motives of social activity are. He introduces the concept of residues as eternal motivational dispositions existing in human nature and rooted in instincts, emotions and passions, present even in very abstract theories created by "pure" intellect [Pareto, 1994, p. 165]. Each political structure promotes certain personal patterns, but the effectiveness of their assimilation by individuals depends on individual inclinations [Bäcker, 2005: 101].

3) What is the function of political culture?

Political culture, as interpreted by R. Becker, is a link connecting personality traits, the corresponding type of social thinking, with the world of knowledge, feelings and political will [Becker, 2005, p. 102]

4) Political culture and culture in general?

Pareto describes types of social thinking based on the ways of communication between people as determined by three criteria: knowledge, the will to satisfy one's own needs and aspirations, and the need for social connections [Pareto, 1994: 165].

From this general point of view, based on some characteristic properties of human nature, Roman Becker first derived types of political thinking, and then types of political cultures. Thus, the type of political culture is compatible with a broader context, with a specific type of thinking, with a personality model that determines all spheres of social activity, and not just political ones. It is worth noting that Pareto and Becker's typology does not depend on the democratic system. Some of the described types of political culture are characteristic of non-democratic societies/groups, some can manifest themselves in both democratic and non-democratic systems.

5) What typology of political cultures does the concept offer? Analyzing the concepts of Vilfredo Pareto, Roman Becker derives from them the following types of political culture:

- vegetative type of political culture. An individual representing this type of culture perceives the world only from the point of view of his profits and losses, without regard to possible future consequences. They are characterized by a high degree of conformism and a lack of rules. They can do whatever they deem beneficial to themselves at any given moment. In democratic systems, such a person will represent insularity, but can be easily activated and rewarded with material benefits. In totalitarian systems, the individual will be actively (bureaucratically) subordinated without showing any rebellious behavior [Bäcker, 2005: 102–103];
- post-tribal type of political culture. Individuals representing this type of culture strive to achieve advantages for the group at the expense of the social environment. They relate to social standards relatively, depending on whether they apply to "us" or "to them." This type can be found in all types of political systems, but most often in authoritarian governance structures (more often at the local than at the state level) [Becker, 2005: 103];
- tribal type of political culture. People representing this type of culture are resistant to renewal processes. They are based on ways of behaving in relation to and within governance structures, passed down from generation to generation, both within a given group and in relation to outsiders. The transmitted rituals are based on a white and black, schematic perception of the world. This type was represented in the twentieth century by the Italian mafia [Bäcker, 2005: 103].

- rational-mythical type of political culture. Representatives of this type of culture are characterized by the ability to fuse individual interests with group ones. They try to do them simultaneously. This culture is based on the coincidence of ideological or religious thinking and Aristotelian knowledge. The fundamental condition underlies tolerance, understanding of differences and the right to the subjectivity of others. Political struggle is perceived as a game with a result of one or zero. This culture is characteristic of an open society [Popper, 1987]. It can be compared to the civic culture of a democratic society [Bäcker, 2005: 103–104];

- fundamental type of political culture. This is a community of cultures that, in a rapidly changing, developing society, struggles to preserve traditional patterns of social life. This type of culture is countercultural, sometimes nativist. It arises under the strong influence of modern derivations using e.g. phraseological resources of universalist religions or traditional models of political behavior [Bäcker, 2005: 104];

- totalitarian type of political culture. Its core is political genesis. A person representing this type of culture grows best in the context of a vegetative or post-breeding culture. It is characterized by a revolutionary or generative model of personality [Bäcker, 2005: 104].

6) What criteria verification when studying types of political culture?

Vilfredo Pareto's concept is sociological and is best used in conjunction with the method of observing the behavior, actions and activities that are the subject of the study of political culture. Some authors, however, note some ambiguity in the Pareto concept regarding the definition of the remainders, which are so significant in qualifying types of social thinking and political culture. Pareto's work includes many disparate interpretations of this concept. In one place he compares it with instinct [Pareto, 1994: 165], in another - with feeling [Pareto, 1994: 204]. At the same time, he believes that residues, although indirectly related to feelings and instincts, are at the same time different from them, since "feelings are expressed through residues" [Pareto, 1994: 169]. When explaining the reasons for observed behavior, one cannot turn to objectively analyzed components of reality, but only to intuitive categorizations. Pareto explains all activity (including political activity) by an appropriate combination of remainders. Therefore, if one does not have a general definition of residues, one cannot actually test that author's concepts [Szczepański, 1961: 298].

The results of a theoretical meta-analysis showed that the leading concept of political culture, which best meets the established criteria, is the concept of Zbigniew Blok [2005; 2009]. The concept he proposed provides the possibility of individually determining the type of political culture of each individual by placing it on a ten-point scale of each dimension of all proposed modules, as well as the possibility of calculating the average significance for determining the dominant

type. It is not based on ideal types, hence it avoids evaluation. Such an approach, which provides a precise and rigid but open framework, should justify itself when adapted to various levels of social complexity, the organization of which will take on a political form. The author of the concept notes a significant problem associated with the transition to the stage of formulating concepts that are understandable to the person being analyzed. He suggests specific interview question formulas and recommends pilot studies designed to test understanding of abstract terms. Within the framework of the concept of using the concept of political culture at the school level, this question recalls the additional need to phrase interview questions in such a way that they clearly indicate attitudes towards the school system. Hence, for example, for the first module, consisting of political ideas, values and norms, the author distinguishes three main dimensions:

- individualism-collectivism, which determines the preference for the good of the individual over the good of everyone, and vice versa;
- freedom - equality, which determines the priority of freedom of action over equal treatment, and vice versa;
- fairness-injustice, which determines the need to treat people equally based on the same criteria, or differently based on random criteria. We can create statements for the presented measurements in accordance with the author's concepts that are understandable for the persons being analyzed in the form of a descriptive representation of the boundaries of a given scale. For the school community this could be, for example:
 - At my school, it is very important for me to follow my passions and do my own thing (individualism). At school we need to remember the good of the groups to which we belong (class, circle of interests), sometimes we have to give up our goals (collectivism).
 - It is important to me to feel that all students are treated fairly (fairness). How other students in my school are treated does not matter to me (injustice).
 - At school, the most important thing is that students can act freely in various areas (freedom). In school, the most important thing is to maintain equality in various areas (equity).

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中国专业技术人员在数字化条件下学习俄语的语言需求
**ON THE LANGUAGE NEEDS OF TECHNICAL SPECIALISTS IN
CHINA WHEN ONLINE STUDYING RUSSIAN LANGUAGE**

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简介: 文章分析了中国劳动市场对俄语技术专家的需求情况。对国际工程项目中应用俄语的中国技术人员进行了问卷调查，概述和分析了关于建筑、技术、科技、地质、IT等领域的俄语网络学习课程和数字资源。

关键词: 俄语学习，技术专家，工程师培训，数字资源，语言需求，中国受众，专业语言的学习。

Abstract. *This article explores the language needs and digital resources for Chinese technical experts in learning RFL from a technical perspective through a survey questionnaire on modern interdisciplinary cooperation between Russia and China.*

Keywords: *RFL learning, technical experts, digital resources, language needs, Chinese audience, speciality language learning.*

近百年之际，中俄紧密合作，已取得累累硕果。例如：中俄政府促进加深“东北—远东”政府间合作，加强中国东北和俄罗斯远东地区发展战略对接。中俄原油管道、中俄东线天然气管道、亚马尔液化天然气、田湾核电站1至4号机组等重大合作项目稳定运行；中俄东线天然气管道南段工程、田湾核电站7号和8号机组以及徐大堡核电站3号和4号机组建设等新开工项目进展顺利[人民日报， URL]。双方计划进一步发展合作项目。特别是在2023年中俄联合声明中，莫斯科和北京表示“双方将继续在民用飞机制造、汽车制造、造船、冶金、运输及其他共同感兴趣的领域开展务实合作”[2023年中俄联合声明双语对照版， URL]。这些事实表明，中国技术人员学习俄语的需求将会有所增加。

在中国劳动力市场上，精通俄语的技术人员已经供不应求。我们分析了中国受众广泛的求职网站-前程无忧网(51.job.com)的数据进行查询和统

计得出，近95%的职位与销售和服务行业有关，而需要掌握俄语的专业技术人才岗位有近900多个。其中，电子、半导体和集成电路领域的职位最多，近430多人，其次是汽车行业和重型制造设备的岗位需要约110人，计算机软件和仪器仪表、工业自动化的岗位比例相近，各需70人左右。

为解决精通俄语专业技术人才短缺的问题，需要为中国技术人员提供专业化的俄语培训。然而，线下统一的集体培训为其工作造成了许多影响和限制，培训效果并不显著。利用远程组织培训学习技术的方法目前有许多缺点，主要原因是适用和发展中国技术人才俄语能力的优质数字资源并不多。

我们研究了10门在线课程，10个线上电子词典和10个以普及俄语语言文化为主题的微信公众号。我们发现，只有在MOOC学习软件中有关于理论力学和航空技术的主题系列俄语课程。在俄罗斯人民友谊大学的数字预科学院也可以学习到俄语工程技术词汇。学习者也可以借助两本在线词典：AVOK术语词典和英俄技术术语词典学习相关专业词汇。在中国受众最多的通信软件——微信中，只有一个公众号属于技术领域，即“石油俄语”。

为了了解中国技术专家在学习俄语时的语言需求，我们决定对已有俄语基础的中国技术人员和学者进行问卷调查。我们特别感兴趣的调查方面主要集中在以下几点：是否在语言环境中工作，专业领域和俄语能力水平等方面。

受访者被要求指出他们在俄语工作环境中面临的主要问题，以及涉及远程学习技术俄语的困难。受访者被要求列举出在目前的职业生涯中使用的俄语网络资源，以及他们渴望的线上专业俄语学习资源，例如，他们认为俄语学习中需优先考虑的方面，以及通过线上网络学习技术俄语的可能性和成功性。

目前，这项调查还没有形成大规模，但已有近40名受访者给出了答案。他们都是母语为汉语，在职业环境中使用俄语的在职技术专家，工程师和学者。

问卷结果分析表明，91.18%的受访者希望借助互联网工具学习俄语技术知识。只有8.82%的受访者表明他们在用俄语进行专业交流时没有遇到任何困难。通过多选问题我们了解了受访者在俄语学习方面的困难，70.5%的专业人员认为俄语专业词汇匮乏是主要困难，其次是语法困难（44.12%），听力能力薄弱（35.29%）也是工作中不能顺畅应用俄语的阻碍。

因此，目前我们可以将用俄语进行专业交流的中国技术人员的语言需求分为三大类：

1. 加强专业词汇的扩充。

正如专家们指出：“在语言词汇中主要有两种语义类型的词汇：普通词汇和术语词汇。它们之间存在着持续而深刻的互动关系。科学术语与整个语言词汇有机地联系在一起。因此，只有联系常用词汇才能深刻理解术语的语义性质” [Ignatieva, Antonova 2022; 145]。中国技术人员也不例

外，他们认为有必要在俄语主动和被动学习过程中加入专业术语词汇的理解和吸收。

2. 利用技术性文本来解释、重复和巩固俄语语法。

“语法练习应确保扎实掌握科学语言风格所特有的语法结构、名词和形容词的词组形式以及使用不同类型从属连词的词语组合技巧” [Yoon 2019; 325]。优质的网络课程应有助于培养在工作环境中用专业俄语进行交流的技能，也包括用俄语进行文化交流的能力。

3. 加强俄语听力练习。

为缓解工作环境中俄语听力方面的困难，可以自主训练，或通过小组合作学习，听练跟读视频和音频材料。

大多数受访者都认为，如果对在职专业人员的培训组织适用且得当，许多俄语交际方面的困难是可以克服的。线上俄语学习就是解决之道，对具有共同学习目标的不同群体非常适用。在数字化环境中学习的有效反馈也可以被推广和借鉴到其他学习者。

因此，在数字化条件下教授俄语可以有效解决中国劳动力市场专业人才，包括实施中俄基础设施项目的技术领域专业人才的俄语技能不足问题。远程教育技术可以成为保障学习过程和提供现代化方法的媒介，能够满足中国工程师在学习俄语时的基本语言需求。然而，为国际工程师提供必要和实时的俄语词汇、语法、文体和其他网络资源的问题亟待解决。

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Kitaygorodskaya教学法在成人汉语强化教学中的应用
**ADAPTATION OF THE KITAYGORODSKAYA METHOD IN
INTENSIVE CHINESE LANGUAGE TEACHING FOR ADULT
LEARNERS**

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抽象的。文章介绍了作者根据G.A.外语强化教学法改编的成人学生汉语强化教学模式的训练结果。基泰哥罗德斯卡亚。这种教学模式是在翻转课堂的框架下实施的,其中内置了激活个人和团队能力的方法原理,但它们对于汉语教学来说发生了一些重大变化。作者展示了采用Kitaygorodskaya方法进行汉语教学与欧洲方法的差异,揭示了按照作者模型组织培训的要点,并提供了培训结果。

关键词: 外语强化教学、对外汉语、Kitaygorodskaya教学法、成人学习、翻转课堂、远程学习。

Abstract. *The article presents the result of training according to the author's model of intensive teaching of the Chinese language to adult students using the adapted method of intensive teaching of foreign languages by G.A. Kitaygorodskaya. This teaching model is implemented within the framework of an inverted classroom, in which the principles of the method of activating the capabilities of the individual and the team are built in, but they have undergone some significant changes for teaching the Chinese language. The author shows the differences in the use of the Kitaygorodskaya method for teaching the Chinese language in comparison with European ones, reveals the main points of organizing training according to the author's model, and also provides the results of training.*

Keywords: *intensive teaching of foreign languages, Chinese as a foreign language, Kitaygorodskaya method, adult learning, flipped classroom, distance learning.*

Introduction

In an ever-changing world and the intensification of globalization processes, the need for learning foreign languages and their application in professional activities is beyond doubt. Due to China's stable position on the world stage and strengthening political ties, the Chinese language is becoming the most popular in

Russia. We are talking not only about schoolchildren and university students, but also about adult specialists whose work is often connected with China. Based on the situation with Covid-19 throughout the world, the impossibility or difficulty of direct education in China and its high cost, an increasing number of adults are paying attention to various Chinese language courses: they return to the university or turn to specialized foreign language centers or tutors etc. The most pressing request is short-term training with visible results. Thus, intensive Chinese language courses meet the needs of society.

In this regard, the question arises about methods of intensive teaching of foreign languages and their adaptation to the specific needs of students of Chinese language courses in distance learning. At the same time, it is worth paying attention to their age and lack of a language environment.

The first methods of intensive teaching of foreign languages were developed in 1970-80. XX century based on the research of the psychologist G. Lozanov, who in the 1960s conducted medical experiments related to suggestion. One of the results of the experiment was the theory of human reserve capabilities, aimed at accelerated learning.

The main idea of G. Lozanov was to use the unconscious structures of the brain for unconscious learning, when learning takes place in a calm, comfortable environment, as if without the participation of the student himself. Based on his ideas, teachers from the USSR and other countries in 1970-80. began to develop their own intensive methods of teaching foreign languages. One of the most popular methods in Russia has become the method of activating the capabilities of the individual and the team G.A. Kitaygorodskaya.

The work of many Russian scientists is devoted to the problems of intensive teaching of foreign languages. For example, V.N. Kartashov and V.V. Kokorina [1] see wide possibilities for using manipulative pedagogy in intensive teaching of foreign languages; L.P. Varenina [2] deals with the issue of intensive online learning, and also reveals the features of intensive learning techniques; D.A. Bickert and I.G. Kondratiev [3] study the general issue of methods of teaching a foreign language using intensive teaching methods. Chinese educators are also interested in the issue of intensive learning: a team of researchers led by Professor Zhang [4] is engaged in the issue of improving the quality of education based on intensive learning with in-depth study of the subject; Zhang Lulu [5] studies the potential of MOOCs in intensive Chinese language teaching; Chan [6] deals with the issue of intensive Chinese language teaching to students who came to China to study for an MBA program, and her colleague Zhang [7] in her dissertation research deals with the same issue, but in relation to students taking short-term general Chinese language courses. Zhu [8] compares teaching aids for intensive Chinese language courses. Despite the fact that there are studies devoted to teaching Chinese, how-

ever, they assume that students of Chinese language courses are in China, that is, in a language environment, and this is significantly different from the conditions of our experiment.

It is worth noting that Russian researchers, when studying intensive teaching, tend to base their research on the teaching of European languages. However, the Chinese language has a number of features compared to the European language, so simply copying methods and techniques cannot bring significant results. Special educational tools are required that meet the specifics of the Chinese language.

We consider the “flipped classroom” model to be the key to success. A flipped classroom in a simplified sense is a reorganization of class time, the meaning of which is to use classroom hours to carry out learning activities that are at a higher (complex) level of mental activity according to Bloom’s taxonomy: application, analysis, evaluation, creativity.

Being a specialist in his field, a teacher can stimulate the learning process of students: help students solve questions and difficulties that arise during the learning process, support and guide the creative activity of students, correct errors that arise in a timely manner, etc. And those types of activities that, according to Bloom’s taxonomy, are the simplest, that is, memorization and understanding, should be transferred to home performance. In this way, classroom time can be used more effectively and efficiently.

Unlike full-time students, adults have multiple social roles, leading to conflict between work and school time. In this regard, the peculiarities of independent learning are limited time, its fragmentation, fragmentation, etc. An inverted classroom allows you to take advantage of the fragmentation of an adult’s free time to include the pre- and post-lesson stages of learning in the educational process. This will also help to overcome such a disadvantage of traditional teaching as the introduction of educational information by the teacher during a classroom lesson, and to place emphasis on consolidating and practicing the material. The flipped classroom allows the student to learn at an individual speed and with unlimited repetition, while the teacher focuses more on individual attention to the student and his or her needs.

The works of A.L. Tsepova [9] are devoted to the study of the flipped classroom. , who considers the general principles of learning using this model in teaching medical disciplines, just like his Chinese colleagues Liu and Zhao [10]. I.I. Gnutova [11] is engaged in the philosophical substantiation of the concept of flipped learning, T.A. Borzova [12] studies the role of the teacher in a flipped classroom, and the work of Zhao [13] is devoted to the same topic. Zhang [14] is exploring the technical side of the issue of ensuring the functioning of the flipped classroom model, and Wu and his team [15] of researchers are working on the issue of a teaching platform for implementing the flipped classroom. Qin et al. study

the flipped classroom project method [16]. Thus, the flipped classroom is mainly used for teaching students, rarely for teaching European languages.

In this regard, the **relevance** of our research lies in the fact that we have combined the advantages of intensive foreign language teaching methods, the flipped classroom, and created a teaching model that meets the requirements of adult students when learning in a distance format in the absence of a language environment.

Method of activating the capabilities of the individual and the team G.A. Kitaigorodskaya

Method of activating the capabilities of the individual and the team G.A. Kitaigorodskaya is based on five basic principles:

- the principle of student-centered learning;
- the principle of collective (group) interaction;
- the principle of game (role-playing) organization of educational material and the learning process;
- the principle of concentration in the organization of educational material and the educational process;
- the principle of multifunctionality of educational activities [17].

Adaptation of the Kitaygorodskaya method for an intensive Chinese language course

These principles were preserved when teaching the Chinese language. However, the Chinese language has a number of differences from European languages, so the implementation of distance intensive Chinese language courses for Russian adults based on the method of activating the capabilities of the individual and the team is possible with significant changes to the method itself. The main difference between the Chinese language and European languages lies in the absence of an alphabet - hieroglyphs, which does not make it possible to move on to pronunciation and reading without first immersing yourself in the phonetics of the Chinese language.

In addition, our teaching model is based on the principles of andragogy, distance learning, flipped classroom, methods of teaching Chinese as a foreign language, as well as communicative and lexical approaches in teaching foreign languages.

There is no separate phonetics course in teaching using the Kitaygorodskaya method. The principle of oral advance applies here: oral presentation of the text, listening and repetition after the speaker creates the conditions for staging pronunciation. However, in the case of the Chinese language, when it is not possible to derive reading rules based on visual analysis of the hieroglyph, an introduction to the phonetics of the Chinese language becomes extremely important, that is, preliminary familiarization of students with the rules for reading individual sounds, syllables, tones, etc. Thus, the presence of a separate phonetic course is the first

fundamental difference in the implementation of intensive teaching of the Chinese language based on the Kitaygorodskaya method. At the same time, the phonetic course is implemented daily by posting phonetic tasks on the training platform. The course is designed for 10 weeks and includes both work on the pronunciation of sounds, sound combinations, tones, and on reading and pronunciation of semantic phrases, work on intonation.

The second point is hieroglyphics. Special writing requires a special approach to teaching, which cannot be fully implemented based on the Kitaygorodskaya method, since the method itself is focused on speaking and listening. Writing and reading are given a secondary role, as a result of which these aspects cannot be fully developed. Nevertheless, when teaching Chinese, even with the priority of oral speech, attention must be paid to writing. In this regard, the Chinese language course included activities to practice writing skills.

The third fundamental difference is the equality of the roles of unconscious and conscious learning. The author of the article, just like G.A. Kitaigorodskaya is an adherent of the communicative approach to teaching, but also pays great attention to the lexical approach. Considering the psychological specificity of Russian adults - significant attention to the analysis of the phenomena being studied in order to understand the phenomena under study, in particular, the grammar that they fill with lexical material - we consider it a waste of time to refuse the stage of thoughtful analysis. This situation is implemented thanks to the inverted classroom method, when tasks without a communicative orientation are carried out at the pre- and post-lesson stages of training. A more detailed acquaintance with vocabulary and grammar, or the analytical stage in the "synthesis 1 - analysis - synthesis 2" paradigm of Kitaygorodskaya is carried out on the educational platform in the form of mini-video lectures (implementation of the principle of fragmented learning, when an adult has the opportunity to study one fragment of educational material in a relatively limited time material, and also return to it many times if necessary), which are duplicated in printed materials for those who do not have the opportunity to view video lectures and for the convenience of taking notes.

The flipped classroom is implemented in three stages: pre-lesson, face-to-face online class, and after-hour stage. At the pre-lesson stage, vocabulary and grammar, which was presented in full in the polylogue, are introduced in portions. Vocabulary and grammar are presented in phrases and sentences, that is, in their direct use, much attention is paid to the compatibility and controllability of lexical units. The face-to-face stage is a face-to-face online lesson with cameras turned on, where work is carried out with polylogues and other communicatively oriented tasks. The post-lesson stage is the stage of further consolidation and repetition of the studied material. Thus, time in a full-time lesson is aimed at practicing what was studied independently at the pre-lesson stage, which significantly expands the learning time.

It is worth noting that educational material for each specific group must be selected separately and very carefully, since an intensive Chinese language course always has a specific goal; students must realize their needs, which are most often related to work. That is why the most important point in the implementation of training is conducting a survey of students' educational needs, finding out their specific personal goals for integration into the general course.

In addition, an important point is the correction of the content of training material in real time. The fact is that those problems that are identified during training in students must be resolved immediately. The overwhelming majority of questions that arise are related to the lack of certain professional vocabulary and its use in Chinese. The teacher must and can make timely changes to the course by filming a video lecture on a given topic and posting it on the learning platform for self-study and further practice. To do this, the teacher only needs to be able to work with programs for editing and creating educational videos, which is not difficult in the modern high-tech world.

Great attention is paid to feedback: both the teacher's feedback to the student on completed tasks and questions, and the student's feedback to the teacher about his progress in his studies and psychophysiological state. The latter involves turning to student reflection. In the implemented intensive Chinese language course, mini-interviews of students were regularly conducted; they were asked to answer questions in detail about their motivation, how they assess their feelings and progress in their studies, what they see as difficulties, how they solve them, and where they need support. teacher. Such surveys not only increased the effectiveness of learning, but also allowed students to connect to the analysis of the process and understand that they are the engine of their progress.

Based on the training results, 95 out of 100 students successfully completed the course. The average score is 80.378 on a 100-point scale. We consider this result to be high, and the applied training model to be effective.

The adapted Kitaygorodskaya method, which formed the basis for intensive teaching of the Chinese language, as well as the flipped classroom, made it possible to make the most effective use of the advantages and characteristics of adult students, the advantages of distance learning and to minimize the negative effects. The intensive Chinese language course was conducted for 3 months, with three full-time online classes per week, during which time students outside the language environment reached the HSK 2 level. They mastered 15 topics, about 500 lexical units. The leading speech skills of students were speaking and listening, which were noted to be the most in demand at the beginning of training. Less attention was paid to reading and writing, but these skills were also learned.

Conclusions

Intensive teaching of the Chinese language outside the language environment in distance learning is an important problem facing Chinese language teachers. Strengthening ties in all areas between China and Russia has led to the popularity of the Chinese language in the Russian Federation, and proficiency in it has become a necessity for the implementation of professional skills. The difficulty of studying in China during a pandemic has led working adults to look for opportunities to learn Chinese in Russia outside the Chinese language environment, requiring short-term courses with visible results. The teaching model we created, which absorbed the advantages of the Kitaygorodskaya method of intensive teaching of foreign languages, the inverted classroom, the principles of andragogy, the communicative and lexical approach, and distance learning, allowed us to achieve high results in teaching the Chinese language. The factors influencing satisfaction with learning among adult students identified during the study make it possible to organize the educational process as efficiently as possible. Experimental data can be used both in the organization of traditional classroom teaching of Chinese and other foreign languages, and for distance learning of foreign languages, provided that students have a common language of communication.

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英语语言包容性话语的逐渐出现

GRADUAL EMERGENCE OF THE ENGLISH LANGUAGE ALL-INCLUSIVE DISCOURSE

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抽象的。 本文讨论了将性别中立语言引入官方英语话语的最新趋势。 它还涉及“酷儿”和“同性恋”这两个词含义的变化, 这些词现在是主流词汇单位, 没有评价(以前的贬义)含义, 但普遍接受某些非二元性别群体的本地术语。

关键词: 语言规范、性别参考描述符、官方风格、城市宪章、性别中立、性别包容、宽容、语言发展、地方名。

Abstract. *The article discusses the latest tendency of introducing gender-neutral language into official English language discourse. It also touches upon the change of meaning for the words “queer” and “gay” which are now mainstream vocabulary units without evaluative (former pejorative) connotation, but generally accepted endonym for certain non-binary gender groups.*

Keywords: *Language norm, gender reference descriptors, official style, City Charter, gender-neutral, gender-inclusive, tolerance, language development, endonym.*

Voters in Oakland, a Bay Area city in California, USA are facing an opportunity to introduce changes into American English by voting for replacement of “gendered” terms by gender-neutral ones in the official documents like city charter and related paperwork according to the local newspaper [1]. This comes as a continuation of a comparatively recent tendency to promote LGBT+ values rather aggressively across the USA and other countries with similar cultures.

Having started innocently enough with attempts to introduce gender equality in the English language grammar to ensure politically correct communication, it is now blossoming into something quite peculiar to the majority of the global English speaking population.

Historically, most professions and occupations, especially those whose names appeared in the English language during and after the Industrial Revolution of 1760, were manned by males, as women were considered only fit to do house-

work or menial jobs like washing and scrubbing. Thus nouns like workman, serviceman, chairman and earlier ones like coachman or churchman abounded. Until quite recently the language norm prescribed the use of pronouns “he, his, him” to substitute such nouns as well as in phrases “someone has left his book here”, when the actual gender was unknown. This was strongly criticised and opposed in the last third of the XX century by feminists, which brought about the first grammar change, requiring the use of plural when the gender of the person was not known. This began by being exotic, but now is quite legitimate.

Next came the change in nouns that named professions – “chairman” became first “chairperson” and later plain “chair” which was ridiculed, but stuck. If voters in Oakland decide so, police “matrons” will become “members of the police department” and “widows” would be “surviving spouses.”

But this no longer is the result of women fighting for equal rights in linguistics. This grows in the wake of California 2017 Gender Recognition Act, which allowed people officially claim they are neither men, nor women (nonbinary). In reality there are many other unconventional self-identifications like agender, by-gender, polygender, genderfluid and many others, described by an umbrella term xenogender. The abbreviation LGBT today looks like this: 2SLGBTQIA+, to include 2Spirit, Queer, Questioning, Intersex и Asexual. The plus sign indicates, that Pansexual, Agender, Gender Queer, Bigender, Gender Variant и Pangender are also included, but using all the necessary letters would make the abbreviation unpronounceable. What concerns English language users and learners is the problems with grammar they have to face.

An attempt was made to introduce new personal pronouns, such as Ze/hir (Ze/zir), per/pers, ey/em, xe/xem to use for xenogender people. So far none of them seem to have taken root as generally accepted forms. There is a special site, devoted to this issue [2]. Judging by its contents, this topic is mostly popular in university circles, among professors and students. We may recall that the “political correctness” movement also started in the same environment and initially produced such ridiculous monstrosities as “horizontally challenged” (overweight) and “melanin deficient” (fair-skinned person). These never became part of the mainstream English language.

