



# 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

Proceedings of the  
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这些会议文结合了会议的材料 – 研究论文和科学工作者的论文报告。它考察了职业化人格的技术和社会学问题。一些文章涉及人格职业化研究问题的理论和方法论方法和原则。

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## Foreword

*We thank all participants of our conference "Scientific research of the SCO countries: synergy and integration" for the interest shown, for your speeches and reports. Such a wide range of participants, representing all the countries that are members of the Shanghai Cooperation Organization, speaks about the necessity and importance of this event. The reports of the participants cover a wide range of topical scientific problems and our joint interaction will contribute to the further development of both theoretical and applied modern scientific research by scientists from different countries. The result of the conference was the participation of 72 authors from 7 countries (China, Russia, Uzbekistan, Kazakhstan, Azerbaijan, Tajikistan, Kyrgyzstan).*

*This conference was a result of the serious interest of the world academic community, the state authorities of China and the Chinese Communist Party to preserve and strengthen international cooperation in the field of science. We also thank our Russian partner Infinity Publishing House for assistance in organizing the conference, preparing and publishing the conference proceedings in Chinese Part and English Part.*

*I hope that the collection of this conference will be useful to a wide range of readers. It will help to consider issues, that would interest the public, under a new point of view. It will also allow to find contacts among scientists of common interests.*

**Fan Fukuan,**

*Chairman of the organizing committee of the conference*

*"Scientific research of the SCO countries: synergy and integration"*

*Full Professor, Doctor of Economic Sciences*

## 前言

我们感谢所有参加本次会议的“上海合作组织国家的科学研究：协同作用和整合”，感谢您的演讲和报告。代表所有上海合作组织成员国的广泛参与者都谈到此次活动的必要性和重要性。参与者的报告涵盖了广泛的主题性科学问题，我们的联合互动将有助于不同国家的科学家进一步发展理论和应用的现代科学研究。会议结果是来自7个国家（中国，俄罗斯，乌兹别克斯坦，哈萨克斯坦，阿塞拜疆，塔吉克斯坦，吉尔吉斯斯坦）的83位作者的参与。

这次会议的召开，是学术界，中国国家权力机关和中国共产党对维护和加强科学领域国际合作的高度重视的结果。我们还要感谢我们的俄罗斯合作伙伴无限出版社协助组织会议，准备和发布中英文会议文集。

我希望会议的收集对广大读者有用，将有助于在新的观点下为读者提供有趣的问题，并且还将允许在共同利益的科学家中寻找联系。

范福宽，

教授，经济科学博士，中国科学院院士，会议组委会主席“上合组织国家科学研究：协同与融合”

形成评估创新项目的方法工具  
**FORMATION OF METHODOLOGICAL TOOLS FOR THE  
EVALUATION OF INNOVATIVE PROJECTS**

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本文提出了一种评估创新项目的方法论工具包，着重于在从事创新活动的各种公司中的可能用途，并旨在确保在开发公司内部监管框架的过程中评估的客观性，准确性和有效性。

关键字：评估，创新业务，潜力，项目

**Abstract.** *The article proposes a methodological toolkit for evaluating innovative projects, focused on possible use in various companies engaged in innovative activities, as well as aimed at ensuring objectivity, accuracy, and effectiveness of assessment in the process of developing the company's internal regulatory framework.*

**Keywords:** *assessment, innovative business, potential, project.*

An objective assessment of innovation is becoming increasingly important, contributing to the effective innovation activity of business entities, which indicates the relevance of this study. In Russian and international theory and practice, there is no common point of view on approaches to assessing innovation. In the economic literature, the concepts of evaluating and measuring innovation are sometimes likened.

It is generally accepted that measurement is a set of operations to determine the ratio of one (measured) quantity to another homogeneous quantity, taken as a unit of measurement and stored in a technical device. The resulting numerical value of the measured quantity together with the designation of the unit used is called the value of the physical quantity. Evaluation is a way of determining the materiality of something for an acting and cognizing subject.

Oslo's leadership only recognizes the measurement of innovation potential, which poses a number of challenges. They are caused by measuring knowledge, unclassified in the heads of people or concentrated in organizational procedures, as well as obtaining reliable information from companies about the exchange of knowledge with other companies. The lack of a well-developed methodology for

assessing innovations complicates everyday practice [1].

From the point of view of achieving a synergistic effect, a systematic approach should be at the heart of the methodological tools for assessing innovations. The assessment scheme must be built as a sequence of interrelated elements, each of which, having its own purpose, is a link in the chain of other components [2].

The formulation of tasks for assessing innovations is carried out in the form of indicators - benchmarks for assessing innovations and optimizing the innovation process. Building a system begins with setting a goal, then determining which indicators will ensure its achievement.

Within the framework of the main goal, sub-goals can be distinguished that are characteristic of individual subjects of assessment, as well as for products, markets, performance, quality or the ability to study and directly influence the creation and introduction of new products, processes, methods of promoting and selling products and (or) on organizational practice and structure.

Objective data can provide background information on the characteristics of different types of innovations. The methodology for assessing innovations provides for the allocation of principles - initial rules, the observance of which allows you to correctly build the assessment process, which ultimately ensures its effectiveness.

The first group - general principles that determine the nature of the innovation assessment system, the second - special, they ensure the functioning of the innovation assessment system (fig. 1) [3].

When building an innovation assessment system, one should proceed from several starting points:

<b>First group: general principles. They define the nature of the innovation assessment system</b>
<i>Complexity</i> - manifests itself in the aspect of the law of consistency: implementation in the system of approaches, operations, techniques, methods, actions, tactics, procedures, technologies that comprehensively characterize the state of innovation; ensuring the completeness of the formed system of indicators, taking into account the key sources of information; building a complete assessment system.
<i>Decomposition</i> - dividing the system into subsystems located by levels (innovative activity of a country, region, innovative organization, innovative activity of an organization, innovative project, etc.).
<i>Purposefulness</i> - orientation of the assessment towards the achievement of the goal and the assigned tasks.
<i>Dynamism</i> - taking into account the time factor in relation to the state of the assessed object, subject and the process of assessment itself.
<i>Adaptability</i> - self-movement in the direction of self-preservation, striving for a state of balance; establishes changes in the external environment that negatively affect the state of innovations, and forcing to adjust the development, making management decisions within the framework of the approved innovation policy.

<i>Adequacy</i> - the key provisions of the system are based on a deep knowledge of the mechanism of economic laws in the innovation sphere and the experience accumulated by science in the course of theoretical and practical research of innovation assessment.
<i>Plurality of approaches to assessment</i> - considered in the context of the law of necessary diversity, providing for the use of the maximum possible operations, techniques, methods, procedures, tools for assessing innovation.
<i>Consistency and validity</i> of applied operations, techniques, methods, procedures, approaches, assessment tools.
<i>Effectiveness</i> - the action of this principle is manifested in the aspect of the law of economic expediency.
<b>Second group: special principles.</b>
<b>They contribute to the functioning of the innovation assessment system</b>
<i>Regulation</i> - development of an internal system of rules and procedures governing the assessment process.
<i>Regularity</i> - systematic assessment, timely fixing of emerging negative trends in innovation; it is important to establish an optimal assessment period.
<i>Materiality</i> - structuring the system indicators in accordance with the most essential characteristics of the development of innovations; elimination of duplication of indicators included in the system; construction for the generated system of time series that are adequate to the used methods of short and medium term forecasting.
<i>Objectivity</i> - supplementing the assessment of innovative activity with methods other than non-formalized (logical) methods.
<i>Credibility</i> - real reflection of the state of affairs in the assessment process with subsequent use; providing complete and reliable information about the innovative infrastructure of the organization.
<i>Accuracy</i> - creation of a high-quality database in conditions of uncertainty, taking into account the increase in the volume of data; federal statistical information on the state of innovation activity of economic entities narrows the possibilities of assessment.
<i>Balance</i> - complete consistency, comparability, interdependence of all components in the "innovation assessment" system.
<i>Openness</i> - implementation of the model of open innovation, full and timely disclosure of information about approaches, techniques, methods, methodology, tactics, tools, procedures, technologies used in the "innovation assessment" system.
<i>Flexibility</i> - quick consideration of modern conditions of economic development.
<i>Integrity</i> of the external and internal corporate assessment of innovation, the unity of analysis and synthesis.
<i>Alternativity</i> - the use of new approaches, techniques, methods, methodology, tactics, tools in the "innovation assessment" system, which is especially important in conditions of uncertainty.
<i>Compliance of approaches to assessment with international regulations</i> - adaptation of the best foreign assessment experience.
<i>Use of advanced information technologies</i> based on the use of modern methods of mathematical modeling, specialized software.
<i>Priority and isolation</i> of innovation activity - the allocation of special indicators for assessing innovative activity as part of the main type of economic activity.
<i>Professionalism</i> of assessment bodies allows to avoid mistakes.
<i>Innovative safety</i> - compliance of the assessment process with external and internal legal framework; elimination of the risk of errors and abuse, availability of an information protection system.

**Fig. 1. Methodological principles for assessing innovation**

1) definitions of innovation, innovation is a system that constantly interacts with the external, internal environment, that is, the essence of innovation finds a specific expression in relation to the assessment system, in the formation of which the subjects of innovation are involved;

2) identification of the subject, object and matter of innovation assessment:

a) the object of assessment is a company, the main activity of which is innovation.

b) subjects of assessment: structural divisions or units of the company that implement the assessment process using specific labor, information, material and financial resources (company management, etc.);

c) innovation activity - a key area of innovation assessment (subject of assessment) from the standpoint of the implementation of the principle of materiality: innovative culture (the determination of the company, personnel, management apparatus to accept the acquired innovations with their subsequent introduction, innovations taking into account failures, adaptation to changes in external and internal environment), business, potential, product, project, risks. The division of the subject of innovation assessment ensures the implementation of the decomposition principle, giving the system maximum flexibility.

When formulating conceptual directions for the formation of an innovation assessment system, it is necessary to take into account several aspects:

1) the national, regional and innovation policy of economic entities has a decisive influence on the formation of the innovation assessment system. It is it what determines the priorities and evaluation criteria, as well as the factors influencing it;

2) the innovation assessment system is based on an in-depth analysis of the implementation of methodological approaches. Accordingly, an integral element of the system is methods, which, in turn, must be of high quality.

Since the conceptual apparatus should be reflected in the methodological approaches to measuring the corresponding values, it is useful to investigate the essence and content of individual concepts in the "innovation assessment" system.

In the theory and practice of innovation, the following approaches to the definition of innovation are distinguished:

- an approach linking it with the implementation of the innovation process and the production of an innovative product (service) in various modifications [4];

- an approach that includes a set of individual creative activities in various modifications, which together lead to innovations [5];

- an approach that reflects the content of types of innovation, work, process in various modifications [6];

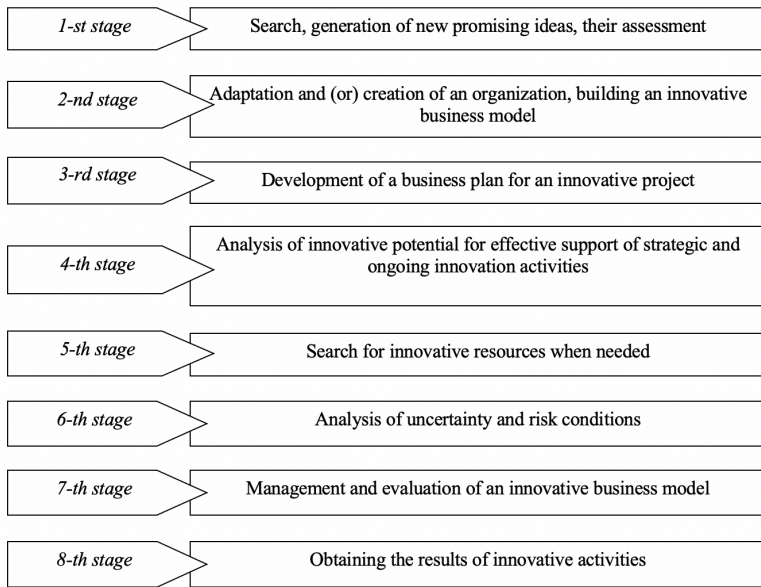
- an approach that takes into account the ultimate goal of using innovations [7].

In research, innovation activity is viewed as an investment of innovation and

the implementation of practical actions (creation, development, dissemination and use of innovations) to ensure a positive financial result and (or) achieve a different beneficial effect, which is reflected in the "innovation assessment" system.

The implementation of the decomposition principle presupposes an initial assessment of the company's innovative business in terms of market and technological parameters, taking into account the fact that a dynamic business process is more difficult to measure than a static activity.

An innovative business is an initiative innovative activity carried out in stages at the expense of its own and borrowed resources under its own responsibility. This is a work characterized by uncertainty and significant risk, and the main goal in this case is to ensure a positive financial result and (or) achieve a different beneficial effect. The stages of implementing an innovative business are shown in fig. 2 [8].



**Fig. 2. Stages of implementation of innovative business**

In the theory and practice of innovation, the following approaches to assessing innovative business are distinguished.

1. Assessment of the level of innovative activity by determining the speed of ongoing innovative changes, the validity of strategic steps, taking into account the existing potential of the business entity, the organizational culture used in the

implementation of changes. The essence of innovation activity as an economic category is the assessment of the scale of the introduction of innovations in the company as a whole, contributing to the choice of directions for innovative development and the formation of an effective innovation policy.

2. Assessment of the degree of achievement of market goals through an innovative approach - changes in market position, market share, relationships between consumers and business partners, growth in the number of loyal customers, goodwill and brand value.

3. Assessment of the impact on the market and financial results of introduced (developed and used) innovations (innovative projects) by their types, forms, number and share in the total product, profitability

A necessary condition for the implementation of an innovative business is the corresponding potential, which conceptually reflects the phenomenon of innovative activity [9].

All approaches to the definition of innovative potential can be systematized as follows:

- resource approach in various modifications [10];
- approaches reflecting the possibilities for the development of innovative activities and determining the strategy of innovative development [11];
- an approach that identifies innovation potential with scientific and technical [12];
- an approach based on the ratio of innovation potential and a specific level [13];
- an approach that combines the methodology for assessing innovative potential [14].

Innovation potential is a complex of resource capabilities of a company for the implementation of its innovative activities, determined through a number of innovation-oriented indicators at the macro, meso and micro levels according to the target setting.

The complexity of the category "innovative potential" makes it difficult to form a single clear independent classification of its types, which are characterized by large fragments that create various kinds of prerequisites for innovation [15].

Each business entity, taking into account the role and characteristics of development, can use its own classification of innovative potential, which corresponds to the actual state of the company and the designated tasks. Taking into account how the key direction of assessing the innovative potential is determined, it is advisable to highlight the following main approaches:

- detailed - identifying the possibility of implementing a specific project, mainly at the stage of arguing innovation and developing a project for its sale, introduction;



- diagnostic - assessment of the state of companies mainly by expert methods based on external and internal parameters, which are open information that characterizes individual aspects of activities;
- an approach based on assessing the company's financial and innovative sustainability;
- an approach based on individual methods, methodology, techniques, assessment tools.

A key feature of all methods of assessing innovative potential is the presence of a base level of indicators, relative to which the qualitative value of the actual value will be determined according to the purpose of the assessment. Since a change in the baseline of indicators causes a change in the actual value, its establishment must be justified.

The next subject of assessment from the standpoint of innovation is a product, product, service, the definition of which in value added is carried out using quantitative indicators of the significance of the level of improvement of the purchasing and technological parameters of the product, taking into account the size of its novelty and the period of innovation by types of products and services.

Another subject of assessment is a set of parameters: efficiency, competitiveness, innovativeness, uncertainty and riskiness.

Russian legislation, as well as domestic scientists-economists, characterize an innovative project as a set of measures in the field of innovation in various modifications, which together create an innovative project [16].

An innovative project is a discrete set of innovative resources, innovations and certain practical actions, the key goal of which is the effective implementation of innovative activities.

The opinions of economists on the methods of evaluating an innovative project come down to two points of view, which are:

- a) taking into account the indicators for evaluating the investment project;
- b) taking into account the independent nature of the assessment.

Considering that an innovative project is a subject of investment, its economic efficiency is directly comparable to the assessment of the efficiency of capital investments [17]. At the same time, a number of researchers ultimately identify the assessment of the effectiveness of investments in innovation with the assessment of the effectiveness of the investments themselves and highlight such assessment methods as discount and standard, reduced costs, absolute efficiency, summarizing the economic performance from the manufacture and implementation of innovations (investments) [18].

In general, Russian scientists integrate methods for assessing generalized and partial indicators of the effectiveness of innovative projects into two groups:

- 1) the allocation of qualitative and quantitative factors affecting efficiency

(incremental methods);

2) comparison of projects in absolute terms: financial result, value added, costs per ruble for similar products, new technology, etc. [19].

Designating the features of innovative projects - the uncertainty of the external environment, dependence on the factors of the macroenvironment, due to the long implementation period, the researchers do not refer to the methods of their assessment of traditional methods of assessing investment projects [20]. In the West, the use of traditional methods for assessing the effectiveness of investments in new technologies is also limited.

So, a high degree of uncertainty and risk in relation to the results (costs) in a rapidly changing environment excludes the possibility of implementing systemic principles of objectivity and reliability when evaluating innovative projects using traditional methods that are static and do not take into account the synergistic effects that arise. Methods for evaluating innovative projects should be independent, and it is advisable to use schemes for assessing their effectiveness only at the stage of transition of an innovative project to an investment and innovation project and subsequently to an investment one. It is possible to assess the effectiveness of investment in innovation, including through various sources of funding.

Innovative relations are a product of competitiveness, which allows us to consider it as a function of innovation  $K = f(I)$ . Since innovative projects are objects of interaction between two segments - science and business, the graphical model for assessing the quality of innovative projects is formalized as two-dimensional: innovativeness  $I$ , competitiveness  $K$  [21].

It is innovation that introduces an element of uncertainty into the project, affecting the cost: the greater the level of innovation, the higher the degree of cost uncertainty.

Uncertainty of innovation activity implies that neither actions nor outcome can be calculated, actions are not predetermined at risk, but the outcome is predictable with a specific choice of actions. That is, the risk is more subjective - the result of the feasibility of the project, unfavorable for some participants, may be favorable for others; risk - uncertainty due to the likelihood of negative conditions and outcomes appearing in the process of project implementation.

Accordingly, the assessment of indicators of risk and uncertainty is a key component in the "assessment of innovation" system. It is advisable to define innovation risk (risk of an innovative project) from the standpoint of the assessment methodology as a result of the influence of factors that cause risks at the macro, meso and micro levels and are individual for each type and class of innovation, including an innovative project.

In the system of "assessment of innovation" it is necessary to classify the risks of innovation activity depending on its factors and causes - risks of macro-, meso-

and micro-levels, the composition of which can be specified in relation to each object, subject of research (implementation of the principle of accuracy).

The value of any risk for each project participant is individual, and assessment activities include:

- identification and assessment of factors contributing to the onset of risk;
- classification and assessment of risks;
- evaluation of the initial assumptions;
- development of a comprehensive method for assessing the impact of risks on the company (project);
- methodology for reducing the impact of risks on the company (project);
- selection and implementation of the optimal control strategy [22].

Consideration of innovation risks in the "innovation assessment" system logically includes the study of methods for their regulation, the most common of which are insurance, diversification, distribution among project participants, and reserve funds to cover unforeseen expenses.

The objectivity and reliability of innovation assessment are limited by:

- the lack of a unified methodology for assessing innovations of an economic entity;
- uncertainty of innovative activity;
- closedness of information, taking into account which, an external assessment can be built for a third-party investor.

In this regard, the company's management can apply the proposed methodological toolkit for assessing innovation, systematizing various areas of assessing innovation (innovative culture, business, potential, environment, product, project, risks, etc.) based on their own professional opinion, taking into account the environment of the business entity.

Thus, the developed methodological toolkit for assessing innovation is based on a comprehensive study, taking into account the general and special systemic principles of the following areas for assessing innovation: innovation culture, business, potential, environment, product, project, risks, etc. The toolkit is focused on developing practical recommendations on the development of innovative activities at the macro, meso and micro levels.

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欧亚经济联盟内部房地产活动监管的国际法律和经济方面  
**INTERNATIONAL LEGAL AND ECONOMIC ASPECTS OF  
REGULATION OF REAL ESTATE ACTIVITIES WITHIN THE  
EURASIAN ECONOMIC UNION**

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本文分析了在EAEU中采用规范房地产活动的示范法的前景。调查了房地产服务提供中的主要问题，该行业的发展前景以及在EAEU成员国中制定统一的方法来调节服务范围的可能性。

关键字：欧亚经济联盟，房地产活动，经纪人，国民待遇，优惠待遇，公共管理，外国法律经验，发展前景。

**Abstract.** *The article analyzes the prospects for the adoption within the EAEU of a model law regulating real estate activities. The main problems in the provision of real estate services, the prospects for the development of this industry and the possibility of developing a unified approach to regulating this sphere of services within the EAEU member states are investigated.*

**Keywords:** *Eurasian Economic Union, real estate activity, realtor, national treatment, preferential treatment, public administration, foreign legal experience, development prospects.*

In the context of ongoing Eurasian regional integration, issues related to the formation of a unified approach to regulating real estate activities in the territory of the EAEU countries are of particular importance.

With the development of the real estate market both in the Russian Federation and in other EAEU countries, the activities of legal entities and individuals that provide intermediary services for the acquisition of residential and commercial real estate are of great importance.

It should be noted right away that there is no special normative regulation of real estate activity in the Russian Federation. Since 2002, the country has canceled the compulsory licensing of this type of activity. Relatively successfully this area is regulated by various associations of professional market participants such as the Russian Guild of Realtors, the Association of Realtors of St. Petersburg and the Leningrad Oblast, and others.

At the same time, the influence of these associations on the real estate market is small, since membership in these organizations is voluntary and a huge number of legal entities operate outside the framework of these associations.

In the Republic of Kazakhstan, real estate activity is also not legally regulated. Currently, the need to create a special state body is being actively discussed, the main direction of which will be the regulation of real estate activities [5].

At the same time, in the Republic of Belarus, this activity is subject to mandatory licensing, the realtor must have a certificate of attestation. To pass the certification exam, a realtor must know the questions of state registration of real estate, know the specifics of notarial certification of transactions, understand civil, housing and land legislation [3].

The Ministry of Justice of the Republic of Belarus maintains a unified register of realtors on the territory of the republic, including full information on the activities and qualifications of a realtor [4].

In addition, the Republic of Belarus has established maximum rates of remuneration for a realtor. When providing real estate services according to certain criteria (for example: preparation of a draft contract, consulting, etc.), fixed tariffs are applied, which allows the consumer to control in detail all his expenses related to the services provided to him [1].

In addition, in accordance with the legislation of the Republic of Belarus, a real estate organization is obliged to prevent the certification and state registration of a transaction that may be invalidated on the grounds provided for by law.

Thus, in the Republic of Belarus, the basic rights and obligations of a realtor, requirements for his qualifications are legally fixed in detail, and the maximum cost of real estate services is established.

In the Russian scientific literature, one can often find the statement that there is no need for special normative regulation of real estate activity, since this area is regulated in sufficient detail by civil legislation.

At the same time, this statement does not seem entirely correct, since in practice, quite often questions arise related to the contractual registration of the intermediary services provided in the real estate sector. Quite often, an agreement

for the provision of services, an agency agreement or a surety agreement is concluded between the parties, which does not fully reflect the specifics of the legal relationship of the parties.

So, in particular, these agreements do not fully clarify the moment when the realtor has the right to receive remuneration and the client's right to compensation if by a certain time the property has not been sold or leased out due to the actions of the realtor.

Also, the issue of the realtor's right to reimburse the costs incurred during the execution of the client's order, both in the case of the execution of the order, and in the case when the order was not executed through the fault of the client (refusal to sell the real estate, independent sale of the object, etc.

In addition, the aspects related to limiting the civil liability of a realtor, questions about the rights and obligations of persons providing intermediary services in the field of real estate have not been sufficiently developed.

At the same time, real estate brokering has an increasing impact on the development of the real estate market, consumer behavior and the business community every year.

Obviously, it is necessary to legislatively formulate the concept of real estate activity as a special type of entrepreneurial activity for the provision of intermediary services in the field of real estate carried out in the interests of a legal entity or individual when concluding any transactions with real estate.

Thus, at the present stage, it is necessary to accelerate the development of legal norms at the international level, including at the level of the Eurasian Economic Union.

The development and adoption of a model law regulating relations in the field of real estate activities will significantly unify legal norms for the provision of intermediary services in the field of real estate and develop a unified approach to this issue among the EAEU member states, which will generally contribute to increasing confidence in this industry and ensuring its economic growth.

In order to balance the interests of the parties, it is required by law at the EAEU level to regulate cases in which the realtor is unconditionally entitled to receive a commission and compensation in full for the costs incurred associated with the execution of the client's order, as well as situations where the costs incurred by the realtor should be considered as entrepreneurial the realtor's risks and are not subject to reimbursement by the client.

In addition to the above, it is necessary to legislatively reflect the main obligations of the realtor, which must be spelled out in the contract for the provision of intermediary services in the field of real estate.

Here it seems reasonable to use international experience and at least reflect the following obligations: to provide complete information about the real estate

object, including information about the existing restrictions and encumbrances of the real estate object; provide information on transactions with this property over the past three years; initially provide truthful information about the expected parameters of the real estate transaction (the value of the real estate object, the conditions of sale and release of the real estate object) [2].

Also, in the proposed model law, it is necessary to develop in detail a mechanism to protect the interests of recipients of real estate services, as well as third parties who participate in the provision of real estate services. It seems that this mechanism should consist of four elements: fixing in the law the main duties of a realtor; legislative consolidation of cases when a realtor has an unconditional right to receive remuneration and situations when he loses the right to remuneration; legislative consolidation of a closed list of grounds under which the realtor is obliged to compensate the losses of clients and involved third parties; legislative consolidation of the basic rights and obligations of the recipients of real estate services.

So it should be legally established that a realtor has an unconditional right to receive remuneration in cases of a transaction with real estate on the terms of an agreement concluded between him and the client, as well as in cases of the client's unilateral refusal to complete the transaction on previously agreed terms.

In this case, the realtor is deprived of the right to remuneration in cases where he has not provided complete information about the property; did not provide essential information necessary for making a decision on the transaction (terms of sale, terms of release of the property, etc.); did not follow the client's written and contractual instructions.

The realtor is obliged to compensate the losses of the client and involved third parties in cases where the realtor misled the client by not disclosing all the necessary information to him or by distorting the information he has that is essential for the transaction (full terms and conditions of sale, terms of release of the property, the presence of encumbrances etc).

In the proposed model law, it is necessary to legally consolidate such a concept as an Agreement on the provision of real estate services. It seems that this concept should be formulated as a special type of contract, in accordance with the terms of which one party (realtor) undertakes to perform in the interests of the other party (client) actions aimed at making an agreed transaction with real estate, in which the client undertakes to pay the realtor contractual remuneration.



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俄罗斯刑法中的走私活动：单一性质 - 不同规定  
**SMUGGLING IN THE RUSSIAN CRIMINAL LAW: SINGLE NATURE –  
DIFFERENT REGULATION**

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俄罗斯《刑法》中“常见”走私的非刑事化和新的走私形式的出现导致了这样一个事实，即，其客体开始界定客体的属性，据此，这些人的营业额被禁止或限制。立法上的变化导致旨在打击走私的刑法规范的建设失去一致性。特别是，在“走私”犯罪中差异最大的客观标志之一就是犯罪的地点。确定刑法中走私的资格特征也有不同的方法，包括接近刑法保护规范的对象（《刑法》第200.1和200.2条）。考虑到对国内刑法规范的分析，提出了统一“走私”犯罪的监管规定的建议。

关键词：走私，商品走私，经济走私，走私的对象，走私的地点。

***Annotation.** Decriminalization of «common» smuggling in the Russian Criminal code and the emergence of new formulations of smuggling has led to the fact that their object began to define the properties of objects in virtue of which the turnover of these banned or restricted. The legislative changes have led to the loss of consistency in the construction of criminal law norms aimed at combating smuggling. In particular, one of the objective signs with the greatest discrepancies in the «smuggling» crimes is the place of their commission. There are also different approaches to determining the qualifying features of smuggling in the criminal law, including close to the object of criminal law protection norms (Art. 200.1 and 200.2 of the Criminal code). Taking into account the analysis of the norms of domestic criminal legislation, proposals have been made to unify the regulatory regulation of «smuggling» crimes.*

***Keywords:** smuggling, commodity smuggling, economic smuggling, the object of smuggling, the place of commission of smuggling.*

Federal law No. 420-FZ of December 7, 2011 art. 188 of the criminal code of the Russian Federation recognized invalid and at the same time the criminal code was supplemented by two articles: article 226.1, stipulating responsibility for the illegal movement across the customs border of the customs Union within the Eurasian economic community or state border of the Russian Federation with the States – items

seized or restricted in civil circulation by members of the Customs Union within the framework of the EurAsEC: explosives, radioactive substances, nuclear radiation materials, weapons, strategically important goods, resources, cultural values and other items seized or restricted in civil circulation; article 229.1, which establishes liability for the smuggling of narcotic drugs, psychotropic substances and tools used for their manufacture.

As noted in the explanatory note to the draft law, the introduction of amendments to the criminal law was due to:

- 1) the creation of the Customs Union within the framework of the EurAsEC, requiring an adjustment of article 188 of the criminal code of the Russian Federation;
- 2) the need to decriminalize the act provided for in part 1 of article 188 of the criminal code of the Russian Federation, which establishes liability for so-called illegal smuggling;
- 3) establishing responsibility for the smuggling of weapons, drugs, and other prohibited items in accordance with the object of criminal encroachment provided for in Chapter 24 "Crimes against public safety" and Chapter 25 "Crimes against public health and public morals" of the criminal code of the Russian Federation<sup>1</sup>.

Thus, instead of one article 188 of the criminal code, currently four articles of the criminal code provide for liability for smuggling. Smuggling has historically been considered a crime in the sphere of economic activity due to the fact that its subject was primarily ordinary goods ("commodity" smuggling), the illegal movement of which across the customs border was considered an infringement on the monopoly of foreign trade, and later – on the procedure for moving goods across the state (customs) border.

Along with ordinary goods, contraband items also included items whose turnover was prohibited or restricted, i.e., in relation to which special turnover rules were established. Con-triband such items was considered as a crime infringing on two objects: the direct object monopoly of foreign trade, procedure of movement of goods across the customs border; additional direct object, which is determined based on the properties of contraband in which the turnover of this subject was premla or limited.

According to A.V. Skachko, the wording of article 188 of the criminal code of the Russian Federation and its place in the system of the special part of the criminal code of the Russian Federation allowed us to say that responsibility for smuggling protected several areas: economic and public safety, ecology, public health and morality. Such an approach to the concentration of protected public relations in one criminal law norm did not contribute to the objective differentiation of responsibility for certain socially dangerous acts. Therefore, the decisions taken to decriminalize contraband under art. 188 of the criminal code of the

<sup>1</sup> See: explanatory note to the draft Federal law "on amendments to the criminal code of the Russian Federation and certain legislative acts of the Russian Federation" // SPS"ConsultantPlus".

Russian Federation with the subsequent criminalization of various manifestations of contraband encroachments, which led to cardinal changes in the criminal law regulation of responsibility for them, are objectively justified<sup>2</sup>.

Until the "division" of the contraband under article 188 of the criminal code of the Russian Federation, scientists defined the object of contraband separately for part 1 (commodity smuggling) and part 2 (smuggling of restricted items) of this article.

S. V. Maksimov, and G. V. Carnitina pointed out that part 1 of article 188 of the criminal code the direct object of smuggling are "the social relations, customs identification of goods and other items (except as provided in part 2 of article 188), crossing the customs border of the Russian Federation" and "public-wearing, ensuring the legitimate interests of businesses and consumers, the fiscal interests of the Russian Federation related to the receipt of customs payments").

For part 2 of article 188 of the criminal code the direct object, in their opinion, was "the social relationships underpinning the procedure of customs identification items in respect of which special rules of moving through customs border of the Russian Federation, as well as alternative or at the same time the main economic interests of the Russian Federation, its military security, public health and public morals and the safety of mankind»<sup>3</sup>.

This position was shared by P. S. Yani and E. M. Zhuravleva<sup>4</sup>, and B. V. Volzhenkin<sup>5</sup>.

The exclusion of article 188 from the criminal code and the appearance of new contraband structures changed the priorities in the assessment of the latter: the order of movement of goods across state or customs borders became an additional direct object, and the main non-direct object began to determine the properties of contraband items, by virtue of which the turnover of these items is prohibited or restricted: public safety (article 226.1 of the criminal code), public health (article 229.1 of the criminal code). Place of crimes under art. 200.1 of the criminal code and 200.2 of the criminal code, in the system of norms of the Special part of the criminal code reflects their directed-ness against the economic interests of the state and is supported by most scientists. Thus, the allocation of various contraband compounds is intended to reflect the priorities of criminal law protection.

One of the difficulties in distinguishing contraband crimes by subject is the recognition of non-denatured ethyl alcohol with an alcohol concentration of 80%

<sup>2</sup> See: Skachko A.V. Contraband and evasion of customs payments: conceptual approaches to the regulation of liability and prevention in the legislation of modern Russia. Moscow, 2016. Pp. 188-189.

<sup>3</sup> See: Criminal law. Special part: study. / edited By L. D. Gaukhman, S. V. Maksimov, M., 2005, Pp. 298, 302.

<sup>4</sup> See: Zhuravleva E. M., Yani P. S. Contraband: the moment of the end of the crime // The Russian justice. 2005. No. 11. Pp. 12-16.

<sup>5</sup> See: Volzhenkin B. V. Crimes in the sphere of economic activity in the criminal law of Russia. SPb., 2007. Pp. 534-535.

or more, as well as ethyl alcohol and other alcoholic tinctures denatured as a strategically important product and resource<sup>6</sup>. Consequently, there is a competition between two criminal law norms-article 200.2 of the criminal code and 226.1 of the criminal code, which requires a competent expert opinion.

Thus, we can say that the scope and limits of criminal liability for smuggling are determined by the current socio-economic situation in the state, taking into account its position in the sphere of foreign economic relations, as well as that the subject of smuggling acts as a defining feature that affects the nature of relations protected by criminal law and the content of the signs of the objective side of contraband crimes.

At present, we can talk about smuggling in a broad and narrow sense. The resolution of Plenum of the Supreme Court of 27.04.2017 No. 12 "About court practice on Affairs about contraband" in order to ensure uniform application of norms of the criminal law on liability for smuggling comes from the narrow understanding of trafficking, based on a literal interpretation of this crime: if the title of the article of the criminal code is the word "contraband", that under this article the crime should be considered contraband; if the title of the article of the criminal code of the Russian Federation does not contain the word "contraband", then the crime provided for in this article is not recognized as contraband<sup>7</sup>.

This approach allows us to refer to smuggling only the crimes provided for in articles 200.1, 200.2, 226.1 and 229.1 of the criminal code of the Russian Federation, which define smuggling as the illegal movement of contraband items across the customs or state border.

However, this precludes the classification as smuggling of crimes related to the illegal movement of crime items across national or state borders: illegal trafficking of new potentially dangerous psychoactive substances (article 234.1 of the criminal code); circulation of falsified, substandard and unregistered medicinal products, medical devices and trafficking of falsified biologically active additives (article 238.1 of the criminal code); illegal manufacture and trafficking of pornographic materials or items (article 238.1 of the criminal code). 242 of the criminal code of the Russian Federation) and the production and circulation of materials or items with pornographic images of minors (article 242.1 of the criminal code).

This confirms that the legislator, having decriminalized contraband (article 188 of the criminal code of the Russian Federation), draws a line to establish the priority of the subject of illegal movement across the state border of the Russian Federation as a criterion for determining the place of a particular contraband crime in the system of norms of the Special part. Moreover, this division is not always

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<sup>6</sup> See: Decree of the Government of the Russian Federation No. 923 of 13.09.2012 (ed. from 09.08.2016) "on approval of the list of strategically important goods and resources for the purposes of article 226.1 of the Criminal code of the Russian Federation" // SPS"Consultant plus".

<sup>7</sup> See: Bulletin of the Supreme Court of the Russian Federation, 2017, no. 6.

carried out consistently, which is most evident in the example of articles 229.1 and 234.1 of the criminal code of the Russian Federation. The subject of crimes under articles 200.1, 200.2, 226.1, 229.1 of the criminal code of the Russian Federation is a key feature that determines the qualification of smuggling crimes.

In our opinion, the resolution of the Plenum of the Supreme Court of the Russian Federation should reflect the position concerning all smuggling crimes in order to systematize and unify their objective features, mainly qualifying ones.

One of the objective features that have the greatest differences in smuggling crimes is the place where they were committed. In this case, the crime scene is considered as contained in the relevant article of the criminal code indicating the specific location in which a crime is committed and in this context, the crime scene is one of the main features of Kon-traband.

The division trains a single smuggling has been happening for six years, along with the integration processes in the post-Soviet space, which is reflected in the wording of their objective side, namely IU-hundred of committing smuggling:

article 200.1 of the criminal code: "Illegal movement across the customs border of the Customs Union within EurAsEC";

article 200.2 of the criminal code: "Illegal movement across the customs border of the Customs Union»;

article 226.1 of the criminal code: "Illegal movement across the customs border of the customs Union within the Eurasian economic community or State border of the Russian Federation with States – members of the Customs co-SW within EurAsEC";

article 229.1 of the criminal code: "Illegal movement across the customs border of the customs Union within the Eurasian economic community or State border of the Russian Federation with States – members of the Customs co-SW within the EurAsEC".

In addition, we note that article 234.1, 238.1, 242 and 242.1 of the criminal code it is only the importation into the territory of the Russian Federation and the who from the territory of the Russian Federation concerning objects.

This confirms the opinion of scientists who believe that the changes in criminal legislation regarding the criminalization and decriminalization of smuggling should be evaluated from the perspective of the socio-economic transformations taking place in the Russian Federation and its participation in international cooperation<sup>8</sup>.

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<sup>8</sup> See: Fedorov A.V. object of contraband and its place in the system of the Special part of the Criminal code of the Russian Federation // Bulletin of the Russian legal Academy. 2012. no.

Pp. 48-52; on. Once again to the question of the object of" reborn " smuggling, the objects of smuggling and its place in the Special part of the criminal code of the Russian Federation // Scientific notes of the St. Petersburg branch of the Russian customs Academy named after V. B. Bobkov. 2013.

2 (46). Pp. 121-153; on. Changes in legislation on liability for smuggling and issues of system-

The criminal code of the Republic of Armenia practically reproduces the wording similar to the earlier article 188 of the criminal code of the Russian Federation, does not allocate contraband of alcohol, tobacco products and cash and (or) tools. There is no wording on the customs border of the Customs Union<sup>9</sup>.

Counteraction to smuggling in the Republic of Belarus is regulated in almost the same way (articles 228 and 228.1 of the criminal code of the Republic of Belarus). the only difference is that a separate norm establishes criminal liability for illegal movement of narcotic drugs, psychotropic substances or their precursors or analogues across the State border of the Republic of Belarus (article 328.1 of the criminal code of the Republic of Belarus)<sup>10</sup>.

The way of division of economic smuggling (article 234 of the criminal code) and smuggling withdrawn from circulation of objects or items, the appeal of which is limited (article 286 of the criminal code) is the criminal legislation of the Republic of Kazakhstan. At the same time, the dispositions of the article indicate the customs border of the Customs Union as the place of committing crimes<sup>11</sup>.

This is the same method that the criminalization of smuggling used in the Kyrgyz Republic, to establish responsibility for the economic con-traband (article 223 criminal code) and smuggling items in respect of which special rules of moving through customs border of the Kyrgyz Republic (article 270 criminal code). in the dispositions of the article, the customs border of the Kyrgyz Republic is indicated as the place of committing crimes<sup>12</sup>.

A comparative legal analysis of the criminal law norms of the member States of the Customs Union confirms the need to bring the terminological content of the norms on smuggling to uniform application and consolidation, including within the framework of the criminal code of the Russian Federation.

We believe that a systematic approach to countering smuggling (economic, as well as items that are restricted in circulation) requires the unification of qualifying features.

It seems that economic measures, such as confiscation and fines, should actually prevail in relation to economic smuggling. Nevertheless, consistency in the regulatory regulation of smuggling crimes should lead to the appearance of new qualified compounds in articles 200.1 and 200.2 of the criminal code of the Rus-

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atization of crimes in the Special part of criminal code // Library CSL. Scientific journal. 2013. no. 4 (9). Pp. 80-90.

9 See: criminal code of the Republic of Armenia [Electronic resource]. URL: <http://www.parliament.am/legislation.php?ID=1349&lang=rus&sel=show> (date accessed: 01.02.2018).

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11 See: criminal code of the Republic of Kazakhstan [Electronic resource]. URL: [https://online.zakon.kz/Document/?doc\\_id=31575252#pos=308;-92](https://online.zakon.kz/Document/?doc_id=31575252#pos=308;-92) (accessed: 01.02.2018).

12 See: criminal code of the Kyrgyz Republic [Electronic resource]. URL: <http://cbd.minjust.gov.kg/act/view/ru-ru/111527> (date accessed: 01.02.2018).

sian Federation, which are subject to stricter measures, including imprisonment.

Special attention should be paid to the unification of criminal legislation on countering contraband crimes, including the criminalization of the smuggling of cash and (or) monetary instruments, alcohol products and (or) tobacco products, as part of integration processes in the post-Soviet space. At the same time, objective signs of smuggling crimes in the Customs Union should be brought to uniform wording.

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违反俄罗斯和国外参股建设法律筹集资金的问题  
**THE PROBLEM OF RAISING FUNDS IN VIOLATION OF THE LAW  
ON PARTICIPATION IN SHARED-EQUITY CONSTRUCTION IN  
RUSSIA AND ABROAD**

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这项研究的目的是通过比较法律分析来确定俄罗斯和外国股权建设参与者的权利遵守状况。这个问题之所以重要，是因为在国内外，随着股份制建设的普及，以及在该领域存在违反法律的行为。对俄罗斯法律进行了分析，该法律规范了股权建设领域，并在吸引股东资金时确立了对违法行为的刑事责任。同时，针对国外股权建设问题的国外立法和科学文献也进行了分析。揭示了外国人在订立股权建设合同时调节法律关系方面的积极方面，以及存在的不足。

关键词：参股建设合同；筹集资金参与股权建设；违反有关股本建设的法律；股本建设领域的刑事责任

**Annotation.** *The purpose of the study is to identify the state of the problem of compliance with the rights of participants in shared-equity construction in Russia and foreign countries by means of a comparative legal analysis. This problem is relevant due to the popularity of shared-equity construction both in our country and abroad, as well as the presence of violations of legislation in this area. The analysis of the Russian legislation regulating the sphere of shared-equity construction and establishing criminal liability for violations when attracting funds of shareholders is carried out. The analysis of foreign legislation and scientific literature devoted to the problems of shared-equity construction abroad is also carried out. The positive aspects of foreign experience in regulating legal relations when concluding shared-equity construction contracts are revealed, as well as the existing shortcomings.*

**Keyword:** *contract for participation in shared-equity construction; raising funds to participate in shared-equity construction; violation of the law on shared-equity construction; criminal liability in the field of shared-equity construction.*

The problem of providing citizens with housing is a priority for the state in the vast majority of countries around the world. In order to ensure its solution at the state level, certain means and measures are applied in each country, such as the development of state support programs, as well as legislation that ensures compliance with the rights of participants in the housing construction market.

Shared-equity construction has gained popularity in recent decades both in Russia and in a number of foreign countries, as it allows you to purchase housing at a cost much lower than ready-made housing. It is the price of housing in buildings under construction that makes shared-equity construction attractive for people who want to improve their living conditions, but there are also negative factors in this area, in particular, abuse by developers.

Statistics on the number of problem housing in Russia, which is maintained by the Ministry of construction of the Russian Federation, suggests that there are multiple violations of the law in the field of shared-equity construction and the issue of regulating the sphere of shared-equity construction, in particular, in the context of criminal legislation, requires attention from the legislator and science.<sup>1</sup> In addition, it is also relevant to study foreign experience in regulating legal relations in the field of shared-equity construction, since this allows us to develop and improve Russian legislation based on the positive experience of other countries, as well as taking into account their mistakes.

In Russia, forms of investment construction similar to shared-equity construction took place in the Soviet period, but shared-equity construction as it is now known appeared in our country in the 1990s, during a period of serious crisis, when a large number of people were deprived of the opportunity to improve their housing conditions. At the same time, the sphere of shared-equity construction was regulated by law only in 2004 after a wave of fictitious bankruptcies and other fraudulent actions on the part of developers swept across the country. In order to streamline legal relations in this area, Federal law No. 214-FZ of 30.12.2004 was adopted. "On participation in shared construction of apartment buildings and other real estate objects and on amendments to certain legislative acts of the Russian Federation".<sup>2</sup> However, the adoption of this law could not solve the problem of criminal offenses committed when concluding shared-equity construction contracts.

The first step in improving the Russian criminal legislation was the introduction of amendments to part 4 of article 159 of the Criminal code of the Russian Federation, namely, the addition of this part with such a qualifying circumstance as the deprivation of a citizen's right to residential premises. However, the dis-

1 Ministry of construction of the Russian Federation. Official website [electronic resource] // Mode of access: <https://minstroyrf.gov.ru/> (accessed: 13.10.2020).

2 Federal law No. 214-FZ of 30.12.2004 "On participation in shared-equity construction of apartment buildings and other real estate objects and on amendments to certain legislative acts of the Russian Federation" // Rossiyskaya Gazeta. - December 31, 2004. - No. 292.

advantage of this change in relation to the field of shared-equity construction is that as a result of abuse by the developer, other consequences may occur for the affected party, so a large number of different elements of crimes committed by developers against shareholders are not covered.<sup>3</sup>

Finally, in 2016, the criminal code of the Russian Federation was supplemented with a new article 200.3 "Attracting funds of citizens in violation of the requirements of the legislation of the Russian Federation on participation in shared construction of apartment buildings and (or) other real estate objects". This important change made it much easier to qualify actions of developers that infringe on the rights and interests of participants in shared construction, which resulted in a reduction in the number of cases of evasion of criminal liability by officials of construction companies.

Analysis of the provisions of the Russian legislation shows that the provisions relating to regulation of the contract of participation in share construction, cover a wide range of issues, including the concept of key terms used in the relations arising in connection with the conclusion of the contract of participation in share construction, the norms regulating the procedure of conclusion of the contract, of raising funds, the order of execution of obligations by the parties, civil, administrative and criminal responsibility for violation of the provisions of the Treaty and legislation.

For the first time, shared-equity construction as a form of investment activity appeared in Argentina in the second half of the 1980s. Just as in the Russian Federation, the deep economic crisis that took place in the country at that time contributed to the spread of shared-equity construction in Argentina. The Argentine currency, the peso, has seriously devalued, and the percentage of people living below the poverty line has increased significantly in a short period of time. All this led to the fact that only a small part of the population could afford relatively comfortable living conditions and was able to purchase housing in the property.

The state, concerned about this issue, set out to support the impoverished segments of the population and help provide housing for people in need. To achieve this goal, in 1985, at the initiative of the current President of Argentina, Raul Ricardo Alfonsín, the program "Building for justice" was developed» (Construcción de la equidad – spanish.) according to which, at the initiative of the state, a company was formed, created solely for the purpose of implementing this program, which was entrusted with the authority to build residential buildings with the involvement of funds from citizens participating in shared construction. Thus, the sphere of shared-equity construction was under the full control of the state, which excluded the Commission of any illegal acts against shareholders.

The experience of Argentina inspired participants in the construction market

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<sup>3</sup> Criminal code of the Russian Federation: Federal law No. 63-FZ of 13.06.1996 // Assembly of legislation of the Russian Federation. - June 17. - 1996. - No. 25, article 2954.

in other Latin American countries to create similar shared-equity construction schemes, but this resulted in a large number of defrauded shareholders and criminal lawsuits due to the lack of state control.

In the 1990s, shared-equity construction came to Russia and the former Soviet Union, where it was further developed.

Thus, the website "Electronic government of the Republic of Kazakhstan" contains information about the housing program currently being implemented in Kazakhstan, which promises to give citizens the opportunity to purchase an individual house or take part in shared construction. Emphasizing the advantages of shared-equity construction, the main of which is the low price of such housing, the government of Kazakhstan draws the attention of its citizens to certain risks that may arise in connection with the conclusion of contracts for participation in shared-equity construction. So, among them are the long wait for the construction of residential buildings and the likelihood of fraudulent actions on the part of real estate developers.

In order to regulate relations arising from the conclusion of contracts for participation in shared construction, the Law of the Republic of Kazakhstan "on shared participation in housing construction" was adopted on April 7, 2016. Analysis of this law allows us to conclude that a significant number of its provisions are similar to the provisions of the Russian law on shared-equity construction, which is not surprising, given the close integration of our country with the Republic of Kazakhstan. At the same time, it is worth noting that since the legislation regulating relations in the field of shared-equity construction in Kazakhstan was developed only a few years ago, it can be noted that it requires serious improvement. As for criminal liability, it follows from the provisions of the Criminal code of the Republic of Kazakhstan that officials of developers who commit illegal actions that violate the provisions of the legislation on shared-equity construction and the rights of shareholders can be brought to criminal responsibility mainly under art. 190 "Fraud", there are no special criminal law rules regarding crimes in the field of shared-equity construction.<sup>4</sup>

In the Republic of Belarus, the sphere of shared-equity construction is currently regulated by the decree of the President of the Republic of Belarus dated 10.12.2018 No. 473 "on shared-equity construction", as well as by-laws.<sup>5</sup>

This decree approved such documents as the Regulations on shared construction of facilities in the Republic of Belarus, as well as the standard form for a shared construction contract.

At the same time, in contrast to Russian legislation in the Republic of Belarus, shared-equity construction is provided not only for the construction of residential

<sup>4</sup> Criminal code of the Republic of Kazakhstan dated 03.07.2014 No. 226-V [electronic resource] access Mode: URL: [https://online.zakon.kz/document/?doc\\_id=31575252](https://online.zakon.kz/document/?doc_id=31575252) (date accessed: 20.08.2020).

<sup>5</sup> President of Belarus. Mode of access: <http://president.gov.by/ru/> (accessed: 15.10.2020).

housing, so non-residential housing can also be built. In addition, the Regulation on shared-equity construction provides that shared-equity construction can be carried out, including with the use of state support and with a limited profit of the developer.

An important clause stipulated in clause 3 Of the regulations on shared-equity construction is a ban on the developer to attract funds from citizens for the purpose of shared-equity construction if they have arrears on taxes, fees and other mandatory payments to the Republican budget. Thus, the legislator aims to provide a guarantee of the developer's reliability, which thus confirms its ability to bear financial obligations, which, in turn, allows to exclude situations in which the developer enters into formal contracts with shareholders, appropriating their funds without fulfilling their obligations.

Clause 13 of the Regulation provides for liability measures applied to the developer in case of non-fulfillment of its obligations under the contract in the form of a penalty. In addition, in cases established by law, a developer who does not fulfill its obligations to shareholders may be subject to administrative and criminal liability measures.

If, due to financial problems, the developer is unable to fulfill its obligations to build a residential building, the authorized authorities appoint another construction organization instead. At the same time, the previous developer is obliged to transfer to the new organization all the funds received for the construction.

Of course, even if there are sufficiently effective mechanisms to protect the rights of participants in shared-equity construction, it is impossible to completely exclude the Commission of crimes. For example, in the Republic of Belarus there are cases of fraud and embezzlement of funds by managers of construction companies. There are also complaints from shareholders about developers' violation of the terms of construction and commissioning of residential buildings. Meanwhile, according to official statistics, the number of criminal offences committed in this area is significantly lower than in Russia.

The scheme used for shared-equity construction in Western Europe is somewhat different from the one that originally appeared in Latin America, as well as from the one used in Russia and the former Soviet Union. So, in the Czech Republic, Germany, and France, shared – equity construction is carried out not at the expense of own funds of citizens who are home buyers, but at the expense of investor funds or through lending. In particular, in the Czech Republic, the buyer pays an average of 10-20% of the cost of the object they purchase to a Bank that acts as an intermediary between the buyer and the developer, the remaining amount is paid after construction is completed. If the object was not completed, the amount deposited to the Bank is returned to the buyer. This financing scheme almost completely eliminates any financial risks for buyers, and therefore reduces

to zero offenses and criminal offenses in this area.

The provisions of the Russian law on shared-equity construction that provide for the accumulation of funds in special escrow accounts are not an invention of Russian legislation, but are based on the experience of countries such as Spain, France, Germany, and the United Kingdom. In these countries, this rule was introduced in 2008, when due to the crisis, a large number of construction companies were unable to meet their obligations and declared bankruptcy. In this regard, the States of these countries have reformed the system of shared-equity construction, assigning part of the control functions to banks, which checked the developer for the ability to fulfill their obligations to depositors. Thus, the States of these countries have taken measures to prevent abuse by construction companies in terms of embezzlement of funds of shareholders.

In the United States of America, a mechanism for prosecutorial supervision of the activities of construction companies is provided for regulating legal relations in the shared-equity construction market. The powers of officials who are charged with the duty of supervision include control over the attraction and expenditure of funds of shareholders. The funds of shareholders, which they transfer to pay for the equity participation agreement in favor of the construction company, are transferred to a special Prosecutor's account, through which the further distribution of these funds for construction purposes is carried out. Thus, through the implementation of public Prosecutor's supervision, the expenditure of funds of shareholders for purposes other than the construction of certain residential buildings is prevented.

Analysis of the legislation of foreign countries shows that in the countries of the former Soviet Union, the legislation regulating relations in the field of shared-equity construction is in many ways similar to the Russian one. At the same time, in some countries there are more effective mechanisms for protecting the rights and interests of shareholders, ensuring the prevention of criminal offenses in this area. In some countries, on the contrary, measures to protect the rights of participants in shared-equity construction are weaker in comparison with Russian legislation. Meanwhile, the analysis of research shows that the nature of crimes committed in the field of shared-equity construction is largely similar in different countries of the former USSR, the most common of them are actions that qualify as fraud, such as forgery of documents, non-compliance with the requirements for registration of shared-equity contracts in construction, as well as embezzlement and embezzlement of funds raised for shared-equity construction with further concealment of officials.

In Western Europe, in comparison with Russia and the former Soviet Union, the problem of criminal offenses that infringe on the interests of shareholders is practically absent due to a well-developed mechanism for attracting funds from

participants in shared-equity construction, as well as due to effective and strict state control measures. Accordingly, as a result, the state does not need to reform the rules that establish criminal liability for crimes committed in the field of shared-equity construction too often, since the civil law system, as well as the existing mechanisms for bringing to administrative responsibility, are sufficiently effective to minimize violations in this area.

Thus, we can conclude that in different countries, shared-equity construction was born and developed differently, depending on the characteristics of each particular country. However, countries that are neighboring each other often have similar mechanisms for regulating shared-equity construction, and the offenses that occur in such countries usually also have similarities. For Russian legislation, the study of the experience of foreign countries is undoubtedly necessary to improve the existing mechanisms for regulating shared-equity construction in our country, and to reduce the level of offenses committed in this area.

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环境犯罪：技术和法律问题反映法律后果  
**ENVIRONMENTAL CRIMES: TECHNICAL AND LEGAL PROBLEMS  
REFLECTION OF CONSEQUENCES IN THE LAW**

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本文专门讨论环境犯罪后果的理论和立法问题。在这方面，考虑了术语的名称问题，现有概念在这方面的比例，后果在语料库结构中的位置；该文章分析了技术和法律技术，这些技术和法律技术是反映刑法规范中所考虑特征的基础：1) 其外部表现形式；2) 公共关系变化的类型（犯罪对象）；3) 公共内容 关系因环境犯罪而发生了变化。对于制造真正危险化合物的合法性表达了意见。

关键词：环境犯罪，后果，后果类型，后果在组成中的位置；在法律中反映后果；技术和法律方法。

**Annotation.** *The article is devoted to theoretical and legislative problems of consequences of environmental crimes. In this regard, the issues of their terminological designation, the ratio of the existing concepts in this regard to each other, the place of consequences in the structure of the corpus delicti are considered; the article analyzes the technical and legal techniques that are the basis for the reflection of the considered feature in criminal law norms: 1) its external manifestation: 2) type of changes in public relations (object of crime): 3) the content of public relations that have undergone changes in the result of an environmental crime. The opinion is expressed regarding the legality of creating compounds of real danger.*

**Keyword:** *environmental crimes, consequences, types of consequences, place of consequences in the composition; reflection of consequences in the law; technical and legal approaches.*

The problem of the consequences of crime in General and environmental crimes in particular, despite the available serious criminal law research, remains controversial, with disputes over the terminology used to designate, and the nature, types and their place in the structure of the crime. For example, the literature talks about consequences, criminal result, harm, damage, etc.<sup>1</sup>, this leads to con-

<sup>1</sup> See about this in detail: Krasheninnikov D. A. Consequences of environmental crimes / ed. by A. I. Chuchaev. Ulyanovsk, 2007. Pp. 9-10.

fusion in the definition of the scope of concepts, their relationship, in particular, criminal consequences and criminal results. Thus, A. S. Mikhlin considered the last two concepts to be equivalent<sup>2</sup>; others related them as content and form<sup>3</sup>. N. F. Kuznetsova associated the term "result" only with the reflection of direct economic damage in the law, which is estimated based on the monetary value of the object of the crime most often<sup>4</sup>. According to D. A. Krashennikov, the term in General "does not carry a legal content, but is used by the legislator only as a linguistic device for constructing a particular legal norm and is used by him in the meaning of "due to" ("as a result of committing a crime", "as a result of careless handling of fire" , etc.)»<sup>5</sup>.

A. I. Chuchayev uses the phrases "criminal consequences and " socially dangerous consequences" as synonymous<sup>6</sup>.

In the literature, all the consequences of a crime are sometimes classified into two types: basic and additional. The former are part of a crime, while the latter involve harm of a type that, by its nature and degree of danger, does not reach the level of consequences specified in the law<sup>7</sup>.

The existing problems of the legislative fastening in the criminal code of the consequences of environmental crimes including due to lack in the theory of criminal law a hard and fast definition of their place in the system of signs of a crime. As you know, many scientists rightly refer to the consequences of the objective side of the crime. Yu. I. Lyapunov believed that " the consequence is within the objective side only in potency, existing in the form of a real possibility, but not reality... Turning the possibility of consequences into reality is the stage in the development of cause-and-effect relationships, at which the consequences forever leave the objective side and harmfully break into the sphere of criminal law protection»<sup>8</sup>.

Thus, the author, in our opinion, emphasized the dual nature of criminal consequences: describing the specified element of the crime, they are reflected in the object of the crime, indicate a change in the state of the natural environment, which ensures the vital interests of a person from the possible negative impact of economic and other activities, natural and man-made emergencies. This circumstance primarily indicates the relationship between the elements of the composition of the crime in General and its objective features in particular. However, this

2 See: Mikhlin A. S. Consequences of crime .. M., 1969. P. 16.

3 See, for example: Criminal law. General part. Moscow, 1997. P. 153.

4 See: criminal law Course. In 5 vols. Vol. 1: the Doctrine of crime / ed. by N. F. Kuznetsova, I. M. Tyazhkova. M., 1999. P. 228.

5 Krashennikov D. A. Decree, Op. 11

6 See, for example: Criminal law of the Russian Federation. General and Special part / under the editorship of A. I. Chuchayeva. M., 2013. P. 86.

7 See: Criminal law of the Russian Federation. General and Special part / under the editorship of A. I. Chuchayev and. P. 86-87.

8 Lyapunov Yu. I. *Public danger of an act as a universal category of Soviet criminal law*. M., 1989. P. 81.

same circumstance has given rise to a discussion both about the nature of criminal consequences and their place in the structure of the *corpus delicti*.

The definition of the concept of criminal consequences of environmental crimes in criminal law has not yet been formed. D. A. Krashennikov understands them as negative changes in public relations for the protection of the natural environment and ensuring environmental safety. It is easy to see that the author substitutes the object of the crime, firstly, for its protection and provision, which in turn could not but affect the accuracy of the proposed definition; secondly, the author indicates the natural environment as a criminal legal protection, which violates the ratio of species and generic objects of environmental crimes.

In criminal law, the consequences of environmental crimes play one of three roles: first, a crime-forming feature; second, a qualifying (especially qualifying) feature; and third, an aggravating circumstance. In addition, it should be borne in mind that they are the basis for intersectoral differentiation of responsibility<sup>9</sup>.

It seems unjustified for the legislator to use the threat of causing significant harm to human health or the environment as a consequence of an environmental crime (part 1 of article 247 of the criminal code of the Russian Federation). As you know, the theory of criminal law has not yet defined the legal nature of this type of consequence. The discussion outlined two main approaches to describing the composition of such a crime by design: some consider it formal, while others consider it material, recognizing the threat as an independent type.<sup>10</sup>

There are concerns in the literature that this formulation of the consequences is fraught with the danger of identifying the completed crime with pre-criminal activity. In addition, in practice, it is very difficult or almost impossible to establish clear criteria for assessing the reality of a threat. Probably, this is also why article 247 of the criminal code of the Russian Federation is very rare in the law enforcement activities of pre-trial investigation bodies and courts<sup>11</sup>.

In the literature, there is a different opinion about environmental crimes that have a real danger. For example, A. p. Chugaev, on the contrary, suggests expanding their circle. The reason for this is the judicial penalization of the crimes in question, which, in the author's opinion, is not sufficiently strict. And crimes with the composition of a real danger will allow you to punish them at an earlier stage<sup>12</sup>.

In General, this proposal was supported By N. A. Iopashenko<sup>13</sup>.

9 On the problems of differentiation of criminal and administrative responsibility for environmental crimes, see in detail: Zvereva A. I. Environmental crimes that encroach on the safety of water objects: characteristics and differentiation with related torts / ed. by Yu. V. Gracheva. M., 2019.

10 In detail about it see: Krashennnikov, D. A. Decree. CIT. P. 9-22.

11 See: Commentary to the Criminal code of the Russian Federation (scientific and practical) / ed. by A. I. Chugaev. M., 2018. P. 1117.

12 See: Chugaev A. P. Environmental crimes related to causing death or harm to human health: autoref. Diss. ... Cand. the faculty of law. Sciences. Krasnodar, 2003. P. 8.

13 See: Iopashenko N. A. Environmental crimes, Moscow, 2017, P. 113.

The legislator does not always comply with the requirement to fully reflect and unambiguously describe the consequences of environmental crimes as criminal characteristics. For example, article 255 of the criminal code of the Russian Federation does not specify such a consequence as contamination of an underground source of drinking water supply; article 246, part 2 of article 247, article 257 of the criminal code – causing significant harm to the natural environment, etc. These and other defects in the technical and legal reflection of socially dangerous harm can lead to at least two non-serious phenomena: first, an artificial reduction in the scope of the criminal law norm, when identical consequences receive a different legal assessment; second, an inaccurate characterization of the consequences, which can give rise to errors in the interpretation of this attribute, and consequently, an incorrect qualification of the act.

The consequences of environmental crimes act as both intra-industry and inter-industry differentiation. As the first condition, they serve as qualifying features. Unfortunately, the criminal and legal norms on environmental crimes are presented in a mosaic, and there is no single approach to fixing them in the law, which clearly violates the principle of differentiation of responsibility depending on the type and severity of the consequences that have occurred. Moreover, they are overloaded with evaluation concepts, which, together with the blank nature of criminal law norms, creates additional risks in assessing the criminal consequences that have occurred and its qualification.

The disadvantages of technical and legal reflection of the consequences of environmental crimes affect the inter-sectoral differentiation of responsibility, in particular criminal and administrative-legal. In fairness, it should be noted that this reproach should be addressed not only to criminal, but also to administrative legislation. For example, N. V. Klishina notes that this disadvantage is inherent, for example, in article 249 of the criminal code of the Russian Federation, which provides for liability, including for violation of veterinary rules. "If the criminal code establishes liability only for such a violation of the rules that caused the spread of epizootics or other serious consequences through negligence ... if such consequences did not occur, it would be logical to establish administrative responsibility. At this level of differentiation of liability, there is a significant gap in the legislation, since there are currently no" parallel " norms in the administrative Code of the Russian Federation»<sup>14</sup>.

There are many examples of the opposite nature, when the administrative Code of the Russian Federation contains a corresponding administrative and legal tort,

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<sup>14</sup> Klishina N. V. *Problems of differentiation of responsibility for environmental crimes // Legal notes of p. G. Demidov Yaroslavl state University. 2004. Issue 8. P. 222.*

The administrative code of the Russian Federation provides for criminal liability for another act – failure to comply with the requirements in the field of environmental protection when handling animal waste (article 8.2.3).

the specific manifestation of which can cause harm inherent in environmental crimes, has all the other features inherent in a socially dangerous act, but it is not presented in the criminal code of the Russian Federation. In this respect, the administrative-legal tort stipulated in article 8.4 of the administrative Code of the Russian Federation is typical. Administrative and legal liability is incurred for failure to comply with the requirements of the law on the mandatory conduct of state environmental expertise, financing or implementation of projects, programs and other documentation that are subject to state environmental expertise and have not received a positive conclusion from the state environmental expert. Federal law No. 174-FZ of November 25, 1995 (as amended), dated December 27, 2019) "on environmental expertise" contains a list of violations specified in the administrative and legal norm. In fact, according to the consequences that may occur as a result of a violation of these rules, the act may well be criminalized, but this did not happen. At the same time, it should be noted that in relation to other circumstances, such as industrial safety expertise, the legislator considered it necessary to recognize a false conclusion as criminal (article 2172 of the criminal code of the Russian Federation). Meanwhile, the consequences of violations of these types of expertise, in our opinion, are quite comparable.

Problems of intersectoral differentiation arise due to the fact that the same term used in criminal and administrative legislation has different meanings. This circumstance is clearly seen when comparing the content of, for example, article 254 of the criminal code and article 8.6 of the administrative Code of the Russian Federation, providing for liability for damage to land. But in the first case, we are talking about poisoning, contamination or other damage to the land by harmful products of economic or other activities; in the second – unauthorized removal or movement of the fertile layer. Obviously, in this case, there can be no question of a pair of these norms.

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能源部门节能政策的规范性规定  
**NORMATIVE REGULATION OF ENERGY SAVING POLICY IN THE  
ENERGY SECTOR**

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撰写本文的目的是分析适当实施节能立法以及授权机构实施高质量国家和市政控制的条件。

关键词：电力工业，节能，法规和法律文件。

**Abstract.** *The article was written with the aim of analyzing the conditions for the proper implementation of legislation on energy conservation and the implementation of high-quality state and municipal control by authorized bodies.*

**Keywords:** *electric power industry, energy saving, regulatory and legal documents.*

Federal Law №35-FZ of 26.03.2003 (as amended on 29.12.2017) "On the Electric Power Industry" gives the following definition to the electric power industry:

"Electric power industry is a branch of the economy of the Russian Federation, which includes a complex of economic relations arising in the process of production (including production in the mode of combined generation of electric and thermal energy), transmission of electric energy, operational dispatch control in the electric power industry, sales and consumption of electric energy. with the use of production and other property objects (including those included in the Unified Energy System of Russia), owned by property or on another basis stipulated by federal laws, to the subjects of the electric power industry or other persons. Electricity is the basis for the functioning of the economy and life support" [3].

The power industry is the most important basic industry in Russia. Therefore, it is necessary to regulate its activities. This is the reason for the emergence of the state energy saving policy.

"Energy saving policy of the state - legal, organizational and financial and eco-

conomic regulation of activities in the field of energy conservation" [4].

Energy saving is the initial stage of the restructuring of all sectors of the country's economy. To create conditions that determine the interest in energy conservation of all participants in the production - consumption - utilization process, a regulatory and legal framework has been developed.

By its legal force, all regulatory documents can be listed in the following order:

- The Constitution of the Russian Federation;
- Federal laws adopted by the State Duma of the Russian Federation;
- Decrees of the President of the Russian Federation;
- Decrees and decisions of the Government of the Russian Federation;
- Regional laws, decrees and decisions of the regional administration;
- Resolutions and decisions of municipalities;
- Orders and directions of heads of enterprises and organizations of all forms

of ownership.

The Constitution of the Russian Federation (December 12, 1993) divided powers between federal and other authorities. According to the Constitution of the Russian Federation, the constituent entities of the Russian Federation have full state power. Regulatory issues in the field of the electric power industry at the level of AO-power engineering and below are transferred to the jurisdiction of the subjects of the Federation [5].

An important role in the regulation of energy saving relations is played by the Civil Code of the Russian Federation, which provides for:

- rules for concluding energy supply contracts, including with the population;
- rules for changing and terminating such an agreement;
- methods of accounting for the quality of energy supplied to the consumer;
- the need to maintain the quality standard of electrical energy;
- the obligation of the buyer to maintain the operation of networks, devices

and equipment;

- responsibility under the power supply contract;
- economic responsibility of the energy supplying organization for damage caused to the consumer during a power outage;
- responsibility of heads of enterprises, organizations, institutions for wasteful consumption of electric and heat energy [6].

In pursuance of federal laws, a number of government decrees were adopted related to energy and energy conservation. State control over compliance with the requirements of the legislation on energy saving and on increasing energy efficiency by organizations, regardless of organizational and legal forms and - of ownership, and by managers, officials, as well as individuals, is carried out by federal executive authorities (federal state control), executive authorities constituent entities of the Russian Federation (regional state control) authorized to exercise such state control in accordance with the rules established by the Government of



the Russian Federation (Art. 28 of the FZ № 261-FZ) [7].

The development of state policy and legal regulation in the field of energy conservation and energy efficiency increase are entrusted to:

– Ministry of Economic Development of the Russian Federation (in the field of increasing the energy efficiency of the economy of the Russian Federation; ensuring energy efficiency when placing orders for state or municipal needs; ensuring energy conservation and increasing energy efficiency by budgetary institutions, organizations carrying out regulated activities);

– Ministry of Industry and Trade of the Russian Federation (in the field of energy conservation and energy efficiency in the turnover of goods, including the approval of the rules for determining the energy efficiency classes of goods, the definition of categories of goods and their characteristics within the limits established by the Government of the Russian Federation and the solution of a number of other issues within the scope of the ministry's activities) ;

– Ministry of Regional Development of the Russian Federation (in the field of ensuring the energy efficiency of commercial buildings, structures, constructions, including in the housing stock, in garden, vegetable gardening and dacha non-profit associations of citizens; in the field of increasing the energy efficiency of the economy of the constituent entities of the Russian Federation and municipalities);

– Ministry of Energy of the Russian Federation (on the issues of conducting energy surveys, information support of energy saving and energy efficiency measures, accounting for the use of energy resources).

Persons guilty of violating the legislation on energy saving of consumption and on increasing energy efficiency bear administrative, disciplinary and civil liability in accordance with the legislation of the Russian Federation (Art. 29 of the FZ № 261-FZ) [7].

Administrative liability for violation of the legislation on energy saving and on increasing energy efficiency is provided for by Art. 9.16 of the Russian Federation Code of Administrative Offenses. Thus, the failure of the persons responsible for the maintenance of apartment buildings to comply with the energy efficiency requirements for apartment buildings, the requirements and equipping with metering devices for the energy resources used, the requirements for mandatory measures to save energy and increase the energy efficiency of the common property of owners of premises in apartment buildings - entails the imposition of an administrative a fine for officials in the amount of 5 to 10 thousand rubles; for persons engaged in entrepreneurial activities without forming a legal entity - from 10 to 15 thousand rubles; for legal entities - from 20 to 30 thousand rubles. [8].

The legal position in the field of energy conservation and energy efficiency is based on the following principles:

- efficient and rational use of energy resources;
- support and encouragement of energy saving and energy efficiency improvement;
- consistency and complexity of measures to save energy and increase energy efficiency;
- planning of energy saving and energy efficiency improvement;
- the use of energy production and technological, environmental and social conditions (Art. 4 of the FZ №261) [7].

Analysis of the above law allows us to conclude that the role of the state should not be limited to the problem of financing. The state authorities of the Russian Federation are endowed with the following powers in the field of energy conservation and energy efficiency:

- formation and implementation of state policy in the field of energy conservation and energy efficiency;
- development and implementation of federal programs in the field of energy conservation and energy efficiency;
- coordination of energy saving and energy efficiency measures and control over and implementation of federal budgetary institutions, federal state unitary enterprises, state-owned companies, state corporations, as well as legal entities whose property is more than 50% of shares or stakes in the authorized capital that are owned by state corporations;
- the definition of goods that must contain information on energy efficiency, and the rules for applying such information;
- establishment of rules for determining energy efficiency classes of goods, shutdown of apartment buildings;
- determination of the requirements for the energy efficiency of buildings, structures, structures;
- establishment of principles for determining the list of mandatory measures for energy conservation and energy efficiency increase in relation to the common property of owners of premises in an apartment building;
- the establishment of requirements for the technical and energy efficiency of goods, works, services, the placement of orders for which is carried out for state or municipal needs;
- establishing the procedure for exercising state control over compliance with the requirements of the legislation on energy saving and on increasing energy efficiency;
- establishment of rules for the creation of a state information system in the field of energy conservation and energy efficiency and ensuring its functioning;
- the establishment of requirements for regional, municipal programs in the field of energy conservation and energy efficiency;

- the establishment of requirements for programs in the field of energy conservation and energy efficiency improvement of organizations carrying out regulated activities, if prices (tariffs) for goods and services of such organizations are subject to establishment by federal executive bodies;
- determination of forms and methods of state support in the field of energy conservation and energy efficiency and its implementation;
- implementation of federal state control over compliance with the requirements of the legislation on energy saving and on increasing energy efficiency;
- exercise of other powers, exceeding energy saving and increasing energy efficiency, assigned by this Federal Law, other federal laws and other regulatory legal acts of the Russian Federation to the powers of the state authorities of the Russian Federation.

Similar powers are assigned to the state authorities of the constituent entities of the Russian Federation, local authorities.

The produced, transmitted, consumed energy resources are subject to mandatory accounting using accounting for the energy resources used. Requirements for the characteristics of metering devices for the used energy resources of the survey are determined in accordance with the legislation of the Russian Federation.

The subject of the energy service agreement (contract) is the implementation by the contractor of actions aimed at energy saving and increasing the energy efficiency of the use of energy resources by the customer.

Taking into account the above, it can be concluded that one of the conditions for the proper implementation of legislation on energy saving is the implementation of high-quality state and municipal control by authorized bodies.

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以俄罗斯联邦《刑法》第117条为例，与COVID-19病毒大流行有关的家庭机构中心理暴力的犯罪学方面

**CRIMINOLOGICAL ASPECTS OF PSYCHOLOGICAL VIOLENCE  
IN THE FAMILY INSTITUTION ASSOCIATED WITH THE COVID-19  
VIRUS PANDEMIC ON THE EXAMPLE OF ARTICLE 117 OF THE  
CRIMINAL CODE OF THE RUSSIAN FEDERATION**

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本文分析了CAVID-19病毒大流行对俄罗斯联邦家庭研究所中心理暴力行为为增长的影响。这个问题的相关性不可否认。俄罗斯联邦内政部统计数字中家庭暴力指标的急剧上升证实了这一点。本文的目的是使用俄罗斯联邦刑法第117条（酷刑）来识别和披露暴露家庭成员之间暴力关系的犯罪学方面。

关键词：家庭暴力，心理暴力，COVID-19病毒大流行，人格，创伤后应激障碍

**Annotation.** *This article analyzes the impact of the CAVID-19 virus pandemic on the growth of psychological violence in the family Institute of the Russian Federation. The relevance of this problem is undeniable. This is confirmed by the sharp rise in domestic violence indicators in the statistics of the Ministry of internal Affairs of the Russian Federation. The purpose of this article is to identify and disclose criminological aspects that expose violent relationships between family members, using the example of article 117 of the criminal code of the Russian Federation – torture.*

**Keyword:** *domestic violence, psychological violence, COVID-19 virus pandemic, personality, post-traumatic stress disorder.*

The COVID-19 virus pandemic, which originated in the subprovincial city of Wuhan in the Hubei province of the people's Republic of China, has changed many areas of life.

For example, in accordance with the decree of the President of the Russian Federation from 02.04.2020 № 239 "On measures on ensuring sanitary and epidemiological welfare of the population on the territory of the Russian Federation in connection with the spread of novel coronavirus infection (COVID-19)" there was a period of days, as well as heads of higher Executive bodies of state power of subjects of the Russian Federation were instructed to begin the development and implementation of a range of restrictive measures that would ensure the reduction of the spread of the virus COVID-19.

The presidential decree actually approved the self-isolation regime. All this contributed to the fact that most families were in the "four walls". Undoubtedly, the house is the safest place for a person. But at this difficult time, when society was tense and uncertain about the future, for some people the house became a truly dangerous place.

The problem of domestic violence during the COVID-19 virus pandemic has become one of the most acute problems not only in the Russian Federation, but also around the world. So, in early April, UN Secretary-General Antonio Guterres noted that "many women in conditions of strict isolation due to COVID-19 faced violence where they should be completely safe: in their own homes"<sup>1</sup>. Official statistics denounced the "leading" countries in domestic violence during the COVID-19 virus pandemic. These include India, the United States, and Germany.