This was supplemented by introducing a new abbreviation to precede the person’s name. Traditionally you had the choice of Mr for men and Mrs and Miss for women. To get rid of the information about the marital status for women, Ms was introduced comparatively recently. Now, to proclaim your xenogender status, you put Mx (pronounced miks) in front of your name.

Another interesting change has taken place in semantics. The list of xenogender variations includes two names, Queer Gender and Queer. The word “queer”, like the adjective “gay” has changed its semantics radically during the past several decades.

Usage of the word “queer” was registered in the English language in 1500. The Etymology dictionary [3] lists it as a borrowing from Scottish or perhaps from Low German with the meaning “peculiar, odd, perverse”. By 1781 the meaning became “appearing, feeling, or behaving otherwise than is usual or normal”. Eric Partridge dictionary offers numerous collocations with this word with the meaning of “mean” and “criminal”[4]. This negative connotation stayed, when by 1922 this word began to be used with the meaning of “homosexual”, as an adjective, which substantiated by 1935 retaining its derogatory colouring [3]. At the time, being a homosexual for an average person had been mean and criminal for centuries, as it was a capital offence in Britain and the USA at least till the mid-XIX century. Even after the laws criminalising same-sex relationships were repealed, general attitude continued to be negative for a long time. Today, as we can see, people proudly identify themselves as “queer”, so it may be presumed that the negative connotation has gone or at least is fading away.

The word “gay” entered the English language from Old French approximately in the XII century with the meaning “joyful, happy; pleasant, agreeably charming”, but, being French, it also acquired meanings of “wanton, lewd, lascivious” and by 1890 had an overall tinge of promiscuity — a *gay* house was a brothel [3]. It could also refer to “legitimate” sexual activity, like in *Canterbury Tales* by Chaucer, where a bath’s wife speaks about her husband as “But in our bed he was so fresh and gay”[5]. But in XX century English “gay” was commonly used without sexual undertones, like related words “gayly” and “gayness” still are.

It is difficult to name the exact date of “gay” acquiring the meaning “homosexual”, but it may be trace to 1940s psychological texts, for example, in Rorschach Research Exchange and *Journal of Projective Techniques*, 1947 [6]. When discussing homosexuality publicly became no longer taboo, the word was used as a euphemism and later became a usual word, as euphemisms often do. Today being a homosexual in the USA is a bonus, especially for getting a post in a public office. Newspapers always stress the fact, reporting new candidates for a governor, senator or High Court judge [7]. Being a black lesbian is an important asset in a political career.

So we may presume that once-slang items “gay” and “queer” have become legitimate lexical units in mainstream English.

To sum up, it should be said, that we continue to observe the reflection of real life in the language development. It should be added, that this encouragement of LGBT+ values in the USA are often associated with the Democratic Party policies. It would be of great scientific interest to see, if any language changes take place in American English, should the Conservative Party come to power.

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社交网络作为心理援助和心理学教育活动的手段
**SOCIAL NETWORKS AS A MEANS OF PSYCHOLOGICAL
ASSISTANCE AND EDUCATIONAL ACTIVITIES IN
PSYCHOLOGY**

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抽象的。 本文探讨了解决现代社会最重要问题之一的理论前提——利用社交网络作为提供心理援助的资源。 还对一些社交网络社区开展的心理教育活动的问进行了研究。 文章中清楚地概述了使用社交网络的社会支持、验证、信息和专家选择的问题。 针对这个问题提出了一些解决方案。

关键词: 社交网络、心理援助、验证、心理教育、在线教育。

Abstract. *The article considers the theoretical prerequisites for solving one of the most important problems of modern society – the use of social networks as a resource for providing psychological assistance. The issues of psychological educational activities carried out by some social network communities were also studied. The problems of social support, validation, information and selection of specialists using social networks are clearly outlined in the article. Some solutions to this problem are proposed.*

Keywords: *social networks, psychological assistance, validation, psychological education, online education.*

In the era of digitalization, social networks are becoming an important aspect of the life of a modern resident. Despite the vociferous claims about the dangers of social networks, it is important to take into account that the resources of the Internet space can serve as a means of providing psychological assistance and psychological education.

Social networks as part of the Internet offer the Internet user a choice of many ways to cope with psychological problems, as well as a lot of educational information on psychological health and psychohygienic issues [1].

One of the ways to cope with psychological problems that can be found in social networks are those ways that do not in themselves carry the coping nature of their use, but they are (emotional type of coping). For example, such coping strat-

egies can include viewing or listening to visual or auditory content, respectively, discussing books, any other abstract topics (unrelated to a psychological problem), and any other ways to abstract from problems by increasing the psychoemotional background.

The most widespread is the emotional type of coping, for which teenagers and young people use mainly video and audio content resources. There were no significant differences between the indicators of age groups in the use of this type of coping. The main tasks of coping, which both teenagers and young people are trying to accomplish by using the resources of the Internet network, are reduced to distraction and compensation [1].

This type of coping is widely used by Internet users, as social networks, which are characterized by an unimaginably huge amount of different content, predispose to adapt to user preferences. Thus, the individual creates a comfortable psychological state in which, for example, he could already begin to discuss the pressing problem that led him to use coping strategies.

The next type of coping, which carries a component of the essence of solving a psychological problem, is the problem-solving type of coping. This type of coping includes three vectors of intended actions:

1. search for information to solve the problem.
2. finding a solution to the problem.
3. seeking psychological help;

Searching for information to solve a problem assumes that the user is not familiar with the terminology, definitions, constructs and surrounding phenomena that are included in the semantic component of the psychological problem.

Problem-oriented Internet coping is carried out by students mainly in the form of searching for information about a problem, directly finding a solution or trying to influence the situation, including seeking help from online specialists. Reading psychological articles and blogs, accessing special websites, seeking advice from psychologists and psychotherapists, in a trust chat, using anxiety relief techniques, trainings, meditation were mentioned by 12.5% of the respondents [2].

For a fruitful search of this information, social networks have various information communities and channels. They contain classified information about mental states, illnesses, explanations from specialists (psychiatrists, clinical psychologists, psychotherapists, psychodiagnosists), diagnostic criteria, as well as those patterns in social behavior and self-perception that you should pay attention to in order to contact a specialist in time [1].

Such communities include, for example, the groups of the social network “VKontakte” “ТВОЯ ТЕРРИТОРИЯ. Онлайн-помощь подросткам” (“YOUR TERRITORY. Help for teenagers online”) and “F00-F99”. The first community consists of various types of content that, firstly, encourages you to contact the

support service, which is organized separately for your safety and psychological health, and secondly, informs you about cases when you need to think about whether your environment is safe, adequate and comfortable. social environment. “F00-F99” also provides clear diagnostic distinctions of where accentuation ends and where a mental disorder begins. These communities are filled with information that would be very useful for an Internet user when selecting the right information about their psychological problem.

Finding a solution to a problem that an Internet user has identified for themselves requires more organized diligence than a normal search for information. Depending on the problem and the degree of its threat to their mental health identified by the Internet user, they may be offered several ways to solve this problem:

- Seeking psychological advice from a psychologist or clinical psychologist. At this stage, the Internet user can understand their life guidelines, find ways to cope with psychological destabilization and find those methods that will allow them to lead an ordinary and comfortable lifestyle;
- Assimilation and application of coping strategies that stop the manifestations of the problem. This decision may be based on the fact that the problem is not acute, psychiatric, or clearly destabilizing. So, accentuations of character that can interfere with the Internet user are not in themselves a psychological problem, but are a feature of the mental personality. Therefore, those moments of accentuation that can slightly disrupt the socialization of an individual can be solved by making decisions that are not related to the help of specialists;
- Applying for social support. With any degree of severity of the individual’s psychological problem, empathy of others, validation of the individual’s feelings and social support are required, which will form a reliable support for the representation of the individual with a psychological problem;
- Seeking psychiatric advice. When identifying concerns about mental health, as well as alarm signals that indicate possible psychosis, depression, or self-destructive behavior, it is necessary that the individual be provided with a psychiatric consultation followed by psychopharmacological treatment [3];
- Return to a crisis support center or private psychotherapist. This method can help both individuals who are in an acutely unstable mental state, and people in remission who still need support and support from specialists.

All of the above-described ways to solve an individual’s existing problem can be implemented through social networks. Especially, social networks are predisposed to validation and social support, which are necessary for an individual with psychological problems of any degree.

Another example is the “VKontakte” community, which also includes people with psychological (often psychiatric) problems. These communities exist in various formats. Let’s look at the two most common ones.

1. Communities aimed at social support and communication between participants. Such communities include, for example, “Клуб Психически Других” (“The Club of Others”) and “Сообщество “заМЫкание”” (“The “Closures” Community”). These groups have clear communication rules that do not allow insults, hate speech, discussion of politics, religion or other provocative topics, and also imply comfortable and safe communication. These rules are actively used, because members of this community post posts containing personal information, communicate in the comments, later go to private messages if they are interested in each other, and so on. The most important thing is that people with mental health problems can get rid of loneliness and discuss those issues that interest them, but which they cannot discuss in their real environment.

2. Communities that do not involve active communication between participants, but include this possibility in the comments. Most often, such communities are aimed at representing and validating people with mental problems through memes, jokes, and other entertainment content. Such communities include, for example, “VKontakte” group “PSY. WEB”. The administration of this community also warns about possible blocking in case of unacceptable behavior in the comments, for example, when communicating, “any expression of homophobia, xenophobia, psychophobia, ableism and other intolerance is prohibited.”

If we talk about the resources of social networks that provide an opportunity to seek help from specialists, then we should mention not only communities, but also private web pages of practicing psychological workers.

From the communities where you can get competent psychological support through consultation with a specialist or by contacting a crisis center, you can distinguish the VKontakte communities “Детский телефон Доверия 8-800-200-01-22” (“Children’s Helpline 8-800-2000-122”) and “Ясно” (“Clear”). Having phone numbers where you can contact a psychologist or psychotherapist, as well as reviews about certain specialists, these communities provide convenient services for finding the right psychological worker for you [3].

Considering the private practices of psychological workers in social networks, it is important to understand that it is problematic for an Internet user to make a choice among a variety of specialists, since even the reviews of clients who have already been consulted by these specialists are not a guarantee of providing high-quality psychological support and assistance. This issue may be complicated by creating fake reviews in order to artificially create a rating among psychological specialists. To solve this problem, it is proposed to introduce licensing of online employees of psychological services and the creation of a regulatory body regulating the activities of individuals who offer psychological assistance services [2].

Also, messages are of a recommendatory nature that the presence of their own publications as an indicator of active involvement in the profession were recognized as factors inspiring confidence; the presence of pets, indicating, according to some respondents, the kindness and care of a specialist; naturalness in self-expression, the presence of a creative hobby, as an indicator of a wide range of interests and creativity of the individual specialist [2].

The activity of using problem-solving strategies is growing, probably with an increase in digital competence and the accumulation of online experience, as well as life experience in general, since it is more pronounced in the group of students. Applying for social support is also significantly more common among young people. The search for social support on the Internet among young people is distinguished not only by greater activity, but by the certainty of the request, purposefulness and selectivity in choosing a significant other [1].

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社交网络作为获得心理支持的一种负担得起的手段的优势
**ADVANTAGES OF SOCIAL NETWORKS AS AN AFFORDABLE
MEANS OF OBTAINING PSYCHOLOGICAL SUPPORT**

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抽象的。为了获得合格的心理帮助和支持，多年来，一个人需要拜访心理学家作为面对面会议的一部分。这样的会面总是让人感到羞耻和害羞，以及患者的恐惧——向陌生人透露自己的灵魂。尤其是这样的困难涉及青少年和年轻人，他们的心理在困难的生活时期本来就很脆弱，因此与局外人会面会承受额外的压力，即使这次会面是在专业心理咨询的框架内进行的。社交网络从 2000 年代末至 2010 年代初迅速发展，彻底改变了这种情况。社交网络允许一个人匿名、不慌不忙地考虑数字空间中提供的心理支持类型，尝试它们，并且大多数不需要花钱，也不需要花费很多时间。还有一个优点是，许多心理学家也开始将他们的专业活动转移到广阔的社交网络上——以促进年轻一代应对困难生活状况的决心。本文探讨了社交网络作为患者和心理学家之间一种可访问且方便的互动方式的优点，以及为生活困难的年轻人寻找额外心理支持手段的一种方式。

关键词：社交网络、心理学家、支持、在线咨询、互联网。

Abstract. *In order to receive qualified psychological help and support, for many years a person needed to visit a psychologist as part of a face-to-face meeting. Such meetings always suggested some shame and shyness, as well as fear on the part of the patient – to reveal his soul to a stranger. Especially such difficulties concern teenagers and young people, whose psyche, already vulnerable in difficult life periods, experiences additional pressure from meeting with an outsider, even if this meeting takes place within the framework of professional psychological counseling. The situation was radically changed by social networks, the rapid development of which occurred in the late 2000s - early 2010s. Social networks allowed a person to anonymously and unhurriedly consider the types of psychological support presented in the digital space, try them out, and not pay money at all for most of them and not spend a lot of time. It was also a plus that many psychologists also began to transfer their professional activities to the expanses of social networks – in order to facilitate the determination of young generations to deal with difficult life situations. This article examines the advantages of social networks as an accessible and convenient means of interaction between a patient*

and a psychologist, as well as as a means for young people who find themselves in difficult life circumstances to find additional means of psychological support.

Keywords: *social networks, psychologist, support, online consultations, Internet.*

In recent years, the activity of teenagers and young people in social networks has been increasing during difficult life periods for them. Young people are looking for support and emotional intimacy on the Internet: they communicate with their friends and meet new people, view a huge array of diverse content – from scientific articles about depressive disorders to ordinary entertainment films. All this is achieved thanks to the availability of social networks, their openness, fullness and the possibility of free choice of «what to see».

The main advantage that social networks can give to anyone who is in a difficult life situation (regardless of its severity) is the so-called «psychological education».

Traditionally, psychological education lay on the shoulders of school psychologists, who not only helped teenagers cope with psychological problems, but also enlightened them about how to prevent such problems, i.e. acted in a preventive manner. As A.N. Ayyanyan [3], T.D. Marcinkovskaya [11], A.A. Kostrigin [10], T.M. Khusyainov, L.F. Chuprov and N.K. Yuryev [5, 14] write, now teenagers are increasingly turning to the Internet for psychological support, because «the level of public confidence in information from the Internet is growing.» [14, p. 13]

But the question arises – can social networks fully replace the work of a practical psychologist at school? I.V. Dubrovina defines psychological education as «one of the important areas of work of a practical psychologist in an educational institution, which, through the transfer and dissemination of knowledge of psychological science, makes it possible to increase psychological literacy and psychological competence of students, parents and teachers. « Of course, such a definition sufficiently describes and reflects the complex profession of a school psychologist, whose consultation is really a qualified help and an effective preventive action. However, do not forget that people experiencing psychological difficulties (especially in adolescence), as a rule, are emotionally unstable, their psyche is vulnerable. It is necessary to approach the dialogue with such a person with great caution, because his success can be a failure for a number of reasons.

Firstly, because of the shyness of the teenager. In adolescence, as T.D. Marcinkovskaya writes [11, p. 105], people tend to shut themselves in more than to share experiences with others, whether they are friends, parents or a specialist. Children's practical psychology before the rapid development of social networks was mainly aimed at creating a trusting atmosphere of a teenager's life, in which he was not shy and would not be afraid to share his problems with a psychologist.

However, it is extremely difficult to create such an atmosphere, therefore, the role of a kind of antipode of a teenager's parents often comes to the fore for a psychologist: a psychologist cannot get frankness from a teenager at meetings, which encourages him to share experiences with his parents.

Secondly, face-to-face consultations with a psychologist do not provide anonymity to a teenager. Of course, an experienced psychologist will assure the young man that all the information that he will tell the specialist will remain between the two of them. But before the psychologist himself, the teenager is not anonymous, which refers us to the shyness and fear that was mentioned earlier: at a young age, only a small percentage of people are able to reveal their soul to both a loved one and an outsider. In contrast, we cite social networks that provide anonymity to a teenager: he can fill out his personal profile as he pleases, call himself by someone else's name, publish a photo of some celebrity instead of his photo - this will be his mask, behind which he is comfortable, safe.

Thirdly, the school psychologist and the teenager are representatives of different generations, heterogeneous types of thinking. No matter how hard psychologists try to «descend» to the level of their patients and appear to patients as friends, there will still be a certain mental distance between them. Of course, such a distance exists between any two people, no matter how close they are, but for psychological support of a teenager, you can reduce this distance to a minimum. And according to this indicator, social networks are superior to qualified specialists, because there a teenager feels at home, in a familiar and understandable flow of information and people.

Based on the above, it can be assumed that the option of «connecting» the psychologist and social networks will be successful, i.e. transferring the specialist's activities to the digital space. These can be both online consultations, which have become a particularly relevant form of psychological support in the era of the pandemic, as well as active educational activities of a psychologist: publication of scientific material, useful articles. In order to get even closer mentally to the young people targeted by this activity, specialists can post materials in the format familiar to teenagers: stories, posts, videos. You can also resort to a collective discussion format of interaction between a specialist and his patients. I.S. Karas, A.A. Lukina and V.I. Pushkareva write [9, p. 108] about such interaction, who conducted a study of the features of professional psychological assistance on the social network Instagram (banned in the Russian Federation) in 2019-2020. According to the study, out of the total number of interviewed specialists (50), «the vast majority of psychologists and slightly more than half of parapsychologists post publications on their personal page where conflict problems are considered. Subscribers submit their specific stories for discussion, or a specialist offers solutions to problems for discussion, thereby responding to a group of similar queries.

The most frequently requested topics on the Internet pages of professional psychologists are toxic relationships, personal boundaries, the role of the victim, infidelity, relationship psychology and sexology. » [9, p. 110] This approach solves the problems of anonymity, shyness and mentality, which we talked about earlier, at least because the psychologist on the Internet is «impersonal» - it is easier for a teenager to communicate with him - and the fact that communication takes place in a group of the same impersonal people should undoubtedly add courage to a teenager in discussing his life's difficulties.

The distance work of a psychologist is regulated by the Ethical Code of a psychologist in Russia; however, the Code does not give precise instructions and recommendations regarding the behavior, self-presentation of a psychologist, his communication and interaction with clients in the online space.

At the same time, the ethical dilemmas «whether to add a current or former client to friends», «how to advertise yourself on social media», «whether it is possible to publish information about family, hobbies, raise personal issues in the profile» and others in practice remain for the independent decision of each individual consulting psychologist.

Foreign researchers (A. Afsahi, Barnett, Clinton, K. Kolmes, etc.) are trying to solve these problems by conducting surveys among psychologists themselves and their former, present and potential clients. At the same time, the authors often try to solve the ethical dilemmas described above by the professional community through recommendations based on research (D. Kaplan, K. Kolmes). [13, p. 211]

So, D. Kaplan argues that it is absolutely ethical for consultants to use social networks, but they must act in the interests of the client. The author gives the following tips: [13, p. 105]

- provide the client with a written policy regarding social networks and a consent form that he must sign;
- the psychologist should use the privacy settings on social networks whenever possible;
- the psychologist needs to check with the ethical council or the licensing commission in order to stay up to date with the changing rules and regulations;
- it is better for a consultant to have separate profiles on social networks: professional and personal.

The psychological community agrees with the position of strict adherence to the principle of confidentiality in social networks. Thus, a survey of practicing psychologists conducted by A. Afsahi showed that ethical behavior in social networks is important to professionals, as well as that psychologists monitor changes and new regulations in the field of professional ethics, and more than half of them have already independently formed an ethical policy of behavior in social media; however, they discuss with clients their policy preventing future ethical dilemmas, there are still a small number of practitioners during the first admission.

At the same time, based on foreign studies, psychologists themselves often look for additional information about their clients on the Internet and social networks, thereby violating the ethical norms of the profession.

Clients do not lag behind their psychologists. Research by K. Kolmes [13] has shown that most of the psychologist's real clients are looking for information about him on the Internet, including in social networks. Respondents reported that the search for information about their psychologist was either neutral or contributed to the progress in counseling. At the same time, about a third of the clients who found the psychologist's personal information felt that they had crossed the border; almost the same number of people indicated that they felt uncomfortable when searching for this information. 18% of respondents stopped searching because they felt that the information they received jeopardized the opportunity to continue consulting with this specialist.

However, social networks themselves obviously have a number of advantages over traditional psychological support expressed by face-to-face consultations of psychologists, especially if the latter use social networks correctly. Let's present a list of these advantages:

1. Anonymity. As mentioned earlier, social networks provide users with the opportunity to use anonymously, which protects them from all kinds of threats and allows them to feel safe;

2. Versatility. Social networks are universal, because they contain information of various kinds, as well as various means of psychological support: from the ability to contact the right specialist online to audio and video content that calms the nervous system;

3. Availability. The use of social networks allows you to minimize the financial and time costs that a person spends turning to specialists. Of course, if we are talking about such specialists as a school psychologist, then his services are paid for by the state, but even so it seems more comfortable to receive psychological support yourself. On the other hand, if we are not talking about budget organizations, but about private interns, then they will be relatively expensive – and the cost of psychological support in the world is growing rapidly from year to year (especially in the era of the pandemic);

4. Social networks also have purely digital advantages that allow you to convey information to the user in various combinations: audio, video, text, which contributes to a versatile perception, which is very important in difficult times for the psyche;

5. Unlike traditional forms of psychological support, social networks from almost anywhere in the world – no need to waste time on the way to a specialist, just connect to the Internet;

6. Social networks collect statistics. Plunging into the Internet, the user can find a lot of statistical information, on the basis of which you can extract relevant information for yourself;

7. The online format of social networks and the ability to connect anyone to the discussion allow you to immerse yourself in collectivist reflections, which can benefit many during periods of vulnerable psyche.

At the same time, of course, the question of the nature of psychological problems that require help also attracts attention. After all, not every diagnosis will be enough to go online and read several blogs about how to cure such diseases, or to communicate with peers on social networks. The latter have their disadvantages, regardless of the severity of the psychological difficulties experienced by young people. [8. p. 198]

A number of problems faced by teenagers and young people who are excessively addicted to social networks in difficult life periods for them, first of all, should include the development of complexes. «Buying into» the accessibility and openness of the Internet in general and social networks and their content in particular, a person begins to compare himself with others. Against this background, in the course of endless introspection, various complexes arise, and the problem with which a teenager or a young person initially turned to people on social networks in order to find support becomes overgrown with new introductory ones - accordingly, it becomes more difficult to solve.

It should also be noted that free «wandering» in social networks changes a person's perception (in some cases, it can cause episodes such as «depersonalization» and «derealization»). At the same time, a person's self-acceptance and self-esteem are changing, which makes social networks a rather dangerous structure for the psyche, despite the possibility of finding free psychological support in them at any time;

When teenagers and young people are emotionally vulnerable, there is another consequence of excessive use of social networks – the risk of the so-called FOMO syndrome («fear of missing out»). A person begins to be afraid of missing certain news, information about events and events - his behavior becomes obsessive;

Despite the fact that social networks, as we have found out, have a range of positive tools for bringing themselves «to their senses» when it comes to frivolous (relatively) life difficulties, yet excessive immersion in digital life leads to social isolation. As the Russian philosopher and political scientist A.G. Dugin writes, «... out of desperation, we are interested in social networks. They don't lead anywhere. They do not tell us anything, they by and large do not develop, strengthen, or expand our self-awareness. They just create another illusion that we are. Although in fact, it would be much more honest to admit that we are almost gone, friends.» [1, p. 2] Social networks, with all the involvement of a huge audience of young people, still lead a person to isolation – and this is their main paradox, which Dugin draws attention to. Within the framework of our article, this paradox, however, can carry both a negative and a positive response from a person expe-

riencing psychological difficulties. In many ways, the polarity of this response depends, as we have already said, on how to use social networks.

Due to all the advantages and disadvantages of social networks as a means of obtaining psychological assistance as opposed to its traditional forms, we consider it appropriate to choose a «hybrid» type of psychological form, which consists in a person contacting a specialist, but in social networks. This format is interesting insofar as, as already mentioned, social networks in recent years have begun to arouse more and more people's trust, as well as the digital environment as a whole. Teenagers and young people are very accustomed to using social networks and the Internet, so the transition of psychological services to such a format (on the territory of their clients) will be an advantage for them, because it will help to inspire trust in clients.

In this regard, it is necessary to understand what a modern «digital psychologist» [15, p. 14] should be. This combination is very subtle, it must take into account many factors, since psychological support deals with emotionally unstable people. For example, a specialist who helps teenagers in social networks can focus on current bloggers on psychological topics and conduct similar scientific and cognitive columns on his profile page. He can shoot interesting videos in the format of selfie travel, where the essence of a particular psychological phenomenon is revealed during the journey itself, or an online meeting with clients is held in an informal mode.

Now forms of psychological support are becoming increasingly popular, just such an online order, which a priori implies informality, some isolation from officialdom, the usual white coat of a doctor. Collectively, such external transformations are aimed at what we called psychological enlightenment at the beginning of the article. But, it should be noted, the tasks of psychological education itself, during the transformation of its forms, remain unchanged: to prevent the development of mental disorders and deviations in young people, and to help those who have already begun to develop them. Therefore, despite the evolution of forms, even in social networks, specialists need to adhere to clear criteria for psychological education: [14, p. 100]

1) The relevance of knowledge, i.e. the information provided must correspond to modern psychological science and must be provided according to the explicit and implicit requests of the target audience;

2) it is necessary to take into account the amount of knowledge based on the age and level of education of the target audience, the information provided should be understandable;

3) it is necessary to take into account the requests of the target audience;

4) reliability of information and absence of plagiarism;

5) remember the goals and objectives of psychological education.

In addition to the basic ethical requirements, for example, the absence of a mat, there are a number of others. In order to create the most effective information records, a school psychologist and any other specialist in this field should know some rules and techniques of copywriting and SMM management. For example, the criteria for an effective informational post that will be appreciated by a modern young audience and will allow them to «win» their trust are: [12, p. 67]

- clear structure;
- clear essence;
- absence of «water» in the text;
- splitting the text into semantic blocks.

Specialists studying the integration of the activities of psychological support specialists into the digital space identify the following errors in their preparation of an information post:

- the use of abstract concepts and abstractions, semantic stamps that will be incomprehensible to most representatives of Central Asia and will form stereotypes from which social networks are trying to protect teenagers and young people;
- the use of cumbersome sentences that become unreadable and poorly perceived;
- violation of logic in the text; pleonasm and tautology;
- a large number of professional terms – specialists may forget that they deal mostly with children whose minds are not yet mature, and the psyche is vulnerable, so many professional terms will not be learned;
- grammatical and spelling mistakes; lack of recognizable author's style.

It should also be noted that for the successful integration of psychological activity into social networks, it is necessary to be able to use the tools of the latter. After all, the social network itself is not a positive or negative tool, it becomes such in the hands of a skilled specialist who will turn its advantages to the benefit of his clients. Thus, a psychologist needs to be able to use various services that minimize the above errors. Attention should be paid to the visual design of posts. It is quite difficult to create a complex and high-quality design without having the appropriate education. But, there are special services that help with this problem (such as «Wix», «AdobeSparkPage», «Canva» and others). [6, p. 12] You should comply with copyright law and take the necessary images either from free photo stocks or subscribe to paid photo stocks. The images should be modern, high-quality and appropriate to the subject of the post. Following these simple rules and constant practice make it possible to make psychological education through social networks more qualitative, and therefore more effective. Perhaps it is the need for specific knowledge and skills that is the reason for the lack of purposeful and systematic professional psychological education on the Internet, which L.F. Chuprova and N.S. Zavoevannaja write about. [5; 15]

Thus, social networks are a convenient and relevant tool for psychological education and support of young generations. Psychological education through social networks is promising and effective due to a number of positive features that make it possible to solve the tasks more effectively, but it should also be taken into account that the use of this tool requires specific knowledge and skills from a school psychologist.