I would like to note that the victims of "domestic" crimes in 75% of cases are women, children in 20%. Men can also be exposed to domestic violence in 5% of cases.

Based on the statistics of the Ministry of internal Affairs for 2019, in the Russian Federation, more than 25% of crimes are committed in the family. Already at the beginning of April 2020, the indicators have increased by 2 times.

According to psychologists, the main reason for the increase in domestic violence was frustration and stress associated with the risk of Contracting pneumonia caused by the COVID-19 virus, social isolation, work suspension and falling incomes. I would like to note that these factors led to the fact that even in well-off families where there was no violence before, but one of the family members was disposed to neurosis, was mentally unstable, neurotic type of person, the police began to record violent actions. Unfortunately, domestic violence can be attributed to latent types of crime, because of close ties between family members, faith in the fix, as well as the fear that turning to the internal Affairs authorities will not help them, but the problem in the family learn many.

Domestic violence is different: it can be both physical and psychological in nature.

Psychological violence is understood as a form of moral and emotional

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<sup>1</sup> UN News: [website]. URL: <https://news.un.org/en/story/2020/04/1061052>.

influence on the individual, which causes a person to feel anxiety, depression, and post-traumatic stress disorders, which can later lead to mental disorders.

Russian legislation does not provide for a legal term-psychological violence. Despite this, in The special part of the criminal code of the Russian Federation in the dispositive part of articles: 110 (incitement to suicide), 117 (torture), 119 (threat of murder or causing serious harm to health) – you can see the terms "systematic humiliation", "mental suffering", "threat", which carries the meaning of psychological violence.

Psychological torture in the family may contain different methods. For example, the most common methods of psychological pressure can be considered: deprivation, coercion, threats and humiliation.

Analyzing the objective side of article 117 of the criminal code of the Russian Federation - causing physical or mental suffering by systematic beatings or other violent actions, we can say that torture is a type of psychological violence. Of course, psychological violence in most cases is realized through physical influence on a person.

So, an example of torture as a psychological trauma can be such a situation: a spouse whose psychological portrait consists of such qualities as authority, quick temper, after learning that his wife was given a ride home by a work colleague, decided to "talk" with her about it. During the conversation, the spouse humiliated his wife, shaved her bald head. To completely suppress the personality, I posted a video file of my wife's shaving on the Internet. These actions of the husband caused his wife haptophobia and severe depression, which was recorded by a psychiatrist. This example confirms the fact that psychological violence is often integral to physical violence. Scientists have already shown that experiencing mental violence increases the risk of various diseases. The consequences can be both physical health problems (gastrointestinal disorders, migraines) and psychological problems.

"The mental consequences of violent acts are of great medical, psychological and social significance. They can develop directly during the Psychotrauma, immediately after it, or after a certain period of time, at a distant stage.»<sup>2</sup> Their severity can range from short-term psychological reactions to severe mental disorders.

Children are the most vulnerable to psychological trauma from domestic abuse. The incidence of mental disorders in children is almost four times higher than in adults. Torture, as a type of psychological suppression of the child, carries problems in further socialization and personality development. Who statistics indicate that people who have experienced violence in childhood are more likely

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<sup>2</sup> Zharikov N. M. Morozov G. V., D. F. Kretinin Forensic psychiatry. 3rd ed., reprint. and add. M.: Norma, 2004. P. 254



to suffer from infectious and mental illnesses, as well as chronic diseases such as hypertension, diabetes and asthma.

One of the main problems of defining torture as a socially dangerous act aimed at causing psychological suffering is the burden of proving the psychological injuries caused. A special feature of this is the fact that each person is unique and everyone has their own reaction to psychological torture. People with a stronger psyche will not succumb to the psychological torture of a partner, while others, on the contrary, will experience a colossal suppression of their personality. Therefore, the main evidence of domestic violence will be the conclusions of a psychologist or psychiatrist, depending on the psychological state of the victim, as well as from his psychotype.

In addition to expert opinions, personal correspondence containing threats and elements of psychological pressure, as well as witness statements can serve as evidence of psychological violence at home.

OSCE Secretary-General Thomas Greminger has called on governments to take action to protect women and children as domestic violence increases amid the COVID-19 virus pandemic.

I would like to note the actions taken by Federal and regional authorities to reduce the level of domestic violence during the COVID-19 pandemic.

Thus, on March 31, 2020, the Russian Government Commission on crime prevention in the second part of its meeting formulated a number of recommendations on the prevention of domestic violence addressed to Federal and regional authorities. The regional authorities, in turn, provided for the operation of "hotlines" for victims of domestic violence, created help centers for victims of domestic violence during the period of self-isolation, and placed information on social services available to victims of domestic violence in police stations. Thus, in the Republic of Tatarstan, during the period of self-isolation, the women's crisis center "Fatima", located in the city of Kazan, and the Naberezhnye Chelny center for social and legal assistance to victims of violence "Nika" were active.

There is no doubt that work to counter domestic violence should be carried out not only in crisis situations, but also in normal times. For example, over the past two years, high-profile cases such as the case of the Khachaturian sister, the historian Sokolov, and the case of Irina Gracheva, whose husband cut off her hands, have exposed the gaps in legislation related to the criminal liability of domestic tyrants. The absence in the criminal code of the Russian Federation of such a crime as domestic violence, which includes both physical and psychological violence, leads to the fact that the abuser partner is not fully responsible for their actions, as well as victims of domestic violence do not seek help from the police, realizing that there is no absolute protection there.

In order to reduce domestic violence in the Russian Federation, the legislative

authorities should adopt a law that clearly defines the concept and essence of domestic violence and indicates the course of criminal prosecution in the form of private-public or public prosecution.

In turn, the authorities of the constituent entities of the Russian Federation must ensure that the police respond effectively to allegations of domestic violence. Victims should be given effective access to social assistance centers that respect the principle of complete anonymity. In addition, it was necessary to move to a more simplified procedure for obtaining a place in a temporary shelter for victims of domestic violence.

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以远东地区为例的非法提取（捕获）水生生物资源的责任问题  
**THE PROBLEM OF RESPONSIBILITY FOR ILLEGAL EXTRACTION  
(CATCH) OF AQUATIC BIOLOGICAL RESOURCES ON THE  
EXAMPLE OF THE FAR EASTERN REGION**

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由于人类对环境的不利影响，在文明发展的现阶段，世界上大多数国家都密切关注非法提取（捕捞）水生生物资源的责任问题。在本文中，考虑了非法提取（捕捞）水生生物资源的公共危险性问题，并通过具体化侵犯主题即堪察加半岛螃蟹的捕获并考虑了堪察加半岛的做法对这种犯罪的责任进行了分析。萨哈林岛被执行了。

关键词：刑事责任，生态犯罪，水生生物资源，环境保护，生态安全。

**Annotation.** *Due to the negative impact of man on the environment, at the present stage of development of civilization, most countries of the world pay close attention to the issues of responsibility for illegal extraction (fishing) of aquatic biological resources. In the presented article the question of public danger of illegal extraction (catch) of water biological resources is considered and the analysis of responsibility for this crime with concretization of a subject of encroachment, namely catch of the Kamchatka crab and taking into account practice of Kamchatka and Sakhalin is carried out.*

**Keywords:** *Criminal liability, ecological crimes, water biological resources, environmental protection, ecological safety.*

The field of ecology is considered the most significant among the objects of criminal law protection; procedures for legislation on the part of public relations, form the legislative base, the practice of law enforcement, and lead to active work with relevant international organizations. If these problems are more local in the Russian regions, then for the far Eastern region, the foreign orientation of this crime is noted as the main feature, which indicates an increased public danger of

these encroachments; this circumstance makes it difficult to objectively assess the harm caused by these crimes, causing objective difficulties in combating them. Preventing damage caused by environmental crimes of a transboundary nature, developing methods for its objective statistics, identifying its scale, and evaluating it would make an invaluable contribution to the preservation of ecosystems of individual States and the natural environment on a global scale, since experts note the threatening scale of negative anthropogenic impact on it<sup>1</sup>.

From 1997 to 2016, the following number of crimes under article 256 of the criminal code of the Russian Federation were registered (see table 1):

**Table 1**

1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
3279	4682	5489	6333	7817	9170	11062	13724	15146	19259

2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
18025	15841	17407	13644	8963	8172	7343	6566	6276	5469

Individuals were brought to justice for these crimes (see table 2):

**Table 2**

1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
4262	5458	7112	8006	9280	9328	10139	13116	14601	18048

2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
17103	14543	14096	12048	8231	7399	6980	6592	6612	5577

As can be seen from the above data, illegal extraction (fishing) of aquatic biological resources is one of the most common environmental crimes [1, p.104].

The subject of the crime is water biological resources. When describing this feature of the crime, the legislator used a generic concept, its content is disclosed in Federal law No. 166-FZ of December 20, 2004 "On fishing and conservation of aquatic biological resources" [2, article 1]. aquatic biological resources include fish, aquatic invertebrates, aquatic mammals, algae, and other aquatic animals and plants that are in a state of natural freedom. Otherwise:

1) aquatic animals – marine mammals (walruses, seals, sea lions, sea lions, dolphins, etc.), crustaceans (crayfish, crabs, shrimps, etc.), mollusks (squids, octopuses, scallops, mussels, oysters, etc.), echinoderms (trepangs, sea urchins, starfish, ophiurians, holothurians, etc.), intestinal-cavity aquatic organisms;

2) commercial marine plants – aquatic plants capable of autotrophic nutrition, i.e., the synthesis of all necessary organic substances from inorganic ones, which

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<sup>1</sup> See: Kuzmenko E. Yu. Institute for environmental impact assessment in international environmental law: autoref. Diss. ... doctor of law. - Kazan, 2019. - P. 6.

are commercial in a certain place and at a certain period of time, which is established by national legislation or international legal acts, or have a special legal status (for example, the so – called sea cabbage-kelp) [1, p.105].

The problem of illegal hunting and illegal extraction (catch) of aquatic biological resources has been familiar to Kamchatka and Sakhalin since the 90s.[3]. The subject of crimes related to the illegal extraction (fishing) of aquatic biological resources on the island and Peninsula of Russia is primarily the Kamchatka crab.

Kamchatka crab is considered a delicacy in South Korea, Japan and the United States of America. The demand for this Russian product is quite high. However, the export of Kamchatka crab outside the Russian Federation is not easy; the procedure for its export is limited by legal requirements. In the previous version of the fishing Rules for the far Eastern fisheries basin, it was prohibited to transport live, fresh and chilled crabs obtained in the territorial sea, economic zone and on the continental shelf, as well as in the internal sea waters of the Russian Federation outside the exclusive economic zone of Russia. The catches themselves had to be delivered for processing or sale only to Russian enterprises. The new version of clause 16 implies the legal possibility of exporting this product, but only after the catch is delivered to the customs territory of the Russian Federation.

However, this did not change the situation. Illegal extraction (fishing) of aquatic biological resources continues to gain momentum. The reason is that the generally allowed catch of crabs would bring poachers less profit than they received in violation of the law. A. A. Savelyev, who was in 2010 the head of the center for public relations of the Federal Agency for fisheries of the Russian Federation, in an interview[3] indicated that in 2009 the generally allowed catch of crab was just over 50 thousand tons. Referring to Korean, Japanese and American sources, he also noted that there were 103,300 tons of the product abroad. The estimated profit of poachers, according to Savelyev, for 100 tons of product is equal to 1 million dollars. These figures have increased significantly in recent years. The total allowable catch of Kamchatka crab in 2017 is approximately 70 thousand tons. This is 2 thousand crab-fishing vessels. And even with the increase in the number of allowed, the situation does not change. The total revenue from crabs is 145 billion rubles a year. For reference, it should be noted that the cost of the product in the ports of Japan and South Korea is \$ 32 per 1 kg.

Arkady Gontmacher, known as the President of the once-existing company Global Fishing Inc, after accusing him of illegally acquiring Kamchatka crab, claimed that he bought this product exclusively in Busan, in the port of South Korea. He explained his activities by the fact that it was impossible to trace the purchase of quotas, sale and resale of goods. This was possible only with black caviar, but there was no corresponding inventory for such a position as Kamchatka crab.

Such shortcomings in the regulation of the sale of Kamchatka crab untie the

hands of many entrepreneurs in the field of fraud with the extraction of Kamchatka crab.

According to Russian legislation, the Kamchatka crab is considered as an aquatic biological resource[2].

It should be noted that the current version of the Criminal Code of the Russian Federation does not contain a General article on poaching. This environmental crime involves different criminal liability, depending on where and how it was committed. Thus, the extraction (catch) of natural resources of the continental shelf of the Russian Federation or the exclusive economic zone of the Russian Federation, carried out without the necessary license (quota), implies liability under part 2 of article 253 of the criminal code of the Russian Federation, and not under art. 256 of the criminal code of the Russian Federation [4] (Illegal extraction (catch) of aquatic biological resources).

On the objective side, the crime under consideration is expressed in illegal extraction (catching) water biological resources specified in article 256 of the criminal code of the Russian Federation. Illegal mining should be considered if it is performed in violation of the rules established by regulatory legal acts. Due to the blank nature of the rule in question, to determine the nature of the violated rule, it is necessary to refer to the legislative norms that establish these rules. They may be Federal in nature, relate to a particular region, or operate on the territory of a subject of the Russian Federation [1, 105-106 pp.].

Another characteristic feature of the crimes under consideration is that they are committed within certain territories. In relation to the far Eastern region, it is necessary to define the boundaries of the continental shelf and the exclusive economic zone. "The continental shelf of the Russian Federation includes the seabed and subsoil of underwater areas located outside the territorial sea of the Russian Federation throughout the natural extension of its land territory to the outer border of the underwater margin of the continent. The underwater margin of the continent is a continuation of the continental massif of the Russian Federation, which includes the surface and subsurface of the continental shelf, slope and rise"[5]. "Exclusive economic zone of the Russian Federation — a sea area located outside the territorial sea of the Russian Federation and adjacent to it, with a special legal regime established by this Federal law, international treaties of the Russian Federation and international law" [6].

Under illegal extraction (catch) of aquatic biological resources (article 256 of the criminal code) [4] refers to "actions aimed at their removal from the environment and (or) taking them in violation of environmental laws (such as obtained in accordance with the law permits, in violation of the provisions of this resolution, in prohibited areas in respect of certain types prohibited for the extraction (catch) of aquatic biological resources, prohibited time, using illegal fishing gear),

provided, that such actions were committed by a person using a self-propelled floating transport vehicle, explosives or chemicals, electric current or other prohibited tools and methods of mass destruction of aquatic biological resources, in spawning areas or on migration routes to them, in specially protected natural territories, in an environmental disaster zone or in an environmental emergency zone, or when such actions caused major damage" [7].

Fishing of aquatic biological resources within the continental shelf or exclusive economic zone without a special permit is fully covered by part 2 of article 253 of the criminal code of the Russian Federation [4]. Exceptions are those acts that have the characteristics provided for in parts 1 and 3 of article 256 of the Criminal Code. This is noted In the resolution of the Plenum of the Supreme Court of the Russian Federation No. 26 of 23.11.2010 (ed. 31.10.2017) "On certain issues of application by the court of legislation on criminal liability in the field of fishing and conservation of aquatic biological resources (part 2 of article 253, articles 256, 258.1 of the Criminal Code of the Russian Federation).

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冠状病毒是不可抗力事件，是向单一供应商购买商品，工程和服务的基础  
**CORONAVIRUS AS A FORCE MAJEURE EVENT AND THE BASIS  
FOR PURCHASING GOODS, WORKS AND SERVICES FROM A  
SINGLE SUPPLIER**

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本文介绍了面对由新的冠状病毒感染引起的不可抗力而缔结政府合同的方法之一。事实证明，新的冠状病毒感染是不可抗力事件。订立国家合同以消除单个供应商的新冠状病毒感染后果的可能性是合理的，同时，指出了这种订立国家合同方法的现有缺点。

关键词：冠状病毒；政府合同；合同制度；从单一供应商处购买；不可抗力；购买

**Annotation.** *The article describes one of the ways to conclude a government contract in the face of force majeure caused by a new coronavirus infection. It is proved that a new coronavirus infection is a force majeure event. The possibility of concluding a state contract in order to eliminate the consequences of a new coronavirus infection from a single supplier is justified, at the same time, the existing disadvantages of this method of concluding a state contract are pointed out.*

**Keywords:** *coronavirus, government contract, contract system, purchase from a single supplier, force majeure, purchase.*

The Constitution of the Russian Federation stipulates that a person, his rights and freedoms are the highest value. The preservation of human life and health is the primary, basic guarantee of the state.

This constitutional provision is based on the universally recognized principles and norms of international law enshrined in the most important legal acts: universal Declaration of human rights 1948, the International Covenant on civil and political rights, 1966, International Covenant on economic, social and cultural rights, 1966, Convention on the protection of human rights and fundamental freedoms 1950 etc.

On March 11, the who Director General said that the spread of the disease caused by the new type of coronavirus COVID-19 "can be regarded as a pan-



demic."

According to article 1 of the Federal law "On sanitary and epidemiological welfare of the population", an epidemic should be understood as infectious human diseases characterized by a severe course, a high level of mortality and disability, and rapid spread among the population.

An epidemic that is characterized by the spread of an infectious disease on the territory of a country, the territory of neighboring States, and sometimes many countries of the world, is called a pandemic (from the Greek - all the people). Это первая пандемия, причиной которой послужил коронавирус. Ранее в истории человечества пандемиями признавались вспышки чумы и холеры, свиного гриппа H1N1 и распространение ВИЧ-инфекции.

В указанных условиях перед государством особенно остро стоит вопрос об обеспечении эффективного функционирования системы снабжения медицинской продукцией и другими товарами первой необходимости.

Система государственных закупок является инструментом регулирования социально-экономических процессов, роль которого трудно переоценить в условиях нестабильной экономической ситуации.

Осуществление закупки согласно положениям законодательства о контрактной системе для заказчика является довольно трудоемкой процедурой, а действующий Федеральный закон от 05.04.2013 №44-ФЗ «О контрактной системе в сфере закупок товаров, работ, услуг для обеспечения государственных и муниципальных нужд»<sup>1</sup> (далее - Закон о контрактной системе) усложняет данный процесс, вводя определенные алгоритмы, критерии и ограничения.<sup>2</sup>

Article 93 Of the law on the contract system provides for cases when purchases can be made in circumvention of competitive procedures.

Paragraph 9 of part 1 of article 93 of this law States that the purchase from a single supplier may be made in the event of the purchase of certain goods, works, services as a result of an accident, other emergencies of a natural or man-made nature, force majeure, in the event of a need for emergency medical care or emergency medical care, and the use of other methods for determining the supplier (contractor, performer) that require time is not appropriate.

The introduction of the "force majeure" category in the law on the contract system is caused by the need to provide customers with the opportunity to make purchases as soon as possible in order to promptly meet the needs that suddenly arose for reasons unforeseen for the customer .

The concept of force majeure is disclosed in the provisions of clause 3, article

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1 Federal law No. 44-FZ of April 5, 2013 "On the contract system in the sphere of procurement of goods, works, and services for state and municipal needs" // Collection of legislation of the Russian Federation. – April 8, 2013 – No. 14 – article 1652.

2 Fedyakina O. V. Purchasing from a single supplier, Moscow: "Right of Access", 2017.

401 "basis of liability for breach of obligations" of the Civil code of the Russian Federation (further – GK the Russian Federation): unless otherwise provided by law or contract, the person has not performed or has improperly performed the obligation in entrepreneurial activity, bears responsibility if will not prove that proper performance was impossible due to force majeure, ie extraordinary and unavoidable under the given circumstances; such circumstances do not include, in particular, violation of obligations on the part of the debtor's counterparties, the lack of goods necessary for execution on the market, or the lack of necessary funds for the debtor.

The application of the above provisions explained in paragraph 8 of the Resolution of Plenum of the Supreme Court of the Russian Federation of March 24, 2016 No. 7 "On application by courts of certain provisions of the Civil code of the Russian Federation on liability for breach of obligations" : in virtue of paragraph 3 of article 401 of the civil code for recognition of the circumstances of force majeure it is necessary that it was extraordinary and unavoidable under the given conditions in nature;

the requirement of an emergency implies the exclusivity of the circumstance under consideration, the occurrence of which is not usual in specific conditions;

unless otherwise provided by law, a circumstance is recognized as unavoidable if any participant in civil turnover engaged in similar activities with the debtor could not have avoided the occurrence of this circumstance or its consequences.

As O. S. Ioffe correctly noted, the indication of the extraordinary nature of an irresistible force is very important, because, in accordance with its objective nature, it focuses on the inadmissibility of qualifying any Vital fact as an irresistible force .

Some scientists reveal the sign of extreme pointing to its scale , the extraordinary power of manifestation

. There is also no understanding of the sign of unavoidability in civil law. Some scientists assume that circumstances are insurmountable for a particular harm-doer, taking into account the possibilities available to them . According to other lawyers, a phenomenon will be considered force majeure if it is unavoidable for any person, taking into account the level of development of science and technology of the entire society .

When assessing unavoidability, it is possible to use a compromise approach, the essence of which is the need to take into account not only the capabilities of a particular debtor, but also the capabilities of similar individuals and organizations by type and conditions of activity . Thus, given the speed and scale of the spread of a new coronavirus infection (COVID-19), as well as the nature of its origin, it seems possible to recognize it as a force majeure event.

The Ministry of Finance of the Russian Federation, in a letter dated 19.03.2020

No. 24-06-06/21324 "On procurement from a single supplier (contractor, performer) when a high-alert mode is introduced", reported that the spread of a new coronavirus infection caused by 2019-NCOV is of an emergency and unavoidable nature, and therefore is a force majeure event. Given that the spread of a new coronavirus infection caused by 2019-NCOV is a force majeure event, the customer has the right to make a purchase from a single supplier on the basis of paragraph 9 of part 1 of article 93 of Law No. 44-FZ. In this case, the condition that the purchased goods, works, and services are not included in the list of goods, works, and services necessary for providing humanitarian assistance or eliminating the consequences of natural or man-made emergencies, approved by the order Of the government of the Russian Federation of 30.09.2013. No. 1765-R, not applicable due to the introduction of a high-alert mode.

The Federal Antimonopoly service of Russia also Reported by letter no. IA/21684/20 dated 18.03.2020 that this situation is a force majeure event due to the coronavirus pandemic (COVID-19), which must be taken into account when considering complaints, cases of administrative violations, requests for inclusion in the register of unfair suppliers and conducting inspections. At the same time, the FAS of Russia also draws attention to the fact that in accordance with paragraph 9 of part 1 of article 93 Of law 44-FZ, purchases of certain goods, works, and services due to force majeure may be made from a single supplier.

In the above-mentioned letter, the Federal Antimonopoly service of Russia emphasizes that purchases aimed at preventing, preventing and eliminating the consequences of the spread of COVID-19 can be made from a single supplier, provided that there is a causal relationship between actions to prevent, prevent and eliminate the consequences of the spread of coronavirus infection and the subject of such purchases.

Undoubtedly, when it is necessary to eliminate the danger to life and health of people, take measures to provide them with medical care, speed is required and there is no time for competitive procedures. The actions of both customers and suppliers are dictated by extreme necessity, and this is justified.

Single source procurement is a non – competitive method of selecting a counterparty when entering into a contract, in which a proposal to conclude a contract is sent to a specific supplier without conducting competitive procurement procedures .

According To N. A. Kurz, the distinctive feature of this method of procurement is its simplicity. In essence, the entire procedure for concluding a state or municipal contract is reduced to two stages, known as the "normal" method of concluding a contract: sending an offer and receiving acceptance.

Being the simplest possible and most time-consuming method, purchasing goods, works and services from a single source is already the most common meth-

od of purchasing. In the current situation, its role will increase many times in order to prevent an emergency.

However, this method of purchasing is not without significant drawbacks in terms of transparency, competition, and efficiency of budget spending.

Even pre-revolutionary Russian civilists noted that the state does not act by itself, but through well-known bodies, and experience shows the urgent need to accurately determine the state authorities' course of action when concluding contracts, especially those for which a significant part of the state's property is used.

As stated by Mikhail Mishustin at an Operational meeting with Deputy Prime Ministers held on 23.03.2020, "we have allocated more than 23 billion rubles to support the medical and pharmaceutical industry in just these two days."

In crisis conditions, the need for rational and efficient spending of budget funds is increasing. Meanwhile, when purchasing from a single supplier, due to the natural lack of competition, it is not possible to reduce the price compared to the originally stated price, and therefore save budget funds. In this connection, there are concerns about a significant overestimation of the value of contracts.

In addition, government orders can play a significant role in the context of the financial and economic crisis and overcoming its consequences. Through the system of state orders, it is possible to support the real sector of the economy, domestic producers, including small and medium-sized businesses and other categories of economic entities. Competition in public procurement and the possibility of obtaining state contracts for many small and medium-sized companies was one of the few opportunities to "stay afloat". The customer, purchasing goods, works or services from a predetermined person, usually a monopolist in a particular area, does not encourage entrepreneurs, which can negatively affect the development of the state's economic potential.

As L. G. Karanatova pointed out, "in General, the Federal contract system is intended to become the most important anti-corruption institution in the field of public procurement, aimed at strengthening the economic partnership between the state and business». The constant choice of the same counterparty, according to N. A. Kurz, is a powerful corruption factor that arises in connection with the threat of forming informal potentially corrupt relations between Representatives of the customer and the only such counterparty.

At the same time, N. A. Kurz emphasizes that in these conditions, the only anti-corruption mechanism remains the customer's obligation to coordinate or notify the Supervisory authority about purchases from a single source, and the customer must justify the impossibility (inexpediency) of using other methods of procurement, calculating the contract price and other essential terms.

It is impossible not to agree with the author that these mechanisms are a priori not sufficiently effective and are intended rather to complement other means of

control over state and municipal customers.

It seems that in the current situation, further assessment of the validity of the use of the "force majeure" category by customers when making purchases from a single supplier in certain cases will be carried out mainly in the course of judicial proceedings within the framework of judicial control.

Thus, the contract procurement system plays a special role in the unstable economic and social situation in the country, aimed at timely satisfaction of public needs, the result of which should ultimately be the effective performance of the state's socio-economic functions.

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组织和管理创新对教育组织发展的影响  
**INFLUENCE OF ORGANIZATIONAL AND MANAGERIAL  
INNOVATIONS ON THE DEVELOPMENT OF AN EDUCATIONAL  
ORGANIZATION**

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本文分析了具有实施组织和管理创新经验的创新平台。结果表明，为了提高满足现代劳动力市场要求的竞争性专家的培训质量，有必要在研究和实施组织和管理创新的经验的基础上，启动教育组织的创新活动，OUI开发和实施最有希望的战略课程之一是创造条件，使所有员工参与发起和开发创新的创新过程，从而形成创新的企业文化和激励创新活动的机制。

关键词：职业教育，创新，管理，创新管理，组织和管理创新，教育组织

**Abstract.** *The article analyzes innovative platforms that have experience in implementing organizational and managerial innovations. it is shown that in order to improve the quality of training of competitive specialists who meet the requirements of the modern labor market, it is necessary to activate innovative activities of educational organizations based on the study and development of experience in implementing organizational and managerial innovations, one of the most promising strategic courses for the development and implementation of OUI is to create conditions for involving all employees in the creative process of initiating and developing innovations, thereby forming an innovative corporate culture and mechanisms for stimulating innovation activity.*

**Keywords:** *professional education, innovation, management, innovative management, organizational and managerial innovations, educational organization.*

Innovative activity in a modern educational institution of any level assumes the presence of local, modular and systemic changes aimed at creating and de-

veloping an innovative environment, which is a fundamental condition for the progress of the organization. For its formation it is necessary to consider various factors contributing to and preventing innovative development of educational institutions, among which a significant place is given to innovative breakthroughs in leadership by administrative team.

The system of Russian professional education in the last decade has been in a state of constant reform and modernization, the main core of which is the focus on continuous development, achieving a high standard of quality of the content and technologies of education, and improving the efficiency of its management.

Thus, the strategic goals of the state program of the Russian Federation "Development of education" (hereinafter referred to as the Program) are: quality, accessibility of education and online education, the implementation of which is impossible without effective reform and development of Russian education that meets the basic requirements of modernity [5]. According to the program, the main areas of development and improvement of the competitiveness of the vocational education system include the following: providing training of highly qualified specialists and workers in accordance with international standards and advanced technologies, demonstrating the level of training that meets the standards of WorldSkills Russia, including the most popular professions and specialties of secondary vocational education (the complex project "TOP-50»); development of modern educational infrastructure, including for people with disabilities; improving the professional level of teachers and managers.

At the same time, the implementation of these areas of professional education development, including at the regional level, is hindered by a number of difficulties:

- the lack of a reasonable medium-term forecast of personnel needs that ensures the socio-economic development of the country and the region, which results in uncertainty and deformed structure of training;

- destruction of traditional and instability of new links between educational institutions and production, avoidance of potential employers from participating in the training process;

- a significant number of professional educational organizations (hereinafter referred to as VET) do not meet the modern requirements of the economy and specialized industries);

- some managers underestimate the need for innovative development based on modern management and marketing theories and practices;

- lack of replenishment of the personnel potential of VET by managers and teachers who have experience in managerial and professional activities in modern production, and a number of others.

With the undoubted significance of the research in the theory and practice of professional education, we can state that there are contradictions between:



- modern requirements of employers to the quality of training that corresponds to the content of professional activity, and limited opportunities to meet them with the modern system of professional education;
- urgent requests of the state to build up the innovative potential of VET and the lack of preparedness of the management systems of educational organizations for changes with an acute shortage of resources necessary for the introduction of innovations that ensure the development and achievement of a high level of quality of professional education;
- the objective need to improve the management of a professional educational organization through the introduction of innovations and the lack of scientific ideas and practical experience about the possibilities of their application in order to accelerate and improve the solution of the goals set for the institution, the steady development of the organization as a whole.

The revealed features of the development of the professional education system at the present stage allow us to conclude that the implementation of the set strategic goal, overcoming emerging difficulties and leveling contradictions is possible on the basis of innovative managed transformations that can give it stability in a competitive environment and significantly increase the effectiveness of its development.

The organizational structure of management is one of the key concepts of management, closely related to the goals, functions, management process, the work of managers and the distribution of powers between them. Within this structure, the entire management process (flow of information and decision-making) takes place, involving managers of all levels and professional competencies.

The organizational structure of the project can be: functional-oriented; matrix (weak, balanced, strong); project-oriented. The types of organizational structures are very diverse, which allows you to choose the most appropriate one depending on the scale and features of the project.

Because of their novelty, project offices (even for managing only information projects) are characterized by an extreme variety of structures, tasks performed, and the value they represent for their organizations. Other elements of corporate governance that are often used in conjunction with project offices are management committees and Supervisory boards.

However, most project offices have a number of common features, goals, and tasks. Project offices perform the following functions:

1. Develop, implement and support corporate methodology project portfolio management, including policies and regulations.
2. They are an essential element of organizational development, providing support for change management, project execution integrity, and employee training.
3. Support the process of creating a project portfolio: developing priorities,

collecting project requests, analyzing and including them in the portfolio (stage-gate process).

4. Develop and Maintain a resource model and process for the project portfolio: types, roles, demand forecast, knowledge and skill requirements, accounting method, analysis, and reallocation.

5. Monitor the execution of the portfolio, programs and projects, analyze deviations from plans, and help make decisions on managing project changes (slow down the project, speed up, stop).

6. Support the accumulation and use of knowledge: archiving materials of completed projects, error analysis, and transfer of experience through training.

To successfully complete these tasks, the project office must be equipped with advanced tools to support and automate the functional components of its work, including investment planning, project management, resource management, collaboration, business analysis, and key performance indicator management for modeling, evaluating, and making decisions on a portfolio of projects and programs.

The analysis of innovative organizational and managerial practices presented below in the system of national education is carried out on the examples of educational institutions of various levels, since any of these examples can be successfully adapted in professional educational organizations.

In the context of modernization of educational organizations, one of the most successful areas is the formation of a portfolio of projects as a system for managing the educational process. A project portfolio is not only a set of combined projects to achieve more effective management and strategic goals, but also an organizational mechanism that promotes the integration of educational projects into the educational process management system. The key advantages of portfolio management include: mobility, resource optimization, easy adaptation, synergy, and creative activity.

One of the priority vectors of the state policy is the creation of a modern, effective system of professional education focused on the needs of enterprises, able to meet the needs of the domestic economy and meet the challenges of innovative development of various economic sectors.

According to Federal law No. 273-FZ of 29.12.2012 "On education in the Russian Federation", article 27. "... professional educational organizations... may create departments and other structural divisions that provide practical training for students on the basis of other organizations that carry out activities in the profile of the corresponding educational program " [8]. Structural divisions make it possible to conduct all types of training sessions and carry out scientific activities.

From the experiences of the departments and other structural subdivisions of Universities on the basis of industrial organizations to form the structural units of the necessary basic conditions: compliance with the implemented educational or-

ganization educational program profile of the organization; the existence of assets necessary to achieve the objectives of the structural unit; the provision of practice, practical exercises, seminars, laboratory practical and other learning activities in the curriculum, in the structural division; providing the organization with conditions for students to prepare final qualifying works and other types of work provided for in the educational program; creating safe learning conditions; compliance with special conditions for students with disabilities to receive education.

Reasons for creating a structural unit: a) the decision of the pedagogical Council (academic Council) of an educational organization to create a structural unit (an extract from the minutes of the meeting of the pedagogical Council (academic Council) is sent by the educational organization to the organization within 10 calendar days from the date of the relevant decision); b) the agreement on the creation of a structural unit concluded between the educational organization and the organization.

Business incubation is one of the tools for effective education, as a result of OUI, which require serious financial investments and management decisions.

On the territory of the Stavropol territory, the experience of the following innovative platforms with experience in implementing organizational and managerial innovations deserves attention: Nevinnomyssk state humanitarian and technical Institute-the topic of innovation activity "Models, mechanisms and technologies for developing the practice of dual education in professional educational organizations and higher education organizations of the Stavropol territory»; Stavropol regional College of computer engineering and electronics - the theme of innovation activity "Creating a universal barrier - free environment in the system of secondary vocational education"; Stavropol College of service technologies and Commerce-the theme "center for healthy nutrition as a factor in improving the quality of training of specialists in the food processing industry and public catering of the Stavropol territory".

The review of foreign and domestic practice shows that in order to improve the quality of training of competitive specialists who meet the requirements of the modern labor market, it is necessary to activate the innovative activities of educational organizations based on the study and development of experience in implementing organizational and managerial innovations, which include the creation of an innovative flexible infrastructure based on the integration of science, education and practice.

The effectiveness of modern professional educational organizations, and any of its structural units is directly related to "...the operational development of the administrative and teaching staff required for innovative activities consisting in the development and implementation of innovative strategic documents of development programmes and activities of the institutions, concepts of the educational

system, additional educational programs, programs of scientific and experimental platforms, innovation projects, development of scientific-methodical services [3].

Any innovative activity at the present stage requires special management techniques, new methods, tools and forms of organization of the educational process, as well as monitoring of introduced and ongoing innovations" [7]. Organizational and managerial changes carried out by a professional educational organization are related to innovation activities and, therefore, require similar approaches to their management.

Innovation management performs certain functions (forecasting, planning, analysis of the external environment, analysis of the internal environment, management decision-making, motivation, control), which determine the formation of the structure of the management system of an educational organization in the implementation of the innovation process.

Search for an idea aimed at solving the identified problems and serving as the Foundation for this innovation; organization of innovative activities that will result in this innovation; the process of promotion and implementation innovation in education is the essence and Foundation of innovation management, including OUI.

A more complete definition of innovation management in an educational institution is formulated by the author's team - E. N. Belova, G. A. Gurtovenko, S. V. Butenko, N. F. Yakovleva, and is considered as "purposeful activity of subjects of management at various levels, aimed at meeting any educational needs and achieving more effective results of activities and ensuring the continuous development of the entire managed system of an educational institution through comprehensive activities to create, develop innovations in the practice of teaching and upbringing, dissemination and exchange of pedagogical experience, management of all resources of an educational institution, development of new forms of interaction with society, it is a process that includes strategic marketing, scientific research, organizational and technological preparation for creating and registering innovations in the practice of teaching and upbringing, dissemination and exchange of pedagogical experience, development of new forms of interaction with society, their implementation and dissemination in other areas, aimed at meeting any educational needs" [6].

The focus on innovative development imposes new requirements to the methodology of VET management activities.

Thus, before you start learning or creating a new one, you need to learn how to manage innovation processes in a new way. The study of the experience of educational organizations allows us to make a clear conclusion that the use of outdated forms and methods does not allow us to effectively and efficiently solve topical issues of management of educational institutions. However, in modern Russian

education, there are examples of not only failures and mistakes, but also positive experience of dynamic development of organizations, which is due to the effectiveness of managerial work, thoughtful problem solving, and the use of various approaches.

In the search for optimal options for innovative development of vocational education systems, the work of scientists: P. F. Anisimov, A. G. Bermus, V. P. Bepalko, A. P. Yegorshin and others, who have made a significant contribution to the vision of innovative approaches to the development and improvement of vocational education, is particularly relevant. In their monograph, E. N. Belova, G. A. Gurtovenko, S. V. Butenko, and N. F. Yakovleva proved Separate approaches to managing the development of innovative activity.

Summarizing the research results, we can conclude that in the theory and practice of management in education, the following scientific approaches to innovation management are known: complex, integration, marketing, functional, dynamic, process, normative, quantitative, empirical, administrative, behavioral, situational, system, program-target approach, approach from the position of a cooperative system, approach from the position of human relations, etc.

As practice shows, to achieve positive and predictable performance results, modern managers often use an integrated approach that combines several complementary ones: functional (it is basic and dominant, in which management is carried out on the basis of the implementation of General and special management functions), process (performance of functions is a process), system (the main idea - any decision (action) has consequences for the whole system), situational (situational focuses on the differences between organizations and within organizations, trying to identify relevant variables of a situation and their impact on the performance of the organization as a whole), management by objectives (in the management of organizations, particularly, identifies its problems, and to address any challenges in achieving objectives, a program, plan its solution and achieve the objective), marketing and from the perspective of human relations.

Thus, it is determined that the following borrowed tools and methods are common for a number of management disciplines, including innovative management for managing organizational changes [1; 2; 4].

According to the company management monitoring reports by the international consulting Agency Bain&Co, today, in addition to the well-known tools, there is a comprehensive tool "change program management", which is one of the ten most popular.

However, despite the increased interest in organizational and managerial innovation changes, there is still a need to develop objective approaches to their development.

Many works of scientists are devoted to the management of innovative chang-

es in education. Noting the General, it should be noted that for the introduction and extensive use of innovative approaches and well-known tools in the management of OSI in professional educational organizations, the following organizational actions will be rational: identification of best practices in the field of management innovations of other educational organizations and its implementation (benchmarking); development of the best models and technologies for solving problems that currently exist; regular holding of various conferences, seminars, participation in webinars with discussion of issues related to the innovative approach; creation of a coordination center for the dissemination and transfer of experience in the field of innovation in the management of educational institutions.

It is recommended that the system for implementing innovations in VET should include the following subsystems: organizational, consisting of structures that coordinate the innovation process; technical, which includes the latest computer equipment and technologies, multimedia tools and resources; information (information systems and technologies); scientific, consisting of its own innovation center, individual consultants and experts; economic (attracting funds from the budget and extra-budgetary funds); development of a mechanism for stimulating (material and moral) innovative abilities of personnel; social, providing for training, retraining and advanced training of personnel, creating an optimal socio-psychological climate in the team, improving working and leisure conditions of employees, overcoming socio-psychological barriers that prevent innovation; regulatory - local legal acts regulating the innovation process, the activities of designated structures and specialists.

In accordance with the above, the following periodization of the stages of innovation management in VET is possible, both in General and organizational and managerial innovation changes in particular: stage

I. Awareness of the importance, necessity and inevitability of future transformations by one of the members of the VET administrative team, i.e. the presence of a kind of "ideological inspirer" and "generator" of future ideas.

Stage II. Formation of their own team - which implies not so much an administrative (managerial) team, but ideological supporters from the teaching staff, methodically and technologically prepared for the introduction of a particular innovation.

Stage III. Choosing a strategy for developing and implementing innovations. Motivation of members of the teaching staff and formation of teachers' readiness for innovation.

Stage IV. Forecasting the future and problem analysis of VET, building a "problem field" and determining the main (key) problem of your organization.

Stage V. Based on the results of the problem analysis and the identified key problem – search, selection and development of a project idea for the development

of the OU for the nearest period.

Stage VI. Defining specific management actions to implement the developed idea, i.e. a) defining the goal of innovation management, b) choosing an innovation management strategy, C) drawing up a plan or program for its implementation, d) defining innovation management techniques.

Stage VII. Organization of work on the project (program) implementation):

a) implementation of an innovation project within the selected organizational structure; b) transfer and diffusion of innovation.

Stage VIII. Monitoring (tracking) steps to implement the project idea in order to correct subsequent management actions.

IX the stage. Monitoring the implementation of the planned program. Analysis and evaluation of the effectiveness of innovation management techniques. Adjustment of innovation management techniques.

In implementing the stages of innovation management, a special place in the organization belongs to the subjects of innovation management. In General, such subjects for the implementation of individual innovation functions can be: managers at various levels who perform General management functions within the innovation cycle; innovation managers who are responsible for the implementation of the innovation cycle for various types of innovations; dedicated structural divisions; temporary creative associations, etc.

It follows from the above that it is possible to use the following forms of management of this activity: functional management (allocation of functions of the company's management personnel, individual management divisions and services); target management (creation of target management subsystems: personnel, innovation, quality, resources, etc.); management system as a whole (implementation of integrated management rationalization).

Any innovative project can bring an effect: economic, social, environmental, etc.

An important step is to assess the potential of the management system's innovative susceptibility [3].

Thus, the most accessible way to assess the effectiveness of OSI, as a condition for the development of VET, is to compare the functioning of the organization (one or more structural divisions that have undergone management innovations) before and after changes based on qualitative or quantitative positive changes. However, it should be noted that in its true form, the effect of the introduction and implementation of OUI is very problematic.

It is worth noting that OUI, as well as innovative activities in General, require a favorable and supportive environment, an open educational space that reflects "...the dynamic relationship of educational concepts (value-semantic guidelines, goals, norms of educational activity), ways to organize and implement them in

specific educational institutions, projects, strategies and practices. In social terms, the openness of the educational space is expressed in the current state of multiplicity, diversity and disagreement of strategic lines and directions of development" [6].

A favorable innovation environment involves creating a creative atmosphere, cultivating interest in initiatives and innovations; initiating search educational systems and mechanisms for their comprehensive support; integrating the most promising innovations and productive projects into real educational systems and transferring them to the mode of permanent search and experimental ones.

Thus, one of the most promising strategic courses for the development and implementation of OUI is to create conditions for involving all employees in the creative process of initiating and developing innovations, thereby forming an innovative corporate culture and mechanisms for stimulating innovation activity.

An essential condition for the formation and development of innovative activities in an educational institution is the presence of a new type of management personnel with a high level of development of managerial competence, which "is a subcompetence that harmoniously integrates such competencies as professional and socio-personal" [6].

The professional competence of a top Manager of an innovative educational institution includes competencies in various types of its activities: innovative, functional, strategic, research, information and analytical, legal, economic, and communication. Social and personal competence is associated with the psycho-physiological characteristics of the leader's personality and their manifestations in society: emotional, personal, humanistic, social and communicative; have will and perseverance, stress resistance.

Consideration of the conditions and methodology of innovative management, analysis of foreign and domestic practice shows that the main obstacles to the successful development of management innovations are: a lack of understanding of the essence and role of organizational and managerial changes in modern realities; underdeveloped methods, management procedures and managerial competencies; insufficient motivation and weak interest on the part of staff. It is worth noting the neglect of factor analysis of external and internal environments, which leads to underestimation of situations that provoke conflicts, and employees' resistance. There are no real intentions to show initiative, innovative activity, and improve management. Therefore, special attention should be paid to the study and development of domestic and foreign experience in managing organizational innovations, which will speed up innovation processes in professional educational organizations.



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通过音乐伴奏预防和纠正体育课学生的消极情绪状态  
**PREVENTION AND CORRECTION OF NEGATIVE EMOTIONAL  
STATES IN STUDENTS IN PHYSICAL EDUCATION CLASSES BY  
MEANS OF MUSICAL ACCOMPANIMENT**

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本文考察了音乐伴奏的影响及其与体育锻炼对人体和心理的影响相关的特征。在与学生进行的体育课中使用音乐来预防和纠正负面情绪状态的可能性已得到证实。指出了体育文化中音乐伴奏的类型，并给出了它们的简要特征，音乐选择要求以及在课程各部分中使用的建议。

关键词：学生，体育教育，音乐伴奏，心理状态，预防

**Annotation.** *The article examines the features of the influence of musical accompaniment and their associated with physical exercises impact on the human body and psyche. The possibilities of using music in physical culture lessons with students for the prevention and correction of negative emotional states have been substantiated. The types of musical accompaniment in physical culture are indicated and their brief characteristics, requirements for the selection of music and recommendations for use in various parts of the lesson are given.*

**Keywords:** *students, physical education, musical accompaniment, psycho-emotional state, prevention.*

In modern conditions, the number of factors of negative influence on the psycho-emotional state of a person is increasing. Student youth are especially vulnerable. This is due to the generally known factors common to all mankind - the rapid pace of life, a high level of competition in the professional sphere, the presence of significant risks of the consequences of rapid technological progress. These include hypodynamia, which turns into motor deprivation in the case of high workload at school and work, mainly by static activity; ecological problems; The "isolation" of urban residents from the natural environment; a significant

reduction in the time of "live communication" between people in comparison with virtual communication, using various gadgets. These reasons are complemented by high information loads among students, without which it is impossible to train a competent, successful and competitive specialist who meets the "spirit of the times". The acute situation with coronavirus infection, which has swept over many countries, also creates additional stress.

Thus, it is obvious that students of our time often experience significant psychological stress and this problem requires a solution.

In Russia, physical culture classes are compulsory for students of all areas of training and specialties both in secondary vocational institutions and in higher educational institutions of the country, they are the content of the compulsory discipline "Physical culture". And one of the most important tasks of these classes is to improve the health of the young generation. At the same time, according to the definition of the World Health Organization, "health is a state of complete physical, mental and social well-being, and not just the absence of diseases and physical defects." The indissoluble integrity of the physical and mental components determines the need to search for ways of health-improving influence on the body and psyche of students in the process of physical education in secondary and higher educational institutions.

It should be noted that the solution of the above problem should take into account the following guidelines:

- high efficiency and complexity of the impact on the body and psyche of those involved;
- the need to be implemented within the time frame limited by the number of hours of classes in the curriculum, that is, the absence of the requirement for an additional time resource;
- the proposed solution should not be an obstacle to mastering the program material determined by the state standard and the program, that is, not to require significant changes in the curriculum of the academic discipline;
- adequacy in the conditions of the existing material and technical base of the educational institution, ideally - not require additional material costs, be "budgetary".

Based on the above, we propose the use of specially selected musical accompaniment for physical exercises with students for the purpose of psychoregulation.

The possibilities of the influence of music on the human body and psyche have been known since ancient times and have received their scientific substantiation and experimental confirmation by scientists from different countries. Special physiological studies (D.A. Dubrovin, 1994; S.V. Shushardzhan, 1998; B.V. Gladkov, 1999, etc.), revealed the influence of music on various human systems.

It was proved that the perception of music accelerates the heart contractions, the intensifying effect of musical stimuli on the pulse and respiration was found depending on the pitch, strength, sound and timbre. The frequency of respiratory movements and heartbeats changed depending on the tempo, tonality of the musical piece

Based on the research of a number of authors (L.S. Brusilovsky, 1988; V.I. Petrushina, 2001, etc.), the following psychological mechanisms of the health-improving effect of music can be indicated: a) catharsis (emotional release, regulation of the emotional state); b) facilitating the awareness of their own experiences; c) confrontation with life problems; d) increasing social activity; e) the acquisition of new means of emotional expression; f) facilitating the formation of new attitudes and attitudes. In accordance with this, scientists (E.A. Medvedeva, I.Yu. Levchenko, L.N. Komissarova, T.A. Dobrovolskaya, 2001; K. Rudestam, 2006, etc.), came to the conclusion that it is possible to use music therapy for the correction of emotional abnormalities, fears, movement and speech disorders, psychosomatic diseases, behavioral deviations, communication difficulties, etc.

In physical exercises, music can serve as an auxiliary means that facilitates the response of suppressed emotions - joy, fear, aggression, etc., as well as contribute to a better memorization of exercises and mastery of motor actions, as indicated by the works of the authors (E.A. Kud, T. S. Rothers, L.P.Serbina, Yu.G. Kodzhaspirov and others). Many authors who have studied the use of music in physical culture lessons (A.G. Brykin, V.A.Kruchinin, Yu.G. Kodzhaspirov, T.T.Rotters, 1989 and others) note that musical accompaniment contributes to an increase in efficiency, the development of coordination movements, fosters a sense and understanding of rhythm, tune of melody and the corresponding beauty and expressiveness of movements, musical taste in students. It has also been proven that the use of music in the classroom helps to overcome the growing fatigue and helps to avoid monotony, and also accelerates the processes of mastering the technique of movement (Smirnova Yu.V., 2017).

It should be emphasized that in physical culture practice, music outside the fulfillment of motor actions is used not so often. Much more often it accompanies the process of performing exercises, and, first of all, of a dance nature.

In the course of research, Russian scientists managed to identify the range and amplitude of frequencies emitted by a healthy cell of the human body. The essence of this method is to influence these frequencies and create vibrations characteristic of a healthy cell of a living organism. Thus, the transfer of healing information at the cellular level is achieved, as well as a positive psychological result.

The impact on the human body depends on the nature of the piece of music and is perceived through tempo, rhythm, accents, dynamic shades, timbre.

The most important means of musical expression is rhythm. It has been

proven that rhythmic sounds affect the deep structures of the brain, and, therefore, affect the psyche of listeners. At the earliest stage of human development, music consisted almost entirely of rhythm. A clear rhythm of music (mostly dotted), pronounced accents are one of the most powerful stimulants of emotions. Under its influence, physiological and mental processes in the human body are activated: the heart rate increases, blood vessels expand, metabolism is activated, glycogen breakdown is accelerated, and the activity of the sensory organs increases.

The tempo of the piece is also important. The faster the tempo of the music, the more movements must be performed under it, the more intense the physical activity. In addition to the coordination of music with movement, one should take into account the activating effect of fast music on the psyche of students and the course of metabolic processes. In turn, musical accompaniment at a calm pace (60-80 bpm) has a calming effect, reduces emotional stress.

When drafting exercises, you should also take into account the dynamic shades that have their own meaning. The amplification of sound (*crescendo*) should be related to the intensification or acceleration of movement, an increase in amplitude, and the decay (*diminuendo*) - with weakening or slowing down of movement. This will allow not only to express music through movement as competently and aesthetically as possible, but also help the exercise itself.

An important component of human impact is the timbre of the music. It is known that the sound of various instruments, due to the timbre of its sound, has a different effect on mental and physical processes in the human body. Even in ancient China, the idea of the correspondence between the sound of certain musical instruments and the physical and psychological health of a person was developed in detail. This is due to the fact that each musical instrument has its own unique sound timbre, its own frequency range.

The sound of high-frequency instruments (flute, violin, celesta and others) at a slow and medium pace has a positive effect on the human brain (reduces overexcitation of the cerebral cortex), its nervous and respiratory systems, and in combination with smooth, specially selected exercises can contribute to correction biofield. The rhythmic sounding of instruments with a lower timbre of sound (middle register) at a pace of 120 to 180 beats per minute promotes the activation of the physical forces of the body and the active release of nervous tension and accumulated aggression. The sound of the instruments of the lower register, the rhythmic sounds of the drum, according to the Chinese tradition, have a healing effect on the genitourinary sphere, which is especially important for young women and men.

In the process of physical culture classes for students, it is possible to use music in different parts of the class (preparatory, main, final).

In the course of the pedagogical observations, we have identified three types of

musical accompaniment: sound leader, psycho leader, background. Each of them has its own conditional features and priority tasks (E.G. Saykina, Yu.V. Smirnova, 2008).

Characteristics of the musical accompaniment of the "sound leader" type: dance (dance), that is, musical works have tempo and rhythm features, the form of the work and the manner of performance, convenient for the performance of motor actions (often characteristic of the musical genre "dance" and determining its style); intonation-rhythmic clarity, which implies a well-defined melodic line with a clear rhythm; metric uniformity, that is, a uniform size throughout the entire piece of music or part of it (sentence, phrase, period).

Characteristics of a musical accompaniment of the "psycholider" type: a clearly expressed structure of a musical work, which allows one to single out its parts, is absent, or the boundaries of the parts are "blurred"; multiple repetitions of any fragment (part, phrase, motive); there is no text, that is, it is either instrumental music or a combination of the sound of musical instruments and sounds of nature; the music is calm, lyrical; quiet sound.

Characteristics of musical accompaniment of the "musical background" type: moderate sound tempo; instrumental music or music in a foreign language; there is no bright emotional-figurative content; moderate volume.

Each of these types of musical accompaniment solves, first of all, its priority task, in accordance with which the music that has the above characteristics is selected from the whole variety of musical works.

The priority task of the sound leader can be called the creation of a stylistic, figurative, characteristic basis for the performed motor actions.

The priority task of the psycholider may be to promote the concentration of the consciousness of those engaged in internal mental and physical sensations due to the influence of specially selected means of musical expression on subconsciousness.

In turn, the priority task of music as a background can be called the distraction from monotonous work, the removal of psycho-emotional stress. Considering the possibilities of regulating certain components of the exercise process through musical accompaniment, it seems possible to consider the influence of means of musical expression within the "increase - decrease" scale.

Thus, an increase in: the clarity of the rhythm (its dotted line, percussive pulsation), the tempo, a more abrupt (staccato) character of the performance, the duration of the sound, the volume, the number of sharp changes in the direction of the melody ("ups" and "falls" down), helps to increase physical activity (the pace of the movement, its amplitude, the nature of the performance (from calm, smooth, to sharp, jerking, jumping), the duration of the exercise), physiological indicators (heart rate, blood pressure, volume of oxygen consumed), psychological

characteristics (mental and physical performance; activity of the cerebral cortex; well-being; mood; activity, excitability of the sympathetic and parasympathetic nervous system).

Accordingly, a decrease in the above musical means has the opposite effect and helps to reduce physical activity, indicators of the functional state, the activity of those involved, and their excitability.

Musical accompaniment of physical culture lessons should be carried out not chaotically, but in accordance with the developed requirements (Saykina E.G., Smirnova Yu.V., 2008):

1. Compliance with the age-related psychophysiological characteristics of the trainees. The content of the text of a musical work, its image, character, duration of sound, form, means of musical expression, etc. should be understandable, accessible to the perception of a specific contingent of students. And, what is extremely important, the students like it, since a musical program causing rejection will evoke negative emotions, instead of correcting them.

2. Compliance with the purpose and objectives of the lesson and its parts. Depending on the direction of the lesson and its target setting, the appropriate music is selected, the pace and nature of which should be a certain part of the lesson and contribute to the solution of the tasks.

3. Aesthetic expediency. Music should enrich the inner spiritual world of students, their experience of musical perception, give them aesthetic pleasure and, accordingly, contribute to the most aesthetic performance of movements. At the same time, not only the choice of musical works itself is important, but also their quality.

Based on the research conducted, recommendations were developed for the use of music in combination with physical exercises for classes with students.

So, in the preparatory part, you can use music to work out both negative emotions, experiences (aggression, fear, rage, anger), as well as to "pull" the body and psyche into the upcoming physical activity in the main part of the lesson. You can recommend music at a medium tempo, minor, with a clear rhythmic pattern, loud sound. Low and medium register predominates (instrumental music in modern styles). For suppressed positive emotions (joy, delight, etc.), you should use optimistic major music at an average and fast pace, with a clear rhythmic pattern, loud sound. Prevailing, as in the development of negative emotions, low and medium register (instrumental music in modern styles). You can use both "sound leader" type music - especially when performing general developmental exercises, simple dance-aerobic elements, and "background" type music - for running and jumping series, walking.

In the main part of the exercises, when performing exercises for the formation of a muscular corset, developing the strength of muscles of various muscle groups,

performing exercises on simulators at a moderate pace, music is used in accordance with the tempo-rhythm of movement, such as "background". For exercises of aerobic and mixed aerobic-anaerobic nature, aimed at reducing the fat component, training the cardiovascular system and increasing endurance, you can use either exercises on cardiovascular equipment, or exercises from various directions of dance and classical aerobics. and unrealized positive emotions, the achievement of catharsis, and also, which is important - overcoming monotony with repeated exercise. Music can be used at an average and fast pace, with an increase in tempo, for working out negative emotions - minor, for positive emotions - major.

In the final part of the lesson, in combination with stretching and relaxation exercises, you can use music of the "psycholeader" type at a slow pace (instrumental music combined with sounds of nature). Psycho-regulatory orientation - relaxation, stress relief.

A number of pedagogical experiments have confirmed the positive influence of the use of musical accompaniment in physical culture lessons in accordance with the specified requirements and recommendations on the psycho-emotional state of students. There were significant changes in the decrease in the indicators of situational anxiety, stress, improvement in the indicators of well-being, activity, and mood. At the same time, the studied indicators in girls improved to a greater extent than in boys.

Thus, summarizing the above, it is possible to optimize the forecast of the use of musical accompaniment in physical education classes with student youth.

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使用健身技术减轻体育课上学生的紧张和情绪压力  
**REDUCTION OF NERVOUS AND EMOTIONAL STRESS IN  
STUDENTS DURING PHYSICAL EDUCATION CLASSES USING  
FITNESS TECHNOLOGIES**

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本文讨论了基于有氧健身操，普拉提练习和精选音乐伴奏的健身技术的使用问题，以形成对健康改善活动和健康生活方式的自觉态度，增加体育锻炼和对课堂的兴趣，减少神经情绪压力和形成系统锻炼的需要。介绍了进行的研究数据，以确定发达健身技术的有效性。

关键词：健康，学生，神经情感压力，体育锻炼，健康，健身，健身技术，兴趣。

**Annotation.** *The article discusses the issues of the use of fitness technologies based on exercises of step aerobics, Pilates and specially selected musical accompaniment for the formation of a conscious attitude to health-improving activities and a healthy lifestyle, increasing physical activity and interest in classes, reducing neuro-emotional stress and forming the need for systematic exercise. The data of the conducted studies to determine the effectiveness of the developed fitness technologies are presented.*

**Keywords:** *health, students, neuro-emotional stress, physical activity, well-being, fitness, fitness technologies, interest.*

The situation in the field of physical culture of student youth is characterized by a number of contradictions that require their resolution at a modern level adequate to the requirements of time and society. The main goal of the industry is to attract students to a healthy lifestyle and regular exercise as an integral part of it.

The school day of students is full of significant emotional and mental stress. Intensification, computerization of the educational process in higher educational institutions in combination with a sedentary lifestyle, intellectual and emotional overload, constant stress are the causes of various diseases in student youth. Deficiency of physical activity often does not correspond to the biological norms necessary for the development of a young organism, and, as a consequence, leads to a low level of indicators of physical development, functional capabilities, physical fitness and psycho-emotional overstrain. This state is characterized by extreme instability of mood, weakening of self-control, impatience, loss of the ability to prolonged mental and physical stress. All these symptoms appear especially acutely during the examination sessions, which are risk factors for the neuro-emotional state of students.

In this regard, there is a need to search for effective means of physical culture, the development and scientific substantiation of health-improving methods, technologies that allow solving this problem and, thereby, maintaining the vital activity and physical fitness of students at the proper level, providing a targeted impact on the function of the central nervous system and success. mastering educational programs.

However, as the data of statistics and various scientific studies show, traditional types of physical education at this stage are not enough to cover all representatives of this category and satisfy their ever-increasing demands for variety, quantity, quality and, which is very important, modernity and conformity to fashion of the proposed physical culture and health services.

Accordingly, we can say that at present a certain cultural request has been formed in the field of youth physical culture. An adequate answer to it may be fitness, which does not deny the traditional values of physical culture, but, at the same time, forms a new, modern fitness culture. At the same time, as V.I. Grigoriev, D.N. Davidenko, S.V. Malinina: "Being a structural component of the physical culture system, fitness culture as a whole performs its basic socio-cultural functions and provides for the use of a wide range of types of physical activity in order to strengthen students' health, as well as create the necessary prerequisites and conditions for fruitful mental work" [1]. Developing and improving, fitness has existed in Russia for more than 25 years, covering various forms of physical activity, the main principle of which is "load for health". Having become one of the most popular types of physical activity, it attracts people of all ages and social groups of the Russian population, penetrating into all types of physical culture: recreation, rehabilitation, education, sports and interacting with them.

In many universities of the country, various areas of fitness have been actively introduced into the educational process of physical education of students studying in various professions in recent years. In the field of additional services, one can note an increase in the number of fitness centers, fitness clubs and other organi-

zations that provide certain fitness services. It should be emphasized that a significant part of the consumers of these services is precisely student youth, which is due to such factors as a large number of types of physical activity presented in fitness, a wide range of tools and equipment used, musical accompaniment of classes, and such factors as involvement in new and fashionable types of occupation, the opportunity to join a certain circle of successful, self-sufficient people, finding like-minded people.

The broad development of the media, the intensification of international contacts in the modern world contributes to the interpenetration of cultures, their interaction and synthesis. At the same time, this does not negate national traditions in a particular field of activity, does not belittle the value of cultural heritage, but only enriches the spiritual world of each person. In our opinion, it is from this perspective that fitness enters the national science and culture - as an integral of domestic achievements in the field of health-improving physical culture based on national traditions and the most effective foreign innovations for the health improvement of Russians.

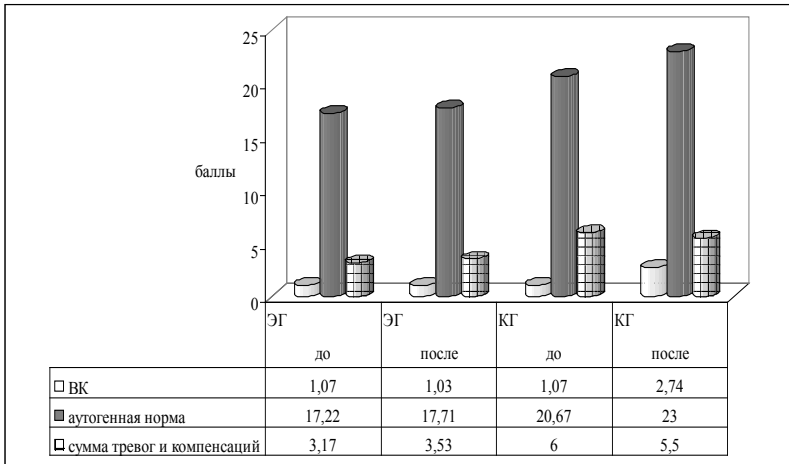
Obviously, the greatest effect will be from systematic, pedagogically well-organized physical exercises, including innovative technologies. It should be borne in mind that the physical culture of students, especially girls, should be organized in accordance with the gender characteristics of the body. It should be remembered that a woman performs a very important function - the function of motherhood, therefore, the occupation, first of all, should have a health-improving orientation. The basis for the physical education of students can be the adaptation of effective areas of fitness to their needs. The indicated interest in these forms of physical education is also conditioned by the voluntariness of participation and accessibility for the widest circle of those involved, regardless of gender, age, state of health. Fitness and its technologies today are one of the ways to increase the interest and creative activity of student youth, create and systematically maintain positive emotions, optimize the conditions for carrying out physical education classes, increase their density and attractiveness.

It should be noted that all types of fitness, regardless of their specific focus and the main and particular tasks being solved, can be reflected in one or another focus of students' physical culture classes (athletics, gymnastics, games), in any of its parts and will contribute to diversity. means and methods of their implementation [2].

The purpose of our study was the use of fitness technologies based on exercises of step aerobics, Pilates and specially selected musical accompaniment [3] for the formation of a conscious attitude to health-improving activities and a healthy lifestyle in students, an increase in physical activity and interest in classes, a decrease in nervous -emotional stress, gaining self-confidence, overcoming the loads neces-

sary for healing the body, the need for systematic physical exercises. The research was carried out with students studying at the universities of Belgorod and St. Petersburg. The experimental groups (ЭГ) were engaged according to the program with the use of fitness technologies, and the control groups (КГ) - according to the program of physical culture, developed in universities. In all the experiments carried out, a positive increase in the indicators of physical fitness and a decrease in neuro-emotional tension was obtained both in the control and experimental groups. However, in the experimental groups it turned out to be much higher.

The neuro-emotional activity of female students was assessed using Luscher's test, in which such parameters as: "the sum of anxieties and compensations", "vegetative coefficient" (VC) and "deviation from the autogenous norm" were taken (Fig. 1).



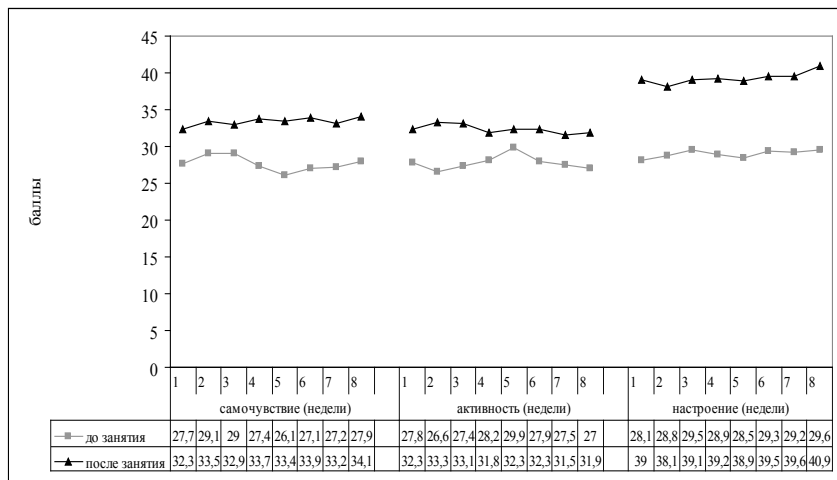
**Figure 1. Dynamics of neuro-emotional state of female students from the ЭГ and КГ (Luscher's test)**

The vegetative coefficient was taken due to the fact that it indicates internal tension, the need for rest, and is a consequence of the activation of the parasympathetic system. So the girls before the use of fitness technologies in the ЭГ and in the КГ (Belgorod) had the same results 1.07 points, which indicates the excitement of the parasympathetic department, after the experiment the considered indicator in the ЭГ decreased to 1.03 points, and in the КГ it significantly increased to 2.74 points, which means that in the КГ girls, as a result of the experiment, inhibition of the parasympathetic part of the brain began to prevail. There were no significant differences in this indicator.

In addition, another secondary indicator of the Luscher test was used - the

"total deviation" index (TD), which shows how the subject's color choice differs from the "ideal" choice - the so-called "autogenous norm". In the ЭГ this indicator increased by the end of the pedagogical experiment to 17.71 points, and in the КГ it increased to 23.00 points, which is characterized in the ЭГ as a static norm, and in the КГ there is a slight deviation from the "autogenous norm". When considering the last indicator of Luscher's test "the sum of anxieties and compensations", the girls from the КГ turned out to be higher, before the experiment they had 6 points, and after that they decreased to 5.5 points. In turn, in the ЭГ before the experiment the studied indicator was 3.17 points, and after 3.53 points. As a result of the increase in this indicator, significant differences were recorded ( $P \leq 0.05$ ).

The indicators of well-being, activity and mood were also assessed (WAM questionnaire). The students from the ЭГ took part in the survey. Analyzing the data in the indicators of students' well-being after the pedagogical experiment, not only positive shifts are observed by the end of each lesson, but also by the end of the pedagogical experiment using this technology. Before the lesson, the studied indicator is in the range from 26.1 to 29.1 points, and after the lesson from 32.3 to 34.1 points, which is characterized before the lesson as "below the low mark", and after the lesson as "the average mark" ( fig. 2).



**Figure 2. Dynamics of well-being, activity and mood of female students from the ЭГ at the beginning and at the end of the training lesson**

In the dynamics of the activity of female students before classes there is a significant rise, starting from the fifth week of classes - 29.9 points, which corresponds to "below the low mark". During all other weeks of the experiment,

the minimum value of activity was on the second week of the experiment - 26.6 points. After classes from the first to the third week, there was an increase in activity up to 33.3 points. By the fourth week, the activity of female students dropped to 31.8 points, on the fifth and sixth weeks, the activity of young people was at the same level - 32.3 points each, and by the end of the experiment this indicator was 31.9 points. After class, the activity corresponded to the "average grade" throughout all weeks.

The dynamics of the students' mood revealed that it changed more evenly in comparison with the state of health and activity. Although before classes the mood of the trainees did not rise higher than 29.6 points, which corresponds to "below a low mark", after classes the same indicator rose to 40.9 points, which is characterized as an "average mark".

Thus, based on the above results, it can be argued that the offered fitness technologies significantly improve the mood, well-being and activity of female students from the ЭГ, in comparison with the КГ. This can be explained by the fact that the proposed technologies have a positive effect on the interest of the subjects in classes, as well as on the reduction of the neuro-emotional stress of student youth.

In conclusion, it should be noted that one of the main tasks of health related physical culture is a competent, scientifically grounded selection of effective means and methods for the development of basic motor abilities, an increase in the level of physical fitness and health improvement of those involved.

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1-3年级学生健身体操第三课的效果  
**EFFECTIVENESS OF THE PROGRAM FOR THE THIRD LESSON IN  
FITNESS GYMNASTICS FOR STUDENTS IN GRADES 1-3**

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娱乐, 发展, 舞蹈和游戏程序“FITNESS-GYMNASTICS”是专为1-3年级的学生开设的第三门体育课。它总结了多年来在儿童中开展有益健康的体育和健身课程所获得的实践经验。该计划中提出的创新健康改善技术, 进行锻炼的游戏方法将提高小学生教育过程的有效性, 并提高对体育课的兴趣。文章证实了制定健身计划的必要性及其理论依据。给出了程序的结构, 揭示了程序的内容并显示了程序的有效性。

关键词: 儿童健身, 计划, 健身体操, 学童, 健康, 体育, 第三课, 运动能力, 效率。

**Annotation.** *The recreational, developmental, dance and game program "FITNESS-GYMNASTICS" is designed for the third additional lesson in physical culture for students in grades 1-3. It is a generalization of the practical experience gained over many years of conducting health-improving physical culture and fitness classes with children. The innovative health-improving technologies proposed in the program, the game method of conducting exercises will increase the effectiveness of the educational process of schoolchildren and interest in physical education lessons. The article substantiates the necessity of developing fitness programs and its theoretical justification. The structure of the program is presented, its content is revealed and its effectiveness is shown.*

**Keywords:** *children's fitness, program, fitness gymnastics, schoolchildren, health, physical culture, third lesson, motor abilities, efficiency.*

An analysis of the works of domestic and foreign authors shows that the threatening increase in morbidity among the younger generation, a decrease in physical and mental performance against the background of a steady progression of the deficit in motor activity over the past decades has become a national disaster.

Numerous statistics show that 30% of first-graders entering school already have some deviations in health, and during the period of schooling, the number



of healthy children decreases by 4 times. The admission of children to school is accompanied by a breakdown of the dynamic stereotype that has developed during the preschool period of life. The transition of preschoolers to a new environment is associated with insecure behavior, an excess of information that is not quite adequate to their perception and requires intensive orientation in new conditions.

Long and systematic study sessions, decreased physical activity, significant static load, new responsibilities and requirements of academic disciplines - all this presents great difficulties for schoolchildren, especially first-graders. Many children develop "school shock" or "adaptation disease" in the first months of schooling. Schooling is becoming a risk factor today. This is the most significant factor in terms of the duration and strength of the impact on the health of schoolchildren. According to various sources, the contribution of the "intraschool" environment to the deterioration of the health status of schoolchildren is estimated from 21% to 40%. The strength of the influence of school health risk factors is determined, on the one hand, by the fact that they act cumulatively, for a long time and continuously, on the other hand, by the fact that they affect a growing organism with immature mechanisms of health preservation [1, 2].

The issues of increasing the adaptive resources of students, strengthening their health, reducing school risk factors in recent years have attracted close attention of the scientific community, as evidenced by the available literature data and emerging in recent years scientific research. However, the problem of scientifically grounded organization of work on physical culture of schoolchildren, conducting training sessions at a high quality level, determining effective means, introducing innovative physical culture and health-improving technologies into the educational process remains open in the educational space of secondary educational institutions.

Recently, the analysis of the results of scientific research confirms that the quality of physical education lessons in many schools does not correspond to modern requirements, interests and needs of children. At the same time, the possibilities of a school lesson should not be exaggerated. On the one hand, by itself, it cannot solve all the pressing problems associated with strengthening the health of schoolchildren, increasing their level of physical fitness and interest in physical education. The lesson is just one of the forms of the process of physical education and these problems need to be solved in a complex way, using all forms of physical education at school. On the other hand, a lesson is the most important factor ensuring the success of the formation of a person's physical culture, and the introduction of a third lesson can significantly change the content of school education in the field of physical culture, make it more interesting and attractive for students, increase the efficiency and quality of the educational process [2].

However, the introduction of the third lesson into the educational process of

schoolchildren requires the development and scientific substantiation of its software. We see the solution to the above problems in the design and implementation of health-improving, preventive, developmental, play, dance programs for children's fitness

All types of fitness, regardless of their specific orientation and the main and particular tasks being solved, can be reflected in one or another orientation of physical education lessons (athletics, gymnastics, games). They will contribute to the renewal and diversity of the choice of means for conducting the preparatory and final parts of the lesson, as well as create good prospects for the teacher's creative abilities to develop and implement fitness programs in the third additional lesson in physical culture for schoolchildren of different ages.

The recreational and developmental, dance and game program "FITNESS-GYMNASTICS" was developed at the Department of Gymnastics of the Herzen State Pedagogical University of Russia and is intended for an additional third lesson for students in grades 1-3. It is designed for three years of study and is aimed at the comprehensive, harmonious development of students.

The essence of the proposed fitness-gymnastics program, contributing to the formation and strengthening of the health of primary school children through their interest in physical exercise, is: to substantiate the unconditional priority of its health-improving orientation; in providing the educational process with innovative health technologies (fitness technologies); in creating conditions for self-determination, socialization of the individual through systematic physical education; the formation of value-motivational attitudes of a person focused on a healthy lifestyle.

The theoretical and methodological basis of the program was the general provisions of the theory and methodology of physical culture, health-improving training, the concept of children's fitness, the idea of modernization of physical education and scientific development of the software and methodological support of physical culture of schoolchildren. The conceptual provisions of the program are:

1. "*Wellness*". The program is based on priority attention to the formation of value-motivational attitudes of the personality of students, orientation to a healthy lifestyle, health promotion through the introduction of fitness technologies in educational and physical education and health work at school.

2. "*Integration*". The content of the program is based on the ideas of interdisciplinary connections, the integration of the foundations of knowledge from various fields of science related to physical culture, in order to form holistic ideas about a healthy lifestyle, health promotion and self-improvement.

3. "*Innovation*". The program is based on the cultivation of new, modern trends in children's fitness, innovative teaching methods and a variety of non-traditional

forms of teaching.

4. "*Interest*". The ideological attitudes of the lesson are based on a personality-oriented approach. Physical exercises should be carried out taking into account the interests of students, their individual inclinations to certain types of physical culture and health and sports activities.

5. "*Variation*". The program is based on the variability of curricula, the freedom to choose areas of fitness and types of physical culture and health activities, depending on the conditions, material and technical base, equipping with equipment and tools, professional competence of the teacher.

6. "*Monitoring*". The process of physical education of schoolchildren should be carried out on the basis of constant pedagogical control over the activities of students, testing and studying their physical development, state of health, physical fitness, etc.

7. "*Effectiveness*". The introduction of various directions of fitness and its technologies in physical education lessons for children is a certain stimulus for the process of self-improvement, personality self-determination, lifestyle changes, helps to achieve physical and spiritual development, improve well-being, mental and physical health. Conducting fitness gymnastics classes ensures the implementation of the goals and objectives, the effective development of motor abilities and the use of the acquired knowledge, abilities, skills in the process of everyday life.

The logic of building this fitness program, its special priority and perspective ensures compliance with the principles of didactics, children's fitness and special requirements:

- the continuity of the learning process, which is ensured by the mechanism of continuity between the goals, objectives and content of individual sections of the program;
- the integrity of the learning process, involving the integration of basic and additional education, adaptation in a specific social environment;
- the personality-oriented nature of learning, realized through individualization and differentiation of content, forms, methods and pedagogical means of achieving learning goals, corresponding to the principles of building curricula;
- the presence of a significant health-improving and developing effect due to the participation of various muscle groups in the work, the possibility of long-term performance of rhythmic exercises (mainly with an aerobic mechanism of energy supply), the possibility of influencing the psychoemotional sphere of those involved (first of all, the effect on the nervous system by means of musical accompaniment, increasing positive emotions, due to dance, game exercises, creative tasks and plot lessons).