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俄罗斯青年的信息和法律教育：社交网络还是教育学院？
**INFORMATION AND LEGAL EDUCATION OF RUSSIAN YOUTH:
SOCIAL NETWORKS OR THE INSTITUTE OF EDUCATION?**

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抽象的。本文讨论了俄罗斯联邦信息和法律教育系统的理论基础和组织方面的问题。被认为是法学教育主要影响力的社会人口群体以俄罗斯青年为代表。该文件不仅指出和指出了俄罗斯政府在这一领域所取得的成就，而且还指出了国家政策在禁止持有极端主义态度的人非法使用互联网网站方面的缺陷。在这方面，确定了年轻人利用社交网络确定其法律地位的危险，并提出了一些措施来防止极端主义意识形态发展到社会实践中。

关键词：媒体素养、媒体教育、法律教育、青年、社交网络、“关于重要事情的对话”、法律素养。

***Abstract.** The article deals with the problems of the theoretical basis and organizational aspects of the system of information and legal education in the Russian Federation. The considered socio-demographic group of the population, which is the main influencing force of legal education, is represented by the Russian youth. The paper identifies and identifies not only the achievements of the Russian government in this area, but also the shortcomings of the state policy regarding the illegal use of Internet sites by persons carrying extremist attitudes. In this regard, the danger of using social networks by young people to determine their legal status is identified, and a number of measures are proposed to prevent the development of extremist ideological attitudes into social practices.*

***Keywords:** media literacy, media education, legal education, youth, social networks, “conversations about important things”, legal literacy.*

The stability of the state system, as well as the success of its internal policy, largely depends on how the population is informed and educated on certain issues. Insufficient information, disinformation, and the spread of fakes - all these problems are observed both among young people with socially disadvantaged status, and among the rich and socially prosperous part of the younger generation.

Currently, the state is taking a number of measures aimed at increasing media literacy among young people. The Ministry of Education is also introducing more

and more regulations for conducting educational activities that would be aimed at forming legal values, as well as at eliminating all kinds of incorrect beliefs among young people regarding their legal status and legal authority.

Despite this, a significant part of the formation of Russian youth's ideas about their legal freedom and legal obligations is invested in the influence of social networks, which can often misinform the younger generation, especially those who are exposed to various kinds of outside influences, but, nevertheless, can also have a positive educational character.

Therefore, it is advisable to consider how these two systems of legal information compete in the minds of Russian youth – the institute of education, whose education is regulated by the state, and social networks, which are not thoroughly regulated by anyone, and have an optional character for young people.

To get acquainted with the measures taken by the Russian state to form a system of information and legal education among young people (and not only), you should refer to the main document declaring the goals, tasks and powers for educational process management bodies at different levels. Such a document is the “Fundamentals of the State policy of the Russian Federation in the sphere of development of legal literacy and legal awareness of citizens”, approved by the President of the Russian Federation on March 28, 2011 (here in after referred to as the Fundamentals).

The Fundamentals, in their paragraph 18, defined measures of State policy in the field of education and upbringing of the younger generation. These include:

1) inclusion in the approximate basic general education program of preschool education, the approximate basic educational program of primary general education of the tasks of introducing children to elementary generally accepted norms and rules of relationships with peers and adults (attentiveness to people, willingness to cooperate and friendship, helping those who need it, respect for others), as well as the development of value-semantic sphere of the individual;

2) development of the practice of teaching the basics of law in educational institutions of various types and types, support for various variants of regional models of legal education, development of training courses that include legal topics, relevant educational programs, training and methodological manuals;

3) application of special programs of legal education and upbringing of children in difficult life situations, difficult adolescents and juvenile delinquents, as well as;

4) improving the level of legal literacy of teachers; training teachers of the subject “Law”, as well as improving the professional and methodological training of teachers of legal disciplines; conducting research and experimental work for the purpose of scientific and methodological support of legal education.

Paragraph 19 of the Fundamentals defines state policy measures in the fields of culture, mass media, broadcasting and cable broadcasting, advertising and publishing. State policy measures in this area are:

1) distribution in electronic and printed mass media, on - air and cable broadcasting of TV and radio channels created with state participation, in the segment of social advertising, on the Internet of information products containing legal information, as well as contributing to the development of legal literacy and legal awareness of citizens and promoting law-abiding, conscientiousness in the exercise of rights and fulfillment of their obligations; obligations, respect and respect for the rights and interests protected by law, including in the format of permanent headings and thematic programs, specialized periodicals and one-time publications;

2) creating and distributing creative projects that are accessible to non-professional perception, information materials that provide basic legal knowledge and form the legal culture and legal awareness of citizens, as well as developing and implementing a system of state incentives for such projects and materials;

3) introduction of a mechanism for public evaluation and recommendations in case of alleged distribution of works and information materials, advertising products that openly promote interethnic and religious discord, gross violation of public morals, disrespect for the law and the court;

4) constant replenishment through targeted funding in public library collections of popular legal literature.

Thus, the Fundamentals defines a number of essential measures that are aimed at developing and strengthening the legal aspects of their life in the minds of young people.

Also, as an illustrative example of state participation in the formation of the legal culture and legal awareness of young people, we should consider “Conversations about important things”. “Conversations about important things” is a project of extracurricular activities (class hours) aimed at “strengthening traditional Russian spiritual and moral values” and “fostering patriotism” among Russian schoolchildren. So, within the framework of this project, Russian schools held class hours on the following topics: “Constitution Day”, “Media Literacy and digital hygiene”, “Russia in the world”, “Labor Day”, “Children’s organizations”, “The electoral system of Russia (30 years of the CEC of the Russian Federation)”, “On relations in the team”. These events contain in their programs (scenarios) the knowledge and information that will allow students to:

1) form ideas about yourself as a unit of society (I am a student, I am a citizen, I am an Internet user, etc.)

2) learn and assimilate their rights and obligations in accordance with their social status

3) get acquainted with the main legal documents of the Russian Federation, study their structure and current provisions

4) determine the place of the Russian Federation as a state in the global political and legal system, as well as get acquainted with the international legal field.

To learn more about the students attitude to these events, we can refer to the RPORC survey conducted at the end of April 2023. As a result of this survey, the following data were obtained (among grades 8-11):

1) 70% of respondents find “Conversations about important things” interesting (25% of them said that all classes were interesting, and 45% - that most of the classes were interesting for them)

2) 27% of respondents found “Conversations about important things” not interesting enough (19% of them said that they were interested in a smaller part of the classes, and 8% - that they did not find any of the classes interesting)

Thus, “Conversations about important things” proved to be an effective way to increase information and legal education among young people.

Now let’s look at legal education of young people through social networks. As you know, at present there is an unimaginable flow of information in the Internet space, as a result of which it is very difficult for young people, who are largely subject to suggestion and influence of information resources, to find correct and useful information for themselves.

The formation of legal culture through social networks takes place through the transmission of socially significant information to an audience of Internet users. Also, the positive development of young people in legal matters contributes to the transmission of knowledge and innovations among young people through various services and platforms to which Internet users have free access.

For example, the Russian social network “VKontakte” and the cross-platform messenger “Telegram” have communities and channels that promote legal awareness and education in matters of law and the state. For example, in “Telegram” there are about 80 channels in the category “Law”, which indicates a considerable interest of the audience of this platform in knowledge and news of the legal field. In “VKontakte” there are communities: preparing students for the GSE, USE, and social studies Olympiads; communicating the current legal agenda and news of the world of jurisprudence; telling about various crimes and public events; explaining legal terminology and jurisprudence in general, etc.

But social networks, forums, and other Internet platforms also have negative aspects in terms of forming a holistic picture of young people’s legal freedom and legal status.

The spread of extremist ideas through social networks leads to the transition of unfriendly ideological constructions into violent and discriminatory practices in society, which leads to devastating consequences for the state and society as a

whole. The most vulnerable to extremist influence is a morally and psychologically fragile social and demographic group—young people.

The lack of a clear regulation, control system and timely moderation of information posts and messages on Internet sites leads to the fact that information that contains hostile statements, incitement to hatred or direct calls to use violence or to participate in extremist and terrorist actions is very quickly distributed, due to reposts and sending this information by Internet users between each other. The dissemination of such information can contribute not only to the growth of conflict potential in society, but also to the introduction of negative ethnic, political and legal attitudes and values into the consciousness of young people.

In connection with this problem, a number of measures are proposed that can be achieved only through a well-coordinated interaction of all structures of the state apparatus and the institute of education:

1) since educational institutions are the main social institution that shapes the worldview of young people, significant changes are recommended in the organization and operation of these institutions: conducting additional advanced training courses for all teachers in the field of media literacy; increasing the requirements for teachers leading the disciplines of sociological and legal modules; introducing “Conversations about important things” more classes providing useful and comprehensive information on the legal culture and legal status of students;

2) a thorough and large-scale legislative activity should be carried out in the field of restricting the use of various Internet sites by persons who may contribute to the spread of extremist attitudes;

3) it is necessary to create a regulatory apparatus that would exercise control over those media outlets that carry distorted values of anarchy, violence, interethnic and racial discord into society.

Thus, through the efforts of the Ministry of Science and Higher Education of the Russian Federation, Ministry of Education and the Ministry of Digital Development, Communications and Mass Media of the Russian Federation, the process of forming a legal culture and legal consciousness among citizens, including young people, can be established with the help of improving the system of information and legal education.

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人类的主体性本体论（共存）
SUBJECTIVITY ONTOLOGY (CO-EXISTENCE) OF HUMAN

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注解。 本文探讨了宗教哲学家 N.A. Berdyaev, L. Shestov, S. Frank 在证实人类本体论的主观性方面的论点，其基础是与主体（上帝）互动的“原始现实”的存在，这有助于人类本体论的发展和实现。 人自身的主体性的实现。 作者依据费尔巴哈（我-你）的人类学原理，发展了人性的共存范式，在共存的结构中包含了人的古怪性和另一个人（主体）的必然存在。 在共同认识、沟通、同情、共同行动、良心的过程中，实现了从外到内、从内到外的可能性。 过程和结果的可变性包括它们作为结构相似性的本体论关系。 个体主体、他者主体、互动的意义和实质内容这四个“主体”的对话是共存主体性潜力的必要条件。 共存主体性的潜力首先关系到人类主体性的产生。

关键词：本体的宗教主体性、偏心性、共存的完整性、共存中另一主体的意义、共存要素的功能、共存的主体性、过程与结果的结构相似性。

Annotation. *The article examines the arguments of religious philosophers N.A. Berdyaev, L. Shestov, S. Frank in substantiating the subjectivity of human ontology based on the presence in his “primary reality” of interaction with the subject (God), which contributes to the development and realization of the subjectivity of the person himself. The author develops the co-being paradigm of human nature, relying on the anthropological principle of L. Feuerbach (Me - You), which contains the eccentricity of man and the obligatory presence of another person (subject) in the structure of co-existence. In the processes of co-knowledge, communication, sympathy, co-action, conscience, the possibility of turning from outside to inside and from inside to outside is realized. The variability of process and result includes their ontological relationship as structural similarity. Dialogization of four “subjects” - individuality the subject, the other subject, meanings and substantive content of interaction - is a necessary condition for the potential of subjectivity of co-existence. The potential of subjectivity of co-existence is primary in relation to the generation of human subjectivity.*

Keywords: *Religious subjectivity of ontology, eccentricity, integrity of co-existence, the meaning of another subject in co-existence, functions of elements*

of co-existence, subjectivity of co-existence, structural similarity of processes and results.

An alternative view of Hegel's religion and philosophy is the philosophy of L. Feuerbach, who proceeded from the primacy of *the earthly connection* between people before the connection of man with the transcendental world or the world spirit. His position against the philosophy of Hegel established that human existence is a subject, and thinking is only a predicate, a property of human existence - this led him to search for a justification for this position. Let us note three main points: 1) the need to proceed from the existence of empirical individuals; 2) anthropological method - "To reduce everything supernatural to nature through man, and through nature to reduce everything superhuman to man..." [8, P. 267]; 3) anthropological principle - "For the origin of man, two faces are necessary, both in the physical and in the spiritual sense: the presence of a community of people is the initial principle and criterion of truth and universality." [8, p. 190] The substantiation of the anthropological principle as a connection between at least 2 people, like Me and You, essentially, *the eccentricity* of man in the world was proclaimed as an axiom in the 40s of the 19th centuries.

There are many reasons to consider L. Feuerbach the founder of anthropology and personalism. According to K. Marx, this is "the only thinker in whom we observe *a serious, critical attitude* towards Hegelian dialectics; only he made genuine discoveries in this area and, in general, truly overcame the old philosophy" [7, p. 622]. The religious philosopher M. Buber in his work "The Problem of Man" agrees with the assessment of Feuerbach's anthropological principle as a "Copernican accomplishment" and admits that "in his youth it was Feuerbach who gave him the decisive impetus" [4, p. 236].

This is the question of why communication between people is elevated to an anthropological principle. From the philosopher's teaching, perhaps, the first answer can be obtained as follows: because the human individual is a species being, and even an individual's idea of God is his idea of the human race. Moreover, only beings of equal value to each other can communicate, since "*truth and perfection lie only in connection, in the unity of equal beings.*" [8, p. 204] And the main thing is that an individual person does not contain human essence. "Human essence manifests itself only in communication, in the unity of man with man, in a unity based on the reality of the difference between Me and You." [8, p. 203] The essence of the supreme being of nature allows us to understand the entities that precede its appearance. Communication destroys the limitations of an individual and gives him an open perspective for development.

Many Russian philosophers created their concepts within the framework of religious philosophy, in which they substantiated the subjectivity of human ex-

istence. ON THE. Berdyaev considered man a metaphysical being and he argued that “hidden behind history is metahistoricity, and there is no absolute isolation of the historical plane from the metahistorical plane. Behind what is happening in historical time is hidden what is happening in the existential aspect” [1, p. 266]. In every change of an individual person, a semantic event takes place, which has a metahistorical element, but this event cannot be explained and determined by historical determination. Such a turn in the search for ontology puts to N.A. Berdyaev the question: “Can a person, as a created being, have a bottomless source of being in himself?” [2, p. 98]. No, It cannot. The source of being is not in man himself, but in God, in God the Son, who combines the natural and spiritual principles. Every meeting of a person with God is a meeting with a subject. Each meeting of such subjects is a spiritual act. God-humanity combines the movement from God to man and from man to God. When a person falls out of God, he falls into the arms of necessity and causality of nature and history and loses his spiritual independence. “The inner life of God is realized through man and the world. The inner life of man and the world is realized through God” [2, p. 136]. In turning to God, a person becomes capable of overcoming the world of necessity and causal relationships in nature and history. *Spiritual life is a primary reality, but it can be a reflection of some other reality.* And naturalistic metaphysics turns to a secondary reality, where the subject is absent, he is already taken beyond the limits of being. “Others cannot be the source of my attitude towards God” [1, p. 247]. Can’t a person become a person through other people? And for L. Feuerbach, without communication, it is generally impossible for a person to know himself and the world.

The main difference is in understanding the characteristics of the human “Me”. In the philosophy of N.A. Berdyaev, the “Me” is not deducible from anything and cannot be reduced to anything, so it cannot be completely penetrated into it and it is never completely objectified outside. It is obvious that the “Me” of each person cannot be socialized completely. Therefore, egocentrism and individualism come precisely from the “I”. And in the communication of individuals, the mutual realization of inner life can only occur partially. Therefore, in the philosophy of N.A. Berdyaev, the philosophical problem of human loneliness inevitably arises.

“The main problem of the “I”, which illuminates its entire existence, is the problem of loneliness, which has been so little studied in philosophy” [3, p. 267]. Each person in his loneliness rises above the generic, general objectified world, since the world of natural objects and another person can never completely lead him out of loneliness. Even in a society with developed human socialization, social loneliness of individuum is possible. “These individuum’s become the creative initiators, innovators, reformers, revolutionaries of the spirit” [3, p. 273]. God is the subject who helps overcome loneliness.

For L. Shestov, close to N.A. Berdyaev, the answer to the following question turns out to be very important, namely, if a man is being born as an individual

into the world by the will or against the will of God? Is a man created for life or did he escape to life by deception? If God created man in his own image and likeness, then individual man is undoubtedly a divine being, God the individuum. If truth is understood as that Hegelian постулат о “General Spirit or the Spirit of the General,” then the individual person has unlawfully broken through into existence and his individuality is an accident and an unnecessary deviation from a single process. And the history of philosophy, according to L. Shestov, has tirelessly repeated since Hellenic times “that only the “general” is true and real, and everything “separate”, in its origin, is criminal, wicked and illusory” [11, p. 262].

L. Shestov does not connect the peculiarity of man with the world of the mind. “Mind, or rather wisdom born of mind, sees in submission the essence and basis of being and absolutely cannot stand “selfhood”, any kind of independence and autonomy” [11, p. 390]. The mind is afraid of freedom and sudden insights and daring moments. But: man’s most dangerous enemy is “self-evident truths.” They enslave a person and doom him in advance to the fate of “common existence.” “And this hypocrisy is considered the highest virtue!” [11, p. 216]. Maybe the movement is not towards a single world of mind, but from it, is a movement towards God? Maybe real life is not in the past, not in what has already been known, but in the perspective of eternity “here”? Perhaps is it not in a person’s submission to mind, but his boldness in spite of mind that leads to the truth?

The power of the philosophy of mind over the minds and hearts of its adherents is their enslavement. Shestov formulated this idea as the main one in his work “The Power of Keys,” in which he spoke out against the power of the Roman clergy to unlock and lock the gates of heaven for believers. He also denies that philosophy has “power of keys.” Each person, through the gifts of God and divine insights, receives much more than was obtained by the labor and culture of all mankind. “Only “there,” in merging with God, is freedom, there is truth, there is the cherished goal of all our aspirations” [11, p. 234].

Here it is appropriate to cite the important question of Semyon Frank, which he posed in his last work, published in 1949, which became known to us recently after its publication in 2007. The question is: “...to what extent exit out of the boundaries of my “Me” and staying inside it or possessing it ourselves has ultimately of an identical nature?” [10, p. 57].

S. Frank insists on the fallacy of the ideas of any individualism; he asserts the existence of a super-temporal unity of reality “in me” and “outside me.” S. Frank insists on the active participation of man in the creation of his own subjective being. “*The being of the subject itself is not “subjective”*; when being does not belong to the composition of objective reality, it remains genuine, in a certain sense, self-sufficient, firmly established *primary reality*. This reality is much completer and more significant than objective reality” [10, p. 45]. The substantiation of the

presence of primary reality is important for S. Frank in his metaphysics because it allows each person to preserve his or her Self on an individual basis. The idea of human “individuality” does not disappear, but is strengthened by subjective activity, participation in the metaphysical layer of human existence. “We ourselves are what we create in ourselves” [10, p. 146]. The identity of the nature of a person’s being “outside” and “inside” himself is achieved, essentially, on the basis of both the subjectivity of primary reality and the subjectivity of the person himself in this *primary reality*. But what is exit beyond oneself, is it a way to what to? The answer is: “...we are completely open only to ourselves – and to God” [10, p. 118].

In our opinion, *trust in the subjectivity of the divine spiritual reality of N. A. Berdyaev, in the divine insights of L. Shestov, in the “primary reality” of S. Frank unites them in one thing - it is the presence of interaction with the subject (God) that contributes to the development and realization of the subjectivity of oneself person.*

The principality of relationship of one individuality to another human individuality, discovered by L. Feuerbach, *creates opportunities* for the necessary categorical understanding of human existence as a co-existence. We have published here a philosophical justification for the co-existential nature of man, which brings us back to the continuation of the development of the logic of L. Feuerbach as the founder of anthropology, stated at the beginning of the article [5]. *Human co-existence by its nature makes it possible to overcome the extremes of sociocentrism and anthropocentrism, the uniqueness of man, the monologue of his relations with the world.*

Co-being is an *elementary structure of the process of the integrity of sociality*, which has an important feature: another person (subject) is necessarily present in it, it contains and realizes the possibility of TURNING processes from outside to inside and from inside to outside. This possibility contains the potential of subjectivity of co-existence.

The cycle of co-existence for individuality in cyclical processes of individualization is realized as a process of fulfillment of individuality’s relationships: 1) with another individuality (other man), 2) with meanings and 3) objective-material reality. The dialectic of the integrity of the process and the integrity of its result implies the turning of the process and the result, including their ontological relationship *in structural similarity*.

Processivity in the integrity of co-existence throughout the entire complex of relationships of subjective qualities goes through two stages:

Firstly, *the difference between oneself and another person* precedes the difference between oneself and oneself: the difference between my *consciousness* and the *consciousness* of another towards me, my sympathy from the *co-sympathy* of another towards me, my assistance from *the co-assistance* of another towards me,

my message from communication with by me, my conscience from *the conscience* of another to me. The difference between oneself and another precedes the difference between oneself and oneself. *Without differences of being, it is impossible to distinguish in co-existence, without differences, meaning cannot arise in it, without differences, meaning is not needed.*

Secondly, the approval and renewal of differences (differences) within co-existence of individuum is the second stage in the implementation of co-existential qualities of individuals, which become conditions for further cyclicity in its integrity. The affirmed differences between individuals set the initial existential asymmetry within the co-existence and existential tension already as a process of the emergence of new differences in meaning in the structure of relationships.

Co-event elements, in turn, perform different functions in ensuring the integrity of the co-existence and in achieving the overall effect. *Meanings* in consciousness are *integrators* of its integrity when directed inward to individuality and its continuity in the processes of comprehension with the dominance of an outward focus - on another person, on objective reality and on the meanings themselves. *Actions* in co-action are external *regulators* of the sequence (continuity) of objective self-realization and the transformative activity of individuality in the actual objective reality of the integrity of co-existence. *Feelings* (and emotions) in co-sympathy are *catalysts* for changing relationships in the integrity of co-existence and the continuity of the process of experiencing individuality. *Significant news* about inconsistencies in conscience are internal *regulators* of correlations in the integrity of the individuality itself, which influence changes in the correlation of meanings, feelings, goals for future actions [6].

Discrepancies within a co-existence, which are constantly generated by the self-realization of individuals, actualize and reproduce its basic social needs - for communication, for further self-realization, for updating the formation of meaning. In this the subjectivity of co-existence also lies, but not in the sense of the influence of an object, thing, another Self on the senses, but in the *sense of generating new content*, as a renewal of objectivity and the individuals themselves in the integrity of co-existence. Outside the relationships of individuals, as carriers of significant differences within a co-existence, there is no reproduction of either the subjectivity of the individuals themselves, or the subjectivity of the co-existence as a whole. It is the integrity of co-existence that determines the integrity of a person's individual individuality, it is the reproduction and *development of the subjectivity of co-existence that determines the subjectivity of each individuality*, and not vice versa.

Thus, the realization of the subjectivity of co-existence cannot be realized without the interaction of individuality with the meanings of the community, with the subjectivity of the other person and the subjectivity of objective intermediar-

ies. Dialogue and dialogization of four “subjects” - individuality, another person, meanings and substantive content of interaction - is a necessary condition for the potential of subjectivity of co-existence. *In these relationships and processes lies the secret and mystery of sociality and, of course, the mystery of human subjectivity!*

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阿什哈巴德巴哈伊社区是新宗教形成的里程碑
**THE ASHGABAT BAHÁ'Í COMMUNITY IS A MILESTONE IN THE
FORMATION OF A NEW RELIGION**

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抽象的。 本文旨在纪念第一批难民的出现，他们是巴哈伊信仰的代表，他们逃离伊朗的迫害来到阿什哈巴德市。 这种流动不仅是因为这座城市靠近边境，而且主要是因为没有受到官方当局的压迫。 值得注意的是，在新的地方，巴哈伊保留了以他们习惯的生活方式生存的机会。 需要强调的是，世界宗教的代表大多居高临下。 结论是，阿什哈巴德巴哈伊社团一直存在到 1930 年代，不仅是土耳其斯坦总督府，而且是整个俄罗斯帝国最大的巴哈伊中心。

关键词：阿什哈巴德、土耳其斯坦、俄罗斯帝国、巴哈伊信仰、社区。

Abstract. *This article is dedicated to the appearance of the first refugees, representatives of the Bahá'í Faith, who fled from persecution in Iran to the city of Ashgabat. This kind of movement was explained not only by the proximity of this city to the border, but mainly by the absence of oppression by the official authorities. It is noted that in the new place the Bahá'ís retained the opportunity to exist in the way of life they were accustomed to. It is emphasized that the representatives of the world religions are mostly condescending. It is concluded that the Ashgabat Bahá'í community existed until the 1930s and was the largest Bahá'í center not only in the Turkestan Governor-General's Office, but also in the entire Russian Empire.*

Keywords: *Ashgabat, Turkestan, Russian Empire, Bahá'í Faith, community.*

The Bahá'í appeared in Turkestan as refugees in 1881-1882, trying to escape persecution by Iran. The neighboring territory of the Khanate of Khiva was both the outskirts and the sphere of influence for Iran and the Russian Empire, where the threat to the community's existence was minimized. The fact is that according to the Akhal Treaty of 1881, Iran renounced its claims to these lands, and they, including the fortress of Askhabad (now Ashgabat), came under the jurisdiction of the Russian Empire. Since 1897, the Transcaspian region became part of the Turkestan Governor-General's Office (Turkestan Krai). For the Bahá'í, who

came mainly from the merchant and artisan population, Ashgabat was a settlement where they could continue their existence without changing their occupation and without suffering religious oppression from the official authorities. As a result, an important factor in the establishment of Ashgabat as a Bahá'í haven was its proximity to the border. Ashgabat therefore attracted Baha'i interest as a possible refuge even before the mass migration of the community began. One of the Bab's relatives, Hajji Mirza Hasan, better known as Afnan-i-Kabir, visited it during his journey to Akka in 1882 and sent a letter to his son, Hajji Mirza Muhammad-Taqi in Yazd, instructing him to buy land to build a house. The latter sent the same message to another Bahá'í, Hajji Muhammad Kazim Isfahani, who lived in Sebzevar (this town is much closer to Ashgabat than Yazd). Eventually, Isfahani's son, who lived near the border area in the town of Kuchan, purchased two plots for both families.¹ Initially, the Bahá'í communities of Yazd and Isfahan, upon learning of the land acquisition, assumed that co-religionists from the major cities of Iran would have to move to Ashgabat and ask for the king's protection. They sent a letter to Baha'u'llah to approve this plan, but it was flatly rejected. Nevertheless, the acquisition of land was approved. From that moment, the mass migration of Bahá'ís to Ashgabat began. The peak period was from 1888 to 1891, when 42 families arrived in the city (out of 115 families between 1883 and 1903). The reason for this dramatic increase in the number of Bahá'í families arriving may lie in the laying of the Transcaspian railroad to Ashgabat in 1885 and to Samarkand in 1888. Nevertheless, according to the 1892 one-day census, only 106 Bahaas lived in Ashgabat.²

The majority of Bahá'í families came to Ashgabat from Yazd (32.5%), Iranian Azerbaijan (21.5%), and the bordering region Khorasan (17.2%). While the immigration of families from neighboring Khorasan and the relatively equidistant Yazd can be explained by the convenient location, voluntary choice, and spread of news about the community's formation in Ashgabat, the justification for such a high proportion arriving from Iranian Azerbaijan does not have such a clear explanation. Furthermore, 4% of Bahá'ís arrived in Ashgabat from Russian Azerbaijan and other Caucasus regions. Presumably the reason for this could be the greater potential of Turkestan and Ashgabat in particular to develop trade in the eyes of the Bahá'ís, despite the fact that the Transcaucasian Baku-Tiflis railroad was already functioning in 1883.

For Russian diplomats and orientologists, the Bahá'í Faith movement itself was seen as a progressive phenomenon that could contribute to the Christianization

¹ Momen Moojan. *The Baha'i Community of Ashkabad: Its Social Basis and Importance in Baha'i History // Cultural change and continuity in Central Asia / Ed. by Shirin Akiner. - London; New York : Kegan Paul publ., 1991, p. 280. 280.*

² *Review of the Transcaspian region for 1896 // Review of the Transcaspian region for 1890 - 1896. - Ashkabad: Steam type. K.M. Fedorov, 1897, p. 264.*

of Turkestan. F. A. Bakulin, the consul of the Russian mission in Asterabad (now Gorgan) wrote:

“It even seems to me that the spread of Christianity among Muslims will meet insurmountable obstacles, while Babism is gaining more and more followers every year. I view Babism as a transitional religion that can easily be replaced by Christianity because the teachings of Christ hardly contradict Babism in practical application, surpassing it in the purity of doctrine and the grandeur of ideas.”³

F.A. Bakulin (died 1879) left this message about Bahá’í before the establishment of the Ashgabat community, but his idea was also shared by S.I. Umanets. Umanets: “From our, European point of view, the Bahá’í Faith is worthy only of encouragement and support, since the foundations of its ethics and philosophy can only contribute to the internal reform in Islam, which is in dire need, promote the gradual convergence of the religion of fanaticism and isolation with the teachings of Christ, and, who knows, a possible transition of Muslims to Christianity.”⁴

Despite these hopes, the opposite process has often occurred. Baron V. R. Rosen stated: “I was informed here by a Persian man, who seemed reliable, that not long ago even Armenians became Babists in Ashgabat... It was expected here that Babism would serve as a transitional stage to Christianity, and it seemed hopeful that the Babists, who were flattered, would not only agree to convert themselves to Orthodoxy but also have a beneficial influence on other Muslims. However, the opposite happened: Christians themselves became Babists, and to my knowledge, not a single Babist converted to Christianity.”⁵

The interest of Christians was also noted by S.I. Umanets: “In this way, Babism, as well as Sufism, which gave rise to it, approaches, to some extent, to evangelical morality, due to which, under favorable conditions, it can serve as a transitional stage from Islam to Christianity...”⁶ Despite this, the Russian administration was lenient towards the Bahá’ís, although they were perceived not as a new religious movement, but as a breakaway sect from Shi’ism. The church also considered them sectarians, but their appearance was also received positively. Babism borrowed and continued to borrow a lot from Christian teaching to develop its moral aspects and, from this point of view, its spread among Persians was welcomed. traveler V. N. Harteveld noted: “There is no doubt that the Muslim world will still have to reckon with this doctrine and, very possibly, that only Babism is able to infuse new, vital juices into the decrepit body of Islam; and if Persia with

³ Zhukovsky V. A. Russian Imperial Consul F. A. Bakulin in the history of the study of Babism. // Notes of the Eastern Branch of the Imperial Russian Archaeological Society. - T.24 - 1916. - Pg.: Tipography of the Imperial Academy of Sciences, 1917, p. 89.