**The purpose** of the health-improving, dance and game program "FITNESS-

GYMNASTICS" is to promote the comprehensive development of the personality of students, the prevention of various disorders of the state of physical and mental health, increase the level of physical fitness and interest in physical exercises, the development of motor, dance, creative and musical rhythmic abilities, introduction to a healthy lifestyle.

The program is characterized by a wide variety of tasks (educational, health-improving, educational, preventive) aimed at influencing the body of the student. Their successful solution will contribute to the formation of the basic basis for strengthening and maintaining health, self-education, physical self-improvement and self-realization, which are the most important factors contributing to the conduct of independent physical exercises throughout their future life.

The content of the program is interconnected with a comprehensive physical education program for students in grades 1-11 and is based on the principles of children's fitness. The program includes a varied arsenal of original ideas, means and methods of health improving aerobics, dance, corrective gymnastics, stretching and other fitness technologies.

The structure of the program consists of: an explanatory note; schedule; characteristics of the content of the sections of the program; requirements for the level of training of students; control standards (testing); material and technical equipment of the learning process; list of references.

The content of the educational and practical material of the fitness gymnastics program is presented in five sections: "BAZIS-GYMNASTICS" - basic gymnastics; "AERO-GYMNASTICS" - aerobic gymnastics; "ATHLETIC-GYMNASTICS" - athletic gymnastics; "PLAY-GYMNASTICS" - game gymnastics; "CORRECTION-GYMNASTICS" - corrective gymnastics.

Each section of the program consists of exercises, creative and play tasks, complexes designed for three years of study. Complexes of exercises solve narrowly set tasks and have different (dance, play, power, correctional, etc.) focus and completeness.

Mastering the main sections of the program contributes to the natural development of the child's body, morphological and functional improvement of its individual organs and systems, adaptation of students to the conditions of the school environment. When conducting lessons on this program during the academic year, innovative forms of its conduct are used, all of them are interconnected by a competitive method. Musical accompaniment, dance and play orientation of the exercise complexes give the educational process an attractive form and contribute to the development of musical, rhythmic and creative abilities.

The program is flexible in nature, which allows, depending on the conditions of the material base, the level of physical development and fitness of the trainees, to rationally vary the content of the program and to creatively ensure its

implementation. The study of the educational material is carried out in a logical sequence in a combination of interrelated lessons, which are held once a week, at the rate of 36 hours per year.

The fitness gymnastics program assumes the use of the game and competitive method of conducting the entire academic year. At the first lesson, students are tested (tests are presented in the requirements for mastering the educational material) and, based on the results obtained, children are divided into three identical groups (crews, teams, etc.). In each group, a group leader (captain, commander) is selected, the name of the group, decals are determined and a route sheet is issued for the journey, which lasts 36 lessons. The plot of the trip is chosen and planned by the teacher. The key points are plot lessons (about 2 lessons per month), where the results of the next stage of the path are summed up. At the end of the year, re-testing is carried out and the winner team (application) is determined. All this will give the educational process an attractive form, create positive emotions, increase the emotional background of classes, facilitate the process of memorizing and mastering exercises, will contribute to the solution of health-improving, educational and educational tasks, the development of thinking, imagination, creative, motor, musical-rhythmic abilities. children of primary school age.

The structure of the content of the "FITNESS-GYMNASTICS" program consists of: the basics of knowledge, educational and practical material, requirements for the level of preparedness of students and requirements for the material and technical equipment of the learning process.

***The basics of knowledge*** - the theoretical section of the program, presented by various topics, without knowledge of which the mastery of practical material is incomplete.

All educational material is distributed over three years of study and is given consistently and evenly in each lesson.

The content of the topics includes a description of the "FITNESS-GYMNASTICS" program and a description of the effect on the body of the trainees, the rules of behavior in the gym and the requirements for performing exercises, the prevention and prevention of injuries, the basics of personal hygiene and a healthy lifestyle.

***The educational and practical material*** is aimed at the formation of skills, the development of motor abilities and includes complexes of fitness gymnastics exercises, which are presented in its five sections, and independent creative and game tasks that complement the study of the program material.

The section "***Requirements for the level of preparedness of the trainees***" includes the requirements for mastering knowledge ("must know ..."), skills ("must be able to ...") and the development of motor abilities ("must demonstrate ..."). To determine the level of physical fitness, one should have objective initial

indicators and see the changes that have occurred in the development of motor abilities, therefore, it is recommended at the beginning and at the end of the study of the program material on fitness gymnastics to carry out tests of the level of physical fitness, using control exercises of the program and special tests.

The section "**Material and technical support of the learning process**" determines the necessary sports equipment, equipment for monitoring and evaluating actions, auxiliary equipment, selection of musical accompaniment and educational and methodological material for conducting fitness gymnastics classes.

According to the developed program, in 2013-14, refresher courses for physical education teachers were organized. In subsequent years, a number of pedagogical experiments were carried out to determine the effectiveness of the program and its influence on the development of motor abilities in primary school children in St. Petersburg [2,3]. As a result of the conducted pedagogical experiments, it can be stated that practically all indicators of motor abilities gave a higher positive reliable increase in the experimental groups, compared with the indicators of the control groups, where the third lesson was conducted according to the basic school program or general physical training. Table 1 shows the results of 3 grades of the school of the Vyborgsky district of St. Petersburg.

**Table 1. Changes in the indicators of the development of motor abilities after a pedagogical experiment in the control and experimental groups**

Indicators (tests)	Control group	Experimental group	t	P <
Flexibility "slope" (in cm)	6,8 ± 0,8	10,7 ± 0,53	4,1	0,05
Coordination abilities "shuttle run" (in sec)	9,18 ± 0,1	8,6 ± 0,17	2,94	0,05
Speed-strength abilities "long jump from the spot" (in cm)	135 ± 4,22	150 ± 2,67	3,06	0,05
Strength "flexion and extension of the arms in the lying position" (number of times)	15,2 ± 1,07	12,1 ± 1,92	1,47	-
Speed-strength abilities "raising the body in 30 seconds" (number of times)	15,2 ± 1,07	21 ± 0,98	4	0,5

As a result of the research, the effectiveness of the developed program "FITNESS-GYMNASTICS" on the development of motor abilities of younger schoolchildren was proved, and on the basis of a survey of children and parents, it was determined that schoolchildren have an increased interest in doing physical exercises.

The use of the recreational, developmental, dance and game program

"FITNESS-GYMNASTICS" in the educational process of schoolchildren is a timely step for equipping teachers with a non-standard, original methodology, the selection of innovative forms, means and methods for conducting the third lesson in children of primary school age, creates conditions for the teacher's creativity, differentiation of the health-improving process, and is also a guideline for the compilation of copyright programs.

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通过博物馆设施确保年轻人的社会安全  
**ENSURING THE SOCIAL SECURITY OF YOUNG PEOPLE THROUGH  
MUSEUM FACILITIES**

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在本文中，作者分析了博物馆教育和旅游资源以及当地历史活动，以促进年轻一代的社会化进程。说明了所研究现象对确保年轻人的社会安全的重要性。揭示了VLSU的科学研究在理论和实践上理解博物馆教育学潜力的作用。由O. A. 开发卡祖罗娃的作者程序已经在俄罗斯和独联体的教育组织中工作了十二年，这已经证明了它的价值。

关键字：博物馆教学法，旅游和地方历史活动，计划，精神和道德教育，青年的社会保障

**Annotation.** *In this article, the authors analyze the resources of museum pedagogy and tourism and local history activities for the integral process of socialization of the younger generation. The significance of the studied phenomenon for ensuring the social security of young people is shown. The role of scientific research of VLSU in the theoretical and practical understanding of the potential of museum pedagogy is revealed. Developed by O.A. Kazurova's author's program has been working in educational organizations in Russia and the CIS for twelve years, which has proved its worth.*

**Keywords:** *museum pedagogy, tourism and local history activities, program, spiritual and moral education, social security of youth.*

Increasingly, we hear from marketers that the modern world is not so much a society of information flow, the world of the Internet and new technologies, but a society of hedonism (having fun) [2]. Among the economic models, the most advanced are post-industrial economies, in which the leading role in meeting the needs of the population is played not so much by the production economy as by



the service economy. The pragmatism of modern socio-economic realities of Russian society initiated the emergence of strata of the population, characterized by individualism, indifference, and soullessness. If you are a car enthusiast, you often meet the driving style on the road: "my life is my rules". Until recently, this situation was not typical for our country. This phenomenon is not as harmless as it seems. Today it is no longer about the "decaying" West, but about Russian society, more and more people say: "Homo homines - lupus est". That in translation means "man to man a wolf".

This state of affairs creates a threat to national security, no less detrimental than the coronavirus pandemic and other dangerous infections. At the same time, if the infection with these pathogenic pathogens, to a large extent, is due to the state of biological immunity and reactivity of the organism of individuals, the presence of a sufficient number of devices, medicines, qualified doctors, then overcoming the spiritual and moral crisis does not have a clear formula. The consequences are fatal.

We offer our view on the causes of these behavioral stereotypes among young people. According to V.T. Lisovsky: "Youth is a generation of people going through the stage of socialization, assimilating (and in a more mature age have already mastered) educational, professional and cultural functions and prepared by society for assimilation and implementation of social roles" [4] ... Therefore, there is an acute issue of ensuring the social security of young people as a strategic resource of society, its present and future, which performs a special function of preserving and developing the country, the continuity of its history and culture, responsibility for the life of older generations and the reproduction of future generations. [5].

We believe that the origins of the problem lie in the following phenomena:

1. Reducing the living space of young people causes instability of their social status, leads to conformism (conciliation), perfectionism (striving for the ideal) and, as a result, procrastination (postponement). Our research showed that the statements "If I can't do it perfectly, then I don't need to start" and "If the salary cannot meet my needs, then there is no point in working" is considered true by 89% of students.

2. Escalation of virtual social experience in the network leads to primitive communication algorithms, to digital autism. Young people cannot maintain long-term communication, they do not realize the values of the interlocutor's inner world, they do not know how to overcome the depressive state due to the underdevelopment of emotional intelligence. Doesn't know how to get joy about life. Our research has shown that 87% of respondents hear a complaint "boring" from their peers.

3. The availability of information about the secret life of the "adult world" leads to the blurring of the boundaries of the child and adult world and, as a result,

the vertical hierarchy of society is transformed into a horizontal one, the erasure of strata occurs. Samples of social behavior are lost, life goal-setting, planning of near and distant prospects are violated, confidence, stability, stability are not felt.

How to saturate the life of young people with the meaning of previous generations?

We believe that at the present stage, culture is turning into a valuable social resource, which, solving socio-economic problems and conflicts like a magnet, attracts even investments, creates jobs and can restore the balance of generations. We are supported by British sociologists noting that the profit from car exports over the past decade has been lower than the profit from the sale of music. The success of music as a part of culture is due to the formation of the economy of sensations (Pine, Gilmore) in the civilization of leisure (Dumazedier J.). Considering that "leisure is acquiring more and more autonomy from work and is becoming an independent value" [1], we need to use the youth's need for new impressions, experiences, and fulfillment of desires. Museums are capable, according to F. Kotler in the book "Museum Strategy and Marketing", to provide "experiences, impressions, satisfaction that you will not find elsewhere" [6]. A museum in an educational institution (school, university) is simply a repository of a collection, it is, first of all, a system of cognition of society through national values (exhibits) and knowledge of oneself through society (comrades, neighbors, parents, etc.).

It seems to us that it is possible to revive spirituality, national identity, patriotism, and citizenship only through the development and improvement of tourism and local history activities [3]. It is important for us that hikes, excursions, travels are in the nature of personal discoveries. This will allow young people not only to contemplate the world around them, but also to feel like a part of the country, its historical past, nature. The image of the Motherland through the visualization of what he saw - people, their activities, attitude to life, monuments of courage, culture initiates patriotic feelings, responsible behavioral strategy, citizenship, social maturity.

The above phenomena are eliminated during the expedition.

1. When searching, there is a variety of social ties (not spontaneous), which entails the expansion of the living space of young people, the emergence of a sense of stability, the growth of personal status due to involvement in the life of the country.

2. When passing along the route of the hike, the participants acquire a sense of friendship, empathy, tolerance, which cannot be brought up by moralizing lectures and conversations, correspondence on social networks.

3. Tourism and local lore activity helps the development of personality at all stages of ontogenesis, improving their creative abilities, fostering a holistic worldview, shaping culture - general, health, legal, legal awareness, legal education,

forming the social and communicative competence of senior pupils and students.

There is an experimental site at Vladimir State University under the leadership of Olga Alekseevna Kazurova. The general educational program of additional education for children "Activists of the School Museum" became a diploma winner of the 7th All-Russian competition of author's educational programs for additional education for children (23.06.2006 №14-11-113 / 01) and was recommended by the Ministry of Education and Science of the Russian Federation for the system of additional education for children (2008). For twelve years now, this Program has been implemented in tourist associations of additional education for children in Russia and the CIS countries. Future specialists in the field of tourism of the Department of T&S ITiP and teachers successfully acquire knowledge by studying such subjects as "Basics of tourism and local history activities", "Children and youth tourism and school museology", "School museology", "Local history". Acquainted with the special course "Organization of tourism and local history activities in a suburban children's camp", students come to practice, almost ready-made specialists, clearly presenting their tasks and functional responsibilities when working in children's camps.

The use of museum pedagogy helps young people to adapt to the difficult conditions of the socio-cultural environment, to strengthen self-confidence, to increase self-esteem, to choose trajectories of self-determination, self-realization, self-improvement, to feel socially mature, spiritually rich, prepared morally, morally, responsible for everything that happens not only in their lives, but also in the country as a whole, thereby ensuring social security for the younger generation.

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跳高运动时健康率的心率（HR）动力学迹象  
**SIGN OF THE DYNAMICS OF HEART RATE (HR) AS A FACTOR OF  
SAVING OF HEALTH WHEN JUMPING OVER THE SLEDGES**

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文章描述了这项研究是在M. K. Ammosov东北联邦大学的体育综合体的基础上进行的。给出了使用Polar FT80心率监测器执行的确定心率动态的结果。该研究涉及不同技能水平的运动员。其中，北部全能运动中有两名具有俄罗斯MS运动级别的年轻人，CMS竞技性运动中具有四位年轻人，北部全能运动中具有第一和第二名的成年人。北部全能比赛的服役时间为三至七年。

关键字：北方，滑橇，动态，心率，运动技能。

**Annotation.** *The article describes the study took place on the basis of the sports complex of the M. K. Ammosov North-Eastern Federal University. The results of determining the dynamics of heart rate carried out using the Polar FT80 heart rate monitor are given. The study involved sportsmen of different skill levels. Among them there are two young men with the sporting rank of MS of Russia in the northern all-around, four young men with the sporting rank of the CMS, six have the first and second adult rank in the northern all-around. The length of service in northern all-around events ranges from three to seven years.*

**Keywords:** *north-around, jumping over sledges, dynamics, heart rate, athletic skills.*

### **Introduction**

Among the northern peoples, there were many different exercises and competitions associated with the traditions and identity of the North, in which a teenager or adult had to show his strength, endurance, agility and other qualities.

One of these types of competitions was sled jumping. Sled jumping is a widespread type of competition among the peoples of the Far North of Asia, Europe and America and is part of the northern all-around program [1, 3].

If you delve into the traditions of the northern people and try to consider the origin of this sport, then we can affirmatively say that jumping over sledges was necessary in the everyday life of reindeer herders. For example, a reindeer wagon train is a combination of seven-eight sleds, each of which is harnessed by two reindeer, and all these reindeer are tied to the sled in front. In the harsh conditions of the North, a reindeer pulling a cargo sled can fall, and, given that the train will continue to move, the reindeer can tighten the loop. To save the animal, it was necessary to get to it very quickly, while jumping over the sledges. These skills were brought to automatism by repeated repetitions. To demonstrate skills, competitions began to be held, which grew into a beautiful sport and at the same time helped to preserve their identity and culture of the peoples of the North. Today, sled jumping is a sport that requires an athlete to develop endurance with high jumping and running volumes. Like any physical activity, sled jumping has an impact on the functional systems of the body. It has long been known about the beneficial effects of loads aimed at the development of endurance and, in particular, continuous, prolonged running on the cardiovascular, respiratory, muscular and circulatory systems. In sports practice, to assess the intensity of the load, especially for activities aimed at endurance, the heart rate is used [5, 7, 8]. As noted by M.I. Popichev. [6], the threshold value of the intensity of the load, providing a health-improving effect, is a load of 55% of the maximum heart rate. The highest heart rate allowed during a health workout should not exceed 75% of the maximum heart rate. Many researchers study physiological occupational processes in sportsmen in various sports (Romanov, Nenasheva, etc.).

However, the reaction of the athlete's body to jumping over sledges remains unexplored. In this regard, the aim of the study is to control the dynamics of heart rate in the process of jumping over sledges among athletes of different qualifications.

### **Methods and organization studies**

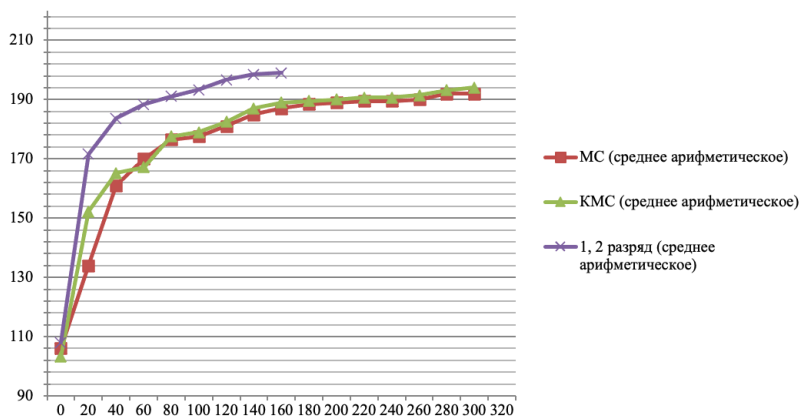
The study took place on the basis of the sports complex of the M.K. Ammosov North-Eastern Federal University. Heart rate dynamics were determined using a Polar FT80 heart rate monitor. The study involved sportsmen of different skill levels. Among them there are two young men with the sporting rank of MS of Russia in the northern all-around, four young men with the sporting rank of the CMS, six have the first and second adult rank in the northern all-around. The length of service in northern all-around events ranges from three to seven years. The average age for boys is 17 years.

The task of the athletes was to overcome the maximum number of sleds.

Each athlete was given one test attempt. Preliminarily, the subjects were warmed up for 20 minutes. Athletes performed jumps in accordance with the rules for overcoming sledges: jumps are performed with simultaneous pushing off of two legs from a place; it is allowed to carry out the transfer of legs through the sleds only straight ahead; the participant who has overcome 10 sledges lands on both feet perpendicular to the sleds, makes a 180° turn with a jump, always with simultaneous repulsion of both legs, 5 seconds are given for the turn (the time is counted from the moment of landing after overcoming the last sled until the moment of repulsion to overcome the sled); jumping over sledges is performed by the participant until the first mistake. The heart rate indicators were recorded before the start of the attempt and every 20 sledges.

### Research results

Masters of sports and two sportsmen with the category of Candidate Master of Sports performed 300 jumps over the sledges. The sportsmen jumped from 120 to 160 sledges.



**Figure: 1. Dynamics of heart rate in the process of jumping over sledges among athletes of different qualifications**

As expected, the indicators of the heart rate dynamics of athletes of different skill levels have significant differences and features. From the diagram in Fig. 1. It can be seen that the average indicators of heart rate among athletes, masters of sports and the category of the CMS increased sharply until the fortieth jump over the sled, then stabilized. A significant increase in heart rate from the beginning of the jumps and after the completion of the first 20 sledges is observed in athletes under the numbers of the dischargers. It is important to note that in highly qualified athletes during the attempt, heart rate indicators in some moments did not increase

in comparison with the previous recorded indicator. After the completion of the jumps among the athletes with the title of MS of Russia, the average heart rate indicators reached 192 beats / min, while the threshold of health-improving training reaches an average of 150 and 150.5 beats / min for both athletes, masters of sports; the increase was 50 and 50, 25 beats / min, respectively. In athletes with the CMS category, the average heart rate at the end of the jumps reached 194 beats / min; the threshold of health-improving training is 151.5 and 152.2 beats / min (the increase was 50.5 and 50.75 beats / min, respectively). In athletes of the first and second mass categories, the average heart rate at the end of the jumps reached 199 beats / min; the threshold of health-improving training reaches 153 beats / min and 153.7 beats / min, respectively (the increase reached 51 and 51.2 beats / min, respectively). Such an increase in heart rate from the permissible health-improving threshold of the training load in athletes is associated with the fulfillment of the load in a competitive mode to achieve the maximum result.

Before the heart rate indicators with a health-improving training effect, athletes with the title of MS and the rank of CCM performed 20 jumps each, athletes of mass categories - 10 jumps. 60% of the volume of jumping over sledges by masters of sports is performed with a heart rate range of 170 to 190 beats / min and averages 180 sledges. Candidates for master of sports with the same range perform an average of 100-110 sled jumps, which is 37% and 36.6% of the volume of jumps. In sportsmen-dischargers, on the contrary, the main volume of jumps falls on the heart rate of 190 beats / min, the greatest number of perfect jumps was 80 (50%).

### **Conclusion**

The identification of heart rate in the process of jumping over sledges in athletes of different sports qualifications will allow both assessing the current reaction of the cardiovascular system, and controlling and competently building the training process for jumping over sledges as a whole.

The obtained results of the study indicate that highly qualified athletes perform jumps over sledges on average with lower heart rate indices, in contrast to athletes-dischargers. A similar situation is recorded in other sports, where inexperienced athletes perform training loads at higher heart rate [2, 4]. However, all athletes went beyond the threshold of heart rate with a healing effect, ranging from 50 and ending up to 51.2 beats per minute. This may be due to the direction of the load fulfillment in a competitive mode in order to achieve the maximum result.

It was revealed that from the beginning of the attempt it is important to smoothly raise the heart rate. As the study showed, maintaining the heart rate in the range from 170 to 190 beats / min for a considerable time serves a greater number of overcome sledges.

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语篇语篇潜能反射的语言手段  
**LINGUISTIC MEANS OF PRAGMATIC TEXT POTENTIAL  
REFLECTION**

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为了定义文本形成的技术，应该关注文本潜力的实用概念。文本是连贯的整体，受作者的动机和意图影响，因此，作者不仅要形成和创作文本，还要指导读者。在这种情况下，务实的文本潜能与读者对文本的理解和诠释紧密相连。语用文本的潜能可以在各种情况下以不同的方式实现，它导致“发送者”（作者）和“接收者”（阅读者）之间的相互关系。但是，只有在达到务实的目标时，沟通过程才是有效的和有结果的。

关键词：文本，语用文本潜能，接受者，语言手段，领域

**Abstract.** *To define the techniques of text formation one should dwell upon the pragmatic notion of the text potential. A text as a coherent whole is influenced by the author's motives and intentions, that's why the author does not only form and create the text but also directs the reader. In this case pragmatic text potential is unmitigatedly connected with the reader's perception and interpretation of the text. Pragmatic text potential can be realized differently in various contexts, it leads to the process of interrelation between "the sender" (author) and "the receiver" (reader). Nevertheless the process of communication will be effective and resultant only when pragmatic aims have been reached.*

**Key words:** *text, pragmatic text potential, recipient, linguistic means, realia.*

The main building factor of a text is its communicative meaning, i.e. its pragmatic nature, since a text is intended for emotional-volitional and aesthetic influence on its addressees (functioning of language units in their relation to the participants of communication act is considered pragmatic in linguistics). The main characteristic of a text is communicative- functional: a text serves for transmission and storage of information and influence on the personality of information recipi-

ent. The main features of any text are its informativeness, integrity and coherence.

It should be noted that the feature of informativeness covers a number of issues that are beyond the sphere of pure linguistics. One of them is the problem of the new (unknown). It is obvious that the new cannot be considered without taking into consideration social, psychological, scientific and technical, cultural, age, time and other factors. For one recipient the message will be new, for the second the same will be non-informative since the message content is already known to him or generally unclear, i.e. recognition of the pragmatic aspect of text information is one of the primary conditions for its appropriate perception. Acquiring the information the reader enters into specific pragmatic relations with the text that may be of intellectual or emotional nature.

V.N. Komissarov notes that: "Capability of a text to produce such a communicative effect, to arouse in the recipient a pragmatic attitude towards the information is called the pragmatic potential of the text" [1, 255]. The pragmatic potential of a text is the result of the author's choice of the message content and the way of its language expression. According to his communicative intention the author chooses linguistic means with the required meaning to convey the information.

Any utterance and any text have the capability to exert specific pragmatic influence (otherwise - communicative effect) on the listener or reader that is why pragmatic potential constitutes the most important part of the utterance content.

It should be noted that perception of an utterance syntactical structure and its communicative importance is referred to the inner linguistic competence of the reader and understanding of pragmatic information is revealed at various stages of text analysis. Pragmatic attitude of the information recipient towards the text depends not only on the text pragmatics but also on what this particular recipient represents himself: his personality, background knowledge, previous experience, psychic condition and nature. Analysis of the text pragmatics makes it possible only to suggest the potential communicative effect of the text towards the "typical" recipient.

It is obvious that within the framework of communicative activity the actions of the information sender are always stimulated and guided by the distinct aim to bring to the recipient the utmost of the author's idea, the aim of being understood.

For example, in the science fiction genre the following fact is of great interest: in some cases the events are perceived by the recipient as future in temporal localization and unreal thanks largely to the semantics of the lexical units used by a science-fiction author. In "2010: odyssey two" science fiction novel by A. Clarke the time, being one of the objects of narration is expressed in various ways. Along with common images and metaphors of time, the novel features original interpretation of its idea.

Let's analyze the following example from the aforesaid A. Clarke's work:

*"Good morning, Sal. So you have nothing new for me?"*

*“No, Dr. Chandra. Have you anything for me?”*

*The voice might have been that of any cultured Hindu lady educated in the United States as well as her own country. Sal’s accent hadn’t started that way, but over the years she had picked up many of Chandra’s intonations... No matter that Sal didn’t really understand more than a fraction of what he said; her responses were so convincing that even her creator was sometimes deceived...*

*“You’ve often told me, Sal, that we cannot solve the problem of Hal’s anomalous behavior without more information. But how can we get this information?”*

*“That is obvious. Someone must return to Discovery.*

*“Exactly. Now it looks as if that is going to happen, sooner than we expected.*

*“I’m pleased to hear that ” [2].*

The given abstract evidently shows that the computer possesses the features typical of a human. It has its own name written with a capital letter “Sal”, within the context it is substituted by a personal pronoun of feminine gender “she”, the noun is used in the possessive case “Sal’s accent” which is substituted by the possessive pronoun “her”. Actions typical of a human are ascribed to the computer. It can keep up a conversation, feelings and emotions are not alien to it, and, undoubtedly, it even has the intelligence, though not so well-developed that is proved by the sentence “*Sal didn’t really understand more than a fraction of what he said*”. A figure of speech which is determined as partial personification creates an image of the computer possessing a number of human characteristics. At the same time a computer that can speak is a realia of another world.

Let’s consider another example taken from the G. Orwell’s novel “1984” [3]. It’s worth mentioning that at the moment of its writing (1961) some realias created by G. Orwell did not exist in the real life but were developed later. For example, a “speakwrite” - from the author’s description one can understand that it is a “dictating machine” well-known to us (so were the student’s answers), however, the translation of the book into Russian gives us the word “rechepis” (the device that records speech (the word is invented by the translator, such word does not exist in Russian). For us the word “dictating machine” is usual and does not have any difficulties in understanding its function, however the word “rechepis” speaks much about the society where it was used, the way of life and vocabulary composition - it reveals the author’s intention to reconstruct and show the necessary environment. The whole work is full of just nonexistent realias that are typical only of the social system created by G. Orwell in the novel “1984”.

Thus, grasping the information the reader builds the specific pragmatic relations with the text which may be of intellectual or emotional nature. The capability of the text to arouse with the recipient pragmatic attitude towards the communicated information is called the pragmatic text potential. As it is seen from the examples pragmatic potential is implemented in different ways in particular com-

munication acts, in various contexts and implies the interrelation between the actions of partners within the framework of joint activity, i.e. interpersonal communication. In such joint activity the partners act on the basis of individual motives and pursue individual objectives. Communication will be efficient if practical and communicative objectives are reached and it is possible only in condition of the interaction between the speaker and the listener - when the phrases of the speaker are adequately perceived, the listener fully understands what was said and when both of these processes are interconvertible.

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青年SL的某些词源方面  
SOME ETYMOLOGICAL ASPECTS OF THE YOUTH SLANG

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本文旨在讨论青少年语解释的一些词源问题。单词的词源特征包括其来源，给定语言的声音变化历史，其语法和单词形成系统的发展，含义变化的模式，与其他语言的关系以及语言环境。此外，词源研究需要语义转换理论和提名原则发展的一些知识以及词形成分析的参与来证明词收敛的有效性。因此，上述所有因素绝对可以成为理解口语词汇起源的关键。

关键字：词源，语，构词，认知，意义变化

**Abstract.** *The present article aims at discussing some etymological problems of youth slang interpretation. Etymological characteristics of words include their origin, sound change history of a given language, the development of its grammar and word formation system, patterns of meaning changes, the relations with other languages and linguistic environment. Moreover etymological research requires the involvement of the semantic transition theory and some knowledge of nomination principles development as well as word-formation analysis to prove word convergence validity. So all the factors above mentioned can definitely become the key to understanding the origin of colloquial vocabulary.*

**Keywords:** *etymology, slang, word formation, cognates, meaning change.*

Etymology (the science of the words origin) is one of the oldest branches of linguistics. Its founders were ancient Greek philosophers, the term *ετυμολογία* first appeared in their works, it was formed from the words *τιμὸν* “truth” and *λόγος* “word, teaching” and originally meant “the science of truth”, or true meaning of the words. During the existence of etymology as a science, the understanding of its goals has repeatedly altered, moreover the methodology of etymological research has undergone even greater changes [2].

Not only the essence of the term slang, but also its etymology is interpreted differently by various scientists.

One of the first etymological information about the word "slang" goes back to the Gypsy slang “language”. Some scientists considered this word to be of Scan-

dinavian origin (cf. Norv. slengja kjeften “swing your jaw, to abuse with words”, slengjenamn “nickname”) [4, p. 63].

E. Partridge refers this word to the past participle of the verb “to sling” (“slang is a language slung about”) (see the Oxford English dictionary, sling 3) and also relates it to such modern slang expressions as “to sling words (language), to sling the bat” [5, p.21].

There have also been undertaken some attempts to link the word “slang” with the meaning “fetters”, which is considered to be somehow connected with the modern meaning of “the prisoners’ language” and the meaning of the word “gang” (Danish “slaeitg”, Norv. “sleng:”), which was supposedly used to describe “the language peculiar to a certain group of people” [2, p. 76].

Each of these etymological explanations seems to be likely more or less. So based on all the information above mentioned, we have come to the conclusion that the English word "slang" appeared as the result of root contamination of different origin.

In modern linguistics, the ultimate goal of etymological analysis is to determine where (in which language or dialect), when, how (what components/ morphemes/ word-formation types are used), what the original meaning of the word is and what form and meaning changes have created the existing sound form and meaning of the word known to the researcher. For example, it is stated that in the 17th century the adjective “freaked” meant covered in mud or spots. In the 19th century, “freak” came to mean wrong or abnormal, perhaps due to the association with dirty spots. Today, this word has an amazing number of meanings and all of them have come from the original meaning of “being abnormal”, including such meanings as: “hippie; drug addict; crazy behavior; sexually disturbed person; extremely beautiful woman”. “A freak” is a social outcast or misfit; a strange person; “weirdo” [5].

However, this certainty is not achievable in all the cases, and therefore the etymological characterization of many words is limited only to the search of similar word groups in the same language or in related ones.

To find out the origin of a word based on these data, we need to take into consideration sound change history of a given language, the development of its grammar and word formation system, patterns of meaning changes, dialects vocabulary of the given language, its relations with other languages (and their history), its linguistic environment throughout the time and the nature of contacts with other languages.

The noun “klutz”, meaning a clumsy person; a clumsy or physically incompetent individual, is derived from the word “klots” which is “stupid” in Yiddish:

For example: “I should never have let you hold my favorite vase - you’re such a klutz!” [3, p. 432].

Interconnection of etymology and historical phonetics is mutually reversible. Every phonetic law, every sound change is based on a range of etymological identifications and approaches to words in related languages, so the degree of certainty of every law is determined by the ratio of etymology itself, supporting it from the one hand and contradicting to it from the other.

The adjective “kooky” - mentally unbalanced - is derived from the word 'cuckoo', an old English word meaning “crazy”. Its synonyms include such adjectives as funny or crazy.

For example: “I realized Peter was a little bit kooky when I saw him running down the street naked” [3, p.473].

“Phat” is a variant of Afro-American slang word “fat”, which has become particularly popular in recent times. Phat means “excellent, cool, the greatest”, its synonyms are bomb and cool. The use of the word “fat”, describing something very good, dates back to the 15th century, when milk fat was considered to be the best product.

For example: “That skateboard is so phat. It's the best I've ever seen!” [3, p. 728].

Also the word “phat” is an abbreviation of Pretty Hot And Tasty.

The ultimate goal of etymological analysis is to establish a certain word-forming process that helped to create a new word meaning based on previously existing ones. First of all, etymology solves questions connected with the possibility of etymological convergence of these words: their phonetic identification, the correlation of meanings and so on. To prove word convergence validity is at the main aim of etymological research where word-formation analysis is included as one of the central components. In historical word formation, on the contrary, the question of correlation is not touched upon, but cognate words are investigated and the research is focused on the study of formation ways of word kinship. This difference leads to the interest of word formation mainly in productive word-forming models, while etymology aims at registering more “incorrect”, irregular connections of morphemes in a word and unproductive, rare means of word formation which can definitely become the key to understanding the origin of colloquial vocabulary [1].

Speaking about word formation aspects one should also pay attention to the great importance of the etymological nest study, i.e. the study of the entire set of words derived from the same word (or root), their influence from each other and chronological order. The degree of isolation of each word in such a nest is determined not only by the change in its phonemic shape and meaning (in comparison with the sound and meaning of the word from which it is formed), but also by the degree of use of those word-forming means that participated in the creation of that word. The analysis of etymological nests can provide significant information about the history of word formation, about the change of some word-formation

types by others in the process of language development.

For example, “all-nighter - a study or work session that goes through the night; studying without sleep (usually a last-minute course of action)”. This term is popular among students who spend the night before the exam memorizing or cramming a subject, trying to learn a huge amount of material in a short period of time. This term is more commonly used in the phrase “pull an all-nighter”. Such nouns are formed according to the following scheme: [PR + N] + ER.

The adjective “icky - displeasing, disgusting, unappealing” may be derived from the word “sticky”, which describes something sticky and unpleasant. For example: ‘Your kitchen is so icky! Why don't you bother to clean it up?’ [3, p. 123].

Moreover, one of the essential aspects in terms of etymological research is semantic analysis, i.e. explanation of meaning correlation of words which are considered to be cognates. The differences can be significant since that even very close (sometimes structurally identical) formations often demonstrate far-diverged values, quite close to the opposite.

Consider the adjective “haywire - broken; in a state of chaos; not working”. The word “haywire” has the meaning of a bale thread. It often happens that this thread breaks and then the haystack falls apart. Now this term is used to describe everything that breaks down completely. Its synonym is bonkers. For example: “1) Jack lost all of his work when his computer went haywire. 2) The plane's engine was haywire so we had to drive to Chicago” [3, p. 213].

In addition etymological research requires the involvement of the semantic transition theory and some knowledge of nomination principles development. At the same time, both in the field of semantic transitions and in connection with the principles of nomination, it would be very important to distinguish between the phenomena related to the general laws of human thinking and the phenomena caused by the material and spiritual culture of the native speakers.

“Average Joe that is someone who is just like everyone else; a normal ordinary person”. “Average” means “average; mid-level”, and “Joe” is just a simple male name, so “average Joe” refers to any man who is no different from the others. Its synonym is a regular guy. For example: “Mickey is your average Joe - he likes football, hates opera, and thinks it's a crime to do any work on weekends” [3, p. 275].

The method of semantic parallels is based on the indisputable regularity of many semantic transitions and stability.

Word meaning analysis of colloquial vocabulary is an area where etymological research is particularly often drawn to non-linguistic realia, using data from various fields of background knowledge. The whole life of words in a language - their formation on the basis of original words or borrowings from another language, their further usage, meaning and sound change, long-term existence or disap-



pearance-is connected with the nature, features and history of those objects, phenomena or concepts that these words denote. Any etymologist must imagine the world of reality behind the meaning of words. This is the reason for the constant interconnection of etymology in various combinations with other sciences such as history, economics, cultural history, history of technology, natural sciences.

The extra-linguistic aspect is especially important when analyzing the origin of "cultural" words that denote objects and concepts due to the development of technological progress, trade, and international contacts. Once formed in the original language, such words, being borrowed together with the corresponding lexemes, can become the property of the other languages very quickly. Their phonemic shape and word-formation structure can be so adapted to the structure of the borrowing language that only a thorough analysis of the cultural history helps to distinguish such borrowings from the original vocabulary, so that is why it is important to study not only the history of the given language vocabulary, but also its phonetic system and word formation types. Let's turn to the analysis of the actual material:

"Back seat driver - someone who gives unwanted advice; someone who tries to run things even though they don't have the power or authority to do so".

"1) Rob is the worst back seat driver I know - he's always telling me what to do.

2) I wish I could tell my boss to stop being such a back seat driver. I don't need to hear his comments every ten minutes!" [3, p. 312].

As for the etymology: sometimes people sitting in the back seat of a car give advice to the driver, that is more annoying than helpful. This phrase can be used directly in the car, or figuratively to make fun of the person who gives the wrong advice.

"Creep - a weird or disturbing person; an annoying person".

"1) Some creep was bothering me last night at the party.

2) I hate it when my little brother follows us around. He's such a creep!" [3, p. 353].

Dictionary of Etymology says that "creep is a thief, a robber, some disgusting man. Due to some associations with thieves and robbers who steal unnoticed, these are so called annoying people who pursue and bother others.

"Mosey along - to walk slowly and casually".

"1) Let's mosey along over to campus and get something to eat.

2) Are you crazy? You can't just mosey on in here 2 hours late for work! Who do you think you are?" [3, p. 603].

In terms of the original meaning this word refers to cowboy slang, which is still used today. It is derived from the old British expression "mose about", which means "hanging around".

These observations give us an overall view of complex interaction of various factors that must be taken into account when studying colloquial vocabulary etymology. The process of etimologization presupposes the investigation of natural phenomena and bringing to attention phonetic changes, changes in meaning, inclusion in a certain word-forming nest etc., because this combination is individual in every single case. It should be stressed that there does not exist two words with the same history and therefore the ways of etymological analysis vary infinitely from one word to another.

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文化历史相关性和历史的渐近性  
**CULTURAL-HISTORICAL RELATIVISM AND ASYMPTOTES OF HISTORY**

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本文的目的是介绍历史过程各种路径的版本，并确定其实现的极限。该计划提出了以历史哲学为代表的文化和历史相对主义代表的思想，以及在对历史动力局限性进行正面和负面评估的辩证统一中，在结社和解体的极端情况下的历史趋势的反趋势渐近线。社会发展线的多元性的观点是从价值取向的观点得到证实的，并且由于社会主体及其身份和自治性质的极端统一和融合是不切实际的。

关键词：文化，历史，价值，整合与瓦解

**Abstract.** *The purpose of this article is to present versions of the variety of paths of the historical process and determine the extremes of its implementation. This plan presents the ideas of representatives of cultural and historical relativism as a philosophy of history and the contra-sonal asymptotes of historical trends in the extremes of Association and dissociation of societies in the dialectical unity of positive and negative assessments of the limits of historical dynamics. The idea of polyvariance of lines of social development is confirmed from the point of view of value orientations and due to the impracticability of extremes of unification and integration of social subjects and their identity and autochthonous nature.*

**Keywords:** *culture, history, value, integration and disintegration.*

### **Introduction**

The role of man in historical dramas was evaluated in social philosophy in contradictory asymptotes. On the one hand, the social thought of the Enlightenment is dominated by the vision of man as a kind of social atom, a separate unit,

a self-contained autonomous entity that independently determines the forms of its own interaction with other social units. "War of all against all" by Thomas Hobbes, "social contract" by John Locke, economic and epistemological "Robinsonades" so characteristic of the philosophy of this era - these are the concrete expressions of the approach under consideration.

The creators of the manifestos, which played the most significant role in the political movements of the modern era, proceed from the same presumption. So, in the US Constitution, Benjamin

Franklin recorded: "We consider the following truths obvious: all people are created equal and they are all endowed by their creator with certain inalienable rights, which include life, freedom and the pursuit of happiness. To ensure these rights, governments have been established among the people, borrowing their just power from the consent of the governed."

In the era of Classicism in the XIX century, a radically different interpretation of human nature takes shape: the individual, the "social atom" give way to the "social wave", the principle of discreteness to the principle of continuity, when a person is presented as a function of the social environment external to him. Moreover, this approach takes place not only in Marxism. We will find such a vision of man both in the philosophy of law of Georg Hegel and in the positivism of Auguste

Comte, and in the "philosophy of total unity" by Vladimir Solovyov - everywhere we are talking about "general agreement", about society as the highest reality that precedes the individual, in relation to which he does not look like an independent subject.

At the same time, the individualistic orientation is not discarded at all and with renewed vigor asserts itself in social philosophy and in the axiology of the XX century. Thus, in Max Weber's sociology, society is always represented by the actions of one or many individuals, and in Max Scheler's philosophical anthropology, a person is generally defined as an eccentric being that does not fit into either natural or social reality and occupies a unique place among phenomena as a phenomenon.

In the Marxism, along with the idea of the human essence as an "ensemble of social relations", there is an opposite anthropological orientation, according to which in a communist society that has overcome the alienation of man from his essence, personal autonomy, freedom of choice in life and the right to happiness in a humane and harmonious social environment.

However, even the first attempts to realize the proclaimed ideal of the desired future turned into a total suppression of man, the most expressive manifestations of which were the notorious ideological clichés of people as "cogs of the social mechanism", about which one can rightfully say: we have no irreplaceable ones! A tragic, but farcical reflection is cast on this ideologeme by the nightmares of the Great Terror trials, when the defendants - prominent Bolsheviks - made confes-

sions that were monstrous in their absurdity, since this was demanded by considerations of the "benefits" of Soviet power and an immutable party duty.

And yet Herbert Spencer, one of the founders of scientific sociology, argued that this society exists for the good of its members, and not its members exist for the good of society.

### **Cultural and historical relativism**

This tradition in understanding history and its values is represented by Wilhelm Dilthey, Pitirim Sorokin, Arthur Toynbee, Oswald Spengler. According to this approach, value is understood as the basis for the existence and functioning of any culture in its historical movement. Life, according to Dilthey, is unlimited and indefinable, it flows from secret sources and strives for unknown goals; it is accessible to our knowledge only partially: individual life phenomena and their psychological interpretation and understanding are available. By observing their repetition and regularities, a certain general classification is created, which makes it possible to include this or that individual phenomenon in relatively constant general types and laws; they serve as an auxiliary tool for the researcher in his very approximate explanation of history, which is a mixture and fusion of such typical phenomena.

Pitirim Sorokin considered culture "as a set of meanings, values and norms possessed by interacting persons, a set of carriers that objectify, socialize and reveal these meanings." [4, p. 218] For a sociologist, society is characterized not just by a set of interactions between people, their relationships, but by a certain inner essence, the meaning of which can be expressed by the concept of culture, revealed through values, norms and their carriers.

Sorokin came to the conclusion that in the history of mankind there are three supersystems that periodically replace each other: ideational, idealistic and sensual. Each of them is characterized by an understanding of reality corresponding only to it, the nature of needs, the degree and methods of their satisfaction. "Any great culture, wrote Sorokin, is not just a conglomerate of various phenomena that coexist, but are not related to each other, but there is a unity or individuality, all components are permeated with one fundamental principle and express one, and the main value."

Ideational culture is a system of absolute principles that are completely alien to utility and instrumentalities. The highest, fundamental values are concentrated here: God, Soul, Truth, Benefit, Beauty. These values never become a means of action; on the contrary, they embody imperatives and goals, constitute a kind of archetypes of human existence. "Such a unified system of culture, based on the principle of supersensibility and superintelligence of God, as the only real value, can be called ideational."

Sensual culture is a relational system of hedonistic values, values of comfort,

coziness, and momentary personal good. The “ethics of happiness includes eudomonism (happiness of the whole life), hedonism (current pleasure, enjoyment), utilitarianism (emphasis on the means of achieving well-being). Sorokin argued that it is these values that are formed in our culture: "thus a modern form of our culture arose - a culture of sensory, empirical and secular and corresponding to this world".

Finally, idealistic culture is a synthesis of the first two: "Partly supersensible and partly sensual, it encompasses supersensible and superrational aspects." "It is both absolutist and at the same time eudemonistic. This is the world of the reasonably valuable, social and cultural". [4, p. 430-431]

Each of these cultural super-systems, according to Sorokin, “has its own mentality, its own system of truth and knowledge, its own philosophy and worldview, its own religion and image of holiness ", its own ideas of right and wrong, its own forms of fine literature and art, its own rights, laws, codes of conduct, their dominant forms of social relations, their own type of personality with a mentality of behavior peculiar only to it.

Analyzing the causes of the crisis of Western European culture, its state at that time, Sorokin came to the conclusion that Western culture - European and American - sensual, based on material values, seeks to free itself from religion, law and other values and is destined to perish. But, unlike Spengler, Sorokin did not see any tragedy or catastrophe in this: “... none of the finite forms - neither sensual nor ideational - is eternal. Sooner or later, it is destined to exhaust its creative potential." [5, p. 67-69]

None of the forms of culture is unlimited in its creative possibilities, it is always limited. All great cultures are subject to change. According to Sorokin, the dying of one culture is the birth of a new, or rebirth, renewal of the old. The crisis of art and science, philosophy and religion, law and morality, way of life in all spheres of society - political, economic, social - he called the crisis of the transition period. It should be followed by a new revival of Western culture and society: sensual culture will be replaced by ideational culture, the core of which will be the values of religion, morality, and law. He imagined this world of the future as a world of socio-cultural, reasonably valuable. This is the result of Pitirim Sorokin's reasoning in analyzing the development of cultures of different peoples.

Values, as Sorokin believed, are the basis, the core of culture, around which all the other diversity of its constituent elements is formed. For Sorokin, the concept of value is central in the philosophical system, just as for Plato the most important concept in his philosophical system was “idea”. Sorokin was the first to substantiate the methodological significance of the value theory in sociology.

One more aspect of the axiological approach in sociology proposed by Sorokin should be noted. Values act as an integrative basis not only for an individual cul-

ture, but also for the whole society. So, Sorokin saw in the presence of an integral and stable system of values the most important condition for both internal social peace and international peace. "The main reason or foundation of international peace is the presence in each of the operating societies of an integral, well-integrated and assimilated system of external and main values and corresponding norms, and these systems must be compatible with each other. In a given group of society or within a given society, the possibility of peace is directly dependent on the condition of the integrity of the system of external values and their mutual compatibility. When their unity, assimilation and harmony are weakened ... the chances of international and civil war increase."

So, according to Sorokin, the basis of every culture is values, and not separate ones, but a system of basic values. According to Sorokin, "... where the basic values are assimilated and embodied, they constitute a single system of interaction and interconnection." This is a system of so-called universal human values, on the basis of which cooperation between the peoples of the world is possible. It was to it that he called as a scientist and public figure. Sorokin came up with the idea of convergence, according to which different types of society, based on different systems of values, will merge into a kind of integral society that "unites most of the positive values." [4, p. 491-492]

Another representative of cultural-historical relativism, Oswald Spengler, in his culturological concept, developed the ideas of his teacher, the Russian philosopher Nikolai Danilevsky, which he outlined in his book *Russia and Europe*. So, he wrote: "... humanity is an empty word. ... Instead of a monolithic picture of linear world history ..., I see the phenomenon of many powerful cultures ... So each of them imposes on its material - humanity - its own formula, and each has its own idea, its own passions, its own life, desires and feelings ... ". [8, p. 56]

Cultures, according to Spengler, arise "with a sublime aimlessness, like flowers in a field", and just as aimlessly leave the stage ("... only living cultures die"), leaving nothing behind. The morphology of Spengler's culture informed the Western world that it was irresistibly declining: according to Spengler, a rationalistic civilization means the degradation of the highest spiritual values of a culture doomed to death.

Each culture in its development goes through several stages: birth, flowering, decline. "Cultures," the philosopher writes, "are living beings of a higher order; they grow with their sublime aimlessness like flowers in a field ... they belong to living nature. " The process of history is a picture of "eternal education and change, the miraculous formation and death of cultures." [8, p. 56-57]

Spengler identified eight types of cultures that, in his opinion, existed throughout the history of mankind: Egyptian, Babylonian, Indian, Chinese, Greco-Roman, Byzantine-Arab, Western European ("Faustian") and Mayan culture. Each

culture has its own forms - language, art, law, religion, philosophy. Each culture is a value in itself, for its essential kernel consists of traditional, historically formed ideas and values assimilated by it. In short, each culture, according to the philosopher, has its own face. Common values - religion, morality, art - bind together all representatives of a given culture. "The phenomena of other cultures speak a different language, for other people there are other truths." [8, p. 61]

Thus, according to Spengler, culture is a "living body of the soul", an internal organism "born of the soil" and associated with morality. Civilization is only a dried-up mummy, a frozen "external mechanism oriented towards logic, towards intellect, as a mental fossil instead of the extinct soul itself." [8, p. 461-463] Civilization destroys culture. Analyzing European culture, its then state, Spengler came to the conclusion that "it is dying." There was a degradation of "the highest spiritual values of culture, and that is doomed." Culture, if it is considered, as it was before, is the embodiment of certain human values, disappears. Interhuman relations, according to Spengler, cease to be regulated by non-rational ways: feelings, customs, faith, ideals, opposition of good and evil, beautiful and ugly. In other words, the principle of benefit, calculation, benefit prevails.

We can say that, according to Spengler, civilization is based primarily on rationality, rational abstraction and, as a result, on material values. Culture, on the other hand, relies on spiritual values and spiritual self-regulation, and the displacement of the spiritual, value factor from people's lives inevitably leads to a crisis of culture, its disappearance. This is the state of culture in Western Europe: culture turns into civilization, its living soul dies. This is the result of Spengler's reflections, for whom culture, and above all its spiritual basis, is value in itself.

Values cannot be imposed on an individual civilization from the outside: they are discovered and determined from within, from the depths of individual and social life. In the spiritual culture of an individual people, moral, religious, aesthetic and other values are embodied and realized, due to which there is the unity of each individual nation or each individual society. The destruction of the value system, its integrity and, above all, its spiritual foundations, inevitably leads to the loss of the soul, to transformation into civilization, to the death of a culture, a nation, a whole society. This is Spengler's view of the problem of values.

The analysis of the solution to the problem of values in cultural-historical relativism will be incomplete if we do not dwell on the views of Arnold Toynbee on this issue. Toynbee found his solution to the problem of values by exploring the spiritual world of the individual through interaction with society. Society Toynbee characterized as "... a set of relationships between individuals, and these relationships ... presuppose the coincidence of individual fields of action, which indicates the presence of a common basis." [6, p. 255]

The comprehension of history, its meaning is inextricably linked with human



existence, and while exploring human existence, it is impossible to bypass the problem of values, because the world of values - moral, aesthetic, religious, etc. - determines the content and direction of behavior of both an individual and society in the whole. "Comprehension of History" is Toynbee's main work. This work contains all the core ideas of the historian. Toynbee's interest in history is specific, philosophical. He is interested not only in specific historical phenomena and events, but in something more: the relationship of history as a universal, all-human whole with inner experience, inner spiritual dynamics of the human soul.

Toynbee's legacy is interesting in terms of translating common human values into the development of a new thinking strategy aimed at analyzing the complex collisions of the nuclear age. It calls to reflect on the relationship between the past and the present, the unity and diversity of the cultural and historical process, progress and multivariate ways of human development, the prospects for its future.

Answering the question, what is the philosophy of history, Toynbee notes that this is in some way a question about the human meaning of history, if you will, a question about the inner and outer dignity of man in the flow of time. In other words, history, according to Toynbee, is personalistic, history that is completely not subject to human arbitrariness, but develops through a person, enriches through a person, has a human face. The objective process of history is largely mediated by the human personality, for it passes through the inner world, the inner experience of man, and inner conflicts.

Human history, the history of people, is a sphere of human communication, moreover, comprehended in its special - temporal, centuries-old dimension. And human personality is not completely soluble in this sphere, but, on the contrary, largely determines its specificity. According to Toynbee, a person who is quantitatively incommensurate with history is, as it were, qualitatively equal to it. History does not exist without personality. Toynbee deduces the concept of value from the understanding of history, the inner content of which is personality. A person should be a kind of bearer of spiritual values - this is its core and huge potential, the guarantee of success. "Personality is a growing factor of the Universe ... Its strength and activity gradually increase ... and often, even in the most unfavorable conditions, it wins moral victories that become great milestones of progress." [6, p. 539]

History from generation to generation carries values and concepts of honor, conscience, law, justice, mercy, and creativity. This is, as it were, the core, the essence of ideas about human dignity. But by doing so, history is reduced to a state of nonsense and chaos. The meaning of history, according to Toynbee, can be defined as the realization of human dignity in the continuity of the historical experience of people. Values, according to the philosopher, and above all - spiritual values, are concentrated in people, and they form the basis of human dignity.

Toynbee included in the world of values, along with spiritual values, social, moral, aesthetic, and intellectual values. Man's struggle to acquire and establish the world of values is, in fact, the process of realizing meaning in history.

Values cannot be replicated mechanically, for they act in human souls as something deeply personal, meaningful. Toynbee believed that values are deeply individual, always correlated with the unique circumstances of human psychology, sociality and culture.

But not only the personality with its creativity and creative power is value for Toynbee. Exploring the development of history, Toynbee asserts the belonging of values to the world of culture. In other words, the basis of each individual civilization is a system of values, which determines its content. At the same time, Toynbee asserted the existence of many equal value systems, independent of each other. Each local civilization, and Toynbee considered there to be twenty-one of them (and later thirty-six) possesses a unique appearance, distinguishing it from others.

The source of civilization is a special world of life, shared by this or that community of people, it is this that constitutes the material for creative efforts. Born here and now, in the specific conditions of space and time, each civilization finds its own way to fit into the context of the natural environment. Once the acquired awareness of self-identity is transmitted by tradition, it is preserved through the centuries, passed down from generation to generation, despite the continuous search of the creative elite striving for renewal.

Each of the civilizations, according to Toynbee, takes on an inimitable appearance, experiences difficulties, accepting challenges from natural factors and social environment. As a rule, it is to the lot of the elite strata, creative individuals that the search for value-target guidelines that contribute to the renewal of a given civilization falls, they develop those value-semantic formations that are necessary for the formation of its unique appearance.

Analyzing the development of history, Toynbee comes to the conclusion that the concept of the unity of history is false. He proves the discontinuous and, moreover, the multifaceted nature of the development of individual societies. He writes about the "flow of human life" that is interrupted from one closed civilization to another. Each civilization has a unique specificity associated with its geographic location, natural and social environment, with distinctive features of the historical tradition, spiritual appearance. It follows that each civilization has its own distinctive features, its own system of values, determined historically. In other words, a person is born in a certain system of values, and his task is not to degrade spiritually, but to perceive that spiritual potential, that system of intellectual, religious, aesthetic values that were created before him, to master them and pass them on to subsequent generations. A creative person who makes a "breakthrough" has a deep

inner content, all that is essential that history carries from generation to generation: concepts of honor, conscience, justice, creativity, freedom - about everything that makes up ideas about human spirituality.

So, according to Toynbee, value is the highest degree of spirituality, it is the inner content of the personality, which includes the concepts of conscience, honor, mercy, etc. In addition, the philosopher argued, a separate culture is value itself, since a unique spiritual image, a system of spiritual, moral and aesthetic ideals peculiar only to it. The system of values of each individual civilization is determined culturally and historically, has a certain time reference.

Summing up the solution of the problem of values in cultural-historical relativism, it should be noted that culture is the “world of embodied values”, because values are determined from within, from the depths of individual and social life. Culture preserves the unity of the nation, state, society, since it is determined by the degree of implementation of values and the implementation of value relations in all spheres of human life, and therefore the culture of each people is primary in relation to its economy, politics, law and morality.

This implies axiological pluralism, and although the number of local civilizations is different, one cannot fail to notice the common thing that lies at the foundation of each individual civilization: the system of values that forms that unique image, a special life world of a particular community of people. Spiritual values within each civilization are passed on to future generations and ultimately determine a person's attitude to himself, nature and society.

The value asymptotes of history

The value orientations of society in our time, as never before, express the maxim of human existence in the age of globalization of social life. The noetic environment of human life - this, in the words of K. Marx, "historical nature" - is torn apart by many contradictions and conflicts. Races and nations, religions and confessions, metropolises and colonies, bourgeois and proletarians, West and East, North and South, despotism and freedom, totalitarianism and anarchy, barbarism and civilization, and they are numerous, enter the polyphonic and discordant chorus.

At the same time, understanding is growing - and the understanding of one of the authors too [9, p. 77-83] - the indisputable truth that we, people, have one world for all, one planet, one society, one history and one destiny. No person and no community can say: stop the globe, I want to descend.

The global trend in modern human history, recognized by all, is the internationalization of public life. The atomic bomb, transnational corporations and satellite communications were the three pillars of the emerging human unity. The supposedly historical highway is being viewed: united humanity. On the other hand, we also see powerful processes of disintegration and separatism. One can understand

the active rejection of such processes. Thus, Aurelio Peccei, in his acutely polemic book "Human Qualities" [3], even calls the preservation of national sovereignty "a syndrome of abnormal cultural development." At the same time, simple negation does not remove the problem of explaining historical and political realities.

The trend of the historical integration of mankind is assessed, on the one hand, very optimistically, in the form of the ideological construction of mondialism. For example, the American political scientist and futurist Francis Fukuyama, in his work with the pretentious title "The End of History" [7] echoes the title of the famous book by Daniel Bell, draws an image of a future united society in which the process of history takes on the character of a one-way: the world organization normalizes conflicts, and although various events, even turbulent ones, can and will occur, but apart from the market model with a liberal ideology - based on the ideal of freedom - there will be nothing new. The scheme is quite simple: integration is progress, and progress is the spread of today's "advanced" model to the whole world.

Of course, there are more cautious assessments of human progress, [1,2] and other methodological attitudes, there are also pessimistic statements in this regard. In general, when a modern sociologist, historian, political scientist or lawyer cites figures and facts of the internationalization of the economy, the interconnectedness and interdependence of the modern world in the areas of security, ecology, resources or mass culture and the emergence of various international structures on this basis, and then draws a trend and future, he sees the external chain of events, losing the value aspect.

History, understood in a naturalistic spirit, as an exclusively objective chain of events, is itself the illusion of a positivist-thinking mind, an abstraction identified with reality. [10, p. 54-56] Humanity is by no means marching in a slender column into the bright future of a communist or liberal paradise, no matter who calls for it.

Historical messianism is a well-known disease. Religious ideologies such as Christianity and Islam suffered from it; ethnic movements such as racism, nationalism and chauvinism; secular economic and political doctrines such as communism or fascism. It seems that this disease in the euphoria of the "victory in the Cold War" has infected the Western "society of free enterprise." It is in this vein that the process of synthesis of a common human civilization is interpreted as a process of unification of the life of peoples and states, adjusting them to a common template, the role of which is claimed by modern Procrustes across the ocean, today the strongest and richest, and everything that does not fit this template, is declared "dead ends" of historical development.

Moreover, the idea is expressed that the new historical highway is generally the only possible path of development, and all deviations to the side are not other directions, but just roundabouts leading a longer road to the same terminal station

- liberal democracy. However, it seems more preferable both from a purely theoretical standpoint and from the point of view of value orientations, the idea of the polyvariety of the lines of social development. Indeed: the answer to the question of whether the subject of history should be tailored to a common model, unified in one or another - communist or liberal - social form, or let there be many social models, good and different - the answer to this question seems to be obvious. The diversity of the system increases its resistance to external destructive factors. The many possible forms of functioning allows the system to quickly and easily adapt to new situations. And on a purely evaluative level, the diversity of a kaleidoscope is more attractive than a chessboard.

Sharing this theoretical orientation in general, we believe it is possible to offer some methodological foundations. The divergence of positions and assessments of historical reality and the prospects for its modification is decomposed into polar-dual, extreme trends observed in the historical process. This is the above-mentioned integration and disintegration of human communities at any scale from regional to global, a kind of attraction and repulsion, as well as unification, standardization of social subjects and cultural values and at the same time isolation, originality, authenticity - a kind of growth of entropy and impoverishment of culture and, on the contrary, the growth of information, the enrichment of the content of social life with various values.

The first thing that should be noted is the asymptotic nature of those extremes towards which the development trends in both pairs are directed. The point of view, according to which the entire earthly society is moving in unison towards "yawning heights", turned out to be refuted by itself and became odious. Not to mention the inconsistency of historical reality, it does not stand up to criticism from the theory: such a model is anisotropic, there is a selected direction in it, which immediately raises doubts about the naturalness of the process and actualizes all the argumentation against preformism and teleologism.

But the opposite statement in the spirit of cultural and historical relativism about the fundamental difference in the paths of the history of cultures and peoples, in addition to the factual and empirical inconsistency with reality, faces the problem of the integrity of society. Vividly expressed in poetic form by Rudyard Kipling: the West is the West, the East is the East, and they cannot come together - it separates between human communities the same, if not deeper, than between humans and dolphins or humans and the Ocean of Solaris. However, it is quite obvious that people are united in a social system not by the possibility of biological interbreeding, but by the very mode of existence, the meaning of which lies in cultural activity, in the creation of the world of values, the artificial world of the noosphere. In relation to culture to nature, in relation to historical nature to prehistoric and extrahistorical nature, all people are identical to each other, regardless of

the whole mass of internal social differences.

The situation is similar with unification and identity. The general and the special are the limits to which you can strive as much as you like and even approach them, but reaching which is as impossible as squaring a circle or a step beyond the horizon.

We can borrow and inherit from each other indefinitely, but none of us can become someone else, because the corresponding place in the social space has already been taken, and everyone must develop their own site, live an individual life, be it a person or a nation. And vice versa: you can in every possible way emphasize the originality of the combination in which the elements of society have formed, giving rise to this or that soul or culture, but the difference will not be greater than between the pictures of a kaleidoscope, made up of the same glasses.

It is interesting, in our opinion, that there is a definite parallelism between the indicated pairs of social asymptotes, extreme states. Strengthening the trend of integration in a particular social environment necessarily entails an increase in unification and leveling, which leads to a simplification, even primitivization of the corresponding social subject and stagnation in its development. A monomaniac and a fanatic are distinguished by these features at the level of personality; and a closed caste, professing the principle of autarchy - at the level of the masses; and a totalitarian state that seeks to impose a standard model of citizens' behavior - at the level of society.

The strengthening of the tendency of division, the autonomy of social subjects, assessed negatively due to the growing mass of differences and the establishment of artificial partitions between people, has as its consequence an increase in diversity, the emergence of many options and alternatives, and therefore the possibility of free shaping and preparation for future use of original models of historical development.

So what: be one humanity, but at the same time drink Coca-Cola, chew sneakers, dance lambada and watch CNN news, or preserve identity, drink kvass, sip shchi, dance Kamarinskaya, listen to the messages of the Sovinformbureau, and bristle with rockets, to conduct an ideological struggle and to erect an "iron curtain"? Alas, both are equally bad. This is the sad dialectic of history.

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在学校教育数字化的背景下，学生成功社交的潜在风险  
**POSSIBLE RISKS FOR SUCCESSFUL SOCIALIZATION OF  
STUDENTS IN THE CONTEXT OF DIGITALIZATION OF SCHOOL  
EDUCATION**

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这项研究的目的是研究在远程教育条件下哪些因素可以促进学生成功社交的风险的出现以及社会能力的形成。正如我们所期望的，获得的结果确定了在学校教育中引入数字化时需要考虑的那些方面。研究表明，有必要开发和实施心理和教学条件和方法，以确保教育数字化的有效性，不仅着眼于学生的认知发展并确保社会化的成功，而且还应关注和发展学科的发展。活动不是作为Internet资源的用户，而是作为可以有效，创造性地使用教育环境的数字资源的元主题。

关键字。 学校教育数字化，学生，社会化

**Abstract.** *The purpose of the study was to examine what, in conditions of distance education, can contribute to the emergence of risks of successful socialization of students and the formation of social competencies. The results obtained, as we expected, identified those aspects that need to be taken into account when introducing digitalization in school education. It is shown that it is necessary to develop and implement psychological and pedagogical conditions and methods that ensure the effectiveness of digitalization of education, focused not only on the cognitive development of students and ensuring the success of socialization, but also the development of the subject of activity not as a user of Internet resources, but as a meta-subject that can effectively and creatively use the digital resources of the educational environment.*

**Keywords.** *Digitalization of school education, students, socialization.*

The use of modern computer technologies in almost all spheres of human activity is already a fait accompli. Along with the undoubted positive value of computerization and digitalization of education, the experience of forced distance education should be analyzed for possible undesirable phenomena that affect the socio-psychological well-being and health of students. During the period of forced school education in a remote form, we conducted a socio-psychological survey;



This article presents an analysis of those "risk zones" that can block the success of socialization of schoolchildren.

The study of issues of socialization was carried out by representatives of various schools of psychology. As noted by I.S. Kon, "the term "socialization" is ambiguous and its interpretations by different authors do not coincide" [6; 150]. Today, the position is widespread, according to which socialization is a two-way process: "... assimilation by an individual of social experience by entering the social environment, into the system of social ties ..."; and "... the process of active reproduction of this system by an individual of his activity" [2; 267]. This understanding includes an important aspect that is necessary for studying the development of an individual, a group, society as a whole, namely, a qualitative transformation of the learned experience and its reproduction (E.P. Belinskaya, O.A. Tikhomandritskaya). The experience gained by a person in the process of life is refracted through personal characteristics and transmitted to others through the prism of individuality. Thus, a person is not only an object, but also an active subject of the process under consideration.

Studying socialization in adolescence, it is impossible to "pull out" the process under consideration from the system of age characteristics. As D.I. Feldstein, a 15-17-year-old adolescent "is developing ... reflection on his own life path, striving for self-realization ..., in adolescents, the state of social maturity is reflected in the desire to assert his "I" in the system of social relations. "This stage of socialization is distinguished not only by the most pronounced individualization, but also by self-determination, self-management of a growing person who has not only become a subject, but also realizes himself as such"[10; 258].

The purpose of this study was to identify possible risks in ensuring the success of students' socialization in conditions of forced remote learning. The results obtained, in our opinion, may be interesting and even necessary when introducing digitalization into school education.

The first stage of the empirical part of the study was interviewing and polling among schoolchildren (grades 7-11), their parents, teachers and school administration (hereinafter adm). The survey involved respondents from the following cities: Vladimir, Volgograd, Kovrov, Moscow, Novosibirsk and Perm). For the main part of the questions (85%), the respondents had to choose from the proposed options those answers/statements with which they agree and rate them on a 5 or 7 point scale; two or three questions in the questionnaires were open-ended. After revising the questionnaires, according to the experts' comments, they were transformed into a Google form and sent to school addresses. This made it possible to ensure the representativeness of the sample when organizing the study. The survey was conducted at the request of the respondents, anonymously. 1046 respondents filled in Google questionnaires, including 422 schoolchildren, 107 teachers, 498

parents and 19 school principals.

One of the questions in the questionnaire directly related to the opinion of adult respondents about the possibility of difficulties in socialization among students in distance learning. It was revealed that almost 83% of respondents believe that with distance learning, difficulties in the socialization of students are possible. The most common justifications of the parents of their choice of answer "Yes, of course", difficulties in the socialization of students will arise, were the following: lack of interaction between students and the teacher in personal "live" contact. Parents noted that communication between children in 90% of cases "occurs in instant messengers in short phrases." There are no full-fledged dialogues, no emotional communication, the socio-psychological context of interaction is lost. Only 9% of the respondents suggested that schoolchildren should not have difficulties in socialization.

Even before the period of mass computerization of schools, in the study of N.V. Antonova found that in the process of communicating with students from teachers, requirements prevail (53.9% of all statements), feedback is used by teachers less often (46.1%) and with a predominance of an evaluative attitude towards the child's personality (20%). Educators seldom give reasons to their students for their feedback. In conflict situations, teachers tend to show such types of behavior as "compromise", "avoidance" and only then "cooperation". "In real communication with students, teachers often react to difficult situations with a type of behavior close to "rivalry""[1;27]. In general, according to the results of this study, teachers have a predominantly destructive attitude towards students. It is worth noting that these are the results of the period when children went to school and there was "live" communication between teachers and schoolchildren. Now (during forced distance learning), when the time of "contacts" with schoolchildren is strictly regulated online, all the more we can expect the dominance of the directive style of interaction with students: "delegating an educational task - monitoring its implementation." Therefore, not only parents, but also teachers write in their justification that a "live" dialogue is necessary, and "it is also important for schoolchildren to feel like a member of the team". Teachers note that the school teaches not only knowledge, but also understanding of how to behave with peers and adults in a common space. Communication skills are formed and developed. In later life, it will be difficult for children to adapt in society, to contact people. It is much more difficult to establish contacts in the community in person than in the game or remotely. Many parents, putting exclamation marks or underlining, noted that "A child should be able to communicate in a team, both with peers and with adults in different situations, including conflict ones! Be able to withstand criticism from children and adults! Evaluate the behavior of others, observe, compare, draw conclusions. Must be able to prioritize everything. The feeling of shame

for not completing tasks is dulled, since the child does not communicate live, his behavior is not known to anyone at school. You need to be able to behave culturally in society, be able to talk with people, be able to look neat, know the rules of behavior in society. Without socialization, children will cease to be friends for real, to experience their failures together, or vice versa, the joys of school life. "Teachers and parents believe that remote contact "loses the ability to manifest and understand feelings, they can be hidden behind a monitor. Communication is lost, a barrier appears in relations with peers, and even more so with adults. Children will not be able to defend their point of view, and the "fertile" ground for the emergence of digital addiction is growing".

The results of our study confirm the results of similar studies by colleagues of the HSE (Higher School of Economics) Institute of Education. Thus, a study conducted by A.G. Kasprzhak et al. Revealed that 41% of schoolchildren experience difficulties in mastering the program [5]. In the study of the group headed by S.G. Kosaretskiy's results are similar: children are not ready for the online format, it is more difficult for them to study: less well-off families are 60% and 45% are better-off families [7].

In the questionnaires, adult respondents were asked about the possible impact of digitalization of school education on the development of the personality of children. The respondents rated the suggested answer options. A tendency was revealed that the most positive assessments were in the group of school administration, then teachers and the most not optimistic assessments of the impact of digitalization of school education on the development of the personality of children in parents. We associate the interpretation of the revealed trend with the fact that the administrative team of the school, as a structure responsible for organizing the educational process, when assessing the changes that took place during the forced transition to distance learning, most likely, was not focused on the learning process itself (which is implemented by the pedagogical collective), but on its organization. Therefore, the assessment of teachers is an order of magnitude lower than that of the school administration, since the organization of educational activities and its implementation are essentially different aspects of education (also, recall that 19 people from administrative schools took part in our survey).

One of the final questions in the questionnaires for all respondents was in the form of a request to write recommendations and suggestions to ensure the quality of education and the formation of social competencies in students during the digitalization of education. The question was open and therefore we give the most frequently suggested recommendations (we give only those recommendations that are relevant to the topic of the article).

About 50% of the respondents from the parent group suggested using distance learning 1-2 days a week and 3-4 days of school attendance, this, while maintaining

the situation of live communication with all the positive aspects, will allow digitalization to be introduced into school education without negative consequences for the psychological well-being and health of children. Parents propose to introduce in a distance format the practice of individual consultations between children and parents with a teacher, parent meetings and, of course, distance education during a child's illness or other valid circumstances of a child's absence from school. In all other cases, "distance learning is not acceptable, children are already very overloaded with digital technology (electronic boards in schools, etc.), many children have vision complications by 5th grade".

Recommendations from the teaching staff and school administration as a whole are similar to the opinions of parents and the students themselves. The general recommendation can be defined as follows: digital resources should be one of the learning tools, but not replace face-to-face learning. When using remote forms, it is necessary to make the most of the videoconference mode for communication; include mandatory elements of extracurricular, educational work, in addition to lessons - master classes, trainings, thematic conversations, i.e. as much emotionally intense interaction as possible, the formation of psychological safety on the Internet, strengthen the psychological support of children, monitor the risk of computer addiction in schoolchildren.

33% of the surveyed schoolchildren believe that distance learning should be eliminated altogether. 63% noted that "Everything is annoying, infuriating, there is no comfortable place. It has become very difficult." 55% note that the transition to distance learning interferes with friendly communication with peers. In the Center for Research of Modern Childhood of the Institute of Education under the leadership of A. Bochaver it was revealed that every tenth schoolchild was not helped by any adult; 40% of primary school students and 30% of high school students needed a lot of help. Moreover, only 16% of parents could easily help their children in all subjects [3].

More than 55% of schoolchildren gave a positive assessment of distance learning. As recommendations in the context of the topic under discussion, schoolchildren also suggest combining full-time and distance learning.

The revealed positive assessments of schoolchildren are most likely associated, firstly, with the fact that this particular group of respondents is close to the "world of Internet technologies" and, most likely, schoolchildren (schoolchildren of grades 7-11 took part in our study) did not experience that discomfort, which is present in teachers and parents in interaction with modern gadgets. Secondly, due to age-related opportunities, schoolchildren are not characterized by the possibility of deep reflection not only of the learning process itself and its effectiveness, but also of the situation as a whole. We are all familiar with the joyful reaction of schoolchildren when the situation arises "There will be no lessons! Hurray, go

home", but in the current situation it is "I want to go to school". The inconsistency of assessments and ideas of schoolchildren is also evidenced by the revealed non-congruence of their own feelings, impressions and ideas. The obtained results of studies conducted before forced distance learning and the results of our survey, once again testify to the ambivalence of feelings, thoughts and behavior, as the main feature of adolescence, manifested in the fact that adolescents are characterized by a complex and contradictory inner self-awareness, as well as confusion in matters of self-determination. The results obtained may also be due to the fact that in modern society, as E.P. Belinskaya and OA Tikhomandritskaya simultaneously exist different "layers of values". These layers, in turn, "... do not represent a clearly structured normative model", which leads to the emergence of difficulties "social choice and acceptance of social norms and - ultimately - complicates the process of socialization in general" [2]. The condition that neutralizes possible difficulties in the socialization of schoolchildren is, of course, the constructiveness of the interaction of significant adults (parents and teachers) with schoolchildren. As a rule, dissatisfaction with relationships with significant adults at this age can act as a rather serious internal condition for possible violations in the success of a teenager's socialization. For example, withdrawal into oneself, or/and rejection of oneself. The importance of this aspect is indicated not only by the reasoning and statements of adolescents, but also by the data of many psychological studies [8,11, 13,14].

The results of our study confirm the data obtained in the study by E.D. Chizhov and K.I. Alekseeva, which shows that problematic themes of adolescents are associated with significant others. Characteristics of relationships such as misunderstanding, lack of support, and disdain for adolescents' self-esteem act as a condition of "distance" from significant others [11]. In studies conducted by Kim, J., Lee, H, similar results were obtained, on the basis of which the authors argue about the inhibitory effect of positive communication between parents and children on the occurrence of gambling addiction [14]. In a study by Eunbi Chang, Boyoung Kim, a connection between gambling addiction and low self-esteem was revealed. The authors believe that low self-esteem can be viewed as a risk factor for gambling addiction [12]. A study by Mehroof & Griffiths found a negative relationship between self-control and gambling addiction [13]. Taking into account the specifics of adolescence, namely the peculiarities of the emotional status of puberty, the identification of the difficulties faced by the adolescent and the corresponding psychological support become an important resource for ensuring the success of his socialization. In a study by M.A. Padun, which analyzes strategies for regulating emotions and their relationship with the emotional well-being of an individual, shows that individual strategies cannot be considered from the point of view of their functional/dysfunctional role outside the situational context, as well

as outside the understanding of micro- and macrosocial characteristics" [8, p.39]. Of course, the author's conclusion predetermines the importance of studying the manifestations of strategies for controlling emotional reactions in the context of relationships, in this case with peers, teachers and parents.