⁴ Umanets S. Modern Babism. - Tiflis, 1904, p. 30.

⁵ Youli A. Ioannesyan. The Development of the Bab’i/Baha’i Communities: Exploring Baron Rosen’s Archives. - London: Routledge, 2013, p. 176.

⁶ Umanets S. Persian sectarians in Transcaucasia // Historical Herald. No. 6, 1890, p. 661

its science and poetry is still capable of revival, this miracle will be performed by the Babists".⁷

The relationship with the local Muslim ulama, however, was somewhat tenuous. Thus, A.G. Tumansky noted: "I had to see him (the Bahá'í preacher Mirza Muhammad Kaini) during his brief stay in Ashgabat in 1892 at one disputation with Shi'ite mullahs, where it was expressed in no uncertain terms how much all these abstract questions generated by one or another text of the Koran or hadith or some saying of a sage can excite and affect alive the Persian crowd present at such a disputation."⁸

It seems clear that after the events that took place in Iran, the local ulama (especially the Shi'ite ulama) had a negative attitude toward the Bahá'ís and considered them heretics. At the same time, the Bahá'ís attracted virtually no new followers from Sunni Muslims, as noted by W.R. Rosen: "It is even more difficult to judge how successful the propaganda of the Bab's teachings is at present. Among Sunnis the number of followers of the sect is very small".⁹

V.I. Ignatiev, a disciple of V.R. Rosen, also wrote: "...the teaching of Babism among the Tekins has not been successful so far. Meanwhile, the ground for propaganda is now as convenient as possible. - It is remarkable that the Tekin people, who before our conquest of the Transcaspian region were completely indifferent to Islam and to religions in general, are now becoming more religious and even fanatical every year.¹⁰ In 1890, the Bahá'ís already constituted 10% of the 4,000-strong population of Ashgabat.¹¹ By 1902, the number of Bahá'ís in Ashgabat had reached 1,000 (including children).¹²

The overwhelming majority of them were representatives of Persian-speaking peoples, with a few exceptions - Armenians and Jews. It is worth noting that about a quarter of its inhabitants were parts of the Russian garrison or representatives of the administration. Other inhabitants of the city were also Jews, Armenians, and Persians, who were engaged in trade. Subsequently, the number of the Bahá'ís also increased. The community was governed by a Spiritual Assembly, whose first

⁷ Hartevelde V.N. Among loose sands and severed heads: Travel sketches of Turkestan (1913). - B.m.: Salamandra P.V.V., 2014, p. 34

⁸ Kitabe Akdes. "The most sacred book" of modern Babids / Text, translation, introduction and appendix. A. G. Tumanskago // Notes of the Academy of Sciences on the History-Philology Department - Vol. III.- St. Petersburg, 1899, p. 54.

⁹ Youli A. Ioannesyan. The Development of the Bab'i/Baha'i Communities: Exploring Baron Rosen's Archives. - London: Routledge, 2013, p. 176.

¹⁰ Youli A. Ioannesyan. The Development of the Bab'i/Baha'i Communities: Exploring Baron Rosen's Archives. - London: Routledge, 2013, p. 180.

¹¹ Mehtieva O.K. From the History of the Bahai Community in Russia and the USSR. Memories of eyewitnesses. / Written Monuments of the East. 2012. № 1 (16), c. 176.

¹² Momen Moojan. The Baha'I Community of Ashkabad: Its Social Basis and Importance in Baha'I History // Cultural change and continuity in Central Asia / Ed. by Shirin Akiner. - London: New York : Kegan Paul publ., 1991, p. 283. 283.

elections were held in 1895, and its first building was constructed in 1900. The first generation of Ashgabat Bahá'ís in Ashgabat followed essentially the same line of work in which they had been engaged before their arrival in Turkestan. Most of them belonged to the field of trade and crafts. The Bahá'ís attached special importance to education, so that already in the second generation their descendants, having entered university, became modern highly qualified specialists, mostly of mental labor: lawyers, doctors, teachers, and others.¹³ The Ashgabat Bahá'ís were respected members of local society due to their high level of education, diligence and friendliness. A.G. Tumansky wrote: "Arriving in Askhabad on June 19, 1890, I easily became acquainted with the most interesting of the Babids. Due to their dignified way of life, they were received by the Russians as well as possible. Some of the wealthier Babids are even regular members of the town's public assembly... Seeing in me a desire to familiarize myself with their doctrine, three of them tried to help me in this endeavor, namely: Mirza Abdul-Kerim Ardebili (whose russified surname is Asadov), Mirza Yusuf Reshti, a former Muslim mullah and a great expert and strict critic of Islam, and Ustad Ali-Akber, an architect to whose art many of Askhabad's buildings owe their existence, a poet and a Sufi."¹⁴ Although Bahaas identify social equality between men and women, the existence of joint schools could have been viewed negatively both by the local Muslim community, which would have created more conflict, and by the authorities. Russian diplomat Georgy Dmitrievich Batyushkov noted: "How difficult it is for a Persian woman to decide to give up her 'rubaid' (veil) can be seen from the fact that A.G. Tumansky, who lived in Askhabad for a long time, tells us that the numerous Babidkas living there do not wear a veil only at home, even if they had guests; when they go out in the street, they always cover themselves, saying that they feel uncomfortable."¹⁵ At the same time, the Bahá'ís achieved absolute literacy among children, including girls, while in the region it barely reached 15%. They willingly sent their children to Russian schools, but preferred their own.¹⁶ It can be assumed that books were translated into Persian, since according to the memoirs of V.N. Hartevelde, the head of the local Baha'i school, Ahmet Verdi, "...spoke to me in very poor Russian, but found a fairly thorough knowledge of French and English"¹⁷. The

¹³ Momen Moojan. The Baha'I Community of Ashkabad: Its Social Basis and Importance in Baha'I History // Cultural change and continuity in Central Asia / Ed. by Shirin Akiner. - London; New York : Kegan Paul publ., 1991, p. 296. 296

¹⁴ Tumansky A.G. Two last Babid revelations. // Notes of the Eastern Branch of the Imperial Russian Archaeological Society. - T.6 - 1891. - St. Petersburg: Tipography of the Imperial Academy of Sciences, 1892, p. 315.

¹⁵ Batiushkov G. Babids. Persian sect // Herald of Europe.- 1897, p. 341.

¹⁶ Krymsky A.E. General historical sketch of Babism and review of the latest literature about it. - Oriental Antiquities, vol. 4, St. Petersburg, 1913, p. 85.

¹⁷ Hartevelde V.N. Among loose sands and severed heads: Travel sketches of Turkestan (1913). - B.m.: Salamandra P.V.V., 2014, p. 34.

Bahá'ís also published their own newspaper, Khorshide Khovar (Sun of the East) in Persian and Russian. It existed until the mid-1930s. Subsequently, a periodical called Star of the West appeared in the United States by analogy with this title.

To summarize the above, it can be stated that the Bahá'ís appeared on the territory of Ashgabat as refugees in the beginning, but later on they managed to form their own community and retain the foundations of their worldview. The Ashgabat Bahá'í community existed until the 1930s and was the largest Bahá'í center not only in the Turkestan Governor-General's Office, but also in the entire Russian Empire.

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中国当代作曲家艺术歌曲的风格特征
**GENRE AND STYLISTIC FEATURES OF ROMANCES BY
CONTEMPORARY CHINESE COMPOSERS**

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摘要: 本文以20世纪末21世纪初中国艺术歌曲为对象,结合世界艺术歌曲的演变趋势,阐述了这一艺术体裁的主要类型和风格特征。研究了中国传统音乐体系与西方音乐体系的互动关系,即中国传统五声调式音阶与西方作曲技术和谐、统一的有机结合。并从中国现代作曲家的音乐内容、题材、形象等方面考虑了中国现代作曲家的创作特点。介绍了中国新一代和“先锋派”作曲家的艺术歌曲作品中,对20世纪欧洲作曲新技法(十二音、系列主义)特征的吸收和折射,指出各类重要比赛及音乐会是传播和推广中国艺术歌曲的重要途径。

关键词: 艺术歌曲体裁,当代中国作曲家的艺术歌曲创作,传统对话,音乐风格

Abstract. *The article presents the main genre and style features of the romance in the works of Chinese composers of the 20th - early 21st century within the context of the world trends in the evolution of this genre. The interaction between traditional Chinese and Western European musical systems is studied, in which pentatonic scales are harmoniously combined with classical-romantic harmony and uniform accentuation. The peculiarities of musical content, themes and images in romances by contemporary Chinese composers are considered. The refraction features of European new compositional techniques of the 20th century (such as dodecaphony, serialism) in the romances of Chinese composers of the “New Wave” or “national Chinese musical avant-garde” are presented. The ways of distribution and popularization of Chinese romance within the context of the festival-competition movement are determined*

Keywords: *romance genre, chamber vocal work of modern Chinese composers, dialog of traditions, musical stylistics.*

Chamber vocal music occupies a special place in the historical development of each national compositional school: it is the versatile possibilities of vocal genres, like a creative laboratory, that allow the formation of a distinctive intonation vocabulary, synthesizing the most characteristic features of folklore traditions, the national language of literature, poetry and music, and the achievements of professional schools. One of the urgent tasks of modern musicology is to create a panoramic picture of compositional searches in the sphere of modern romance and to reveal the dialectical relationship between the traditional and the new, the national and the international. In general, the romance genre development in the world musical culture of the 20th and early 21st centuries is a complex and diverse picture, as composers, taking works beyond the established traditional forms, offer a fundamentally different approach to the issue of musical and poetic synthesis in vocal music.

The focus of our research is the composition work in China from the second half of the 20th century to the beginning of the 21st century, which demonstrates new perspectives in the development of chamber vocal music and, particularly in the romance genre. The analysis of the modification of the romance genre itself and its figurative-thematic space is relevant, dictated by one of the most important perspectives of introducing Chinese romance into the contemporary European musical-performing context. The possibility of realizing this perspective is based on the fact that the genre archetype of the Chinese romance is known to be a kind of “European matrix”.

The works of Chinese musicologists and composers are of particular interest for studying the national specifics of Chinese chamber-vocal lyrics. The studies draw attention to the emphasis on the problem of terminology and the analysis of chamber-vocal opuses in the works of individual Chinese composers. In this regard, the works of Xiao Yumei, Yang Shumin, Go Kecian, and others are mentioned [1, 2]. Based on the arguments of Chinese musicologists about the concept of “art song”, it can be concluded that several genre varieties are differentiated in the field of Chinese chamber-vocal lyrics, among which the concept of “romance” in the European interpretation is highlighted [5].

The works of Chinese musicologists and composers are of particular interest for studying the national specifics of Chinese chamber-vocal lyrics. The studies draw attention to the emphasis on the problem of terminology (defining the genre-stylistic boundaries of concepts such as “art song,” “romance,” “art song,” etc.) [3]. In our research, based on the fundamental works of Chinese musicology devoted to the traditions of national chamber-vocal creativity, we emphasize that the romance in modern Chinese music is understood as the high art of “duet of soloists” - a singer and an instrumentalist who accompanies the vocal part.

In terms of genre and style, in the designated period, traditions of declamation in romance are primarily developed. Chinese composers strive to come as close as

possible to the intonations of natural human speech. The expansion of the expressive means of the romance also takes place in the field of intonation, including the entry of folklore elements and dialectal features of the poetic language.

At the present time, Chinese vocal art is a complex of various components that have both intrinsically national and borrowed origins, as well as being the result of their synthesis. The variety of Chinese vocal performing traditions consists of characteristic vocal styles that differ in the intonation type, genre fixation, method of assimilation and transmission, and artistic and aesthetic function.

Almost all of the outstanding works among classical Chinese art songs, romances, and new chamber-vocal forms were composed by composers familiar with the Western European School and bel canto technique [4]. This symbiosis of the national-traditional and the Western has become the standard in the creation and performance of this kind of works. Contemporary Chinese composers synthesize the experience of many generations with different style tendencies in their work. And for this reason the characteristic performing feature of Chinese art songs and romances is the combination of bel canto techniques with traditional Chinese singing and sound production forms. The phonetic aspect of Chinese speech and the interaction between the poetic texts of songs and their melodies also play a leading role in the performance interpretation of Chinese romances.

At the current stage, Chinese romance continues to actively develop, discovering new figurative and thematic, dramaturgical and musical-stylistic directions, gradually moving away from deliberately given an ethnic recognizability. One of the new trends associated with the aesthetics of Western European Romanticism that came to Chinese chamber and vocal music of the 20th century was Chinese composers' awareness of the possibility of subjectivizing creativity, which was reflected in the rethinking of its very essence, the complete freedom of self-expression of a new generation of composers, and their concentration on the search for individual-author artistic concepts.

Analyzing the figurative and thematic space of chamber-vocal opuses by Chinese composers, we can highlight the following typological features:

- macro-level images (philosophical and contemplative, landscape and pastoral, narrative and epic), which reflect the ideas of eternal existence, the unity of heaven and man, the appeal to the highest spiritual truths;
- micro-level images, embodying the rich inner world of a person, including elements of psychology;
- mixed type images, in which the process of symbolizing ideas rooted in ancient folk beliefs about the world and humanity can be observed.

It should also be noted that the basis for creating the national romantic musical and poetic genre of romance was the German “Kunstlied”, as it contains a set of principles and features similar to the classical Chinese art. These include:

- the appeal to the archetypes of national consciousness;
- the principle of autobiographical;
- the idea of the world duality;
- the unity of landscape images and emotional states of personality;
- the dominance of themes such as homesickness, loneliness, wandering, etc.

Following the introduction of the author's personal character into Chinese chamber vocal music, it became possible to reveal the inner spiritual world of a person in a time of change, reflecting their true feelings and aspirations. In this regard, a new aspect of the content of chamber vocal lyrics, particularly in romance, is emphasized - anthropocentrism with a characteristic deep psychological approach, immersing in the emotional state of the protagonist. This trend clearly shows the influence of Western European musical tradition.

One of the most striking examples of the embodiment of this concept is the chamber-vocal work of Qin Yongcheng, which focus on the individual and their life in various manifestations, as well as the exaltation of the "hero" instead of the aesthetics of the "greatness of nature" over the "little man" familiar to Chinese music. This composer's chamber and vocal lyrics present a whole gallery of images - integral, real, living people endowed not only with virtues but also with contradictions ("I Produce Oil for the Motherland", "My Beloved Motherland", "Me and My Motherland", etc.).

The composer Shang Dei, revealing the theme "the hero and their surroundings", transforms the detached and philosophical tone of the narrative, traditional for Chinese vocal lyrics, and reflects the author's compassion in his vocal miniatures ("Hian Lin", "Ai-Que", "Ah, Lu Xin!"), bringing them closer to a dramatic monologue. In the plot line of these opuses there is a continuous dramaturgical line from the fatal indifference surrounding the protagonist in the first ballad, through the demonstration of the destructive aggression of the crowd in the second, to the exalted worship by the descendants of the "national soul" of New China - Lu Xinyu, in the third ballad. In his vocal lyrics, Shang Dei turns to the literary texts of Sho Yung Chao (a contemporary of the composer), who, under the influence of European traditions, introduces small-form genres (short stories, essays), atypical themes (mockery of destructive feudal rules of behavior) and new artistic techniques into Chinese literature.

The romantic worldview in Chinese chamber-vocal music, derived from the Western European tradition, was also reflected in the intensification of the role of lyricism. Lyrical imagery in Chinese romances often appears in landscape sketches, where a contemplative mood and observation of nature's play of colors lead to the search for musical vividness. For example, Zhu Qiangyer's romance "Spring" shows spirituality and deep inner trepidation, while in "Beidaihe Waves" the inner

world of a person is revealed through the prism of nature, where the unity of feelings and landscape melts into the expression of human emotions.

In the romance “Autumn Bell” by the composer Zhao Yuanzhen, the lyrical hero is immersed in sound images that take on real and illusory-symbolic meanings. The characteristics of dualism, typical of European Romantic aesthetics, become apparent: here: reality acquires a dual character - an objective picture interacts with a fantastic illusion. The subtle facets of lyrical images are also represented in other chamber-vocal miniatures by this composer (“How I Miss Him” and “Listening to the Rain”), translating human emotions and feelings through images of nature.

Thanks to the influence of Western European romance, the interaction between the vocal and piano parts in chamber-vocal miniatures by Chinese composers has also undergone significant changes. Often the instrumental accompaniment in miniatures-romances becomes not only equal, but also determines new relationships in the ensemble interaction between vocalist and pianist. For example, the principles of duet interaction in the combination and development of contrasting images can be found in the romance “Parting” by Ao Changchun, while the principle of dialog with elements of conversation, response, and commentary is present in “Song for Two” by Zhu Liang Cheng.

The appeal to the Western European romance tradition led to the transformation of the foundations of Chinese national music, which absorbed the features of Western harmony, melody, texture, form formation, and the character of the relationship between vocal and piano parts. At the same time, the style features of the Western European genre were synthesized with the basics of the Eastern national music culture.

Thus, the national element, originating primarily in the speech nature, is realized in the genre of Chinese romance at different levels: as stylization (imitation of folk tradition), and as an individual compositional style that blends national characteristics. National stylistics, being a complex multicomponent musical and linguistic phenomenon, manifests itself in the romance genre in different ways, combining, on the one hand, real authentic intonations characteristic either of folklore or of the composer as a carrier of the national mentality, on the other hand, as a peculiar complex of ideas about the music of any nation or region, as a rule, not concretized in details. As an example, we can mention the chamber-vocal works of Zhu Qiangyer, for which the main genre source of thematism is the North Chinese musical tradition with its characteristic heroic theme and reliance on pentatonics. For example, his vocal miniatures “Memory” and “Gada Meilin” make extensive use of characteristic features of Manban folk song tales and instrumental traditions of performance on folk instruments (qin, drums, etc.).

Thus, summarizing the results of this study, it should be emphasized that the aesthetic principles, imaginative and thematic space, and genre-stylistic features

of romance (art song) in the works of contemporary Chinese composers represent a synthesis of Chinese national characteristics with global (primarily Western European) trends in the development of the genre.

The typological features of Austro-German “Kunstlied” and “Lied”, the subtle interaction between music and word, the reliance on the principles of poetic classicism and musical romanticism, as well as the national foundation in terms of images, symbols, drama, musical and stylistic markers, and linguistic specificity - all these determine the specificity of the romance genre in the work of Chinese composers of the twentieth and early twenty-first centuries.

The rich palette of lyrical images, heroic plots, philosophical themes, landscape sketches, and socio-cultural images define the imaginative and thematic space of the analyzed works. The embodiment of national stylistics in the genre of romance is inconceivable without an integral component of vocal works - vocal intonation.

The performing interpretation of Chinese romances is based on the synthesis of the indigenous properties of the verbal language, folk singing style, dialectal originality of the national origins of Chinese vocal stylistics and academic influences (primarily *bel canto*). In general, the interaction of Chinese and Western musical traditions has contributed to the emergence of works that are absolutely unique in their expressive structure, where national images and symbols, the tonal specificity of pentatonicism are organically combined with classical-romantic principles, functional harmony and uniform accentuation.

In conclusion, the following observations can be made.

At the turn of the 20th and 21st centuries, in the chamber vocal works of Chinese composers, there are tendencies of blending and collision of traditions and innovations, as well as a multidirectional creative search. These include:

- expansion of figurative and semantic space: from lyricism to the grotesque;
- diversity of literary and poetic sources;
- expansion of the genre boundaries of romance, the emergence of new, transformed and individualized genre models;
- strengthening the relationship between the verbal beginning, the literary text and music;
- mixing of musical and extra-musical genres: monologue, ballad, epitaph, quotation, poem, parable, sonnet, triptych, etc.

Overall, the diversity of forms and varieties of romance in contemporary musical culture makes it universal and highly appealing for various artistic solutions.

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人类常见的呼吸道病变
COMMON RESPIRATORY LESIONS IN HUMANS

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抽象的。近几十年来，由于流行地区人口的迁移、流浪动物的传播，寄生虫病的数量有所增加，各专业的医生必须具备及时识别所需的知识和技能。

本文讨论了不同类型和类别的寄生虫非典型定位对支气管肺系统造成损害的例子。肺部病理往往与寄生虫侵袭无关，这使得诊断和治疗变得困难。

人类寄生虫的典型生命周期已得到充分研究，因此，通常不难确定其种类并诊断其引起的疾病。同时，在体内寄生虫定位不典型的情况下，在诊断和治疗方面常常会出现困难，这使得他们有必要进行研究。最常见的肺部寄生虫病包括包虫病、囊尾蚴病、肺吸虫病、蛔虫病、血吸虫病。

这些知识在第一门课程的寄生虫学学习后得到延续，并在后续课程中得到临床知识的补充，形成未来医生的科学实用思维。

关键词：寄生虫、生命周期、非典型定位、芬兰人、肺损伤。

Abstract. *In recent decades, there has been an increase in the number of parasitic diseases, due to the migration of the population from endemic areas, the spread of stray animals, doctors of various specialties must have the knowledge and skills necessary for their timely recognition.*

The article discusses examples of damage to the bronchopulmonary system in cases of atypical localization of parasites belonging to different types and classes. Pulmonary pathology is often not associated with parasitic invasion, which makes diagnosis and treatment are difficult.

Typical life cycles of human parasites are well studied, therefore, it is usually not difficult to determine the species and diagnose the disease they cause. At the same time, in cases of atypical localization of parasites in the body, difficulties often arise, both in diagnosis and in treatment, which necessitates their study. The most common parasitic lesions of the lungs include echinococcosis, cysticercosis, paragonimiasis, ascariasis, schistosomiasis.

This knowledge is continuous after the study of parasitology in the first course and is supplemented by clinical knowledge in subsequent courses, which forms the scientific and practical thinking of the future doctor.

Keywords: *parasites, life cycle, atypical localization, Finns, lung damage.*

The typical life cycles of human parasites belonging to various types and classes have been studied quite well, so determining the species and diagnosing the disease they cause is usually not difficult. At the same time, in cases of atypical localization of parasites in the body, difficulties often arise, both in diagnosis and in treatment, which necessitates their study. The most common parasitic lesions of the lungs include echinococcosis, cysticercosis, paragonimiasis, ascariasis, and schistosomiasis [1, 2].

Pulmonary echinococcosis (*Echinococcus granulosus*) is a dangerous disease that occurs with fever, intoxication syndrome, chest pain, cough, hemoptysis, allergic reactions, etc. A person becomes infected with echinococcosis by ingesting eggs excreted in the feces of canines. From the intestine, oncospheres spread hematogenously throughout the body, causing lung damage in 15-20% of cases. A specific cystic lesion of the pulmonary parenchyma develops, which is called the measles (echinococcus type). Inside the measles, there is a toxic liquid and constantly forming brood chambers with scolex (daughter and grandchild bladders). Measles gradually grow, reaching 10-20 cm in diameter, squeezing the bronchi, leading to their atrophy and impaired gas exchange. Over time, they can calcify, fester, or rupture. Rupture of the echinococcal measles is the most unfavorable variant of the course of echinococcosis, since in this case there is contamination of healthy tissue of the lungs and other organs with daughter scolex, and the development of toxic-anaphylactic reactions [3, 4].

Cysticercosis (caused by *Taenia solium*) develops when an egg with an oncosphere is accidentally ingested. But, most often, cysticercosis is a complication of taeniasis, in which the patient, when vomiting, throws mature segments of the pork tapeworm into the stomach, where they break down and release eggs. In the intestine, oncospheres emerge from the eggs, which spread hematogenously throughout the body and form measles of the cysticercus type (vesicles with clear liquid and a scolex inside up to 15 mm in size). Pulmonary cysticercosis in most cases occurs without pronounced clinical symptoms. It is detected during X-ray

examination in the form of round shadows with clear boundaries, scattered across the lung fields. The parasite lesions may be partially or completely calcified [5].

Acute pulmonary paragonimiasis (caused by *Paragonimus westermani*) is associated with the penetration of trematode larvae into the lung tissue and manifested by shortness of breath, chest pain and hemoptysis. Patients have a cough with “rusty” sputum (the color is due to the hemosiderin and brown eggs of the parasite contained), often with the smell of “rotten fish,” fatigue, and irritability. Fibrous cysts that form in the lungs are up to 2-3 cm in size. The cysts usually contain pairs of mature helminths, their eggs, mucus and necrotic lung tissue. After 2-3 months, paragonimiasis becomes chronic with alternating periods of exacerbation and subsidence of symptoms. The chronic stage lasts up to 2-4 years and it is accompanied by a gradual extinction of symptoms, the appearance of isolated foci of fibrosis and calcification in the lungs, the development of pneumosclerosis, and “pulmonary heart” syndrome. Complications of pulmonary paragonimiasis include pneumothorax, pulmonary hemorrhage, and the formation of abscess or emphysema of the lung [6].

Ascariasis (caused by *Ascaris lumbricoides*) develops when ascaris larvae migrate through the pulmonary circulation and enter the lungs. The larvae grow by molting. At this stage, mechanical damage to the lung tissue and sensitization of the body occurs. A dry cough, bronchospasm attacks, shortness of breath, and pneumonia develop. Low-grade fever, weakness, and skin rash are noted [7-12].

Urogenital schistosomiasis (caused by *Schistosoma haematobium*). Human infection often occurs when swimming in bodies of water: cercariae invade through intact skin or mucous membranes or are ingested through the mouth. Approximately 30 minutes after entering the human body, cercariae, due to active movement and tissue lysis, penetrate the capillaries of the skin, and then into venules and larger blood vessels. Five days after implantation, the larvae reach the large veins of the bladder, i.e. final localization sites. However, in rare cases, the larvae can infect the lungs. This occurs during the migration of schistozomula through the venous bloodstream, when they reach the right side of the heart and then enter the pulmonary capillaries. This requires several days, during which some larvae destroy small blood vessels, which is accompanied by hemorrhagic manifestations. The pressure in the pulmonary circulation increases. Shortness of breath, rapid heartbeat, increased fatigue, dry cough mixed with blood, swelling and a burning sensation in the heart area appear [13, 14].

Thus, in view of the fact that in recent decades there has been an increase in the number of parasitic diseases due to the migration of the population from endemic areas and the spread of stray animals, doctors of various specialties must have the knowledge and skills necessary for their timely recognition.

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利用人工神经网络分析达吉斯坦共和国居民心率变异性参数
**ANALYSIS OF HEART RATE VARIABILITY PARAMETERS OF
RESIDENTS OF THE REPUBLIC OF DAGESTAN USING
ARTIFICIAL NEURAL NETWORKS**

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抽象的。 N.A.伯恩斯坦关于“没有重复的重复”（1947）的假设和W.韦弗关于第三类系统（TTS）的假设已经在许多著作中得到了实验和理论的证实。 SRISA RAS 和罗蒙诺索夫莫斯科国立大学的科学家小组证明，人体有机体状态向量的各种参数 $x_i(t)$ 的样本缺乏统计稳定性。最初，生物力学中的 Eskov-Zinchenko 效应是通过多次重复震颤图和敲击图记录的例子得到证明的。然后，这种效应在心血管系统参数（15 个参数 x_i ）、脑电图（EEG）、肌电图（EMG）和人体其他参数（无论是在正常条件下还是在病理条件下）以及在心理学、生态学和其他与生命系统相关的科学。

关键词：心率变异性，第一类和第二类不确定性，心血管系统，人工神经网络。

Abstract. *The hypotheses of N.A. Bernstein about “repetition without repetition” (1947) and W. Weaver’s hypotheses about third-type systems (TTS) have received experimental and theoretical confirmation in a number of works. The groups of scientists of SRISA RAS and Lomonosov Moscow State University proved the absence of statistical stability of samples of various parameters $x_i(t)$ of the vector of the human organism state. Initially, the Eskov-Zinchenko effect in biomechanics was proved on the examples of multiple repetitions of*

tremorogram and tappinggram registration. This effect was then demonstrated on parameters of the cardiovascular system (15 parameters x_i), on examples of electroencephalograms (EEG), electromyograms (EMG), and other parameters of the human body, both in normal conditions and in pathology, as well as in psychology, ecology, and other sciences related to living systems.