In our other study, a significant relationship was found between adolescent dissatisfaction with the attitude of significant adults and their passion for playing computer games and watching social networks [9]. The propensity to computer addiction and dissatisfaction with the attitude of teachers received Spearman's correlation coefficient equal to 458 and, accordingly, dissatisfaction with the attitude in the family, 431 (correlations are significant at the level of 0.01). The obtained values of the correlations make it possible to assert that the nature of the attitude of significant adults can be considered both as a resource and as a certain block in the immediate environment of a teenager for his development. The block is the overly protective attitude of significant adults, as well as the authoritarian style of attitude, within which the child's need for self-respect as a person is deprived. The attitude of significant adults, which is characterized by the creation of students' sense of faith in their capabilities, the creation of a trusting relationship in a situation of interaction; the ability of adults to refrain from pressure, respect for the child's freedom of choice, refusal to manipulate can be considered as important conditions for the successful socialization of schoolchildren.

In conclusion of the topic under discussion, it is appropriate to recall the statement of V.V. Zenkovsky that "... the child's self-awareness develops with its continuous interaction with the social environment"[4; 315]. "Social feelings are born together with social experience, since any socio-psychological experience is expressed primarily in feelings. It is not through the work of the intellect, not through imitation that we enter into a connection with the social environment, but because we directly feel this environment as living, human. The primary and immediate experience of the human environment, as such, underlies all of our social interaction" [4; 145].

The results obtained, as we expected, identified those aspects that need to be taken into account when finalizing digital technologies and procedures for introducing effective and useful aspects of digitalization into school education. This is, first of all, ensuring not only the success of the socialization of students, but also the development of the subject of activity not as a user of Internet resources, but as a meta-subject who can effectively and creatively use the digital resources of the educational environment for self-realization.

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适应压力时警官应对策略的方法论方面  
**METHODOLOGICAL ASPECTS OF COPING STRATEGIES OF  
POLICE OFFICERS WHEN ADAPTING TO STRESS**

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这项关于应对策略研究的理论综述考察了在G. Selye的艰难生活中，应对心理健康和行为表现的概念。工作的目的：在维护内部事务机构员工健康和成功的措施框架内具体化应对策略的边界。方法：采用分析和综合的理论方法，归纳法，演绎法和解释学法。结果与讨论：文献分析表明，应对策略的标准在不同的方法（心理防御，认知失调和心理矫正）方面有所不同，具体取决于其意识，任意性和情绪调节的程度。评估应对者作为应对策略R的方法的比较特征。Lazarus和S. Folkman等作者。结论：应对的有效性取决于解决困难生活状况的各种战略选择以及许多其他因素：受试者的个性和问题以及情境的心理特征。

关键词：应对，预期，认知，应对策略，压力，防御机制，认知失调，内政警官

**Introduction.** *This theoretical review of research on coping strategies examines the concept of coping with psychological aspects of well-being and performance in difficult life situations of stress by G. Selye. The purpose of the work: to concretize the boundaries of coping strategies in the framework of measures to preserve the health and success of employees of internal Affairs agencies. Methods: theoretical methods of analysis and synthesis, induction, deduction and hermeneutical method were used. Results and discussion: literature Analysis has shown that the criteria for coping strategies vary in different approaches (psychological defenses, cognitive dissonance, and psychocorrection) depending on the degree of their awareness, arbitrariness, and emotional regulation. Comparative characteristics of methods for evaluating the founders of coping as a coping strategy-R. Lazarus and S. Folkman and other authors. Conclusion: the effectiveness of coping depends on the variety of strategic options for solving difficult life situations and many other factors: the personality of the subject and the problem, as*



*well as situational psychological characteristics.*

**Keywords:** *coping, anticipation, cognition, coping strategies, stress, defense mechanisms, cognitive dissonance, police officers of internal Affairs.*

### **Relevance**

The word “coping” is of English origin and since its appearance in the literature, its meaning was not always clear for a wide range of Russian researchers and, in particular, for practical psychologists, due to the emergence of various interpretations in understanding the structure of coping personality behavior. Therefore, the problem arises of generalizing concepts and systematizing various approaches to its interpretation, for the development of a purposeful unified program for training future police officers (cadets and students) techniques, methods, methods and principles of successful coping with difficult life situations at all stages of adaptation and readaptation to stressful situations. and extreme conditions of professional activity of police officers.

The significance of our research lies in its addressing to practical psychologists, to teachers and researchers who solve police problems, whose activities are characterized by constant stressfulness and dependence on economic and political cataclysms.

**Purpose of the work:** to determine the methodological boundaries of coping strategies within the framework of constructing a concept for teaching coping for police officers to preserve their mental health and professionalism while adapting to stress.

### **Research methods**

In this theoretical and methodological study, the methods of analysis, synthesis, induction and deduction were used, which allowed us to make assumptions about the relationship of the studied phenomena, build a logical chain of factual concepts and carry out our own interpretation of the studied data.

The hermeneutic method made it possible to use the techniques of interpreting textual information of various authors in the broader context of modern knowledge with the author's interpretation.

### **The degree of elaboration of the problem**

A large number of domestic works [2-5, 7-15] have been released that considered coping strategies as actions that increase stress resistance, within the framework of help and self-help of a person experiencing difficulty in extreme and stressful conditions [12; 14, pp. 50–56; 3, S. 3-18; 4, p. 170; 5, pp. 20–24; 10; pp. 38–42; 7;] and others. In the works that have appeared at the present time, the expressions began to be used: “coping strategies, coping behavior”, “coping resources”, “anticipatory coping” - I.P. Abitov [1, p. 274], I. V. Ryabchenko [13, p. 6]; [J. M. Violanti, J. E. Vienna, S. Petralia, and others [25-27, pp. 366-373; 9, pp. 227-237; p. 541]; V.L. Linevich, [11, P. 19-23]; E.I. Rasskazov and T.O.

Gordeeva [12; E. Hardy et al., [23, p. 224-235]; Kryukova T.L. [9, p. 184-188].

Extreme situations with a risk to life and health that police officers are constantly exposed to (death, threats to life and health, various losses, a challenge thrown by offenders, insults, etc.) depend both on the context and on the assessment of the situation by the person himself and the interaction of these factors at the psychological and, in general, the organismic level [7;8;10;11;14;].

### **Coping methodology study results and discussion**

The methodology of approach to coping strategies so far is based mainly on three models: dispositional, integrative and situational. The author of this article in his previous studies adheres to the *situational coping model*, which was first studied by S. Folkman and R. Lazarus [19, p. 9; 22; P.265-298], since it mainly considers stressful situations and conditions that police officers have to face. Earlier, in the research, in the methodology for solving difficult life situations, moral and ethical principles and various methods of resistance to stress and methods [14, 188s; 15, pp. 146-157.] of solving stress problems were laid.

R. Lazarus and S. Folkman [19, p. 9; 18, P.9-43] divided all the obtained strategies into three large groups: 1) the strategy of active problem solving when a person uses his own resources; 2) a strategy of actively seeking social support from others; 3) a strategy of avoidance or maladaptive behavior, when a person avoids solving problems, using both autoaggression and other methods, such as psychoactive drugs, drugs, alcohol.

As for the methods of diagnosing coping behavior, in Russia the methods of the authors of coping themselves are used, based on their eight coping strategies. The methods adapted and modified, developed on the basis of the types, approaches and strategies of R. Lazarus and S. Folkman, the most popular method is D. Amirkhan's Coping Strategy Indicator (CSI), developed for the diagnosis of personality coping strategies in 1990.

According to these constructs, these authors, as the founders of the introduction of the concept of "coping", distinguish three approaches to coping with stressful situations: dispositional, integrative and situational.

The dispositional approach examines the question of the existence of personal qualities that determine the best coping with difficult situations, which usually include the mechanisms of psychological defense of Z. Freud, the founder of psychoanalysis. In this approach, various authors identify the connection between personal psychological defenses and coping strategies, in their similarities and differences. Z. Freud, from the point of view of a doctor, divided the unconscious - preconscious and conscious systems, which psychologists naturally consider simultaneously as a cognitive - affective - emotional sphere of mental processes, and which are manifested in the behavioral reactions of the personality. Therefore, the borderline reactions of a person are normally considered by specialists in dif-

ferent ways, although they all consider one object of research: the personality and the functions of his brain structures that determine his behavior.

In the *integrative* approach, it is believed that both personal and situational aspects influence the choice of coping strategies [21, pp. 287–313]. They naturally intertwine and influence each other, sometimes so closely that it is difficult to separate them from each other and not confuse them. Therefore, this approach is singled out purely conditionally and is, as it seems, rather conditionally theoretical in nature.

In the *situational* approach, coping with stress in connection with a change in certain situations is considered as the most reasonable and conscious one. The founders of the situational approach are S. Folkman and R. Lazarus [19, p. 9; 22, S.265–298], who believe that it is the stressful situation that has a greater influence on the coping style of the individual. In this connection, the situation is primary, it triggers further actions of the individual: cognitive, emotional, behavioral. In the studies of these authors, coping is a behavioral, cognitive and emotional effort that an individual consciously spends on reducing the influence of a stressor. The coping efficiency is influenced by several parameters: the degree of threat to the subject, the availability of the necessary resources of the individual and their success. The results of the interaction of these parameters, as S. Folkman and R. Lazarus revealed, are influenced by the internal resources of the individual: self-concept-self-esteem, locus of control, affiliation, empathy, anticipation and the person's ability to successfully use them depending on the degree of threat of the situation. This interpretation was undoubtedly influenced by G. Selye's teaching on stress.

Therefore, coping S. Folkman et al., 1979 [22, pp. 265–298], R. Lazarus, 2006 [18, pp. 9-43] mean "constantly changing cognitive, emotional and behavioral ways of overcoming *external and internal* requirements to the personality" (according to G. Selye, 1936), which are assessed by a person as significant or "superior to his capabilities" and which are presented to him by professional activity.

There are opinions that L. Murphy was the first to use the word "coping" while observing the age crisis of children. But a chronological analysis of scientific literature on coping shows that the palm of a reasonable interpretation of this concept should be given to S. Folkman and R. Lazarus [19, pp. 27–34], as well as G. Selye, who was the first to develop the physiological mechanisms of the emergence and development of stress as a clinical result of human adaptive capabilities and stress resistance (G.S. Chovdyrova [14, pp. 50-56]. Subsequent work on coping and stress repeat the main content of the conclusions of these scientists, interpreting only verbal expressions and, somewhat adding, various options, respectively changes in social conditions and personal requirements (Kryukova T.L. [9, pp. 184-188]). Many say more about personality resources, such as optimism, humor, self-esteem, etc., than about strategies for adapting to stressful conditions.

As a result, the transactional model of stress and coping behavior began to be considered after the publication of works by the genius scientist G. Selye on stress, the first of which was titled "Essays on the Adaptation Syndrome". According to this model, physiological stress and experienced emotions are the result of the interaction of social processes and personality traits of a person to whom excessive demands are made. G. Selye in his works substantiated the doctrine of stress, which subsequently made it possible to understand both the etiology of the development of stress personality disorders and the pathogenesis [14,188 p.] and the need for further study of coping strategies and resources of personality stress resistance.

Thus, stress and coping initially, according to S. Folkman and R. Lazarus, and then his followers, turned out to be "two sides of the same coin" (S. Folkman, 1979 [22, pp. 265–298]; R. Lazarus, 2006 [18; p. 9-43]; J. M. Violanti, J. E. Viena, S. Petralia., Et al. [25, pp. 366–373; 26, pp. 227–237; 27, P.541]).

S. Folkman, S. Schaefer, R. Lazarus [22, pp. 265-298.] believe that, in general, coping is a changeable process, the patterns of which form their strategies, or personal styles of coping. They distinguish two types of coping: 1) problem-oriented, aimed at overcoming the very source of stress and 2) emotionally-oriented, aimed at overcoming their own response caused by the stressor.

As a result, both psychologists and the personality itself need to work both with the "problem" and with the emotional attitude of the police officer towards him. Both types of coping most often merge, are perceived and look like emotional regulation caused by a stressor (S. Lozoya., N. Aisenberg., R. Febes., 1998, [20, pp. 287–313]). Later, behavioral coping-own actions associated with decision-making were added to them. Considering all this, some authors believe that coping strategies have a rather complicated history (B.E. Kompas et al., [16, pp. 231–237; 17, p. 541]) of their development.

As for the resources of the individual, R.I. Abitov, R.V. Kupriyanov, E.E. Mustafin et al., [1, p. 274] use the term "anticipatory coping", which is understood as a sometimes anticipated, foreseeable response to a stressful event that is deliberately expected.

Anticipation (from Lat. *Anticipatio*) - the ability of a person to foresee the development of difficult life situations, events, phenomena. It is possible that anticipatory coping is more acceptable in solving everyday or narrowly personal problems and can be considered as a strategic resource, although not many individuals have the gift of foresight.

V.M. Wundt in his work from 1874 "Psychology from an empirical point of view" distinguishes two semantic contents of the concept of anticipation [6; P.379-384]: 1) a person's ability to imagine a possible result of an action before its implementation, as well as the ability to cognitively imagine a way to solve a

problem before it actually happens; 2) the ability of the human or animal body to prepare for a reaction to any event before it occurs (animals anticipate an earthquake or shipwreck, some people also have extra sensitivity to the outcome of upcoming life events).

Based on the analysis of the views of various authors and the functions of anticipation, psychological defense, and other coping, the term “coping behavior” is used, which unites the studied characteristics. It seems that such a combination, when a person chooses coping, is possible only with the accumulation of life experience of a person's collision with various difficult situations and events, or after purposeful training in these strategies.

From this perspective, it is interesting to consider *cognitive dissonance* as the desire of the personality itself to maintain its balance and launch its internal energy potential in the right direction, in difficult situations.

Cognitive dissonance, according to L. Festinger [20, pp. 315-317], means a discrepancy between two cognitive elements (cognitions) - thoughts, experience, information. At the same time, when two logically contradictory knowledge collides, a person's consciousness develops a feeling of psychological discomfort, which is often the cause of internal anxiety. Leon Festinger suggested two main hypotheses in the context of his concept: 1) when developing cognitive dissonance, a person will always strive, in some way, to reduce the discrepancy and achieve a balance between the two dissonant factors; 2) in an effort to reduce the feeling of dissonance, the person will avoid situations in which it can intensify. These assumptions are confirmed by our research on police officers [15, pp. 146-153].

However, there is also a problem of related concepts (coincidences and differences), such as cognitive dissonance, psychological defense in psychoanalysis, anticipatory coping and the choice of methods to increase stress resistance not by the person himself, but by psychologists for psychocorrection, remain similar phenomena - ultimately, contributing to coping with stress .,

Is it morally correct to train future police officers to avoid difficult situations or only those situations that he is unable to resolve? Can he foresee or anticipate them? These are challenging questions faced by educational psychologists, and practical psychologists need to be addressed.

Can psychocorrection and psychotherapy be included in this arsenal of methods for coping with a stressful situation and called a coping strategy? In addition, in our opinion, the concept of "strategy" means the breadth of the coping process - a set of measures, therefore coping strategies can include both conscious and unconscious defense mechanisms of psychoanalysis by Z. Freud, and the concepts of L. Festinger, R. Lazarus and S. Folkman et al. The processes of psychotherapy and psychocorrection when expanding the arsenal of proven methods can

be offered by psychologists and psychotherapists for the client to choose. In the course of accumulating experience of overcoming stressful situations, they can be processed into conscious coping, within the framework of emotionally oriented decision making.

Then, not always, what psychologists consider unconscious is such, since mental processes are always synergistic, they pass from the unconscious into conscious impulses automatically and spontaneously, often unexpectedly with the accumulation of experience. Based on this, some of the existing methods of psychocorrection, especially breathing trainings, which the client can choose for himself, can be included in the framework of coping strategies that ensure the psychological well-being of the individual, confidence in overcoming difficulties. Thus, they can be added to the structure of social support strategies proposed by S. Folkman and R. Lazarus.

V.A. Kapustina and O.A. Repp [8, pp. 91-96] believe that the most effective option for the prevention of adaptation disorders and correction of maladaptive coping behavior of police officers is socio-psychological training, the purpose of which is to develop competence in emotional the volitional sphere and the change of irrational attitudes, manifested in stressful situations, to adaptive ones, which helps to reduce emotional stress. This work shows just the synergy of the mental processes of the individual, their interconnectedness and interdependence and the ability to cope with emotional reactions to stress.

The point of view on the problem, the ratio of defense mechanisms and coping strategies, was proposed by J. Weillant [24, pp. 89–98], highlighting three classes of coping strategies in their broad sense.

1. The first group includes strategies related to receiving help and support from other people - seeking social support.

It seems that the methods of psychocorrection and psychotherapy can also be included in this item as getting support from psychologists and psychotherapists.

2. The second group includes conscious cognitive strategies as coping strategies in their traditional understanding by R. Lazarus and S. Folkman [19; P.9.].

This also includes the methods of psychocorrection at various stages of stress development and the termination of the action of stress factors, which can be chosen by those who have suffered stress, according to the situation and its significance for the individual, especially trainings. Although they differ significantly if we consider *psychocorrection as a straightening of maladaptive coping*, as the formation of the process of a person's awareness of its essence. In our future works, we will try to get closer to the mechanisms of converting unconscious coping into conscious coping.

3. The third group consists of involuntary mental mechanisms that immediately change our perception of reality to reduce stress, among these psychological

defense mechanisms he singled out as highly effective *anticipation, altruism, humor, sublimation and suppression*.

It seems that this can also include *cognitive dissonance*, which ultimately leads to subconscious coping or weakening of the significance of stress and, possibly, automatically connects all the variety of personal resources. Of course, it is possible that naturally inherent adaptive mechanisms are triggered, and they are most effective from the point of view of quickly connecting a person to coping; to what extent they provide an opportunity for awareness of their feelings, ideas and their consequences is a question requiring further study.

### Conclusions

Thus, the outlined approach to the methodology of the problem revealed that the choice of coping strategies is inevitable in stressful situations shows that the wider their boundaries and arsenal, the wider the individual has the opportunity to choose one or more of the most effective adaptive coping with stress. Therefore, an important factor in reducing distress and improving the psychological well-being of a person is a variety of coping strategies, which, in general, by providing a choice to a particular person, can first improve at least his general condition, after which he can consciously act, choosing more cardinal effective ways of coping, as with emotions, and in the future the problem itself, if possible.

1. This theoretical study of the problem indicates the absence of a unified concept showing logical psychological constructs for stress coping behavior of a person, which would help to choose the right strategy for overcoming the tension and stressfulness of activity by authentic, understandable and adequate to the situation techniques, methods and methods within the framework of generally accepted moral and ethical cognitive principles.

2. Research has shown that coping behavior is an indicator of the level of personality adaptation in the formation of which such predictors of success and well-being of the individual as anticipation and cognition and other personal resources play a role [1; 6; 11; 13; 15; 20;].

3. The analysis led us to the understanding that such phenomena as cognitive dissonance, psychological defense, anticipatory coping and choice, existing methods of increasing stress resistance by the person himself and psychologists - having similarities and differences, can be included in the list of strategies for coping with stress. If we add personal resources to them: optimism, sublimation, altruism, humor, suppression and other similar concepts, they, being at the same time mediators, will make up a variety of choices for both police officers and psychologists - for building methods of psychodiagnostics and psychocorrection. Then the word "strategy" will acquire its true meaning of the breadth of choices in the scientific interpretation of the concept of "coping strategy".

4. An understanding is gradually being formed that the transition of uncon-

scious copings to conscious ones occurs spontaneously, as the individual's life and professional experience in solving problems is accumulated, therefore this transition, perhaps, can be accelerated by psychologists by analyzing the results of the application of psychocorrectional psycho-training methods that prevent the development of stress disorders [15; 25; 26; 27].

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成瘾行为的决定因素  
**DETERMINANTS OF ADDICTIVE BEHAVIOR**

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本文讨论了精神疾病的内容，治疗方法和后果。特别要强调的是上瘾行为中表达的一种违规形式。给出了依赖性和共依赖性的比较分析。在对文献进行分析的基础上，确定了成瘾行为的主要决定因素，包括不利的社会环境和个人的特定心理特征。

关键词：心理健康，成瘾行为，依赖性，相互依赖性，个体的特定心理特征

**Abstract.** *The article discusses the content, ways of treatment and consequences of mental health disorders. Particular emphasis is placed on one of the forms of its violation, expressed in addictive behavior. A comparative analysis of dependence and codependency is given. Based on the analysis of the literature, the main determinants of addictive behavior were identified, including the unfavorable social environment and the specific psychological characteristics of the individual.*

**Keywords:** *mental health, addictive behavior, dependence, codependency, specific psychological characteristics of the individual.*

Unfortunately, the relevance of the problem of the growth of people with mental health disorders has not lost its force for several years. The problem is considered by both foreign and domestic scientists (B.S.Bratus, O.S.Vasilieva, I.V.Dubrovina, A.G. Maslow, G. S. Nikiforov, V. E. Pakhalyan, K. R Rogers, E. Fromm, C.G. Jung and others) from the point of view of both valeology and psychology.

Certainly, at the present stage, a certain experience has been accumulated to

preserve it. Thus, representatives of humanistic psychology see the preservation of mental health through work on the positive forces of the individual, by which they understand the ability to healthy adaptability, self-actualization, kindness and friendliness (A. Maslow, F. Perls, K. Rogers); E. Fromm in maintaining mental health stands for the formation of a productive character; V. Frankl in this process called for the creation of conditions for the search and realization by man of the meaning of his life;

V. Pakhalyan, I. V. Dubrovina considered the preservation of mental health through the prism of ensuring mental balance, which was understood as the harmony of interaction of the emotional, volitional and cognitive spheres of the individual.

Following them, S. I. Grigorieva, L. D. Demina studied the consequences of mental health disorders, as a result of which they revealed that violation of one of the personality spheres leads to personal degradation, destruction, social and personal maladjustment. Today we often meet with such forms of mental health disorders and state the increasing cases of addictive behavior (codependency), which is a special type of destructive behavior, expressed in the desire to escape from reality through special means of changing one's mental state. In the course of the analysis of the literature, we came to the conclusion that the motive of addictive behavior is the desire to achieve a certain emotional state of satisfaction, self-confidence, which such a person cannot otherwise survive, for various reasons.

The problem of dependence and codependency, which are mirror images of each other, is not new today. First, their similarities and differences are highlighted. The similarities are that both conditions are the primary disease; lead to gradual physical, mental, emotional and spiritual degradation; if left alone, they can lead to premature death; when recovering, they require a systemic shift, both physically and psychologically. Differences - a codependent person at different points in time can manifest himself both as a dependent, addictive and as a normal, adequate individual.

To date, different types of addictions have been identified and described - chemical, food, money, gambling, workaholism, etc., Internet addiction, etc.

The same series includes various dependencies in which the object is nothing more than another person. Sometimes they are referred to by a single term "emotional dependence".

Many works today are devoted to the problem of codependency. So, American researchers Sharon Wegsheider Cruise [2, p. 156], Melody Petey [4, p. 70] identified the causes of codependency: "difficult" childhood; people from disadvantaged families where one of the parents was absent or the parents suffered from alcoholism, where children were subjected to violence; people with childhood injuries. This also includes victims of sexual, physical, emotional, sectarian violence,

themselves chemically addicted to alcohol, drugs, etc.

In a broad sense, the term codependency [1, p. 75] is applicable to spouses, partners, children and adult children of alcoholics or drug addicts, alcoholics or drug addicts themselves, who grew up and developed in a dysfunctional family. Any person living in a dysfunctional family with unhealthy rules that fosters a codependent relationship can be considered codependent.

Following the logic of KS Lisetskiy, codependency is a painful state at the present time, one of the determinants of which, to a large extent, is the result of adaptation to a family problem [3, p. 46]. At first, it is a means of protection or a way of survival of a given person in unfavorable family circumstances, a kind of fixed reaction to the stress of drug addiction or alcoholism of a loved one, which eventually becomes a way of life.

According to the authoritative opinion of Sharon Wegsneider Cruz [8, p. 89] codependency is a specific state, which is characterized by strong absorption and preoccupation, as well as extreme dependence (emotional, social, and sometimes physical) on a person or object.

Analysis of the literature also made it possible to single out the intrapsychic symptoms of codependency: control, pressure, obsessions and thoughts, low self-esteem, self-loathing, guilt, suppressed anger, uncontrolled aggression, compulsive help, focus on others, ignoring one's needs, communication problems, withdrawal, tearfulness, apathy, problems in intimate life, depressive behavior, suicidal thoughts, psychosomatic disorders.

Thus, we come to the conclusion that a codependent person is not free in his feelings, thoughts and behavior; deprived of the right to choose what to feel, how to think and how to act.

Psychotherapist V. Moskalenko [6, p. 124] singles out low self-esteem as the main characteristic of codependency and considers it the base for all its other signs. The consequence of codependency, according to the author, is the outward orientation: dependence on external assessments; from relationships with others, although they have little idea of how others should treat them; criticism of others; intolerance to criticism from the outside, leading to unjustified self-confidence, resentment and anger.

In search of the determinants of addictive behavior, we were particularly interested in the study by I. L. Matasova and E. A. Morozova, the subject of which was tobacco smoking. Researchers have proven the relationship between:

- the characteristic of smoking "stimulation" and "isolation-openness": the higher the rate of stimulation, the more closed the person;
- "stimulation" and "independence": the higher the rate of stimulation, the less independent a person is;
- the characteristic "relaxation" in tobacco-addicted people and "isolation-

openness”: the higher the index of relaxation in smoking, the more closed the person;

- the characteristic of smoking "thirst" and the characteristic "relaxed - tense": the higher the thirst for smoking, the more tense the person;

- a very high degree of dependence on tobacco and indicators of "irritability - equanimity": a person with a very high indicator of addiction to tobacco smoking manifests itself as an irritable individual [5].

Thus, the determinants of addictive behavior are: first, a dysfunctional social environment, which results in low self-esteem; secondly, specific psychological characteristics of an individual, such as isolation, lack of independence, tension, irritability.

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学龄前儿童成功适应学前教育机构的条件  
**CONDITIONS OF SUCCESSFUL ADAPTATION OF CHILDREN OF  
YOUNGER PRESCHOOL AGE TO PRE-SCHOOL EDUCATIONAL  
INSTITUTION**

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随着孩子进入学前教育机构，他的生活发生了许多变化：严格的日常生活，9小时或更长时间没有父母陪伴，对行为的新要求，与同伴的不断接触，新的房间，很多隐瞒未知（因此很危险）的通信方式。本文探讨了应集中精力进行教师努力的条件，以使儿童尽可能地适应幼儿园的生活，教师的努力应集中于创造条件并使用可用的心理和教学工具来消除症状。新来的孩子们

关键字。适应幼儿园，适应条件，内容活动区

**Annotation.** *With the admission of a child to a preschool institution, many changes occur in his life: a strict daily routine, the absence of parents for 9 hours or more, new requirements for behavior, constant contact with peers, a new room, concealing a lot of unknown, and therefore, dangerous, a different communication style. The article examines the conditions on which the efforts of teachers should be concentrated so that the adaptation of a child to kindergarten is as painless as possible, the efforts of teachers should be concentrated on creating conditions and using available psychological and pedagogical tools to level the symptoms of newly arrived children.*

**Keywords.** *Adaptation to kindergarten, adaptation conditions, content-activity zones.*

The peculiarities of children's adaptation to new conditions in practice are caused by the characteristics of the early age of children.

At this time, they gradually begin to develop such dominant qualities as independence, self-confidence, initiative, manifestations of cognitive activity, goodwill towards people, and creative manifestations. But at the same time, their suc-

successful formation requires adequate influence from adults and correct interaction.

When a child begins to go to kindergarten, many changes immediately occur in his life. In particular, his daily routine is changing, he is in kindergarten outside the usual home atmosphere.

Based on the existing provisions of the Federal State Educational Standard, there are 3 groups of conditions that, in practice, ultimately determine the effectiveness of successful children's adaptation of children to being in kindergarten:

1. the formation of a subject-developing environment for children in kindergarten;
2. professional competence of teachers;
3. work with the parents of children [1, p. 50].

Now let's consider these conditions in more detail.

The first group of conditions turns out in practice to be directly related to the need to create a subject-developing environment for children for more successful development. If everything is done correctly, then in this case it is much easier for children to adapt to a new environment for themselves. As a result, they adapt faster. In order to emotionally support children, it is required to create all the necessary conditions for their successful development. For this, it is customary to distinguish in the adaptation group, including special content-activity zones: for cognitive, artistic, as well as constructive-play work.

The zone of cognitive work makes it possible, in a short period of time, to acquaint preschoolers with the situation, teach them the development of speech, and acquaint them with mathematics. At the same time, teachers should be engaged in work on the design of this zone. They can use for this purpose, including gifts, which can be made from a variety of materials. For example, it will be useful to make bags, boxes and much more from various materials. The main thing is that it is entertaining for children. For crafts, you can use fur, various fabrics and much more. You can also equip a book corner, and much more.

What is the constructive play area? She is able to develop construction skills and games in preschoolers. Here you can, among other things, include a variety of "Builder" constructors, as well as chairs, soft modules and much more.

The artistic zone is designed separately. It presupposes something like a basis for the successful development of manual labor and visual activity in children. A variety of materials can be used for its equipment. For example, it can be pencils, brushes, one or another improvised material, such as plasticine. [3, p. 67].

The second group of conditions refers primarily to the professional competence of the teachers of the institution.

In order to implement in practice a sufficiently successful adaptation of children to kindergarten, the teacher, in any case, should try to do everything in his power, so that as a result the children are interested and they develop creative

possibilities. It is important to work on the development of children, while taking into account their personal qualities and social living conditions. The current level of development of children and their adaptation must also be taken into account. But in order to successfully implement all this, the teacher, in any case, must actively develop himself and learn about the most modern and effective methods of teaching and education. He should also learn about the newest and most effective methodological developments in the field of adaptation of children under 3 years old to kindergarten. In this case, the adaptation of children will be more smooth and painless. Teachers are encouraged to take part in all sorts of thematic events, they should work with a psychologist, collaborate with other teachers with more practical experience than themselves. The experience of working in this direction now shows that the effectiveness of the work carried out in practice is ensured primarily due to the teacher's willingness to draw up plans and successfully implement in practice all sorts of measures for the adaptation of children. The third group of conditions in practice is characterized by work with parents. The interaction of the kindergarten with the family is in fact not a one-sided, but a two-sided process in which all parties are interested. The forces of action and reaction are in fact the family and non-family, as well as the social kindergarten system. And there, and there are different areas of socialization and child education [4, p. 52].

In practice, the full adaptation of a child to kindergarten is possible in some children no earlier than a couple of months after the start of a visit to a preschool. To ensure in practice easier adaptation, it is important to observe some important conditions:

- parents are required to prepare their children in advance for the start of the kindergarten visit;
- parents should find out the working hours of the kindergarten;
- They should find out information about the process of adaptation of children to kindergarten, and about its main stages, as well as about the criteria for adaptation. This is very important for their understanding of their children [2, p. 281].

Prevention of disorders of adaptation of children to kindergarten is an important preventive measure. Its goal is to ensure the preservation of the health of children, as far as possible, and at the same time to accelerate their socialization in kindergarten. But in practice it is still possible with the help of the kindergarten staff. At the same time, an individual approach to children is important, taking into account their real capabilities and preferences.

Two different criteria for children's adaptation can be considered: internal comfort and external adequacy, which manifests itself in the ability to accept new living conditions.

Among the important indicators of the successful adaptation of children, in the first place, there are usually such as a gradual decrease in the manifestation of



diseases in children, as well as, in principle, a long period without diseases. The positive dynamics of mental development is also important.

So, the problem of the successful adaptation of children to attending kindergarten is an important problem in the field of early childhood education. More than half of all children aged 2-3 years continue to be completely unprepared for attending kindergarten for a long time.

For children to feel as comfortable and comfortable as possible, it is very important that teachers take care of this. But parents also play a role. In this case, it is possible in a short time to successfully adapt the child to attend kindergarten. It is important, among other things, the purposeful organization of the life of young preschool children in kindergarten. This will allow you to painlessly adapt to new conditions.

The development of requirements for children's behavior, the coordination of the impact on it in a preschool institution and at home is a very important condition, which in practice greatly simplifies adaptation to a change in the child's usual lifestyle.

So that as a result the process of the child's getting used to the kindergarten was as successful as possible, in fact, various forms and methods of practical work are used.

It is very useful to apply various components of body therapy, as well as read poetry, sing songs, and draw. All this contributes to the creative development of children, makes them more liberated. It will also be useful to use various relaxation techniques, the use of fairy tale therapy, games.

Thus, among the important pedagogical conditions for the adaptation of preschool children, first of all, the following should be noted: the formation of a spatial subject-developing environment; the competence of the educator; work with parents.

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家庭制度背景下的崇尚性别认同问题

**THE PROBLEM OF GENDER IDENTITY IN ADOLESCENCE IN THE  
FAMILY SYSTEM CONTEXT**

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社会和职业关系的现代转变，以及对社会和家庭价值观传统基础的修改，对可持续的性别社会化产生了负面影响，结果形成了分散的性别立场（L. G. Stepanova）。大众传媒，特别是西方大众传媒，对社会上的性关系问题施加了某种非传统的观点。文学作品，媒体产品传达的非传统关系成为现代社会的规范。分析这种社会趋势，我们可以说这是社会的社会，心理和人口问题（L. B. Shneyder）。本文考虑了教学，心理和社会预测因素，这些因素决定了不适当形式的性别认同以及某些类型的青春期性别认同的发展。这项工作的主要目的是确定具有不同性别代表性的家庭在青春期各种类型的性别认同表现的心理特点。

关键词：性别，性别认同，性别认同类型，家庭系统，青春期个体心理特征

**Annotation.** *The modern transformation of social and professional relations, as well as the revision of the traditional foundations of the society and family values have a negative impact on the sustainable gender socialization, as a result of which a diffusive gender position is formed (L.G. Stepanova). The mass media, especially the Western mass media, impose a certain non-traditional view of the problem of sexual relations on the society. The literary works, media products convey non-traditional relations as the norm of the modern society. Analyzing this social trend, we can state that it is a social, psychological and demographic problem of the society (L.B. Shneyder). The paper considers the pedagogical, psychological and social predictors that determine the development of unadapted forms of the*

*gender identity, as well as certain types of the gender identity in adolescence. The main goal of the work was to identify the psychological peculiarities of the manifestation of various types of the gender identity in adolescence in families with different gender representation.*

**Keywords:** *gender, gender identity, types of gender identity, family system, individual psychological characteristics of adolescence.*

In the modern society, there is a confusion of the social roles of men and women in various spheres of life. The analysis of scientific literature allows us to conclude that these trends are due to the lack of a gender approach to education at all levels of education, including the family system: the traditional family foundations are changing, there is a redistribution of roles and a shift in the system of values and life goals. The pace of life is changing, and such values as career progression and social status are becoming a priority. The number of cohabiting couple families is increasing, and teenagers and young people are gaining experience in numerous sexual relationships [3]. There are same-sex relationships. One of the urgent problems of the socio-economic development of the society in the post-industrial period is the blurred, undifferentiated gender identity images [13], which negatively manifests itself in the individual's social role performance in the society, leads to destroyed gender-role expectations, to complicated relationships with others. Adolescents and young people occupy a special place among the groups exposed to the new social trends.

The modern education is designed to form a harmoniously developed, adaptive personality that can flexibly respond to professional and social changes in life. In adolescence and youth, the moral and ethical beliefs are formed, and the social roles are assigned that determine the individual's interaction with other people. [2]. Today, the gender strategy of the Russian Federation, enshrined in the Constitution of the Russian Federation, involves innovative changes at all levels of the education system.

The formation of a child's identity begins at birth. The biological sex of the child leads the parents to a certain style of interaction, which reflects the positions of the parents, the siblings in relation to the male or female child. The identification with the immediate environment is provided by socialization mechanisms, such as imitation, emulation, inculcation, etc. The gender identity is detailed at the subsequent stages of development, and selective identifications are formed with each of the parents (E. M. Izhanova, I. S. Kleitsina, L. B. Shneyder) [2; 4; 15].

Adolescence and youth are a significant age period of the identity formation. The formation of the gender identity is based on the reproduction of the dominant gender culture as the basis of socialization of the individual (S. A. Butkovskaya, L. R. Diasamidze, E. M. Izhanova, O. A. Karabanova, L. V. Korneva, N. Yu. Rymarev, V. L. Sitnikov, et al.).

The theoretical and methodological basis of the research is the provisions on the gender identity phenomenon, its components and structure: a structural approach to the study of the gender identity as an integral structure of the personality and its components (L. Bertalanffy, F. Koffka, V. S. Merlin, K. K. Platonov, V. P. Pryadein, H. Erenfelts, et al.); a historical-evolutionary approach (A. G. Asmolov); a gender approach (S. Bem, E. M. Izhanova, I. S. Kletsina, I. S. Kon, L. V. Mishchenko, L. N. Ozhigova, L. B. Shneyder, E. R. Yarskaya-Smirnova, et al.); the concept of a multidimensional and functional organization of properties of the personality and individuality (A. I. Krupnov); the concept of age-specific and socio-personal development (L. S. Vygotskiy, S. A. Kozlova, A. A. Mayer, A. V. Petrovskiy, V. I. Slobodchikov, G. A. Tsukerman, R. M. Chumicheva, E. Erikson et al.).

*The object of the research* is the psychological phenomenon of the gender identity.

*The subject* is the peculiarities of the structure and content of the components of the gender identity in adolescence.

*The hypothesis:* the conditions of the family upbringing and the prevalence of certain patterns of the gender-role behavior in the family determine the formation of certain types of the gender identity.

*Methods of research.* The following research methods were used: theoretical methods; empirical methods (questionnaires, testing, mathematical and statistical analysis); the following set of psychodiagnostic methods was used: the questionnaire "I am a woman / a man" by L. N. Ozhigova; the method "Who am I?" by M. Kuhn, T. McPartland, in the modification of T. V. Rymantseva; the gender type questionnaire by S. Bem; the questionnaire "Proverbs" by I. S. Kletsina.

*The empirical base of the study.* The study was conducted at the Russian State Vocational Pedagogical University. The study involved 200 students aged 17 to 21 years: males -100 people; females -100 people.

*The main theoretical and methodological provisions.* The gender identity is an integrative multifunctional dynamic structural formation of the personality, determined by the acquired socio-cultural norms, rules of behavior and relationships in the process of socialization of the individual [6]. The structure of the gender identity includes emotional-evaluative, cognitive, behavioral, and personality-specific components. The categories of "masculinity", "femininity" and "androgyny" in the modern society are undergoing changes and depend on the socio-cultural conditions. The authors N. Yu. Rymarev, L. G. Stepanova and others note that today an individual is more often a carrier of androgynous personality traits [12; 14], which increases the adaptive capabilities of the androgynous type.