Keywords: heart rate variability, uncertainty of the first and second types, cardiovascular system, artificial neural network.

Introduction.

The cardiovascular system (CVS), which is responsible for the overall well-being of the body, often becomes the subject of medical research. It is known that dry climate, high levels of solar radiation and sudden temperature changes can have a negative impact on the state of CVS parameters. This can be one of the reasons for the prevalence of heart and vascular diseases in the North-East Caucasus [22-23].

Within the framework of the traditional deterministic and stochastic approach in the study of living systems, we encounter situations when conventional statistics is unable to reliably detect differences between samples (HRV, EMG, EEG parameters). It should be noted that we are dealing with an unchanged homeostasis, for example, of the CVS of one person (or a group) during N repetitions of the same research (experiment). We cannot obtain coincidence of two neighboring statistical distribution functions $f_j(x_i)$ and $f_{j+1}(x_i)$ because the probability P for equality $f_j(x_i) = f_{j+1}(x_i)$ is extremely small ($P < 0.05$ for CVS). In the new chaos-self-organization theory (CST), this is defined as type 2 uncertainty (samples x_i in unchanging homeostasis are unique), where it is analogous to Heisenberg's uncertainty principle in quantum mechanics (in CST we limit kx_f and kx_f to be the variation spreads of any coordinate $x_i = x_i^r$ and its velocity $x = dx/2i/dt$.)

At the same time, type 1 uncertainty is also introduced in CST, when the samples may statistically match, but the homeostasis state $H1$ is significantly different from homeostasis $H2$ ($H1 \neq H2$). In this case, the physician misdiagnoses (a sick person may not differ from a healthy person by x_i). The reality of type 1 and type 2 uncertainties dramatically complicate the problem of system synthesis, i.e., finding the main diagnostic features of x_i^* (the entire state vector $x^*(t)$) [1-11].

To solve this problem, CST proposes the application of artificial neural networks (ANN) in two modes: chaos of initial weights w_{i0} and multiple re-tuning of the neural network. In this case, in each feature separation procedure $x_i(t)$, we set the initial weights w_{i0} of the features $x_i(t)$ chaotically, i.e., $w_{i0} \in (0, 1)$. At the same time, we repeatedly set up the neural network (at least 50 iterations) and the obtained samples $x_i(t)$ are ranked. If the weights w_i after 50 iterations show values higher than the statistical mean $\langle w_j \rangle > 0.5$, then such j -th features can be considered as main features (or order parameters). As a result, we have now

formalized the procedure for finding the order parameters, i.e. formalized system synthesis (finding the main features).[12-21].

Methods. The age dynamics of *autonomic nervous system* (ANS) parameters in the female population of the North-Eastern Caucasus of the Russian Federation was based on the method of variation pulse intervalography. Forty-five people, indigenous population of the Republic of Dagesta, were examined.

In these samples, 3 age groups were distinguished: Group 1 - 27 years old; Group 2 - 34 years old; Group 3 - over 57 years old. The examined individuals had no pathologies or health complaints (according to the Helsinki Declaration, they gave voluntary consent to the examination). The main parameters of the cardiovascular system of the examined individuals were in a fifteen-dimensional phase space of states in the form of $x=x(t)=(x_1, x_2, \dots, x_m)^T$, where $m=15$. These coordinates X_i , consisted of: x_1 - *SIM*, an index of activity of the sympathetic section of the autonomic nervous system, c.u.; x_2 - *PAR*, an index of activity of the parasympathetic section, c.u.; x_3 - *SPO2* - blood oxygenation level (oxyhemoglobin level); x_4 - *SDNN* - standard deviation of measured cardiointervals, ms; x_5 - *INB* - stress index (according to P.M. Baevsky);. The studies were conducted in June, when the air temperature ranged from +21 to +36 °C with minimal precipitation.

Statistical data processing was performed for five HRV parameters in each age group. Normality of data distribution was assessed by the Shapiro-Wilk (W) criterion. For pairwise comparison of samples, we used the Mann-Whitney test ($p<0.05$). The analysis showed statistical matches, after which we resorted to using ANN in chaos mode of initial weights $wi0$ of all diagnostic features x_i and multiple re-adjustments. Having obtained the values of the final weights, we calculated their mean. The computer programs “MS Excel” and “Statistica 12” were used for all calculations.

Results. During statistical processing of the data, most samples showed the absence of a Gaussian distribution. Given that the distributions differ from normal (the type of distribution was determined using the Shapiro-Wilk test, for samples with 50 or fewer observations), all data are presented as median and interquartile range. The interquartile range was counted as 5% and 95% percentiles. Due to the inconsistency of the empirical distribution with the theoretical distribution law, it is reasonable to apply the non-parametric Kraskell-Wallace test for 3 independent groups to assess the significance of the difference in unrelated samples; $p<0.05$ values were taken as reliable differences. The medians were calculated (Table 1), and for pairwise comparison of samples we used the Mann-Whitney test ($p<0.05$).

Table 1

Statistical analysis of heart rate variability parameters in women (n=45)

		HRV parameters				
		1	2	3	4	5
		SIM	PAR	SPO2	SDNN	INB
Median	Group 1	2,600	13,933	97,333	52,267	35,933
	Group 2	4,067	11,467	97,067	42,133	47,867
	Group 3	6,067	9,000	96,333	34,400	66,133

When statistically comparing the 5 parameters (Table 2) of HRV between the three age groups using the Mann-Whitney criterion, it can be seen that of the 15 comparison pairs, only 6 were statistically different, which is approximately 40%. According to the Mann-Whitney criterion, the remaining 9 comparison pairs $p > 0.05$, which is 60% have the general population in common and are not statistically different. With such a large percentage of overlap, it can be assumed that a person does not undergo any significant changes in the body with age.

Group 1 - 3 (younger and older age groups) showed the most differences. It showed differences in four out of five parameters: PAR, SPO2, SDNN and INB. But at the same time, group 2 - 3 has differences in only two parameters (SPO2, SDNN) and group 1 - 2 (younger and middle age groups) showed no differences in any parameter at all ($p \geq 0.05$), indicating type 1 uncertainty. Based on this result, it can be assumed that changes are observed between the younger and older group, but there is little or no change in the transitional stages. This once again highlights the insufficiency of statistical methods in evaluating the human body's condition and the utilization of this data in medicine.

Results of pairwise comparison of the significance of heart rate variability parameters of the examined groups 1-3 using the nonparametric Mann-Whitney criterion

Parameter	Values of the criterion p in pairwise comparisons		
	1-2	1-3	2-3
SIM	0,363	0,125	0,629
PAR	0,069	0,020	0,118
SPO2	0,180	0,012	0,028
SDNN	0,064	0,017	0,047
INB	0,233	0,041	0,125

Note: group: 1 - women 27 years old; 2 - women 43 years old; 3 - women 57 years old; *p* - achieved level of significance (at the critical level <0.05); *- groups statistically belong to different general populations.

Due to the presence of type 1 uncertainty, we resorted to using ANN in two special modes. During processing, we obtained average weights $\langle w_i \rangle$ for all 15 comparison pairs, which can be seen in Table 3. The fifth parameter (INB) has the highest values ($\langle w_5 \rangle > 0.3$). The parameter x_3 (SPO2) comes second, with average weights greater than 0.2. Thus, the neural network after 50 iterations ($p < 50$) failed to identify the main diagnostic features and get rid of type 1 uncertainty, as well as to find the order parameters (the weights w_i after 50 iterations did not show values higher than the statistical mean $\langle w_j \rangle \geq 0.5$). This is due to the fact that the neural network operates with low efficiency when the number of repetitions is small [24-25].

For example, if we use a number generator within a uniform distribution on the interval (0,1) and for each specific value of weights w_i of features x_i , which form an m -dimensional phase space of states ($i=1, 2, \dots, m$), set specific values of weights w_{i0} chaotically (i.e. $0 < w_{i0} < 1$ from a uniform distribution generator in the interval (0,1)), then after solving the binary classification problem, at the output of the neuroemulator, we will receive sets w_{ij} of weight values of each diagnostic feature x_i , where i is the coordinate number and j is the number of iterations ($j=1, 2, \dots, p$) [17-20]. These sets will be different after each j th iteration and they form a matrix $W = \{w_{ij} | i=1, \dots, m^{j=1 \dots p}$. If there are few such p ($p < 50$), we will obtain specific samples of these weighting factors x_i , (for each individual pl , where l is the number of the series of iterations out of the number p). However, attempts to select the most significant features from them (i.e., ranking x_i) are doomed to failure. The weights of diagnostic features w_{ij} will change chaotically for different series of iterations $l=1, 2, \dots, r$ and we will not be able to select the most important ones. For small $p < 50$, we will for each value of l , obtain a different ranking set w_j and different values of average weights $\langle w_{il} \rangle$ for each sample l [13-16] The problem of identifying order parameters will not be solved (as presented in Table 3).

Table 2

Results of 50 training (pairwise comparison) of neural network (rank values in u.s.) of heart rate variability parameters in women (n=45).

	SIM	PAR	SPO2	SDNN	INB
Group 1 / Group 2	0,1520	0,1437	0,2812	0,1894	0,2328
Group 2 / Group 3	0,1214	0,1130	0,2792	0,1540	0,3310
Group 1 / Group 3	0,1244	0,1288	0,2686	0,1676	0,3114

Conclusions. We have shown the prevalence of nonparametric distributions in HRV parameters on the example of five parameters. Application of Mann-Whitney criterion does not give an objective result when diagnosing the state of cardiovascular system (60% of samples have a common general population and statistically have no differences).

The example presented also shows that a 50-fold tuning of the neural network does not answer the question of identifying order parameters from all x_i . In the case of the neural emulator for $p < 50$ we will obtain sample sets for each x_i , but the distribution functions (for each set $p^1 = p^2 = \dots = p^N$) will be obtained differently. As we move to $p > 50$, there is stability in the values of the feature weights of x_i in the first significant digit (after the decimal point) and further, as p increases ($p \geq 10^3$, $p \geq 10^4$), we will have chaotic variations in the last two significant digits. However, the ANN tuning when going to $p > 100$ identifies the order parameters, we will present the obtained results in more detail in the next communication.

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食品工业中使用的生物传感器
BIOSENSORS USED IN THE FOOD INDUSTRY

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抽象的。 该文章提到了许多分析食品中某些有毒物质含量或允许检测产品中是否超出其最大允许浓度的方法。 该领域有希望的方向之一是生物传感器的开发。 生物传感器可以在生物技术中连续监测生化过程，确定食品的质量、其成分、毒素、抗生素的含量，以进行环境监测。 在生物传感器技术中使用的各种电极中，石墨印刷电极占有重要地位。 有一种用于测定乳糖的酶电导生物传感器。 生物传感器元件是固定在电导传感器表面的三酶膜（葡萄糖氧化酶、变旋酶、 β -半乳糖苷酶）。

关键词：生物传感器、牛奶、过氧化氢酶、葡萄糖氧化酶、酒精氧化酶、蔗糖、重现性、功能稳定性。

Abstract. *The article refers to the existence of many methods of analyzing food products for the content of certain toxic substances or allowing to detect the exceeding of their maximum permissible concentration in products. One of the promising directions in this field is the development of biosensors. Biosensors allow to continuously monitor biochemical processes in biotechnology, to determine the quality of food products, their composition, the content of toxins, antibiotics, to carry out environmental monitoring. Among the various electrodes used in biosensor technologies an important place is occupied by – graphite printed electrodes. There is an enzymatic conductometric biosensor for the determination of lactose. The biosensor element is a membrane of trienzymes (glucose oxidase, mutarotase, beta-galactosidase) immobilized on the surface of the conductometric transducer.*

Keywords: *Biosensor, milk, catalase, glucoxidase, alcohol oxidase, sucrose, reproducibility, functional stability.*

Food safety is one of the most pressing issues directly related to the health and well-being of the population in every country. One of the promising directions in this area is the development of biosensors. Today biosensor technologies are widely used in medicine, agriculture, ecology and other industries.

Currently, there are many methods of analyzing food products for the content of certain toxic substances, or allowing to detect the exceeding of their maximum permissible concentration in products. Most of them have disadvantages consisting in the costliness of research, mandatory sample preparation, the duration of obtaining results, as well as the need to analyze directly in the laboratory.

All this causes the need to search for and modernize methods of foodstuffs research for the content of controlled toxic substances.

One of the promising directions in this field is the development of biosensors. To date, biosensor technologies are widely used in medicine, agriculture, ecology and other industries. Control of food products is a wide field for finding new methods based on the use of biosensors, since almost any analyzed substance can be found a biosensor. Biosensors are devices used to analyze and diagnose substances by converting a biological reaction into a signal. Depending on the type of biomaterial, biosensors based on enzymes, microbial cells, tissue cultures, DNA, immune components and organelles are distinguished. Electrochemical (amperometric, potentiometric and conductometric), optical, calorimetric and acoustic transducers are used to record parameters of biochemical reactions, such as the appearance of electrochemically active products, temperature changes, light amplification or attenuation [1].

Biosensors allow continuous monitoring of biochemical processes in biotechnology, determining the quality of food products, their composition, content of toxins, antibiotics, and environmental monitoring.

Enzyme biosensors are widely used for monitoring low molecular weight compounds such as glucose, amino acids, and antibiotics. Immunosensors are actively used to detect pesticides, toxins, pathogenic bacteria in food products. It is promising to use microbial cells as biological material in biosensors, since they are available, cheap, easily cultivated and maintained in pure culture. To date, microbial sensors are known for the determination of alcohols, sugars, organic acids, antibiotics, as well as inorganic compounds (ammonia, nitrates, nitrites, sulfides, sulfates, phosphates) [2, 3].

Scientists have developed and use a biosensor module of amperometric type built into a personal computer. Sensors in this device are oxygen electrodes with immobilized yeast preparations of alcohol oxidase and glucose oxidase. The device used allows high-precision measurements in the range of nanoampere currents and the use of a small amount of biomaterials. Signal processing in the device is carried out using special software IPC (Kronas, Russia). Amperometric

type biosensors were developed and their characteristics were determined for analyzing the content of ethanol, glucose and starch in fermentation intermediates. Researchers have found that a biosensor based on the enzyme glucose oxidase can analyze glucose in the range of 0.5-2.5 mM and an alcohol oxidase biosensor can analyze ethanol in the range of 0.7-12.3 mM. [4]. Among the various electrodes used in biosensor technologies an important place is occupied by - graphite printed electrodes. They have such advantages as compactness, multifunctionality, low cost and possibility of modification. All this makes it possible to create on their basis various biosensors convenient for industrial production.

Determination of starch content by biosensor method is carried out using a bi-enzyme receptor element including glucose oxidase and amylase (GO+Am). There are examples of the development of biosensors of this type in the literature [5], but not many of them are presented. The advantages of printed electrodes are fully manifested when combining several biosensors into a single analytical system capable of simultaneously determining the content of several components of fermentation media. It is this task, traditionally difficult for physicochemical analytical methods, that can be successfully accomplished using biosensors. As for biosensor systems for selective analysis of the composition of multicomponent samples, such systems are still rather uncommon. A system of amperometric biosensors is known that allows simultaneous selective determination of glucose and lactate content using a flow-injection system including an electrode with immobilized glucose oxidase and lactate oxidase [6]. An amperometric biosensor system for analyzing ethanol, lactate, and glucose in wine samples (operating ranges - 0.3-20 mM for ethanol, 0.04-2.5 mM for glucose, and 0.008-1 mM for lactate) is described [7].

There is an enzymatic conductometric biosensor for the determination of lactose. The biosensor element is a membrane of trienzymes (glucose oxidase, mutarotase, beta-galactosidase) immobilized on the surface of the conductometric transducer. The time required to determine the concentration of lactose in solution using this biosensor is 1-2 min. The linear operating range of the biosensor is from 0.01 mM to 0.75 mM for glucose and from 0.01 mM to 1.25 mM for lactose. The scientists investigated the dependence of the biosensor response upon substrate addition on the pH, ionic strength and buffer capacity of the working solution and presented data on the biosensor selectivity and storage stability. This conductometric biosensor has high functional stability and signal reproducibility.

As a conductometric transducer, the scientists used a differential pair of flat gold electrode combs deposited on a chitaxial substrate. Three enzyme systems (invertase, mutarotase, glucose oxidase) immobilized on the surface of the sensor served as a bioselective element. The developed biosensor was characterized by high signal reproducibility. The optimal sucrose concentration for the inhibitor

analysis was 1.25 mM, and the incubation time in the test solution was 10-20 min. The biosensor was characterized by the highest sensitivity to Hg²⁺ and Ag⁺ ions. The possibility of reactivation of the biosensor by solution of ethylenediamine-tetraacetic acid after inhibition by silver ions or by cysteine solution after inhibition by mercury ions was demonstrated. The results of analyzing real aqueous samples were positively correlated with the results of traditional methods of toxic substances determination. [8]

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西伯利亚狍 (*Capreolus pugarus*) 骨髓中总蛋白及其组分与年龄相关的变化
**AGE-RELATED CHANGES IN TOTAL PROTEIN AND ITS
FRACTIONS IN THE BONE MARROW OF SIBERIAN ROE
DEER (*CAPREOLUS PUGARDUS*)**

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抽象的。本文介绍了西伯利亚狍 (*Capreolus pugarus*) 骨髓中总蛋白定量含量及其随年龄变化的研究结果。已确定西伯利亚狍幼龄动物骨髓中的总蛋白含量为 $63,6 \pm 0,85$ g/l, 年老动物为 $60,1 \pm 0,88$ g/l。白蛋白和球蛋白的浓度随着年龄的增长而降低, 平均分别占总蛋白的37.5%和62.5%。

关键词: 骨髓、总蛋白、白蛋白、球蛋白、西伯利亚狍。

Abstract. *The article presents the results of studies of the bone marrow of Siberian roe deer (*Capreolus pugarus*) on the quantitative content of total protein and its fractions depending on age. It is established that the content of total protein in the bone marrow of Siberian roe deer in young animals is $63,6 \pm 0,85$ g/l, in old animals - $60,1 \pm 0,88$ g/l. The concentration of albumins and globulins decreases with increasing age and averages 37.5% and 62.5% of total protein, respectively.*

Keywords: *bone marrow, total protein, albumin, globulin, Siberian roe deer.*

Proteins play a significant in the life processes of the body. The functions of proteins are determined by the fact that they form the basis of living protoplasm, take part in the synthesis of metabolism, in contractile processes and reactions that provide higher organisms with protection from pathogenic agents, and are components of respiration systems (A.V. Buchel, I.A. Lykasova, 2008). In addition to the fact that proteins play a leading role in the metabolic processes in the animal body, they are functionally related to the development of the main economically useful traits. All proteins of the organism are continuously renewed. Even in the state of external rest, there are two oppositely directed processes - protein synthesis and decay, which represent a series of complex chemical transformations (Y.I. Yarets,

2015). Body proteins most objectively reflect the state of metabolic processes in the animal body. It is possible to judge the physiological state of the animal, the body's resistance to adverse factors by the nature of changes in the total protein and its fractions (O.A. Gorbatenko, T.S. Samsonova, 2003). Serum proteins play an exceptional role in the process of metabolites, in the realization of a number of regulatory and protective functions of the body.

Protein fractions represent separate types of blood proteins - 5 standard fractions: albumin and four globulin fractions: α (alpha) 1- globulins, α (alpha) 2 - globulins, β (beta) - globulins, γ (gamma) - globulins. Having high reactivity, albumins easily form complexes with mineral and organic ions, participate in their transport and regulation of buffer capacity. Actively binding with toxic products, albumins sharply reduce their concentration in the body and carry out excretion of toxic products through the kidneys (A.V. Buchel, I.A. Lykasova, 2008). Globulins are a complex of numerous components that differ in their immunobiological and physicochemical properties, as well as in their functional role in the body. Alpha- and beta-globulins are involved in the transport of lipoids and fat-soluble substances. Gamma-globulins include antibacterial and antiviral bodies (N.M. Mandro, T.V. Fedorenko, 2015).

There is no information in the literature about the content of total protein and its fractions in the body of the Siberian roe deer, therefore, studying the main indicators of protein metabolism in the bone marrow of the Siberian roe deer under normal conditions is relevant. Therefore, the aim of our research was to determine the total protein and its fractions in the bone marrow of the Siberian roe deer (*Capreolus pugardus*) in the Amur region.

For the experiment, material was collected from nine animals, which were hunted in the fall-winter period in different districts of the Amur region. The hunted animals were divided into groups based on age differences in physique, including young, middle-aged, and old species according to commonly accepted methodology.

In order to study age-related changes in the content of total protein and its fractions in the bone marrow, bone marrow from each animal was taken from tubular bones in the same amount, on average up to 10 g. The protein was isolated using trichloroacetic acid precipitation method. The mass of isolated proteins from bone marrow cells in young roe deer averaged 149.33 ± 15.83 mg, in middle-aged animals - 154.0 ± 10.12 mg and in old animals - 135.33 ± 15.82 mg of protein. Total protein was determined using a refractometer, its fractions were determined by electrophoresis.

The amount of total protein and protein fractions depends not only on the animal's protein supply, its digestibility and assimilability, but also on the animal's age. As a result of the conducted research (Table 1), it was determined that the

amount of total protein, which characterizes the content of all proteins, in young animals of Siberian roe deer is $63.6 + 0.85$ g/l, in middle-aged animals - $61.5 + 0.5$ g/l and in old animals - $60.1 + 0.88$ g/l, respectively. Thus, it can be noted that the content of total protein in bone marrow cells decreases with age, with the quantity being 5.5% less in old animals (these data are statistically insignificant).

Table 1
Indicators of protein metabolism in the bone marrow of Siberian roe deer
($x_{cp} \pm s_x$, $n=3$)

Indicator	Young animals	Middle-aged animals	Older animals
Total protein, g/l	$63.6 + 0.85$	$61.5 + 0.5$	$60.1 + 0.88$
Albumins, g/l	$23,8 \pm 0,28$	$23.5 + 0.22$	$22.5 + 0.67$
Globulins, g/l	$39,73 \pm 0,78$	$37,93 \pm 0,71$	$37,63 \pm 1,81$
α -globulins	$3.96 + 0.13$	$3.87 + 0.09$	$3.6 + 0.2$
α_2 -globulins	$3.94 + 0.04$	$3.95 + 0.05$	$3.57 + 0.35$
β -globulins	$5.89 + 0.17$	$5.87 + 0.17$	$6.64 + 2.19$
$(\gamma_1 + \gamma_2)$ -globulins	$26.27 + 0.47$	$24.25 + 0.87$	$23.83 + 0.34$
A/G ratio	$0,6 \pm 0,01$	$0,62 \pm 0,01$	$0,6 \pm 0,05$

Note: x_{cp} - arithmetic mean; s_x - deviation from the arithmetic mean; n - number of units in the group.

There is also a difference in the ratio of protein fractions in the proteinogram (Fig. 1). The highest concentration of albumins, which is an important indicator of the body's protein reserve and performs a transport function, is observed in roe deer of young age group $23,8 + 0,28$ g/l (37,42% of total protein), which is higher by 1,3% than in middle-aged animals, and by 5,8% than in old animals. The amount of globulins, which are the main proteins of hemostasis and immune system, in young animals is 62.48% of the total protein, in middle-aged animals - 61.79%, in old animals - 62.56%, and its highest concentration is observed in young animals and is 39.73 ± 0.78 g/l, their amount in old animals decreases on average by 5.3%.

The globulin fractions of the protein include α_1 -globulins, α_2 -globulins, β -globulins, $(\gamma_1 + \gamma_2)$ -globulins, the content of which also varies with age. The highest amount of α_1 -globulins and α_2 -globulins, which are responsible for maintenance of circulating blood volume and transport of substances, is observed in young animals and amounted to $3.96 + 0.13$ and $3.94 + 0.04$ g/l, respectively, which averages 6% of total protein. A slightly different pattern is the change of β -globulin fractions, which serve for the transfer of substances and participate in immune reactions, their greatest amount is observed in old animals of Siberian roe deer and is 6.64 ± 2.19 g/l (11% of total protein), which exceeds the index in young

animals by 11.3% and in middle-aged animals by 11.6%. The content of ($\gamma_1 + \gamma_2$)-globulins, which are antibodies and play an important role in the defense reaction of the organism against foreign agents, in the highest concentration is observed in young animals and amounted to $26,27 \pm 0,47$ (41.31% of total protein), in the middle-aged group their amount was $24,25 \pm 0,87$ (39.43% of total protein), and in old animals already $23,83 \pm 0,34$ (39.65% of total protein), which is 7.7% and 9.3% lower than the value of young animals.

- gamma globulins
- beta-globulins
- alpha-2-globulins
- alpha-1-globulins
- Albumins, %

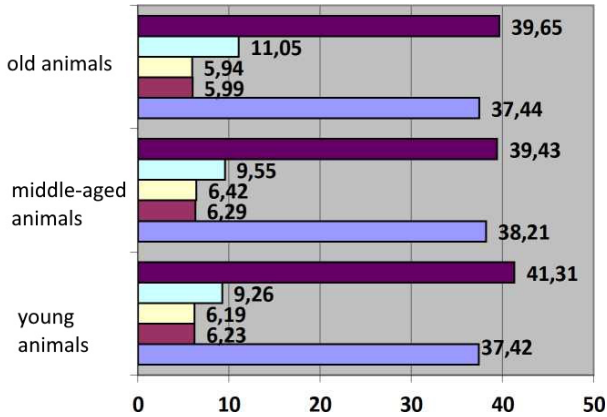


Figure 1. Albumins and globulins content in Siberian roe deer bone marrow, %

Thus, not only the concentration of total proteins in the bone marrow, but also the ratio of individual protein fractions in the proteinogram changes in animals in the course of life. At the same time, their content has a wide range of individual values and largely depends on the physiological state of the organism, conditions and habitat of Siberian roe deer in the Amur region.

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哈萨克斯坦共和国心血管药物医药市场趋势营销分析
塔吉克斯坦

**MARKETING ANALYSIS OF TRENDS IN THE
PHARMACEUTICAL MARKET OF CARDIOVASCULAR DRUGS
IN THE REPUBLIC OF KAZAKHSTAN
TAJIKISTAN**

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关键词：市场、心血管药物、品种分析、ATC 代码、塔吉克斯坦共和国。

Keywords: *market, cardiovascular drugs, assortment analysis, ATC code, Republic of Tajikistan.*

Relevance. The prevalence of cardiovascular pathology in the Republic of Tajikistan ranges up to 60.3%, in Europe up to 52% and in America up to 33%. According to the World Health Organization (WHO), almost 1/3 of deaths in the world annually occur from cardiovascular diseases - about 17 million deaths per year. Cardiovascular pathologies in general are the main cause of mortality in the world. In Russia and in the Republic of Tajikistan, diseases of the circulatory system have been the leading cause of overall mortality and the second leading cause of morbidity in the country for many years. Most developed countries, unlike Tajikistan, have adopted national programs for the prevention of cardiovascular diseases, which has allowed Europe and the USA to reduce mortality from heart disease by more than half over the past 30 years. Stroke mortality in Russia, the Republic of Tajikistan and the rest of the former USSR countries is 6 times higher than in the USA. [1,3] Therefore, a significant part of the health care budget is

spent on the therapy of cardiovascular diseases; [2] in some countries up to 12-13 % of health care costs are spent on the treatment of this group of diseases [Kobzar L.V., Batoeva B.G., 2000]. In view of the above, cardiovascular drugs worldwide are the largest in terms of sales and one of the most dynamically developing pharmacological classes of drugs. These medicines account for about 18% of the total sales in the global JIC market. Firstly, this is due to the rapid gap between recommendations for the treatment of a particular pathology and real clinical practice due to the rapid increase in the arsenal of drugs offered for therapy [Mazur H.A., 2002], and secondly, this is due to the fact that in circulation in the pharmaceutical market there are many duplicate analogs and drugs with unproven efficacy and safety. According to the opinion of the special representative of the Director General of the World Health Organization (WHO), in many countries prescribing of medicines is carried out irrationally. In these conditions, the problem of correct selection, prescription and use of medicines is very urgent.

Research objective. From the foregoing, the aim was to analyze the pharmaceutical market of cardiovascular drugs (CV drugs) in the local market

Materials and methods. The materials consisted of the data of the State Register of Medicines of the Republic of Tajikistan. The results were processed by the method of descriptive statistics using the programs “MS Office EXCEL 2017”.

Results and Discussion. It was found that during the specified period, a total of 3835 drug names were registered in the country, with 261 of them being medications used for cardiovascular diseases. As a result, registered CV drugs for the period 2017-2022 accounted for 6% of the total volume of registered drugs. As can be seen from Fig.1, the highest number of registered CV drugs was in 2017, with 87 drug names.

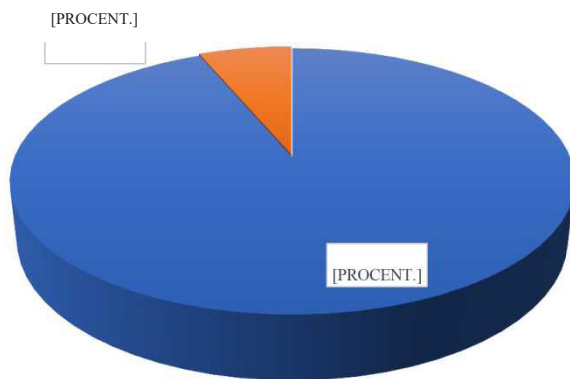


Figure 1. Structure of the market of registered medicines in the Republic of Tajikistan for the period 2017-2022.

When analyzing the structure of the SSLC market it was found that India is the leader in the import and registration of medicines, which amounted to 21%, the second place was taken by Ukraine 12% and then the Republic of Belarus 10%, England 8%, Georgia 6%, Slovenia 5%, Hungary 4%, Netherlands, Pakistan, Bulgaria, Turkey amounted to 3%, domestic manufacturers and France -2% and the smallest positions were the United States, Republic of Moldova, Republic of Macedonia, Italy, Spain, China, Korea, Poland, Latvia, Czech Republic, Bangladesh, Iran at 1%.

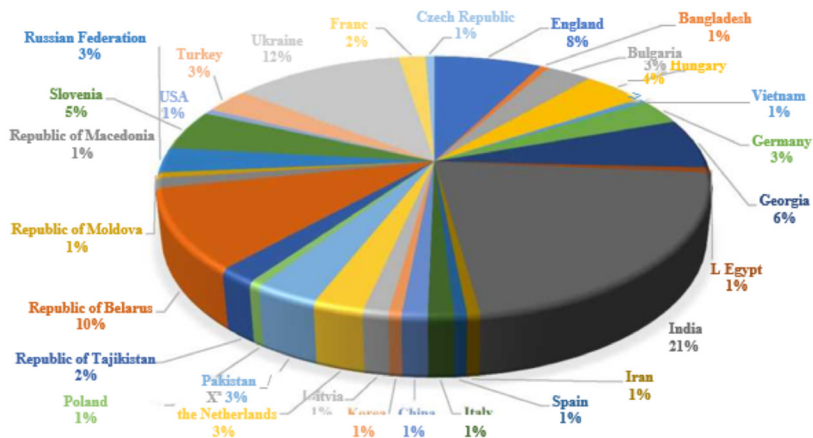


Figure 2. Structure of the market of registered cardiovascular drugs in the Republic of Tajikistan.

The largest number of registered drugs was in the form of tablets, which accounted for 71.62% of the total volume. Other types of dosage forms were capsules 10.14%, solution for injection and infusion 7.43%, gel for external use 4.05%, lyophilizate powder for injection 2.70%, powder for preparation of solution for intravenous injection 1.35%, rectal suppositories 0.68%, syrup for oral administration 0.68%, concentrate for preparation of solution 0.68% and oral drops 0.68%.

When analyzing the registration of drugs for the treatment of cardiovascular system in the domestic market according to the 3rd level of the ATC classification structure, it was found that the largest number of registered drugs was in the subgroup C10A-hypolipidemic agents, which amounted to 18.39%; further - C02A - antoadrenergic agents of central and C02C - peripheral action - 17,24%; C01E - other drugs for treatment of heart diseases - 13,41%; C03A - thiazide diuretics, C03B - thiazide-like diuretics, C03C - loop diuretics and C03D - potassium-saving diuretics - 12,26%; C08C-selective calcium channel blockers predominantly

with vascular effects and C08D-selective calcium channel blockers with direct cardiac action, 7.28%; C09A- ACE inhibitors, 6.90%; C08C-selective calcium channel blockers predominantly with vascular effects and C08D-selective calcium channel blockers with direct cardiac action, 5.75%; C01B - antiarrhythmic drugs, classes I and III - 5.36%; C09C - angiotensin II antagonists - 2.68%; C07A - beta-adrenoblockers -0.77%; C01E - Others for the treatment of heart disease - 0.77%;C01D - vasodilators - 0.76%; C03D - potassium-saving diuretics, C01C - cardiotoxic agents other than cardiac glycosides, C01A - cardiac glycosides - 0.38%.

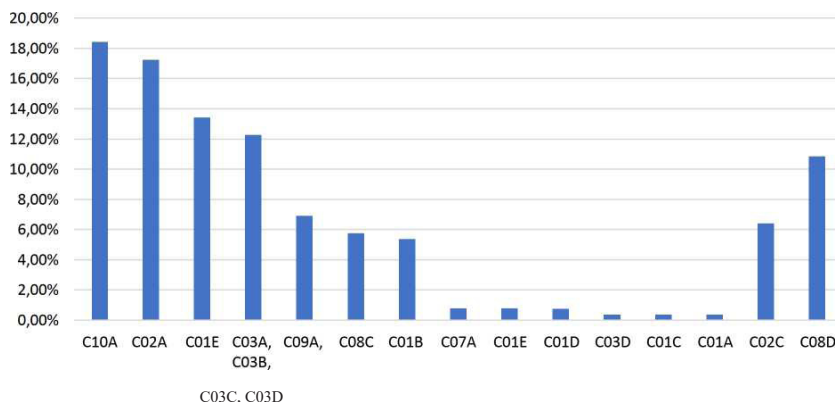


Figure 3. Dynamics of registration of medicinal products for the treatment of cardiovascular system by ATC classification.

Conclusion. Thus on the basis of the results presented above it was found that: 1. The number of drug registrations among cardiovascular drug groups has decreased. 2. The market is dominated by manufacturers of foreign production, where 90% are generic drugs. 3. Insufficient assortment on the market. All these shortcomings, in turn, reduce the quality of drug supply to the population.

Keywords: market, cardiovascular drugs, assortment analysis, ATC code, Republic of Tajikistan.

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酸模品种 (*Rumex l.*) 在医学中的应用 (文献综述)

THE USE OF THE SORREL VARIETY (*RUMEX L.*) IN MEDICINE (LIT. REVIEW)

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抽象的。 本文探讨了塔吉克斯坦共和国植物区系中列出的 10 种酢浆草 (*Rumex L.*) 的基本特性。 对现代专业文献和当前科学数据进行了系统回顾。 已经考虑了酢浆草物种在各种类型的药物中的用途及其在各种疾病中的使用的有效性。 酢浆草尚未在农场得到广泛应用。 但是, 尽管科学家对植物提取物进行了积极有效的研究, 但该草药的所有治疗可能性尚未被揭示。 对塔吉克斯坦共和国境内拥有商业储备的酢浆草进行分析, 可以识别出最有前途的物种: - 帕米尔酢浆草 (*Rumex pamiricus* Rech. fil.), 卷曲酢浆草 (*Rumex crispus* L.), 保尔森酢浆草 (*Rumex crispus* L.) paulsenianus Rech. f.), 酸模 (*Rumex acetosa* L.), 金字塔酸模 (*Rumex thyrsoiflorus* Fingerh.)

关键词: 酢浆草品种 (*Rumex*)、生物活性物质、药理研究、医药应用。

Abstract. *The article considers the basic properties of 10 species of Sorrels (*Rumex L.*), which are listed in the flora of the Republic of Tajikistan. A systematic review of modern specialized literature and current scientific data has been carried out. The use of species of sorrel in various types of medicine and the effectiveness of its use in various diseases has been considered. Sorrel has not received a large wide application in the farm. But, but the active and effective study of plant extracts by scientists, all the therapeutic possibilities of the herb have not yet been revealed. Analysis of sorrel, which have commercial reserves in the territory of the Republic of Tajikistan, allows to recognize the most promising species: - Pamir Sorrel (*Rumex pamiricus* Rech. fil.), Curly Sorrel (*Rumex crispus* L.), Paulsenian Sorrel (*Rumex paulsenianus* Rech. f.), Common Sorrel (*Rumex acetosa* L.), Pyramidal Sorrel (*Rumex thyrsoiflorus* Fingerh).*

Keywords: *variety of sorrel - (*Rumex*), biologically active substances, pharmacological study, application in medicine.*

Introduction.

The search for new domestic plant sources for obtaining biologically active compounds is promising and provides an opportunity to expand the range of medicinal plants for medical use. This work is aimed at research of raw materials that could be used in medicine to create plant-based medicines.

Among these plants are species of sorrel, which since ancient times have found their application both in the food industry for their nutritional properties and in folk and modern medicine [2].

Research objective.

Since plants of the genus sorrel are widely used in folk medicine and in cooking, the study of chemical composition and its pharmacological properties is relevant for further question of using sorrel species as medicinal plant raw materials. Comparative studying of sorrel species to substantiate the possibility of their use in medical practices.

Material and methods of research.

The material and methods of the study are literature data from foreign and domestic sources. The object of the study was 10 species of sorrel Common sorrel (*Rumex acetosa* L.), Pyramidal sorrel (*Rumex thyrsoiflorus* Fingerh), Pamir sorrel (*Rumex pamiricus* Rech. fil.), Curly Sorrel (*Rumex crispus* L.), Reching'er's Sorrel (*Rumex rechingerianus* Losinsk), Paulsen's Sorrel (*Rumex paulsenianus* Rech. f.), Tubular Sorrel (*Rumex conglomerates* Murr.), Halaczii Sorrel (*Rumex halaczii* Rech. f.), Syrian Sorrel (*Rumex syriacus* Meisn), Nepal Sorrel (*Rumex nepalensis* Spreng) growing on the territory of the Republic of Tajikistan [7].

The results of the research and their discussion.

The review discusses the current knowledge of the basic chemical properties and pharmacological activities of species of Sorrels, the second largest genus in the Buckwheat family.

There are about 200 species of the genus *Rumex* L. worldwide, its distribution range is Central Asia (everywhere in the mountains, except Kopet Dagh), Caucasus, Siberia, Far East, Balkans, Asia Minor, Iran, China, Himalayas, Mongolia [3].

This species is found mainly In Tajikistan in the subalpine area, in the belts of herbaceous steppes and meadows, in the belt of juniper and steppes, in the upper belt of black forests - in rosaries, maple forests, sometimes forms pure thickets on fine-grained and rubbly soils. It grows in meadows, along the banks of rivers and streams, along ditches, along field margins within 2300 - 3600 m above sea level [1,8].

The flora of Tajikistan [7] includes 10 species of Sorrels (*Rumex* L.), out of which 8 are wild-growing: Pamir Sorrel (*Rumex pamiricus* Rech. fil.), Curly Sorrel (*Rumex crispus* L.), Reching'er's Sorrel (*Rumex rechingerianus* Losinsk), Paulsen's Sorrel (*Rumex paulsenianus* Rech f.), Strawberry Sorrel (*Rumex con-*

glomerates Murr.), Tuberous sorrel (*Rumex conglomerates* Murr.), Halaczii sorrel (*Rumex halaczii* Rech. f.), Syrian sorrel (*Rumex syriacus* Meisn), Nepalese sorrel (*Rumex nepalensis* Spreng), and 2 cultivated species: Common Sorrel (*Rumex acetosa* L.), Pyramidal Sorrel (*Rumex thyrsoiflorus* Fingerh) as food cultivars.

1. *Rumex pamiricus* Rech. fil. - Pamir sorrel, “шалња”, “туршаквох” (Tajik), Otkulok (local name). The height 40-200 cm – is found in the Southern Tajikistan, Hissar-Darvaz, Western Pamirs, Eastern Pamirs, and Alai. It grows on wet meadows, along mountain rivers and water bodies, at altitudes ranging from 2200 to 3600 meters.
Use in folk medicine - decoction of the root for diarrhea; patch l. on vegetable oil for boils and purulent wounds; infusion of flowers for hypertension.
2. *Rumex crispus* L. - Curly stubble, “шалња”, “шульња”, “туршаквох”, “ќав” (Taj.). Height: 50-120 cm. Found in all regions except East Pamir. Along riverbanks, among crops, at elevations ranging from 350 to 2500 m.
Use in traditional medicine. In homeopathy - extract pl. in enterocolitis, infusion of root in heart disease, inflammation of the cornea, phimosis, hemorrhoids, respiratory infections, laryngitis, and pulmonary tuberculosis. In traditional medicine, the root infusion is used for schistosomiasis and hemorrhoids. In folk medicine, the leaf juice is used as a healing agent for stomatitis, malaria, and hepatitis. Fried leaves with fat are used for pulmonary tuberculosis. Leaf infusion is used for pyoderma and flatulence. Internal use of root infusion is diuretic and cardiac, used for asthma, pulmonary tuberculosis, dermatitis, chlorosis, and anemia. The seeds are used for diarrhea. Root powder is used as an anti-alcoholism, anthelmintic, and hemostatic agent. Seed decoction is used as an antiseptic for dyspepsia, diarrhea, and psoriasis [3, 6].
3. *Rumex rechingerianus* Losinsk - Rechinger's Sorrel, found on damp places; at the height of 1700-2900 m. Zerafshanskaya above Kishl, Shink, Mazari-Sharif, Gissar-Darvose, West-Pamir, East-Pamir valley of Kaindy r., Suyak-Mazar. General distribution Central Asia, western China.
Economic value. The leaves contain 0.1-0.5% alkaloids, while the roots contain up to 20%.
4. *Rumex paulsenianus* Rech. f. - Paulsen's Sorrel, grows in meadows, along banks of rivers and streams, along ditches, along field margins within 2300 - 3600 m above sea level Economic importance. A vicious pasture weed. It is not eaten by cattle, well tolerates grazing, forming continuous thickets in places where cattle stay for a long time (tyrlakh).

5. *Rumex conglomerates* Murr. - Strawberry Sorrel, Turshaki, Tudshuda (Tajik name), occurs along ditches, wet places, among crops, and in nut forests; at an altitude of 800-1600 m.
Economic importance. The roots contain bast fibers measuring 265 mm in length, with a fiber cavity diameter of 13.0 μm and a fiber wall thickness of 8.5 μm . The fruits contain 2.17% resin, 3.7% tannins, 0.28% free oxymethylantraquinone, and 0.37% bound oxymethylantraquinone (based on absolutely dry weight).
6. *Rumex halaczii* Rech. f. - Halaczii sorrel, found along ditches, in crops, in damp places; at alt. 400-800 m.
Economic value. Field weed. In Tajikistan it contains 25.7% water-soluble substances, 21.0% ntn, 4% tn, with D 15.58%. In the Karakums, tannins are 8.32%. The author of this species considers it a hybrid between *B. pulcher* and *R. U- mosus*. Neither species is found in Tajikistan, so we believe that *R. halaczii* is an independent species. *Halaczii* is an independent species.
7. *Rumex syriacus* Meisn - Syrian sorrel, turshaki Syria (taj.). On moist places in gardens and crops; at an altitude of 800-1600 m.
8. *Rumex nepalensis* Spreng - Nepalese sorrel. On stony slopes with subsoil moistening, along streams; up to the altitude of 2500-3000 m.
9. *Rumex acetosa* L. - Common Sorrel, wildy occurs in neighboring areas of Kyrgyzstan, where it is found in grass-typchak steppes in the Alai district, along the Sary-Tash-Irkeshtam road. It is possible to find it here as well. It is cultivated for its leaves, which are consumed as food.
10. *Rumex thyrsoflorus* Fingerh - Pyramidal Sorrel, Sometimes cultivated in gardens and vegetable gardens as a vegetable for the sake of the leaves, which are eaten.

Dioscorides, Theophrastus, Hippocrates and Abuali ibni Sino noted the medicinal and nutritional value of sorrel. Dioscorides wrote: "If you boil sorrel, it tastes good". In his opinion sorrel is a good laxative. Abuali ibn Sino notes that sorrel is useful for kidney and bladder stones, for ulcers and catarrhs in the intestines, as well as effective in treating scabies, scabies and tumors. According to "Mahzan-ul-adwiya" by Muhammad-Husayn, sorrel is useful for strengthening the liver, for jaundice, as an appetite stimulant; its juice is kept in the mouth to quench toothache. In boiled form it softens the body. Sorrel with vinegar is useful for the spleen [1].

In local medicine, the juice of the leaves is used for nausea, heartburn and jaundice; gargle the mouth and throat for sore throat and bleeding gums. Decoction of dried fruit drink with gastritis and ulcers of the stomach and intestines, and decoction of fried fruit with colitis, enterokalitis and hemocolitis, dysentery,

bloody diarrhea, and it is also useful in scurvy. The juice of the leaves is drunk in nausea, heartburn and jaundice. Leaves smeared with melted butter are applied to wounds and tumors. In a decoction of flowers bathe children with skin diseases and sunstroke. Decoction of plants used for baths for skin diseases (rashes, scabies, shingles and eczema).

Young leaves are edible; they are considered to strengthen the gastrointestinal tract. The leaves are used along with other herbs as a filling for samosas, added to soups, and used as a seasoning for various dishes. In homeopathy, curly dock is used for irritating cough, laryngeal tuberculosis, and diarrhea.

Clinical observations have shown that when taking sorrel curly in the kravi increases the number of red blood cells and hemoglobin. There are indications of the curative effect of decoctions of the root and seeds of this species of sorrel in severe diseases of children with bloody diarrhea. In medical practice, the roots and fruits are used in decoctions for dysentery and intestinal diseases in powder and in a decoction, as well as a styptic and as an astringent for rinsing the mouth and throat. Externally, it is used in the form of decoctions for astringent lotions for skin diseases. Chrysophanic acid contained in the plant can replace “chrysoicin”, used as a skin antiseptic and has a positive effect on the treatment of diseases such as psoriasis.

Roots contain 4-11% tannins, 2.5% resin and 25.7% extractives. The above-ground parts contain about 0.1% emodin, chrysophanic acid, about 4% anthraquinone derivatives, sugar, resin and organic acids, up to 175 mg% (in leaves 112-272 mg%) ascorbic acid, vitamins P, B, carotene, 8-10% of tannins. Immature fruits contain 4-5% of tannins, 119.3 mg% of vitamin C, carotene, 0.3% of free and 0.47% of bound oxymethylanthraquinone and others. In addition, Ca, P, Mg, Si, Fe and Mn are found in the plant in the flowering phase.

The group and individual composition of all groups of biologically active substances in the studied species varies significantly and depends on the dates of collection of samples, places of growth and age of plants.

Numerous phytochemical studies on these plants have confirmed that sorrel is rich in anthraquinones, naphthalenes, flavonoids, triterpenes, carotenoids and phenolic acids. In addition, extracts and compounds isolated from these plants have been experimentally proven to possess a range of therapeutic properties including anti-inflammatory, antioxidant, antitumor, antibacterial, antiviral and antifungal activities [8].

Conclusion.

Conducting research has allowed the expansion of scientific data on the different species of sorrel. The study of these species of the plant can be noted as a promising medicinal agent. It was found that the above mentioned species of Sorrel have become a good source of modern medicine for the treatment of inflam-

mation, cancer and various bacterial infections, and provides new information for further research. These plants can be recommended for further and more detailed study as a source of raw materials, as well as for industrial cultivation in the territory of the Republic of Tajikistan.

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预防医院感染的基础知识——医务人员的手部卫生

BASICS OF HAI PREVENTION – HAND HYGIENE OF MEDICAL PERSONNEL

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概括。 本文介绍了一项研究结果,旨在证明医疗机构中的手卫生是在实施《预防与提供医疗相关的感染的国家概念》(已批准)的框架内预防 HAI 的最有效措施。 由俄罗斯联邦首席国家卫生医生于 2011 年 11 月 6 日发布)。 据透露,医疗保健相关感染(HAI)是现代俄罗斯医疗保健中的一个紧迫问题。 医院感染的主要原因是医疗机构感染控制方法不够有效和抗菌药物的过度使用。 研究过程中采用了内容分析、文献综述、排序、假设演绎、概括、形式化等方法。 使用的材料是在国际书目和摘要数据库(Scopus、PubMed)中发表的文章; 俄罗斯联邦的官方文件以及专门讨论与提供医疗服务相关的感染问题的国际文件(立法法案、计划、公约等)。 系统文献分析表明,预防 HAI 的主要措施之一是手部卫生。 结果发现,通过实施多模式方法可以实现预防 HAI 的最大效果。 根据现有科学研究,确定了医护人员强制执行手部卫生的 5 个要点。 结论是,医院感染预防必须是多模式的,成功实施医院感染预防需要医院层面的文化转变和国家协调,以解决医院感染造成的严重威胁。

关键词: 医疗保健相关感染、手卫生、预防、房间清洁、感染预防概念。

Summary. *The article presents the results of a study aimed at justifying hand hygiene in medical organizations as the most effective measure for the prevention of HAIs within the framework of the implementation of the National Concept for the Prevention of Infections Associated with the Provision of Medical Care (approved by the Chief State Sanitary Doctor of the Russian Federation on November 6, 2011). It was revealed that healthcare-associated infections (HAIs) are a pressing problem in modern Russian healthcare. The main causes of HAIs are insufficiently effective infection control methods in healthcare organizations and excessive use of antimicrobial drugs. During the study, methods such as content analysis, literature review, ranking, hypothetico-deductive method, generalization, and formalization were used. The materials used were articles published in international bibliographic and abstract databases (Scopus,*

PubMed); official documents of the Russian Federation, as well as international documents (legislative acts, programs, conventions, etc.) devoted to the issues of infections associated with the provision of medical care. The systematic literature analysis performed suggests that one of the main measures to prevent HAIs is hand hygiene. It was found that the maximum effect in the prevention of HAI can be achieved through the implementation of a multimodal approach. Based on available scientific research, 5 main points have been identified when hand hygiene is mandatory for healthcare workers. It was concluded that HAI prevention must be multimodal, with successful implementation of HAI prevention requiring a cultural shift at the hospital level and national coordination required to address the serious threat posed by HAI.

Keywords: *healthcare-associated infections, hand hygiene, prevention, room cleaning, infection prevention concept.*

Relevance of the problem

Health care-associated infections (HAIs) are infections that a patient receives while being treated in a health care setting, such as a hospital, or as a result of exposure from a health care worker, such as a doctor or nurse. Infections acquired as a result of medical care can enter the body through portals such as the bloodstream, lungs, skin, urinary tract or digestive tract, causing serious illness. These infections are difficult to treat and can persist in the body for a long time. In the worst cases, infections of this group lead to death [1, 2].

The main causes of HAIs are insufficiently effective infection control methods in healthcare organizations and excessive use of antimicrobial drugs. In the long term, reducing HAI rates depends on the implementation of multimodal prevention strategies that require behavioral and cultural changes. Key components of such strategies include identification of carriers of multidrug-resistant organisms, elimination of environmental reservoirs, measures to suppress cross-transmission, and evidence-based use of antimicrobials. These measures must be implemented within a framework of individual ownership, strong administrative support, and access to up-to-date national and local surveillance data [3].

Treatment of HAIs is exacerbated by rising rates of antimicrobial resistance. Healthcare workers and contaminated hospital environments are increasingly responsible for the transmission and persistence of multidrug-resistant organisms, as well as other pathogens such as *Clostridium difficile*. This makes it urgent to focus on a number of measures to prevent HAIs.

The purpose of this study is to substantiate hand hygiene in medical organizations as the most effective measure for the prevention of HAIs within the framework of the implementation of the National Concept for the Prevention of Infections Associated with the Provision of Medical Care (approved by the Chief State Sanitary Doctor of the Russian Federation on November 6, 2011).

Materials and methods

To achieve this goal, methods such as content analysis, literature review, ranking, hypothetico-deductive method, generalization, and formalization were used.

The materials used were articles published in international bibliographic and abstract databases (Scopus, PubMed); official documents of the Russian Federation, as well as international documents (legislative acts, programs, conventions, etc.) devoted to the issues of infections associated with the provision of medical care. 20 domestic and foreign sources were cited.

results

The main components of HAI prevention have been found to include:

1. antimicrobial stewardship to reduce overuse of antimicrobials and ensure evidence-based use of antimicrobials;
2. infection prevention strategies to control multidrug-resistant - especially methicillin-resistant *Staphylococcus aureus*, vancomycin-resistant *Enterococcus* spp. (VRE organisms) and, more recently, multidrug-resistant gram-negative bacteria;
3. cleaning and disinfection of hospitals;
4. development of prescription guidelines and treatment standards [4, 5, 6].

In this case, the main preventive measures recommended for patients to avoid infection are:

- Mandatory hand washing by the patient himself or the use of liquid, gel hand sanitizers.
- Washing hands by medical workers before performing manipulations or using liquid and/or gel hand sanitizers;
- Taking antibiotics only as prescribed by a doctor;
- Take antibiotics strictly according to the doctor's instructions, and complete the necessary course strictly in accordance with the intended purpose;
- When taking antibiotics or painkillers, care must be taken to protect the digestive tract from side effects;
- Knowledge of patient rights [7, 8].

Available research suggests that *Clostridium difficile* is one of the most common causative agents of HAI, with an annual incidence of 3.65 per 10,000 hospital days and a 30-day relative mortality rate of 6–7%. The profile of *Clostridium difficile* has increased in recent decades. Between 1999 and 2013 a hypervirulent strain of *C. difficile* (ribotype 027), which causes high morbidity in the elderly, has become endemic in hospitals in North America and the United Kingdom. The factors behind its occurrence were poor practice in prescribing antibiotics, especially fluoroquinolones, and inadequate environmental and hand hygiene; these shortcomings are also characteristic of modern Russian healthcare [9, 10, 11].

Complicating the epidemiology is that, according to expert estimates and available research data, up to 1/3 of new cases of *Clostridium difficile* infections occur outside the home; only 35% of hospital-acquired *Clostridium difficile* infections were associated with other hospital-acquired cases when examined using whole-genome sequencing [12, 13].

Available research data indicate that viable HAI spores were isolated from 49% of surfaces surrounding patients in healthcare settings, including high-touch areas such as call buttons and bed rails, reflecting the pathogen's ability to resist desiccation and survive on hard surfaces. At the same time, other factors, including aerosolization of spores after flushing toilets and the release of asymptomatic carriers, further contribute to the pollution of the environment of medical organizations [14, 15].

Patients admitted to a room previously occupied by patients with *C. difficile* have an increased risk of acquiring a HAI, despite proper cleaning. For asymptomatic carriers of viable *C. difficile* spores, the pathogen was found to contaminate 29% of surrounding surfaces; it is currently unclear whether standard bleach cleaning and standard contact precautions should be carried out in such cases, or whether a special specialized algorithm is required [16].

C. difficile spores, the main causative agent of HAIs, have now been shown to be resistant to standard hospital disinfection methods, including alcohol-based hand rubs and conventional disinfectants (quaternary ammonium compounds). To minimize pathogen transmission, patient care packages should include contact precautions, use of patient-specific equipment, routine cleaning with bleach, and hand hygiene using soap and water [17].

The systematic literature analysis performed suggests that one of the main measures to prevent HAIs is hand hygiene. At the same time, the maximum result in the prevention of HAI can be achieved through the implementation of a multimodal approach.

Hand hygiene is a fundamental principle of quality health care. While interventions are often multimodal in nature and direct cause-and-effect relationships are difficult to prove, there is epidemiological evidence supporting the role of hand hygiene in reducing HAIs.

For example, in the period from 2002 to 2013, hospital-onset *S. aureus* bacteremia (SAB) (MRSA and MSSA) decreased by 63%, and similar reductions have been demonstrated in many countries around the world. This reduction in HAIs occurred in parallel with national initiatives, leading to the widespread implementation of successful hand hygiene programs. Good hand hygiene is a core principle in HCAI prevention packages and remains a key indicator of hospital safety and quality systems [18].

Infection with HAI pathogens occurs in hospital settings through cross-transmission, so hand and environmental hygiene are key prevention strategies. Health care workers, patients and visitors should be made aware of the importance of strict hand hygiene, especially after using the toilet.

Based on available scientific research, 5 main points have been identified when hand hygiene is mandatory for healthcare workers [19, 20].

1. Before contact with the patient. Hand hygiene is performed to protect the patient from pathogen colonization and, in some cases, from exogenous infection, harmful microbes carried on the hands. Situations included in this paragraph: handshake; assisting the patient in self-care; providing assistance and other non-invasive therapeutic procedures: applying an oxygen mask, massage, etc.; conducting a physical non-invasive examination: measuring pulse, blood pressure, auscultation of the chest, recording an ECG, etc.

2. Before clean/aseptic procedures. Hand hygiene is performed to protect the patient from infection by harmful germs, including his/her own germs, entering his/her body. Situations that are included in this item: brushing the patient's teeth, instilling eye drops, performing a digital vaginal or rectal examination, examining the mouth, nose, ear with or without instruments, inserting a suppository / pessary, suctioning the mucous membrane; dressing the wound with or without an instrument, applying ointment to the vesicle, injections/punctures; insertion of an invasive medical device (nasal cannula, nasogastric tube, endotracheal tube, urinary tube, catheter, drainage); preparation of food, medicines, pharmaceutical products, sterile materials.

3. Contact with body fluids. Hand hygiene is performed to protect the healthcare worker from colonizing or contaminating the patient's harmful microbes and to protect the healthcare environment from the spread of germs. Situations that are included in this paragraph: contact with the mucous membrane and intact skin; performing an injection or puncture; insertion of an invasive medical device (vascular access, catheter, tube, drainage, etc.); removal of an invasive medical device; removal of any protective material (napkin, bandage, gauze, sanitary pad, etc.); actions with a sample containing organic matter, after cleaning excrement and any other biological fluids after cleaning any contaminated surfaces and contaminated material (dirty bed linen, dentures, tools, urinal, bedpan, toilets, etc.).

4. After contact with the patient. Hand hygiene is performed to protect the healthcare worker from infection by pathogens and to protect the environment of the healthcare facility from the spread of germs. Situations that are included in this paragraph: after shaking hands, stroking the child's forehead; after helping the patient with self-care; after assistance and other non-invasive treatment; after a non-invasive examination: measurement of pulse, blood pressure, auscultation of the chest, ECG recording, etc.

5. After contact with objects surrounding the patient. Hand hygiene is performed to protect the healthcare worker from colonization by pathogens that may be on surfaces/objects around the patient, as well as to protect the healthcare environment from the spread of pathogens. Situations that are included in this paragraph: after physical contact with the patient and his environment; after providing medical care, for example, after setting up equipment; after contact with surfaces or other objects, beds, bedside tables, etc.

When considering hand hygiene, the wearing of gloves deserves special attention. The use of gloves does not replace the need for good hand hygiene. Hand hygiene must be performed in all considered moments and other situations, regardless of the indication for the use of gloves. After each use of gloves, throw them away and wash your hands. Gloves should only be worn when indicated according to established standards - otherwise they become a major risk of microbial transmission.

Conclusion

Successful implementation of HAI prevention requires a cultural shift at the hospital level, and national coordination is required to address the serious threat posed by HAI. Prevention of HAIs should be multimodal, with hand hygiene being the most effective measure.

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彩色流式细胞术检测多发性骨髓瘤患者骨髓和外周血肿瘤细胞的可能性
**POSSIBILITIES OF THE MULTICOLORED FLOW CYTOMETRY
FOR THE DETECTION OF TUMOR CELLS IN PATIENTS
WITH MULTIPLE MYELOMA IN THE BONE MARROW AND
PERIPHERAL BLOOD**

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注解。 该研究的目的是比较骨髓瘤浆细胞和循环肿瘤细胞的免疫表型特征与病程特征。 使用多色流式细胞术对 34 名新诊断 MM 患者的骨髓抽吸物 (BM) 和外周血 (PB) 样本进行平行免疫表型研究。 在 45.7% 的患者中, 新诊断的 MM 病程不复杂, 在 29.4% 的患者中, 该疾病因不同部位浆细胞瘤的发展而复杂化, 在 25.7% 的患者中, 由于肾脏病理学的发展而复杂化。 根据BM和PC的所有有核细胞中强表达的CD38⁺细胞的含量对肿瘤PLC进行定量评估。 研究了标记 CD138 和 CD45。 CD56、CD19、CD20、CD28、CD11c等。MM的特点是存在两种肿瘤亚克隆——骨髓和循环, 其免疫表型特征不同: MM患者的CTC与其他患者相比, 其CD138、CD56、CD28的表达较低。 BM PLC, 这使它们独立于骨髓环境的条件。 在简单和复杂的病程中揭示了BM肿瘤细胞和CTC的免疫表型特征。

关键词: 多发性骨髓瘤, 多色流式细胞术, 循环肿瘤细胞。

Annotation. *The purpose of the study was to compare the immunophenotypic characteristics of myeloma plasma cells in the bone marrow and circulating tumor cells with the characteristics of the course of the disease. 34 patients with newly diagnosed MM underwent parallel immunophenotypic study of bone marrow aspirate (BM) and peripheral blood (PB) samples using multicolor flow cytometry. In 45.7% of patients, newly diagnosed MM with an uncomplicated course was diagnosed, in 29.4% of patients the disease was complicated by the development of plasmacytomas of various localizations, in 25.7% of patients - by the development of renal pathology. Quantitative assessment of tumor PLC was carried out based on the content of CD38⁺ cells with strong expression in terms of all nucleated cells of the BM and PC. Markers CD138 and CD45 were studied. CD56, CD19, CD20, CD28, CD11c, etc. MM is characterized by the presence of two tumor subclones - bone marrow and circulating, differing in immunophenotypic*

characteristics: CTCs in MM patients are characterized by low expression of CD138, CD56, CD28 compared to BM PLC, which causes them independence from the conditions of the bone marrow environment. Immunophenotypic features of BM tumor cells and CTCs were revealed in uncomplicated and complicated course of the disease.

Keywords: *Multiple myeloma, multicolor flow cytometry, circulating tumor cells.*

Introduction. The evolution of a precancerous cell into a malignant one, as well as further tumor progression, dissemination and relapse, depend on the characteristics of the tumor microenvironment and the effects of therapeutic drugs. This process of natural selection promotes tumor plasticity, leading to the formation of genetically complex and heterogeneous tumors that are difficult to treat.

The clinical signs of a disease such as Multiple Myeloma (MM) are varied and are manifested by a high concentration of monoclonal M protein, a tendency to infections, the presence of severe bone tissue disorders, impaired renal function and other signs.

The diagnosis of MM is established if the criteria established by the International Multiple Myeloma Study Group in 2014 are met [1]. Immunophenotyping of bone marrow aspirate (BM) cells is advisable for verification and determination of the percentage of clonal plasma cells (PLC) in cases of unclear diagnosis and is included in the list of mandatory examination methods [2].

The multicolor flow cytometry method is used in the diagnosis of MM (detection of an aberrant phenotype, confirmation of PLC clonality), differential diagnosis of tumor and reactive plasmacytosis, when monitoring the tumor clone during treatment, including the determination of minimal residual disease (MRD), as well as to identify prognostically unfavorable tumor markers that allow identifying risk groups of patients. The advantage of multicolor flow cytometry is the ability to simultaneously perform multiparametric analysis of a large number of markers on a large number of cellular elements, since neither standard morphological nor molecular approaches, individually or together, have the ability to distinguish between clonal and normal plasma cells.

Numerous studies have established that the majority of normal bone marrow plasma cells are immunophenotypically heterogeneous in the expression of CD19 and CD45, negative for CD117 and CD20, while the expression of CD27 and CD81 antigens is quite pronounced [3, 4].

An algorithm for the immunophenotypic diagnosis of tumors of the lymphoid and hematopoietic systems, including for the diagnosis of plasma cell tumors, was proposed by the European Consortium of Flow Cytometry Specialists “Euro-Flow” in 2012, which made it possible to standardize flow cytometric approaches when

selecting panels of monoclonal antibodies and fluorochromes, gating strategies [5]. This approach, which remains relevant today, involves the use of 2 samples containing monoclonal antibodies to 8 antigens each.

The CD38 antigen is used as the main marker; on hematopoietic cells its expression is most pronounced on cells of plasmacytoid differentiation. For more accurate detection of plasma cells, a marker such as CD138, or syndecan-1, which is expressed on mature plasma cells, has been proposed.

This panel also includes antibodies that confirm the clonality of tumor cells (predominant expression of immunoglobulin light chains (Kappa/or Lambda) and prognosis markers. In this case, the main markers that distinguish pathological PLC from normal ones are the CD56, CD19 and CD81 antigens; significant prognosis markers are CD27, CD28, CD117, CD200. It has been established that MM patients who have positive expression of the CD138 molecule have a worse prognosis and a high probability of relapse [6].

Currently, with the help of immunophenotypic studies, it has become possible to talk about the presence of different subclones of tumor cells in MM. One such subclone is circulating tumor cells (CTCs). According to a meta-analysis of 11 studies, it was shown that CTCs are present in most cases of multiple myeloma, and the presence of CTCs in MGUS is associated with an increased risk of transformation of MGUS and “smoldering” MM into symptomatic MM [7, 8, 9].

Thus, studying the biological characteristics of a tumor and the phenotypic profile of its subclones can reveal new immunopathogenetic factors that, from our point of view, influence the clinical course and prognosis of the disease.

Purpose of the study: to compare the immunophenotypic characteristics of myeloma plasma cells in the bone marrow and circulating tumor cells with the features of the course of the disease.

Materials and methods. 34 patients (16 women, 18 men) with newly diagnosed MM underwent parallel immunophenotypic study of bone marrow aspirate and peripheral blood (PB) samples using flow cytometry. The median age of patients was 59 years. All patients at the time of examination had stage 3 of the disease according to Salmon-Durie. 16 (45.7%) patients were diagnosed with MM with an uncomplicated course. 10 (29.4%) patients had plasmacytomas of various locations (bone, extramedullary). In 9 (25.7%) patients, the disease was complicated by the development of renal pathology (DRP). Immunophenotypic study of bone marrow aspirate and PC samples was carried out using 4-color laser flow cytometry (2-laser flow cytometer FACSCalibur (Becton Dickinson, USA). Bone marrow aspirate was preliminarily filtered, washed twice with a solution of phosphate-buffered saline (PBS), then the erythrocytes were lysed using a “soft» lysing solution without formaldehyde. The PC samples were preliminarily poured into several portions in a volume of 500-1000 μ l, the erythrocytes were lysed

with a «soft» lysing solution without formaldehyde, washed twice with a PBS solution and the sediment was concentrated in one tube. Next, the BM and PC samples were incubated at room temperature with monoclonal antibodies (MAbs) of a certain specificity, conjugated with fluorescent dyes in various combinations. The gating strategy and the selection of immunophenotypic markers were carried out in accordance with the recommendations of the European Consortium for Flow Cytometry (Euro-Flow, 2012) , but were adapted for a 4-color flow cytometer. Along with light scattering characteristics, CD38 and CD45 were used as “anchor” markers for identification and quantitative assessment of PLC. The main stages of the plasma cell gating strategy in MM patients were the isolation of a gate of CD38-positive cells with high expression intensity (bright) against the side-scattering (SSC) channel, followed by assessment within this gate of the content of positive cells for the antigens of interest. The criterion for positivity was the presence of antigen expression on the surface of more than 20% of tumor cells. The analysis included at least 500,000 events. Non-tumor plasma cells of BM and PC were excluded by the CD45+(bright)CD19+CD56- phenotype. Quantitative assessment of PLC was carried out based on the CD38+ content in terms of all nucleated cells (NCCs) of BM and PC. Statistical processing of the results was carried out using the Statistica v program. 8.0. with calculation of the mean and square error of the mean ($M \pm m$). To determine the statistical significance of differences in the average values of quantitative indicators, Student’s t-test was used.

Results. The most massive tumor lesion of the BM, detected by the cytometric method (based on the content of PLC with a strong expression of CD38 from all NCCs), was observed in MM complicated by kidney damage; in uncomplicated MM it was slightly less, in MM complicated by plasmacytomas it was the lowest. The highest content of CTCs, accordingly, was also determined in MM complicated by kidney damage, in MM complicated by plasmacytomas - slightly less, and the lowest level was observed in uncomplicated MM (Tables 1,2).

Table 1.

Comparative characteristics of the immunophenotypic profile of BM PLC and CTCs in patients with plasmacytomas and uncomplicated MM (% positive cells)

Antigens studied	PLC CM with uncomplicated course of MM N=16	PLC CM in patients with plasmacytomas N=10	P	CTCs with uncomplicated course of MMN=16	CTCs in patients with plasmacytomas N=10	P
Number of tumor cells (CD38+Bright), % of NCC	11,0±2,54	3,18±1,49	0,005	0,46±0,16	1,18±0,31	0,024

CD138+	78,0±6,47	77,99±9,16	0,499	29,51±8,64	19,175±6,43	0,163
CD56+	66,58±8,58	40,76±7,49	0,013	32,77±5,83	35,24±7,1	0,39
CD117+	5,21±1,71	9,73±4,6	0,176	3,98±1,34	4,6±1,49	0,379
CD11c+	40,96±7,01	45,64±12,07	0,364	40,09±5,82	43,51±8,2	0,362
CD33+	20,89±7,75	10,77±2,41	0,003	13,81±3,6	16,13±4,55	0,339
CD28+	49,29±7,44	51,99±14,45	0,431	26,38±5,9	29,33±10,22	0,396
CD19+	7,39±3,11	25,56±8,12	0,024	11,29±2,81	19,81±7,58	0,144
CD20+	15,41±6,39	4,68±1,37	0,054	8,44±2,3	7,53±2,07	0,38

As can be seen from the table, the number of tumor cells in the bone marrow in MM complicated by plasmacytomas was significantly lower than in uncomplicated MM. In contrast, CTC levels were significantly higher in patients with plasmacytomas than in patients with uncomplicated disease. The level of CD138 expression did not differ in patients with plasmacytomas and in patients with an uncomplicated course on both BM PLC and CTCs, although the proportion of CD138+ plasmacytomas in the circulation was significantly lower. BM plasma cells in patients with MM complicated by plasmacytomas were characterized by strong expression of CD138, a marked decrease in the expression of adhesion molecules CD56, CD33, and an increase in the expression of CD19 compared to the group of patients with uncomplicated MM. Half of the BM tumor plasma cells in both compared groups of patients expressed the CD28 molecule. The binding of CD28 to its ligand CD80/CD86 on stromal dendritic cells stimulates them to produce the cytokine IL-6, directly transducing a survival signal in the myeloma plasma cell, helping to avoid the effects of chemotherapy and apoptosis [10,11]. CTCs from patients with plasmacytomas were characterized by less pronounced expression of CD33 and CD56 compared to bone marrow PTCs. It is worth noting the stable level of expression of the CD11c integrin molecule, which carries out intercellular interactions and chemotaxis both in BM tumor cells and in PCs in patients with uncomplicated MM and plasmacytomas. Probably, the loss of adhesion molecules and a less “mature” stage of cell differentiation predetermine the intensive release of tumor cells from the BM into the bloodstream with the further formation of plasmacytomas of various localizations.

Table 2.

Comparative characteristics of the immunophenotypic profile of BM PLC and CTCs in MM patients with kidney damage and with an uncomplicated course (% positive cells)

Antigens studied	PLC CM uncomplicated course N=16	PLC CM in patients with kidney damage N=9	P	PLC CM uncomplicated course N=16	PLC CM in patients with kidney damage N=9	P
Number of tumor cells (CD38+Bright), % of NCC	11,0±2,54	18,87±7,28	0,151	0,46±0,16	4,803±2,35	0,071
CD138+	78,0±6,47	72,77±9,19	0,315	29,51±8,64	35,7±9,51	0,309
CD56+	66,58±8,58	77,13±9,94	0,204	32,77±5,83	57,61±8,27	0,009
CD117+	5,21±1,71	3,32±1,51	0,197	3,98±1,34	3,94±1,67	0,491
CD11c+	40,96±7,01	17,69±5,89	0,007	40,09±5,82	43,20±9,07	0,382
CD33+	20,89±7,75	15,21±6,66	0,283	13,81±3,6	11,14±3,73	0,297
CD28+	49,29±7,44	19,9±7,64	0,004	26,38±5,9	15,02±6,18	0,085
CD19+	7,39±3,11	7,04±5,72	0,477	11,29±2,81	12,91±6,51	0,406
CD20+	15,41±6,39	20,1±10,97	0,351	8,44±2,3	6,02±1,83	0,199

The number of tumor cells in the bone marrow in MM complicated by kidney damage was much higher than in uncomplicated MM, although no statistically significant differences were found. The same trend was observed when analyzing the number of detected tumor cells in the circulation. Tumor plasma cells of BM in MM patients with kidney damage were characterized by significantly less pronounced expression of the integrin molecule CD11c and CD28 compared to uncomplicated disease. In the CTC compartment in MM patients with kidney damage, a significantly higher level of CD56 expression was observed compared to uncomplicated MM. These differences allow us to conclude that there is a weaker connection between the bone marrow PIC and the bone marrow matrix in patients with kidney damage compared to the uncomplicated group. The expression level of CD28 on PLC BM and CTCs did not exceed 20%, which is significantly lower than in patients with uncomplicated MM and MM complicated by plasmacytomas. It is possible that a decrease in the expression of CD11c integrin molecules in the pool of bone marrow plasma cells may also contribute to the increased release into circulation of tumor cells with a high degree of malignancy that have not lost neural adhesion molecules.

Conclusion. In MM, the presence of two tumor subclones was revealed - bone marrow and circulating, differing in quantitative values and immunophenotypic characteristics in uncomplicated and complicated course of the disease. A com-

mon pattern characteristic of all groups of patients is a significant decrease in the expression of the syndecan-1 molecule (CD138) on CTCs compared to BM plasma cells. It has been proven that myeloma cells have the ability to self-reproduce (MM tumor stem cells), tumor regrowth and resistance to therapy; the role of myeloma stem cells can be played by PLCs that lack CD138 expression [12]. Based on the immunophenotypic features of tumor subclones in patients with MM, the following conclusions can be drawn: 1. Low level of expression of CD56, CD33 molecules and high level of expression of CD19 on BM PLC can serve as prognostic criteria for a high risk of myeloma cells entering the circulation and the development of plasmacytomas. 2. Low expression levels of CD11c and CD28 on BM PLC and high expression of CD56 on CTCs can be considered as prognostic criteria for a high risk of kidney damage in MM.

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随机样本中人群的肥胖发生率

THE INCIDENCE OF OBESITY AMONG THE POPULATION IN A RANDOM SAMPLE

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Relevance

Today one of the most common chronic diseases in the world is obesity. The growth of this problem is so great that it has acquired the character of a non-infectious epidemic of the 21st century [1]. Obesity is a risk factor for a number of pathologies such as type 2 diabetes mellitus (DM), arterial hypertension (AH), coronary heart disease (CHD), myocardial infarction (MI), malignant tumors, which lead to decreased ability to work, early disability and reducing the life expectancy of patients [2]. The risk of mortality increases from a number of reasons, both in men and women of all age groups, while there is no clear significance in the degree of excess weight (moderate to significant) [3].

In many countries, even in socially developed ones, obesity is a heavy economic burden for the state, and therefore, on October 2, 2019, the Government of the Republic of Tajikistan adopted the Program for the Prevention of Obesity and the Promotion of Healthy Nutrition in the Republic of Tajikistan for the period 2019-2024, which is currently being successfully implemented. [4].

According to the dissertation work carried out on the territory of the Republic of Tajikistan, a screening was carried out, which showed that almost half (45.5%) of the adult population of our republic are overweight (25.3%) and obese (20.2%). Most often, young and middle-aged men living in urban areas and young and middle-aged women living in rural areas are overweight. The results obtained show the need to intensify preventive measures by promoting a healthy lifestyle, healthy eating and increasing physical activity among the population of our region [5].

Purpose of the study. To identify the incidence of overweight by random sampling at a screening examination dedicated to Diabetes Day.

Material and research methods. We held an event dedicated to Diabetes Day on November 14, 2022, in Dushanbe in three administrative centers: Dushanbe Mall, Siyoma Mall, Salomat TJ, where 399 people were examined in a random sample. Of these, 211 were women and 188 were men. All individuals were asked to complete a diabetes risk score (FINDRISK) questionnaire. During the screening process, it was revealed that the average age of those examined was 41 ± 0.6 years (from 18 to 72 years).

Based on the results of the questionnaire on the FINDRISK scale, in addition to the citizen's age, anthropometric measurements were taken (height, body weight, waist circumference), the body mass index (BMI) was calculated according to the classification taking into account the WHO value, 1997, and the nature of nutrition and physical activity were also taken into account.

Based on the results of data analysis, the subjects were divided into age groups: Group I - persons under 45 years old, Group II - 45 - 54 years old, Group III - 55 - 64 years old, Group IV - over 65 years old. Also, during the scoring process, if they exceeded 15 points on the FINDRISK scale, the subjects had their blood sugar measured using an "Accu Chek Activ" glucometer. Statistical processing and mathematical analysis were carried out using the Statistica 8.0, Excel 2017 program.

Research results. Based on the results of the screening examination, we identified a number of people with normal, overweight and obesity. Where all those examined were included in age groups by weight categories. The first age group included 265 people, the second age group included 77 people, the third included 41 people, and the fourth - 16 people.

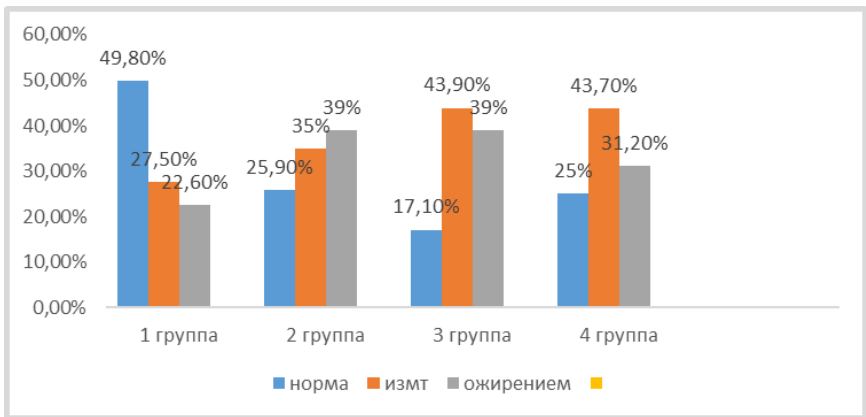


Figure 1. Weight category of persons

In the first age group, the number of people with normal body weight (BMI<25kg/m²) was 132 people - 49.81% (65 men and 67 women) with an average BMI of 21.75±0.1 kg/m². There were 73 people with excess weight (BMI 25 to 30 kg/m²) - 27.55% (41 men and 32 women) with an average BMI of 27.56±0.06 kg/m². There were 60 people with obesity (BMI>30 kg/m²) – 22.64% (26 men and 34 women) with an average BMI of 34.18±0.36 kg/m².

In the second age group with normal body weight, the number of subjects was 20 people - 25.9% (7 men and 13 women) with an average BMI of 22.3±0.11 kg/m². The number of overweight people in the second group was 27 people - 35.06% (14 men and 13 women) with an average BMI of 27.21±0.07 kg/m². The number of obese people in the second group was 30 people – 38.96% (22 women and 8 men) with an average BMI of 33.96±0.21 kg/m².

In the third age group with normal weight there are 7 people – 17.07% (2 men and 5 women) with an average BMI of 22.8±0.08 kg/m². The number of overweight people in the third age group was 18 people – 43.9% (9 men and 9 women) with an average BMI of 22.8±0.04 kg/m². The number of obese people in the third group was 16 people – 39.02% (6 men and 10 women) with an average BMI of 34.8±0.18 kg/m².

In the fourth group, the number of people with normal body weight was 4 people - 25% (2 men and 2 women) with an average BMI of 21 ± 0.16 kg/m². With excess weight in the fourth group, the number of subjects was 7 people - 43.75% (3 men and 4 women) with an average BMI of 26.97±0.07 kg/m². With obesity in the fourth group, the number was 5 people - 31.25% (3 men and 4 women) with an average BMI of 33.18±0.15 kg/m².

Conclusions.

Thus, the screening results showed the presence of overweight and obesity in 59.2% of those examined, with the highest incidence found in the 3rd age group (where the age was 55-64 years). I would also like to note that excess body weight is more common in women in all age categories.

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阿尔泰边疆区干旱草原条件下马铃薯栽培技术中的微生物制剂
**MICROBIAL PREPARATIONS IN POTATO CULTIVATION
TECHNOLOGY IN THE CONDITIONS OF THE ARID STEPPE OF
THE ALTAI KRAI**

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抽象的。 本工作致力于研究阿尔泰边疆区干旱草原条件下微生物制剂对马铃薯品种产量的影响。 该研究于 2021 年至 2022 年在阿列斯基区同一地区的私人农场境内进行。 试验了缔合型固氮剂 Agrophil、Mizorin 和 Flavobacterin 制剂对马铃薯生长发育的影响。 在中熟马铃薯品种科伦坡和红猩红色的生长和发育生物指标方面, 在种植前对块茎进行接种获得了积极的结果。 芽的高度、茎、叶的数量和面积增加。 生物制剂对块茎生产力产生了积极影响, 增加了每株植物的数量、灌木丛中块茎的重量及其大小。 块茎接种使马铃薯品种的产量在两年内平均提高了 27%–63.2%。 当用黄杆菌素处理时, 两个品种都表现出最大的产量增加

关键词: 马铃薯, 微生物制剂, 联合固氮细菌, 接种, 产量, 生物特征参数, 分数。

Abstract. *The work is devoted to the study of the influence of microbial preparations on the yield of potato varieties in the conditions of the arid steppe of Altai Krai. The research was conducted in 2021–2022 in the Aleysky district on the territory of the private farm in the same district. The effects on the growth and development of potatoes of preparations of associative nitrogen fixers Agrophil, Mizorin and Flavobacterin were tested. Positive results were obtained with inoculation of tubers before planting on biometric indices of growth and development in medium maturing potato varieties Colombo and Red Scarlet. The height of shoots, number of stems, leaves and their area increased. The bio-preparations had a positive effect on tuber productivity, increasing their number per plant, tuber weight in the bush and their size. Inoculation of tubers increased the yield of potato varieties on average for 2 years by 27%–63.2 %. Both varieties exhibited maximum yield increase when treated with Flavobacterin*

Keywords: *potato, microbial preparations, associative nitrogen-fixing bacteria, inoculation, yield, biometric parameters, fractions.*

In recent decades, many countries of the world, including Russia, have been switching to organic farming, replacing or supplementing agrochemicals with biological preparations, the action of which is based on useful microorganisms. Replacing chemical methods using mineral fertilizers and pesticides of various purposes with biological ones has a number of advantages. These are reduction of toxic load on soils, microflora, useful fauna, reproduction of soil fertility, reduction of production costs, as biopreparations are much cheaper than chemical preparations, and obtaining useful safe products.

In addition, most of the applied biological preparations perform many important functions for plants, possessing a complex of useful properties. They regulate and accelerate the growth and development of plants, provide mineral nutrition elements, possessing mineralizing or fixing activity, provide protection against diseases caused by pathogenic microorganisms, increase plant immunity, resistance to adverse environmental factors. Therefore, there is no need to apply high doses of mineral fertilizers, additionally apply toxic chemicals to protect against diseases and pests. These functions are taken over by microorganisms in the preparations. The use of biopreparation allows more rational use of mineral fertilizers, saving up to 70%. At the same time, the increase in crop yields reaches 20-50% and more [1,2].

Potatoes are the most important food and industrial crop, the composition of which is characterized by an optimal ratio in tubers of organic and mineral substances necessary for humans. They contain on average 75-80% of water and up to 25% of dry matter, of which 1422% are starch, 1.4-3% are easily digestible proteins, 0.2-0.3% are fats [3]. Potato tubers in large volumes are also used for technical processing, as they are valuable raw materials for alcohol, starch, rubber and other industries. Of great importance is also the use of the crop for fodder purposes, especially for dairy cattle, pigs and poultry.[4].

Providing the population with ecological nutrition on the basis of profitable potato production is possible only if its yield is 30 tons/ha and higher. However, in the Siberian region potato yield remains low - 22-24 tons/ha, while the yield potential of domestic potato varieties and hybrids reaches 80 tons/ha[5]. The reason for low yields is the insufficient level of agrotechnics, provision of modern machinery, plant protection products, as well as natural anomalies in the form of droughts or floods.

Therefore, it is very relevant to introduce new technologies based on biological forms of farming, in which the provision of crops with necessary nutritional elements, their protection from pests and phytopathogens is achieved not at the expense of chemistry, but at the expense of resources of biological communities. The use of modern technologies makes it possible to solve these problems. In particular, the use of biopreparations containing pure cultures of nitrogenfixing

bacteria simultaneously ensure high crop productivity, obtain ecological products, maintain and restore soil fertility [6,7].

The goal of this study was to study the effect of microbial preparations containing cultures of associative nitrogen-fixing bacteria on potato yield in the conditions of arid Aleysk steppe of Altai Krai.

Objects and methods of research

The study of the effect of biopreparations on potato yields was conducted in 2021-2022 on the experimental field of the farm in the suburbs of Aleisk in the conditions of the arid steppe of Altai Krai. Weather conditions of vegetation periods of these years were dry, not enough precipitation fell in the first half of vegetation, especially dry in 2021 were the months of May and July. The months of May and July were particularly dry in 2021, with precipitation rates of 0.17 and 0.5, respectively, in May and July. In 2022, severe drought was observed in May and June, and insufficient moisture in July and August. The precipitation rates in May, June, July, and August were 0.3, 0.5, 1.1, and 1.0, respectively.

The soil of the experimental plot is chernozem leached medium thick medium humus soil with humus content in arable horizon 4.9 %, neutral reaction of soil solution. The content of phosphorus and potassium in the soil is quite high - 24.7 and 22.5 mg/100 g of soil, respectively, easily hydrolyzable nitrogen 23.5. The area of the experimental plot of one variant was² 300 m, accounting 21,0 m², repetition - threefold, location - randomized. Two medium maturing potato varieties: Colombo and Red Scarlet served as an object of research. Before planting, tubers were inoculated with bacterial preparations: Agrophil, Mizorin and Flavobacterin at recommended doses [6]. The variant without inoculation served as a control. Agrophil preparation contains pure culture of bacteria *Agrobacterium radiobacter*, strain 10; Mizorin preparation - *Arthrobacter mysovens* pcs.7, Flavobacterin - *Flavobacterium sp*, pcs.130. Potato planting was carried out in late May on the scheme 70 x 30 cm at a depth of 10 cm, the harvest was counted in early September. During the vegetation period the crops were cared for and phenological observations were carried out. The yield was counted on 10 linear meters in three repetitions on each variant. The obtained yield data were processed by single-factor dispersion analysis according to B.A. Dospikhov [8].

Results of the study

The action of associative nitrogen-fixing bacteria on plants is multifaceted. Their main function in preparations is fixation of atmospheric nitrogen and providing plants with available mineral ammonium nitrogen. In addition, they synthesize biologically active substances- phytohormones that stimulate growth functions and stress resistance of plants, produce antibiotics that protect plants from pathogens and other influences [1]. Potato is a crop well responsive to the use of biological preparations. Table 1 shows biometric indices of potato plant growth for two years.

Table 1
Biometric indices of potato plant growth (averages of 3 reps)

2021				2022				
Plant	Number	Number	Leaf	Plant	Number	Numbe	Leaf	
Variant	height , cm	of shoots, pcs./bus h	of leaves, pcs./ bus h	area, m /bush ²	height, cm.	of shoots, pcs./bush	r of leaves, pcs/bu sh	area, m /bush ²
Colombo								
Control	35,1	4,6	31,6	0,23	40,9	4,1	28,4	0,26
Agrophile	43,1	6,6	48,4	0,29	54,8	5,4	32,6	0,32
Mizorin	33,3	4,0	32,0	0,44	56,9	4,6	38,7	0,36
Flavobacte rin	32,0	4,6	37,0	0,35	55,4	4,3	36,1	0,37
RedScarlet								
Control	38,0	5,1	34,7	0,22	44,0	4,3	29,4	0,21
Agrophile	47,6	4,9	33,8	0,32	56,0	4,4	30,0	0,34
Mizorin	32,4	6,0	35,4	0,44	57,3	3,8	37,1	0,29
Flavobacte rin	41,4	5,9	32,7	0,38	55,6	4,6	38,2	0,27

The use of preparations of nitrogen-fixing bacteria had a positive effect on many

biometric indicators of both potato varieties. despite the dry conditions of the years of the study. The most noticeable effect of the preparations was on the increase in shoot height, especially in 2022. In most cases, the preparations contributed to an increase in the number of shoots, leaves and their area on one bush compared to the control variant. Both varieties responded to the effect of the preparations almost equally.

Table 2
Effect of biopreparations on potato tuber formation (2021-2022 average).

Variant	Number of tubers, pcs./growing.	Number of tubers, pcs./m ²	Tuber weight, g/plant	Average tuber weight,g
Colombo				
Control	11,9	56,7 -	860	72
Agrophile	13,2	62,4	1090	83
Mizorin	13,6	65,7	1180	87
Flavobacterin	16,1	76,6	1390	86
RedScarlet				
Control	10,6	50,9	780	74

Agrophile	14,1	66,3	1080	77
Mizorin	13,2	62,4	1080	82
Flavobacterin	14,6	69,5	1260	86

Formation of number of tubers per plant and weight of one tuber were higher on the background of applied preparations (Table 2). On average for 2 years, Colombo variety formed the number of tubers in 1 well and on 1m² by 10.2-35.1 % more than the control, RedScarlet variety by 22.6-36.5 %. The maximum number of tubers and weight of one tuber were obtained on Flavobacterin preparation in both varieties.

Application of biopreparations also changed the yield structure of the studied potato varieties (Table 3). Compared to the control, inoculation contributed to a decrease in the fractions of tubers with a small weight of 30-50 g and 50-80 g and an increase in fractions with a larger tuber weight. In the variety Colombo maximally increased the fraction >120g, by 10% compared to the control from Agrofil, and Mizorin and Flavobacterin to a greater extent contributed to an increase in the fraction of 80-120 g. As a result, the weight of marketable tuber increased by 21-33% in Colombo variety compared to the control. In Red Scarlet variety under the influence of biopreparations more significantly increased the fraction >120g by 17-30%. Flavobacterin had a greater effect on the increase in tuber marketability.

Table 3
Potato yield structure, %

Options	4		uber fraction, g			Average weight of a marketable tuber, g
	0-30	30-50	50-80	80-120	>120	
Colombo						
Control	1	4	14	29	52	91
Agrophile	-	2	9	27	62	110
Mizorin	1	2	9	32	56	112
Flavobacterin	1	2	10	33	54	121
Red Scarlet						
Control	2	2	4	25	67	98
Agrophile	-	2	3	17	78	115
Mizorin	-	-	2	18	80	121
Flavobacterin	-	-	2	12	86	127

Application of nitrogen-fixing bacteria preparations provided a significant increase in yield of both varieties, both by year and on average for 2 years (Table 4). Despite the dry conditions of vegetation periods of both years of the study, the yield of the control was quite high from 30.4 to 34.8 t/ha. At the same time, the Colombo variety stood out in terms of yield. Yield increases amounted to 27 to 65.2% for Colombo variety by years. They were higher in 2021. The maximum increase was provided by Flavobacterin, the minimum by Agrophil.

The Red Scarlet variety showed the best interaction with all three preparations. On average for two years, Agrophil and Mizorin gave an increase of 43.2% each, while Colombo had only 27.5 and 37.4%, respectively. The maximum yield increase was also provided by Flavobacterin. On average for two years, the yield of varieties with Flavobacterin application was 63.2-62.6 t/ha.

Table 4
Yield of potatoes, t/ha

Variant	Yie			Id			2-year average		
	2021			2022 r					
	t/ha	control gain		t/ha	control gain		t/ha	control gain	
		t/ha	%		t/ha	%		t/ha	%
Colombo									
Control	33,6	-	-	34,8	-	-	34,2	-	-
Agrophile	42,9	9,3	27,6	44,2	9,4	27,0	43,6	9,4	27,5
Mizorin	48,5	14,9	44,3	45,4	10,6	30,5	47,0	12,8	37,4
Flavobacterin	55,6	22,0	65,2	54,3	19,5	56,0	55,8	21,6	63,2
NDS05		5,1			5,0				
Red Scarlet									
Control	30,4	-	-	31,7	-	-	31,0	-	-
Agrophile	41,1	10,7	35,2	45,7	14,0	44,2	43,4	13,4	43,2
Mizorin	44,2	13,8	45,4	42,5	10,8	34,1	43,4	13,4	43,2
Flavobacterin	48,3	17,9	58,9	52,4	20,7	65,3	50,4	19,4	62,6
NDS05		4,7			4,8				

Conclusions

1. Positive results were obtained on the effect of biopreparation of associative nitrogenfixing bacteria on biometric parameters and tuber yield in potato varieties Colombo and Red Scarlet. The height of shoots, number of stems, leaves, and their area increased.

2. Biopreparations had a positive effect on the marketability and productivity of tubers, increasing their number per plant, tuber weight and tuber size.
3. The varieties responded differently to inoculation with different preparations. The RedScarlet variety was the most responsive to inoculation with all biopreparations. Its yield increased by 43.6 - 62.6 % on average over 2 years. Colombo variety increased yield by 27.563.2. The maximum effect was obtained from Flavobacterin. On average for two years, the yield of varieties at application of Flavobacterin was 63.2-62.6 t/ha.

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阿塞拜疆亚热带干旱地区灌溉土壤的诊断
**DIAGNOSTICS OF IRRIGATED SOILS OF THE DRY
 SUBTROPICAL ZONE OF AZERBAIJAN**

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The soilforming process of the zone occurs in the dry subtropic climate condition, and this is characteristic for a long hot period, winter with little rain, hot dry summer. Much heat, long vegetation period, absence of salinization and natural drainage create a chance for growing of the valuable subtropic plants in irrigation [1-6]. There is a human's great effect on formation of soil structure. We see that the diagnostic indicators of the virgin and irrigated soils are typical (tabl. 1).

Grey-brown irrigated soils spread in the plain part of the relief, at a height of 150-250 m from sea level. The water source, limpid ganat and artesian waters humidity regime create condition for weak movement of the soluble combinations. The granulometric composition of the culti-vated layer (40-45 cm) changes from gradually weakly cultivated, newly irrigated soils to highly cultivated irrigated ones; a size of the heavy and light loamy water-resistant aggregates is > 0.25 mm – 45-55%, humus is 2-3%. C:N ratio (8-11) is larger than virgin soils (8-9). Compo-sition of humus is humate type. A sum of the absorbed bases is high -28-35 mg-eq in 100 g of soil and pH indicators rise in water suspension (7.3-8.5).

Table 1
Diagnostic indicators of grey-brown soils

Indicators	Virgin	Boharic		Irrigated		Anciently irrigated	
		Plowed	Sowing	Newly irrigated	Irrigated	Irrigated	Anciently irrigated
Thickness of cultivated layer or humus layer, cm	30-35	35-40	30-35	40-45	45-50	56-60	60-70
Depth, cm: maximum collection of carbonate gypsum layer salt layer	35-40	40-50	35-40	60-90	90-100	-	-
	90-110	100-110	90-100	100-130	130-160	-	-
	150-160	155-165	150-160	160-200	-	-	-

A rate of silt, %	35-40	30-35	-	40-50		40-50	
A quantity of water-resistant aggregate (>0.25 mm), %	50-58	35-45	45-55	45-50	50-55	55-65	65-75
Density, g/cm ³	1,1-1,2	1,1-1,2	-	1,0-1,2	1,2-1,3	1,0-1,3	1,0-1,2
Total humus, %	1,5-3,5	1,0-2,5	2,5-3,0	2,0-2,5	2,5-3,0	3-4	4-5
C:N	6-9	5-6	6-7	6-11	7-10	8-11	9-13
Ch:Cf	0,8-1,0	-	-	0,8-1,3			1,0-1,8
A sum of absorbed bases, mg/eq in 100g soil	30-35	30-32		30-35		30-40	
Ca:Mg	3-5	2,5-5,5	1,5-2,0	2-5	2,5-5,0	2-4	3-5
Suspension of pH	7,0-8,0	8,1-9,2		7,5-8,5		8,0-9,0	
CO ₂ filthiness in soil air, %	0,1-0,2	0,07-0,21		0,2-0,3		0,3-0,5	

Irrigated arid field soils spread in the oldest agricultural zones and develop with the accompaniment of dependent floats and nutrients brought by turbid waters in the leached irrigation automorph regime. This is constant renewal of its cultured layer and the formation of agro-irrigation layer with a thickness of 90-100 cm and more, which determines the diagnostic of the soil. Most brown faiences are found at a depth of 70-100 cm, the clay pots, cinnamonic and dark brown bricks are at a depth of 150-200 cm. Quick -dissolved dusty – siltation is superior in granulometric composition and its profile is homoge-nous, siltation rate is 40-50%. A size of water – resistant aggregates is > 25 mm, high 55-75%. Humus in the cultivated layer is 3-5 % (4-5 % - high, 1.3-4 % - average, 2.5-3.0– weakly cultivated). C:N-humus is more than the irrigation and virgin soils (8-13). A composition of humus is fulvate – humate or humate. Homogenous distribution of calcium carbonate along the profile is 6-10%. A quantity of absorbed bases is higher – 30-40 mg -eq in 100g.

Soils of the dry subtropical zone. Such soils are formed in the subtropic climatic condition i.e.dry, long hot period, soft winter with little rain, hot dry summer condition, they have high assimilation in the irrigation condition. Some irrigated soils differ depending on anti-quity of irrigation and change of perennial cultivation process. A special ecological development condition, morphogenetic and physico-chemical diagnostic indicators are characteristic for one of them (tabl. 2, 3).

Table 2
Main diagnostic indicators of grey soils

Indicators	Virgin	Irrigated		Anciently irrigated	
		Newly irrigated	Irrigated	Irrigated	Anciently irrigated
Thickness of cultivated layer or humus layer, cm	25-30	30-35	35-45	40-50	50-60
Depth, cm: maximum collection of carbonate	25-30	50-70	70-90	-	-
Gypsum layer	100-200	70-130	130-150	-	-
Salt layer	130-120	110-150	-	-	-
A rate of silt, %	30-40	35-40	40-45	40-45	45-60
A quantity of water-resistant aggregate (>0,25 mm), %	25-35	-	-	50-60	60-70
Density, g/cm ³	1,3-1,4	-	-	1,3-1,4	1,1-1,3
Total humus, %	1,5-2,0	1,3-1,7	1,7-2,2	1,5-2,5	2,5-3,0
C:N	5-8	8-9	9-10	8-10	10-15
Cht:Cft	0,5-0,6	1,1-1,2	-	1,1-1,5	
A sum of absorbed bases, mg/eq in 100g of soil	18-28	20-30		25-35	
Ca:Mg	3-5	1,0-1,2	1,2-1,7	0,5-1,0	1,0-3,5
Suspension of pH	7,5-8,5	8,0-9,5		8,9-9,5-9,8	
CO ₂ filthiness in soil air, %		0,22-0,30		0,17-0,43	

Table 3.
Main diagnostic indicators of soils in the dry subtropical zone

Indicators	Virgin meadow-grey	Irrigated meadow-grey soils			Anciently irrigated meadow soils		Boharic meadow soils
		Newly irrigated	Irrigated	Anciently irrigated	Irrigated	Anciently irrigated	
Thickness of cultivated layer or humus layer, cm	30-35	35-45	45-55	55-65	45-60	45-60	40-50
Depth, cm: maximum collection of carbonate	35-45	40-50	70-80	-	-	-	-
Salt layer	60-80	90-130	130-170	140-170	40-50	40-50	15-25
A rate of silt, %	40-50	35-45	50-52	50	45-50	45-50	40-45
A quantity of water-resistant aggregate (>0,25 mm), %	-	1,2-1,3	45-55	50-55	55-65	55-65	30-50
Density, g/cm ³	1,5-2,5	1,3-1,8	1,1-1,2	1,2-1,3	1,1-1,3	1,1-1,3	-
Total humus, %	6-12	9-10	1,8-2,3	2,3-2,8	1,5-3,0	1,5-3,0	1,4-2,2

C:N	0,4-0,8	-	10-12	12-15	8-12	8-12	5-10-15
Cht:Cft	20-25	-	1,0-1,5	-	1,1-1,2	1,1-1,2	0,4-0,5
A sum of absorbed bases, mg/eq in 100g of soil	1,5-3,0	-	25-30	-	20-35	20-35	20-22
Ca:Mg	8,0-8,5	-	1-2	-	1,2-2,0	1,2-2,0	2,0-2,5
Suspension of pH	0,08-0,15	0,15-0,40	8,3-9,0	-	8,0-8,5	8,0-8,5	8,5-9,2
CO ₂ filthiness in soil air, %							0,11-0,20
Depth of gleyey layer, cm	150-170	140-170	160-190	150-180	100-150	100-150	55-65

Irrigated grey soils occupy a high foothill zone (from 50-60 m to 150-160m above sea level) with natural drainage and develop in the irrigation regime condition of humidity. A source of humidity is atmospheric sediments and limpid irrigative waters are mainly ganat and artesian waters. The cultural soilforming process is created, the cultivated layer with thickness of 30-45 cm, fine structure, subsoil hardening are observed while the assimilation period increases. The initial signs of grey soils: the profile monotony, carbonates separation, etc. remain. The irrigated grey soils have 1.3-2.2 % in the plow layer (1.3-1.7% weak, 1.7-2.0% average, 2.0-2.2% high). C:N is more larger (8-10), but 5-8 in virgin soils. CaCO₃ quantity is high (5-10%) in the plow layer, distribution is the same along the profile. Light, loamy, dusty particles are superior in granulometric composition: a silty degree is 35-45%. An amount of the absorbed bases is 20-35 mg-eq in 100g soil, (20-25 mg-eq weak, 25-30 mg-eq – average and 30-35 mg-eq–high cultivation). Ca:Mg ratio is 1-1.7. An inclination of profile to saltness is noted in the weak cultivated variants. (formation depth-110-150- cm) and solonetzification (pH – 9.5-9.7 quantity N₃-10-15 %, 30-50 cm).

Irrigated the dry subtropical zone soils. Agro-irrigation layers with the depth of 90-100 cm are created. The upper layer of 40-50 cm is dark-grey, humic, well- used and modern cultivation. The lower transition (40-50 cm) is grey, calcareous, non-gypsum, the skull bones, red brick fragments and coals are often found. The granulometric composition of the cultivated layer is mainly light loamy dusty silty. 1.5-3.0% of humus is in the cultivated layer, (1.5-2.0% - weak, 2.0-2.5%-average, 2.5-3.0 %-highly cultivated). A composition of humus is C_{hc}:C_a –1.2-1.5.

Keywords: dry subtropical zone, diagnostics, irrigated soils, humus.

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形成草原地区的社会生态框架, 作为领土可持续发展的基础
**FORMATION OF THE SOCIO-ECOLOGICAL FRAMEWORK
OF THE STEPPE REGION AS THE BASIS FOR SUSTAINABLE
DEVELOPMENT OF TERRITORIES**

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抽象的。目前, 在俄罗斯地区致力于旅游和休闲业发展的许多会议和论坛上, 由于高度不对称, 人们对该国各地区旅游业的发展提出了更为乐观的建议。在各地区的社会经济发展中。因此, 不可能有一个单一的机制来管理和支持所有地区的旅游业。如果我们考虑奥伦堡地区的边境地区(萨马拉州、巴什科尔托斯坦州、车里雅宾斯克州和哈萨克斯坦共和国), 我们可以说, 这些地区在面积和发展程度、自然特征以及历史和文化方面差异很大。文化传承, 经济社会发展。

因此, 在战略上是正确的, 接受这个空间的不对称性, 建立自己的区域(个人)方法来管理旅游业的发展机制, 并形成自然和文化遗产的保护和利用的社会生态框架。出于娱乐目的, 考虑到现有的基础设施、潜在游客和度假者的兴趣以及他开发和提供的旅游产品的主题。

关键词: 旅游和休闲领域、社会生态框架。 边境地区, 集群方法, 社会学调查。

Abstract. *Currently, at many meetings and forums of Russian regions dedicated to the development of the tourism and recreational sector, more optimistic proposals are made about an individual approach to the development of tourism in the territories of the country's regions, due to the high level of asymmetry in the socio-economic development of the regions. Consequently, there cannot be a single mechanism for managing and supporting the tourism industry for all regions. If we consider the border regions of the Orenburg region (Samara oblast, Bashkortostan, Chelyabinsk oblast and the Republic of Kazakhstan), we can state that these regions differ sharply from each other in terms of area and degree of development, natural features and historical and cultural heritage, socio-economic development.*

Therefore, it is strategically correct, accepting this space as asymmetrical, to build your own regional (individual) approach to the mechanism for managing the

development of tourism and the formation of a socio-ecological framework as the preservation and use of natural and cultural heritage for recreational purposes, taking into account the existing infrastructure, the interest of potential tourists and vacationers and the themes of the tourism products developed and offered by him.

Keywords: *tourism and recreational sphere, socio-ecological framework. border areas, cluster approach, sociological survey.*

The formation of a socio-ecological framework in the region with the aim of preserving and using natural and cultural heritage as the basis for sustainable development of territories makes it possible to identify the most attractive habitat (socially) as centers of “growth poles” that have significant socio-cultural potential, influencing economically active rural areas capable of improving people’s living conditions and their accessibility.

Natural and social objects are usually interconnected in spatial, informational and temporal aspects, so we have a complete understanding of natural tourism resources, their infrastructure, and recreational facilities. Therefore, we can say that tourism and recreational activity is associated with the implementation of two main tasks: it is economic - making a profit from commercial activities in the provision of tourism services; social - creation of an attractive living environment, availability of social benefits and provision of tourist and recreational services. It is worth noting that an important feature in the tourism and recreational sector is the multiplier effect, which has a significant economic and social impact on the development of many sectors of the regional economy, which is expressed in the fact that the growth of economic activity and investment entails an increase in income received in one (for example, in the tourism industry and this contributes to the growth of income of the associated business entity. At the same time, one should not neglect the emerging risk factors in tourism and recreational activities, which depend on the seasonal nature of the demand for tourism services, the lack of availability of tourism resources, the limited quantity and sometimes low quality of service of tourist and recreational infrastructure [1].

The formation of a comfortable living environment, development and use of territories is influenced by the natural and economic value of the territory, tourist and recreational attractiveness, and the degree of settlement maturity (settlement system). Population size and quality of life are one of the main indicators of the pace of development of cities and municipal settlements.

Tourism activity serves as a catalyst for the socio-economic growth of territories, stimulates the creation of new jobs, identifying new opportunities for the functioning of single-industry towns and rural settlements, promotes the growth of entrepreneurial and investment activity, improving the standard of living of the

population, expanding interregional cooperation, creating an interregional tourism product and rational use of recreational resources. resources[3].

The level of socio-economic development of interregional territories has a significant impact on the development of recreational services, and in general, on the development of the tourism industry between neighboring regions.

Experts note that in regions with developed economies, the principles of polarized development operate, when innovative activity is concentrated in regional (large) cities (Ufa, Samara), this makes it possible to reduce the technogenic load on remote (outlying) areas and increase their recreational attractiveness. In regions with an average or low level of economic development (Orenburg oblast), the predominant direction should be the growth and preservation of the population in existing and newly formed settlements in peripheral territories in the zone of influence of the region's core cities based on the support of small and medium-sized businesses that are able to invest in improvements transport accessibility and development of social infrastructure. The city cannot grow uncontrollably, as it were, "in breadth", coming close to suburban cottage settlements (Ekodolye, Priuralye, Rostoshi, Prigorodny) and destroying valuable recreational and agricultural lands[4].

Local authorities are faced with the difficult task of developing and creating a socio-ecological framework of the city, its planning structure in order to streamline the surroundings of the regional center with its peripheral abandoned quarries, industrial wastelands and a network of existing (outside the development plan) garage cooperatives, engineering-undeveloped private sectors (often lacking both running water and sewerage). The creation of a favorable urban environment for the life and recreation of citizens is associated with the development and promotion of tourism in the regional center (where the degree of clustering of attractions is maximum) and small towns in the region, which have significant socio-cultural potential, influencing economically active rural areas. In the most problematic areas of the region, in the territories of industrial cities and settlements in the eastern part of the region, in order to preserve natural and cultural objects in the future, it is possible to create potential sites for glamping accommodation, and to recreate tourist and recreational centers of attractions and points of interest (attraction), where possible as a priority tourism development will be industrial tourism[3;5].

Sociological studies show a low level of citizen activity when considering issues of landscaping - built-up spaces and recreationally attractive green areas where people can spend their leisure time outside the home, in their free time from work.

A sociological survey was conducted among young people of different socio-demographic groups; 143 people took part in the survey, aged from 17 to 35, including 71% women and 29% men. Among the respondents, 63% are employed, 30% are students, 7% are unemployed (running a household).

The survey showed a low level of awareness of citizens about the activities of municipal and local authorities in implementing projects to create a comfortable urban environment, as centers with significant socio-cultural potential and capable of influencing the living conditions of rural areas. The majority of young people (78%) are not interested or, without delving into the essence, have heard about the implementation of the activities of local authorities to improve territories; 22% of respondents responded positively about their awareness of the activities of municipal and local authorities to implement projects to create a comfortable urban environment [3]. The survey shows that not only at the local level, but also at the federal level, there is still no regulatory framework and a unified approach to the concept of a “comfortable and safe living environment”; there are no clearly defined and well-developed mechanisms for involving the population in the formation and implementation of programs improvement of urban and rural areas. It is also important in the programs to provide for a set of measures to develop organizational and legal forms for the integration of attractions and displays into the surrounding urban environment. Recreation and tourism, in many cases, is a trigger in the use of resources, involving into economic circulation natural and cultural heritage sites that were not previously touched for recreational purposes as the basis for the sustainable development of territories [7].

An important indicator of the development of the tourism and recreational sphere is the established tourist information centers that will be able to popularize tourist and recreational areas, as well as act as a source of formation of the flow of both local recreationists and tourists from neighboring regions.

The purpose of tourist information centers is to search for new attractive types and forms of tourist and recreational activities. It was found that those objects that are constantly expanding the range of tourism services and introducing new forms of tourism development are popular among the population. These tourist sites are willingly visited by tourists, they are photographed, written about (using all Internet platforms), thereby contributing to their popularity[2].

Thus, judging by the search queries of users who are interested in objects with a diverse combination of tourist services, we have identified three objects in each region that are most frequently requested. We see that historical, cultural and educational types of tourism are leading in the regions.

From this table 1, it is obvious that educational tours are one of the most popular types of tourism, since they represent a recreation option associated with the knowledge of various cultural and natural sites, historical places, features of traditional culture and life of various peoples. Often educational and sightseeing tours are organized in regions with a large number of museums, art galleries and exhibitions[4].

Popular tourism centers create the most attractive living environment (socially), and form important tourist “growth points” for the development of the territo-

ry as socio-cultural centers that have a significant impact on nearby, economically active suburban and rural areas, in order to improve living conditions people living here.

Table 1
Popular tourism centers in the steppe regions characterized by the largest number of search queries (in the Yandex system) 2022

Region	Tourism centers (main attractions)	Type of tourism
Republic of Bashkortostan	Ufa and its surroundings (mosques, temples, gardens and parks, military-historical monuments)	Historical-cultural, religious, geological-archaeological, military-patriotic tourism
	Oktyabrsky (architectural monuments, large oil fields).	Geological, environmental, sports (biathlon, speedway, kickboxing, freestyle) tourism
	Beloretsk and its surroundings (natural attractions, ski center).	Ecological, sports (caving tourism), horseback riding, water tourism
Orenburg region	Luna (private natural landscape park).	Educational, cultural and historical tourism
	Orsk and the surrounding area (architectural monuments, Colonel Mountain (jasper mining for more than 250 years), merchant mansions, temples, monasteries, church)	Geological, historical, cultural, scientific and educational tourism (about 150 monuments of history, architecture and urban planning)
	Yasny (Kimbayevskoe asbestos (mountain flax) deposit, natural monuments)	Scientific, educational, ecological tourism, educational
Samara region	Shiryaevo (historical and museum complex (I. Repin, A. Vdovin)	Historical, cultural, scientific, educational, industrial tourism (lime adits)
	Vinnovka (Holy Mother of God Kazan Monastery, Church of St. Sergius of Radonezh)	Religious, educational, archaeological tourism, river cruises
	Zolnoye and the surrounding area (the highest part of Zhiguli is Mt. Nabludatel)	Ecological, scientific and educational tourism

An important element in the formation of a socio-ecological framework could be the creation of an interregional tourist route network, which will be connected by end-to-end routes - reference points where one can stop or linger because of certain attractions (attractive areas). An extensive interregional route network is capable of connecting “growth points” and laying the foundation for the creation

of a unified socio-ecological (infrastructural) framework for tourism in the interregional region. Growth points and investment-attractive zones associated with the use of the natural, historical, cultural and other potentials of the territory determine the socio-economic development of the region [4;8].

We include existing and officially approved tourist and recreational clusters (with legal support) as the cores of the supporting socio-ecological framework of the first level - the Sol-Iletsk and Kinel-Buzuluk cores, the Pre-Ural Steppe, the Shaitan-Tau Nature Reserve. Key points of the first level: “Kargaly Mines”, Tanalyksko-Suundukskaya, Arkaimo-Alandskaya, for the development of which investment investments are planned. The cores of the second-level support frame consist of objects included in the investment projects of the Ministry of Economic Development, Investment, Tourism and External Relations of the Orenburg Oblast: Soksksko-Kinelskaya point, Talovsko-Chaganskaya, “Ural Urema”, “Aituar-Ebitinskaya steppe”, “Ashchisayskaya steppe”, Svetlinsky Lakes.”. The reference points (growth poles) include the most promising tourist and recreational facilities that can influence the socio-economic development of the region. This approach allows us to take into account the economic and environmental features of the region.

Taken together, the socio-ecological, economic, tourist and recreational supporting framework of the region can be considered as the basic elements of sustainable development of the territory. The socio-ecological framework ensures the integrity of the tourist space. The accessibility of tourism and the degree of involvement of the population in tourism activities, and the competitiveness of a tourist destination in the domestic and international markets largely depend on the design of the socio-ecological framework.

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