In her work, S. Bem identifies four types of the gender identity: masculine, androgynous, feminine, and undifferentiated [1]. L. G. Stepanova defines such

types of the gender identity as traditional, isomeric and undifferentiated [14]. In this study, the authors identified five types of the gender identity: masculine, androgynous, feminine, and undifferentiated, which correspond to the typology by S. Bem and L. G. Stepanova, as well as such types as androgynous with a tendency to masculinity (high indicators of androgyny, shifted to the masculinity pole) and androgynous with a tendency to femininity (high indicators of androgyny, shifted to the femininity pole) [8]. The basis for determining the additional types was the results of the descriptive analysis: in each of the male and female groups, 2-4 respondents were identified with the traditional type of gender identity (masculine-for men and feminine-for women, according to L. G. Stepanova). The undifferentiated type of the gender identity is associated with increased excitability, internal conflict, negative attitude to oneself and forms a pronounced emotional instability of the individual, which is negatively manifested in the sphere of interpersonal relations and determines the relevance of psychological help [9; 10; 14].

*Research results.* As a result of the study of the content of the characteristics of the emotional-evaluative, cognitive and behavioral components of the gender identity using the "Who am I" method, a positive self-image was found in the male (52% of the respondents) and female (64%) groups. The indirect gender identification was found in 63% of males and 67% of females. In both subgroups, characteristics were found that denote social, professional, and family roles (student, girl / boy, son / daughter, brother / sister).

The analysis of the structural components of the gender identity suggests that its formation and manifestation in interpersonal interaction is influenced by the type of the family system [8]. Table 1 presents the types of the respondents' families identified with the help of questionnaires. It should be noted that there were no respondents from single-parent families in the presented sample.

**Table 1 - Characteristics of the sample by the family type**

Type of family	Number of respondents	
	<i>Males</i>	<i>Females</i>
Intact family	32	23
Intact family with the predominance of women	37	53
Intact family with the predominance of men	31	24

In the course of determining the type of the gender identity of the respondents, in the context of the gender representation in the family system in the male and female subgroups (the descriptive analysis) it was found that in the male subgroup the androgynous type of the gender identity was identified in intact families (71.87% of the respondents), with the predominance of women (35.14%), with

the predominance of men (54.94%). The masculine type of the gender identity is almost equally expressed in the subgroups of the respondents from families with the predominance of women (10.81%) and with the predominance of men (9.68%). These results confirm the findings that the formation of the gender identity matching one's sex is not influenced by the characteristics of the gender-social family group, it most likely is determined by the peculiarities of the interpersonal and gender-role relationships in the family. It is alarming that in the male subgroup high rates of the respondents were found to have the androgynous type with a tendency to femininity (24.32%) and the undifferentiated type of the gender identity (13.51%) in families with the predominance of women. The gender-role behavior of the family members, the peculiarities of the intra-family system and interpersonal relationships form a specific type of the gender identity. 3.22% of the respondents with the feminine type of the gender identity (the male subgroup) were found in families with the predominance of men, such results can be explained by the peculiarities of the family relations, in particular, by the dominance of the mother.

In the female subgroup the androgynous type of the gender identity is most pronounced in intact families (30.43%), in families with the predominance of women (45.28%) and in families with the predominance of men (52.13%). In the female subgroup from intact families, a greater number of the respondents were found to have the androgynous type with a tendency to femininity - 43.49% and the feminine type - 13.04%. In the female subgroup from families with the predominance of women, 30.19% of the respondents revealed the androgynous type with a tendency to femininity; 20.75% of the respondents were found to have the feminine type of the gender identity. In the female subgroup from intact families with the predominance of men, 13.04% of the respondents were found to have the androgynous type with a tendency to femininity; the same number - 13.04% of the respondents had the feminine type. Thus, the results obtained may indicate that the type of the gender identity is formed on the basis of patterns of gender-role behavior corresponding to the sex of the respondent.

The undifferentiated type of the gender identity is most pronounced in intact families (8.7% of the respondents) and in families with the predominance of men (8.7% of the respondents). It is alarming that in the female subgroups from intact families (4.35%) and families with the predominance of men (4.35%), the masculine type of the gender identity was found; the androgynous type with a tendency to masculinity was also found in intact families with the predominance of men (8.7%). Most likely, women can form these types of gender identity on the basis of the family patterns of behavior and the choice of the gender-role behavior corresponding to the opposite sex. It can be assumed that in adolescence, girls consciously choose the male stereotypes of behavior.

The results of the study of the behavioral component as to the type of the gender identity in the family system aspect (using the questionnaire "Proverbs" by I. S. Kletsina) in the male subgroup are as follows: the high level of adherence of young men to the traditional view about the distribution of the roles within the family with the masculine type of the gender identity (25%) is revealed in intact families, as well as in the subgroup of the respondents with the androgynous type with a tendency to masculinity 25% are from intact families, 10.81% are from families with the predominance of women and 12.9% are from families with the predominance of men. Men form these types of the gender identity on the basis of the gender-role behavior of the family members, the distribution of the roles and the peculiarities of the interpersonal interactions in the family. The traditional ideas about the distribution of the roles in the family are mostly adhered to by the individuals with the androgynous type with a tendency to femininity in the subgroup of the respondents from intact families (31.25%) and from families with the predominance of women (13.51%). The respondents with the undifferentiated type (25%) from intact families and 13.51% from intact families with the predominance of women are prone to perceptions of the gender-role behavior in the family. As a result of the analysis, we can conclude that the degree of the individual's adherence to the traditional ideas about the distribution of the roles in the family is shown by young men from intact families, while the individuals with the androgynous type of the gender identity assimilate the gender-role behavior of both parents.

The results of the study in the female subgroup of the respondents. A high degree of the individual's adherence to the traditional ideas about the distribution of the roles in the family is shown by the girls with the androgynous type of the gender identity from intact families (17.39%), families with the predominance of women (32.08%) and with the predominance of men (21.74%). The degree of adherence to the traditional ideas about the distribution of the roles in the family is typical of 21.74 % of the girls with the androgynous type with a tendency to femininity from intact families and from families with the predominance of women (9.43%). The girls with the feminine type (13.04%) from intact families, from families with the predominance of women (16.98%) adhere to the gender-role stereotypes of behavior in the family to a greater extent than those from families with the predominance of men – 4.35%. The percentage of the girls from intact families with the masculine type of the gender identity was found (4.35%). The girls of this type have a low degree of adherence to the traditional ideas about the distribution of the roles in the family. The individuals with the undifferentiated type (4.35% of the girls from intact families and 8.7% from families with the predominance of men) are not characterized by the adherence to the ideas about the gender-role behavior in the family. It can be concluded that the girls' adherence

to the traditional gender-role behavior is associated with the early identification with their mother.

The proposed hypothesis was confirmed: the conditions of the family upbringing and the prevalence of certain patterns of the gender-role behavior in the family determine the formation of the corresponding type of the gender identity.

Discussion of the results: 1) the gender-role behavior of the family members, the peculiarities of the intrafamily system and interpersonal relationships form the specific types of the gender identity in the male subgroup (the androgynous type with a tendency towards femininity, and the undifferentiated type); 2) women form the undifferentiated type of the gender identity on the basis of the patterns of the gender-role behavior, corresponding to the opposite sex; the feminine type is determined by the assimilation of the role patterns of women's behavior in the family in the process of their socialization and their early identification with the mother; the individuals with the androgynous type of the gender identity assimilate the gender-role behavior of both parents; 3) the peculiarities of the formation of the isomeric and the undifferentiated types (L. G. Stepanova) of the gender identity in the family can be the basis for the complication of the individual's interaction with others.

The correction of the gender-role behavior is possible when gender-oriented programs and psychotechnologies are introduced into the educational process at any stage of education, which will contribute to the formation of a successful gender socialization of the individual.

The materials of the empirical research can be useful for teachers, educational psychologists, psychological service specialists, professional consultants, and students' parents.

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草原地区的空间规划（农业生态框架的建设）  
**SPATIAL PLANNING OF THE STEPPE TERRITORIES  
(CONSTRUCTION OF THE AGROECOLOGICAL FRAMEWORK)**

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考虑到奥伦堡地区草原南部地区的生态组织问题，考虑到农业和工业的巨大资源潜力，该问题在农业和工业上得到管理。该领土的空间规划包括制定一套措施系统，以实现人类环境的综合，环境友好型发展，同时考虑到经济和社会关系发展的现代趋势，不仅着眼于广泛的发展因素，而且着重于利用该地区的创新潜力。

关键词：空间规划，经济发展，领土生态状况，农业生态框架

***Annotation.** The problem of the ecological organization of the steppe southern territories of the Orenburg region, which has an agrarian-industrial profile of management, taking into account their considerable resource potential, is considered. Spatial planning of the territory includes the development of a system of measures for the integrated, environmentally friendly development of the human environment, taking into account modern trends in the development of economic and social relations and focusing not only on extensive development factors, but also on the use of the innovative potential of the region.*

***Keywords:** spatial planning, economic development, ecological state of territories, agroecological framework.*

The basis for the development of the concept of spatial planning of the territory, taking into account its resource potential, the level of economic development, the ecological state of the territories, it is necessary, first of all, to lay the legal basis concerning land relations, these are: land reservation, withdrawal (their use for other purposes), redemption, land from one category to another. The system of measures should contain recommendations for: optimization of steppe agrolandscapes using innovative methods of agroecological land assessment, allocation of agricultural and forestry zones; development of adaptive animal husbandry, incl. alternative, like breeding a plain bison; development of the concept of conservation and restoration of the landscape and biological diversity of the steppes; optimization of the structure and regime of the existing specially

protected natural areas (development of eco- and agritourism); creation of industrial zones, etc. [1].

Since the historical development and gradual settlement of the southern territories of the Orenburg region, which was based on the following principles: centralized state policy, pursuing a defensive nature; favorable natural and climatic conditions; the presence of fertile land; remoteness of the territory from the center; concentration of natural minerals - there were changes in the structure of land use [3].

At the initial stage, the development of territories proceeded on the basis of defense necessity, then on the basis of a combination of the principles of favorable climatic and natural conditions. The settlements were located along the rivers and were in harmony with the natural environment. At the end of the 18th century. the lands began to be settled by natives of the south of Ukraine and people from the agricultural regions of central Russia, especially during the period of development of fallow and virgin lands. This led to a violation of the traditional way of steppe land use, which consisted in a reasonable combination of pasture cattle breeding and agriculture. Then came the principle of concentration of settlements around places of concentration of natural minerals, in the immediate vicinity of places of extraction of raw materials, overgrown with barracks and temporary, it seemed, buildings. Industrial zones and enterprises occupied good lands and territories, apparently proceeding from economic considerations [1]. For example, in the Svetlinsky region, where there was a grain-nickel specialization of the region that was formed during the Soviet era. There was a reduction in pastures, agricultural land with a simultaneous increase in the area of waste land and occupied by technical structures. And so far, the region has not formed a clear concept for the allocation and development of reserve territories, protected natural and recreational areas for recreation of the population [2].

Despite the fact that the southern districts of the region have considerable potential for industrial and agricultural production (they are represented by state and farm enterprises), at present, agriculture, in many districts, is in a state of disrepair, there is a reduction in jobs, migration of the population, a deterioration in cultural and domestic service. The countryside, due to high unemployment and low incomes, is gradually losing its attractiveness as a place to live and work. The transport infrastructure does not have the appropriate quality of coverage, which hinders the movement of cargo and passenger flows. As a result, spheres of mutual influence of economic and economic activity between settlements are lost and they are ejected from the market economy. For example, the Belyaevsky district belongs to an area of low-profit agriculture with an unstable socio-economic situation and requires optimization of the steppe nature management for 25-30% of farmland, Akbulak and Sol-Iletsky belong to an area of unprofitable agriculture

with stagnation of the socio-economic sphere and acute agro-ecological problems and with the need to optimize the steppe nature management for 30-50% of farmland [1].

The ecological organization of these territories is understood as the construction of an environment stabilizing system - an agroecological framework, which provides for the need to concentrate agriculture on the most fertile, most advantageously located land plots, the transformation of unproductive arable land into hay and pasture lands with the development of adaptive meat animal husbandry; also the development of rural, ecological and hunting tourism. In this regard, the Svetlinsky district may well become a pilot territory not only for the Orenburg region, but also for the steppe regions of Russia. To do this, it is necessary to enhance the landscape attractiveness and entertainment of the area, first of all, by restoring and saturating it with large ungulates (for example, breeding lowland bison) and hunting and game birds. On the territory of the southern regions, there are steppe areas with diverse and unique steppe flora and fauna ("Oryol Steppe", "Donguzskaya Steppe", "Burtinskaya Steppe", "Ashisay Steppe" - a site of the Orenburgsky Reserve). Coordination and conservation of land areas between the site of the "Orenburgsky" reserve "Ashisay steppe" and the lake. Eike, will create a steppe cluster adequate to the pre-virgin landscape structure of the region. Here, a continuous steppe ecological corridor can be formed with various modes of use except for arable from the lake. Zhetykol to the east to the state border with Kazakhstan. The cluster will include almost all pre-virgin types of landscapes with different levels of protection: a regional biological reserve, a nature reserve; ecological corridors will be formed, incl. from a transformed unproductive arable land, possibly in the status of a new protected area. Also of interest is the approach to building an agroecological framework - the creation of a transboundary specially protected natural area "Aytuarsko-Ebitinskaya Steppe" with a high level of biodiversity, a significant recreational area. The Aytuarsko-Ebitinskaya steppe can be formed by combining the reserve of regional significance "Ebita", located on the left bank of the Ural River on the territory of the Republic of Kazakhstan and the adjacent protected area of the Orenburg steppe reserve "Aytuarskaya Steppe". The promising specially protected natural area "Aytuarsko-Ebitinskaya steppe" can become not only one of the important elements of international cooperation in the Orenburg-Kazakhstan region, but also become a testing ground for joint projects in the field of nature management, ecological, scientific, ethnographic tourism (for example, it is possible to create a breeding center steppe ungulates - Przewalski's horses, bison, wild boar, the development of horse tourist routes and ethnographic tours, the organization of ecological educational hiking trips for students in picturesque landscapes, acquaintance with the flora and fauna [1,2].

The implementation of spatial planning at various levels of the region is a

prerequisite for balanced socio-economic development, ensuring a combination of economic, social and environmental interests. For this it is necessary: to create a regulatory framework necessary for changing the type of permitted use of land plots belonging to the category of agricultural land; comprehensive support for the development of adaptive animal husbandry in the southern regions; optimization of the territorial nature protection of these territories by creating several clusters of specially protected areas of different levels and hay and pasture lands in the mode of rational use; creation of conditions for the arrangement of ecological and recreational territories. which will increase the flow of tourists and traditional types of economy will receive a significant impetus for their development [3].

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为了提高稳定性，对冻结井眼中的钻井液进行硬化处理  
**HARDENING OF THE DRILLING FLUID IN THE FREEZING  
BOREHOLE FOR THE PURPOSE OF IMPROVING STABILITY**

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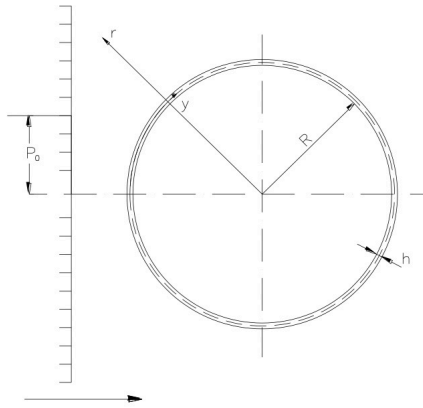
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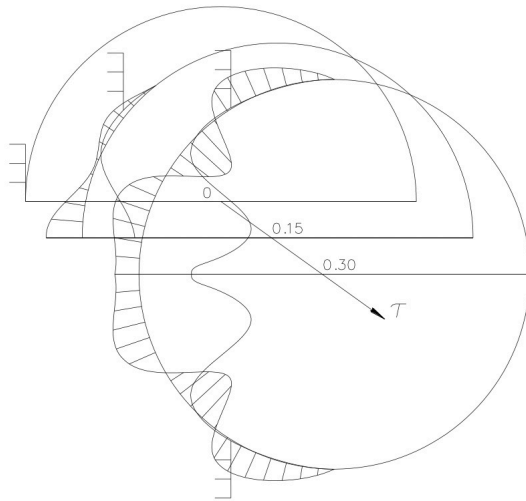
Shaft designers know that when freeze holes are drilled, a free space is left between the rock wall of the well and the freeze pipe, often filled with drilling fluid. When carrying out artificial freezing, the drilling fluid exhibits properties that differ from those of the surrounding rock mass. In particular, the frozen solution is significantly inferior in strength to frozen flooded rocks, since at a coolant temperature of  $-20^{\circ}\text{C}$ , its strength reaches only 1.8 MPa. Consequently, a weakening of the rock mass is observed on the contour of the drilled freeze well.

When using the explosive method of rock destruction in the bottom hole, the reflected blast waves from the rigid boundary of the media, which is the contour of the freezing well, destroy the weakly frozen drilling fluid, and form a deformable space behind the contour of the freezing well.

Based on the obtained results of deformation of freezing pipes, usually used in mine construction, we came to the conclusion that under the action of dynamic loading of a single explosion in the immediate vicinity of the epicenter (40 cm with a charge mass of up to 2 kg), a pipe that loses stability, gets one deep dent, which corresponds to the critical buckling of the third transitional form with one deep dent.



**Fig. 1 Scheme of the impact of a dynamic shock load on a pipe section according to A.S. Volmir**



**Fig. 2. Scheme of the third transitional form of stability with the emergence of one deep dent according to A.S. Volmir.**

This confirms the conclusion of A.S. Volmir that under dynamic loading the number of dents, as a rule, deeper than under static loading, increases by one or two.

In order to minimize the reflection of the elastic explosion wave at the boundary of the frozen massif, it is necessary to reduce the reflection coefficient of the

shock wave by creating a softer boundary between the rock contour and the annulus, increasing the strength of the latter. To accomplish this task, we conducted experiments to strengthen the rigidity of the drilling fluid by adding polypropylene fiber to it.

The results of experimental studies to determine the strength and water resistance of a fiber-reinforced clay drilling fluid under compression and temperatures of -1°C to -20°C are presented below.

The test specimens measuring 70x70x70 were frozen in an MK-50 freezer to the specified temperatures, and in the BV-21 chamber of extreme deformation under volumetric compression of the specimens, the strength was determined on an EU-10 hydraulic press. The water resistance of the samples was measured by the filtration coefficient according to GOST 12730584 using an FM-3 filter instrument with a maximum test pressure of 1.3 MPa. On the fifth day, the hardened clay solution with fiber has a water resistance of 10<sup>-6</sup> cm/s, a deformation modulus E <100 MPa, and a uniaxial compression strength from 2.8 to 4.5 MPa.

**Table 1. Compressive strength  $\sigma_{comp}$  and water tightness of frozen clayey drilling fluid, reinforced with fiber, depending on temperature.**

Clay drilling fluid reinforced with synthetic polypropylene fiber (SPF), wt%		Compressive strength (in MPa) at temperature, C°				
		From -1 to -5	From -5 to -10	From -10 to -15	From -15 to -20	From -20 to -25
Clay drilling fluid	Fiber (SPF)					
92-91	8-9	0,7-0,85	1,1-1,2	2,1-2.8	2,9-3,4	3,2-3,6
90-88	10-12	1.1-1,6	1,8-2.8	3,1-4,2	4,2-4.8	4,9-5,2
87-85	13-15	1.5-1.8	1,9-3,0	3,2-4.4	4.5-5.5	5.6-6,2
83-80	17-20	2.2-2,6	3,0-3,8	4.0-5.2	5,5-7.2	7,5-9,2
Water resistance, m						
Clay drilling fluid		0.02	0,02-0.04	0,05-0,08	0,09-0,1	0.1-0.2
Clay drilling fluid with fiber 10-12%		0,09-0.12	0,15-0.17	0,18-0.22	0.26-0.28	0,31-0.34
Clay drilling fluid with fiber 13-15%		0,15-0.19	0.20-0.24	0.25-0.28	0,34-0.38	0,38-0.41
Clay drilling fluid with fiber 17-20%		0,18-0,22	0.24-0.31	0,31-0,38	0,34-0,42	0,41-0,44

From all measurements, we compose an interval variation series.

Interval value

$$h = \frac{x_{max} - x_{min}}{1 + 3,2lgn} = \frac{5,2 - 0,7}{1 + 3,2lg92} = \frac{4,5}{1 + 3,2 \cdot 1,95} = 0,6$$



The beginning of the first interval  $Q_1 = x_{min} - \frac{h}{2} = 0,2$   
 We draw up an interval series table.

**Table 2**

Ultimate strength interval, MPa	Midpoint value	Frequency, $m_i$	Occurrence $W_i = m_i/n$	Accumulated frequency
0,4-1,0	0,7	8	0,09	8
1,0-1,6	1,3	11	0,12	19
1,6-2,2	1,9	13	0,14	32
2,2-2,8	2,5	21	0,22	53
2,8-3,4	3,1	9	0,11	62
3,4-4,0	3,7	8	0,09	70
4,0-4,6	4,3	9	0,1	79
4,6-5,2	4,9	13	0,14	92
Total		92	1,0	92

Next, we calculate the arithmetic mean of the distribution series, variance and standard. For this, we compose an ordered variation series.

**Table 3**

Option $x_i$	frequency	$m_i x_i$	$x_i - X$	$(x_i - X)^2$	$(x_i - X)^2 m_i$
0,7	1	0,7	-2,18	4,75	4,45
0,71	1	0,71	-2,17	4,71	4,71
0,74	1	0,75	-2,14	4,58	4,58
0,75	1	0,75	-2,13	4,54	4,54
0,79	1	0,79	-2,09	4,37	4,37
0,82	1	0,82	-2,06	4,24	4,24
0,84	1	0,84	-2,04	4,16	4,16
0,86	1	0,86	-2,02	4,08	4,08
1,2	2	2,4	-1,68	2,82	2,82
1,4	2	2,8	-1,48	2,19	4,38
1,5	2	3	-1,38	1,9	3,80
1,6	5	8	-1,28	1,64	8,12
1,7	2	3,4	-1,18	1,39	2,78
1,75	1	1,75	-1,13	1,22	1,28
1,8	3	3,4	-1,08	1,17	3,50
1,9	1	1,9	-0,98	0,96	0,96
2,0	3	6	-0,88	0,77	2,32
2,1	2	4,2	-0,78	0,61	1,22
2,2	1	2,2	-0,67	0,46	0,46

Option $x_i$	frequency	$m_i x_i$	$x_i - X$	$(x_i - X)^2$	$(x_i - X)^2 m_i$
2,4	2	4,8	-0,48	0,23	0,46
2,5	2	5	-0,38	0,14	0,29
2,6	4	10,4	-0,28	0,78	0,31
2,7	3	8,7	-0,18	0,032	0,097
2,8	8	22,4	-0,08	0,0064	0,05
2,9	1	2,9	0,02	0,0004	0,0004
3,0	1	3,0	0,12	0,0144	0,0144
3,1	2	6,2	0,22	0,0484	0,0968
3,2	1	3,2	0,32	0,1024	0,1024
3,3	2	6,6	0,42	0,1764	0,3528
3,4	3	10,2	0,52	0,2704	0,8112
3,8	1	3,8	0,92	0,8464	0,8464
3,9	5	19,5	1,02	1,0404	5,202
4,0	2	8	1,12	1,2544	2,5088
4,1	3	12,3	1,22	1,4884	4,4652
4,2	4	16,8	1,32	1,7424	6,9696
4,6	2	9,2	1,72	2,9584	5,9168
4,8	2	9,6	1,92	3,6864	7,3728
4,9	2	9,8	2,02	4,0804	8,1608
5,0	3	15	2,12	4,4944	13,4832
5,1	2	10,2	2,22	4,9284	9,8565
5,2	4	20,8	2,32	5,3824	21,5296
	92	$\Sigma 265,06$		91	$\Sigma 190,9642$

Average value of the characteristic  $\bar{X} = \frac{\Sigma x_i m_i}{\Sigma m_i} = \frac{265,06}{92} = 2,88$

Dispersion and distribution standard

$$\sigma^2 = \frac{\Sigma (x_i - \bar{x})^2 \cdot m_i}{\Sigma m_i} = \frac{190,9642}{92} = 2,076$$

$$\sigma = \sqrt{\sigma^2} = \sqrt{2,076} = 1,44$$

The value of the probability coefficient and its error

$$V = \frac{\sigma}{x} = \frac{1,44}{2,88} \cdot 100\% = 0,5 \cdot 100\% = 50\%$$

$$m_v = \frac{V \cdot \sqrt{0,5 + V/h^2}}{\sqrt{h}} = \frac{0,5 \cdot \sqrt{0,5 + 0,5/92^2}}{\sqrt{92}} = \frac{0,3535}{9,59} = 0,037 \cdot 100\% = 3,7\%$$

$3m_v < V(11.1\% < 50\%)$ , therefore, the assay results can be considered reliable.

Find the error of the arithmetic mean ( $\bar{x} = 2.88$ ) MPa for a number of distributions

$$\sigma_x = \frac{t\sigma}{\sqrt{n}} = \frac{2 \cdot 1.44}{\sqrt{92}} = \frac{2.8}{9.59} = 0.3 \text{ MPa}$$

$t=2$  – argument of the Laplace function with a reliability of 95%.

The value of the arithmetic mean  $\bar{X} = 2,88$  MPa with a reliability of 95% was determined with an error of  $\sigma_x \pm 0,3$  MPa.

95% reliability means that on average out of a hundred cases, only 5 cases will have an error greater than  $\pm 0,3$  MPa.

Hence the confidence limits will be  $2.88-0.3$  and  $2.88 +0.3$  for

$$B = f(t) = 95.5\%$$

We determine from the given data the value of reliability B, with which the limiting selection program can be guaranteed

$$\sigma_x = 1 \text{ MPa}$$

We calculate  $t = \frac{\sigma_x \sqrt{n}}{\sigma} = \frac{1 \cdot \sqrt{92}}{1.44} = \frac{9.59}{1.44} = 6.66$

Substituting this value into the Laplace function, we obtain

$B = f(t) = 99.9$  find  $t = 4$  from the expression

$$t = \frac{\sigma_x \sqrt{n'}}{\sigma}$$

$$n' = \frac{t^2 \sigma^2}{\sigma^2 x} = \frac{4^2 \cdot 2.076}{1} = 33 \text{ samples}$$

Therefore, at least 33 samples must be taken.

Let's conduct a one-way dispersion experiment. The values obtained are shown in table. 4.

With a fiber content of 9%.

**Table 4.**

№	Temperature range				Dispersion
	-5°C	-10°C	-15°C	-20°C	
1	0,7	1,8	2,1	3,1	
2	0,74	1,5	2,8	3,1	
3	0,71	1,9	2,5	3,4	
4	0,79	2,0	2,8	3,2	
5	0,75	2,0	2,8	3,4	
6	0,82	2,0	2,6	3,1	
7	0,86	2,2	2,9	3,3	
8	0,84	2,1	2,7	3,3	

Determination of variance and arithmetic means

**Table 5**

Group	Score	Sum	Average	Dispersion	The sum of the standard deviation
Column 1	8	6,21	0,78	0,0031	0,0056
Column 2	8	15,5	1,94	0,0409	
Column 3	8	21,2	2,65	0,0603	
Column 4	8	25,9	3,24	0,0149	

The arithmetic mean is determined by the formula for each column and written in the lines:

$$\bar{X} = \frac{\sum_{i=1}^n x_i}{n}$$

The variance is determined from the expression:

$$\sigma^2 = \frac{\sum (x_i \bar{X})^2 \cdot m_i}{\sum m_i}$$

To determine the critical value of F, we use the significance level  $\alpha = 0.05$ , where F - distribution of quantities;

$K_1$  - number of degrees of freedom of the greater variance,

$K_2$  - number of degrees of freedom of the lesser variance

$K_2 = (n-1), K_1 = m(m-1)$

At  $m = 4, n = 8$

$$K_1 = m(m - 1) = 8(4 - 1) = 24$$

$$K_2 = (n - 1) = 8 - 1 = 7$$

$$\frac{K_1}{K_2} = \frac{24}{7} = 3.42$$

The critical value  $F = 9.2$  indicates that the temperature factor significantly affects the value of the ultimate compressive strength, that is, with a decrease in temperature, the ultimate strength increases.

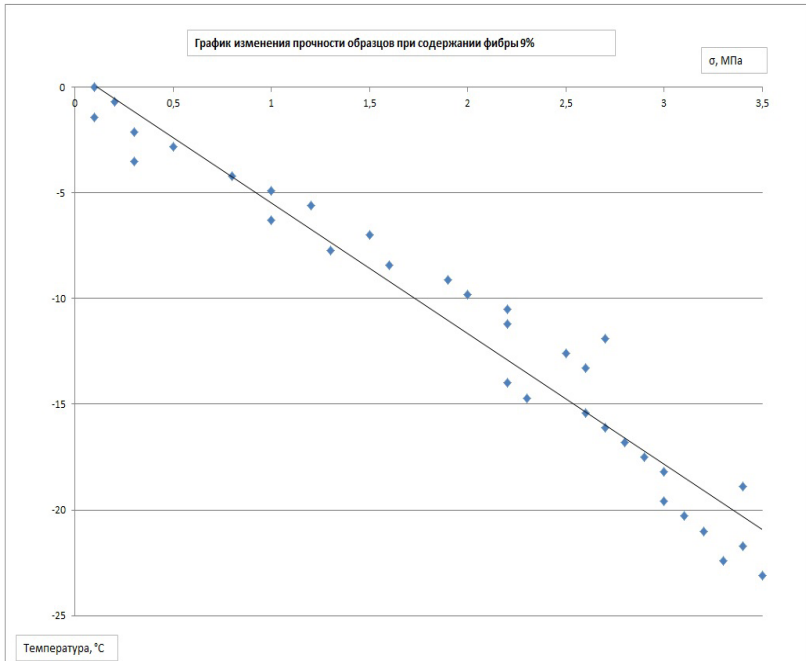
Let's construct an empirical curve from experimental data. To do this, we plot the temperature along the X-axis, and the average value along the column with the fiber content of 9% along the Y-axis.

At  $t = -5$   $\sigma_{comp} = 0,78$  MPa

At  $t = -10$   $\sigma_{comp} = 1,94$  MPa

At  $t = -15$   $\sigma_{comp} = 2,6$  MPa

At  $t = -20$   $\sigma_{comp} = 3,24$  MPa



**Fig. 3. Graph of changes in the strength of frozen samples of clay solution reinforced with 12% fiber at different temperatures.**

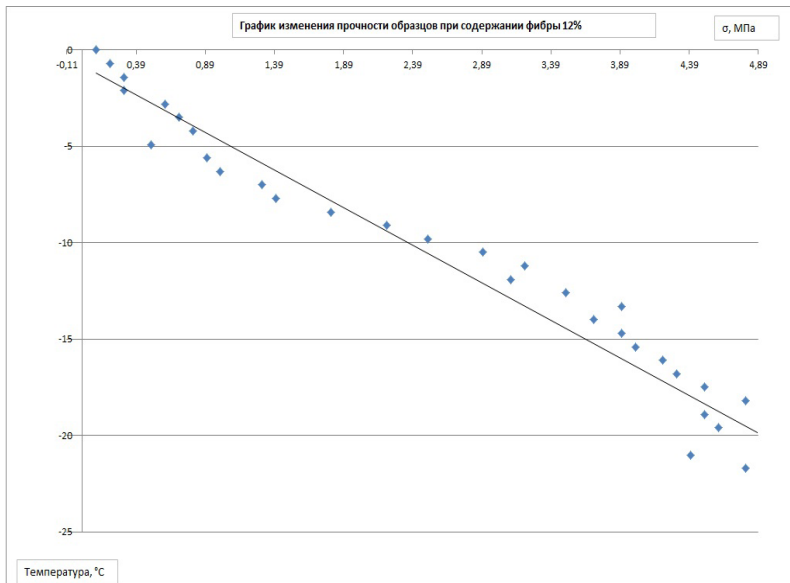
With a fiber content of 12%.

At  $t = -5$   $\sigma_{comp} = 1,44$  MPa

At  $t = -10$   $\sigma_{comp} = 2,66$  MPa

At  $t = -15$   $\sigma_{comp} = 4,02$  MPa

At  $t = -20$   $\sigma_{comp} = 4,98$  MPa



**Fig. 4. Graph of changes in the strength of frozen samples of clay solution reinforced with 15% fiber at different temperatures.**

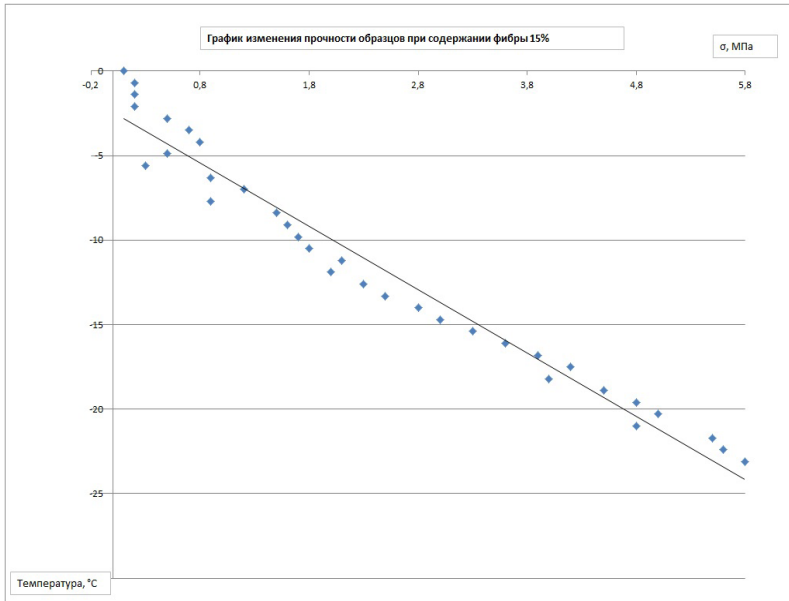
With a fiber content of 15%.

At  $t = -5$   $\sigma_{comp} = 1,99$  MPa

At  $t = -10$   $\sigma_{comp} = 2,3375$  MPa

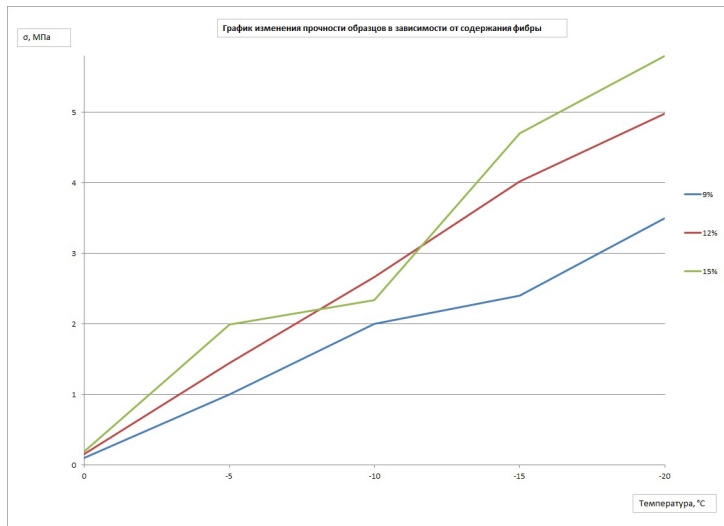
At  $t = -15$   $\sigma_{comp} = 4,72$  MPa

At  $t = -20$   $\sigma_{comp} = 5,86$  MPa



**Fig. 5 Graph of changes in the strength of frozen clay samples reinforced with 9% fiber at different temperatures.**

Let us construct an empirical dependence of the change in the strength of the sample when the content of fiber changes from 9 to 15% at temperatures: - 5°C, -10°C, -15°C and -20°C.



**Fig. 6. A graph of changes in the strength of frozen samples depending on the fiber content.**

It can be seen from the graph (Fig. 6) that even at a fiber content of 9%, the strength of the samples is 3.4 MPa at a temperature of  $-20^{\circ}\text{C}$ . and when adding polypropylene fiber in a ratio of 12% to the clay drilling fluid, it is possible to increase the strength of the latter to a value of 4.98 MPa. With this strength, the reflection coefficients between the rock contour and the frozen solution layer become less than 1, therefore, a soft boundary is formed between the materials, which will protect the freezing column from the action of the shock wave.

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俄罗斯联邦西北部种植药用植物的前景  
**PROSPECTS FOR GROWING MEDICINAL PLANTS IN THE NORTH-  
WEST OF THE RUSSIAN FEDERATION**

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本文对俄罗斯联邦西北地区药用植物的自然资源基础状况进行了分析。有必要在俄罗斯联邦所有自然和气候区，包括俄罗斯西北部，种植药用植物。显示了俄罗斯。但是，这需要解决许多重要问题。

圣彼得堡国立农业大学为解决这一问题做出了贡献。因此，向学生介绍了“药用和精油植物”，“蜂蜜和药用植物”学科。就种植农作物向农民和园丁进行了磋商，还组织了药用和精油植物苗圃。圣彼得堡国立农业大学成功地与四川省农业科学院工业作物科学研究所（中华人民共和国成都）合作。SPbSAU代表参加了于2019年11月在成都（四川省）举行的“第六全球农业科学技术领导者论坛和药用植物研讨会”（全球农业科学技术领导者论坛，GLAST-2019），以及“药用植物专题讨论会”，他们分享了经验并了解了中国药用植物的生长状况。

在SPbSAU上进行的研究工作使人们有可能确定一些有望在俄罗斯联邦西北部种植并且对原材料市场有需求的物种。在文章的最后，指出了在俄罗斯联邦西北地区发展药用植物的主要任务。

关键词：药用植物药用植物生长药用原料生长栽培

**Abstract.** *The article presents an analysis of the state of the natural resource base of medicinal plants in the North-West region of the Russian Federation. The necessity of cultivating medicinal plants in all natural and climatic zones of the Russian Federation, including in the North-West of Russia, is shown. However, this requires solving a number of important issues.*

*Saint-Petersburg State Agrarian University contributes to the solution of this problem. Thus, the disciplines "Medicinal and essential oil plants", "Honey and medicinal plants" were introduced for students. Consultations are held for farmers and gardeners on the cultivation of medicinal crops, a nursery for medicinal and essential oil plants has been organized. Saint-Petersburg State Agrarian University successfully cooperates with the Scientific Research Institute of Industrial Crops of the Sichuan Academy of Agricultural Sciences (Chengdu, People's Republic of China). SPbSAU representatives were participants in the "Sixth Global Forum*

*of Leaders for Agricultural Science and Technology and Symposium on Medicinal Plants", which took place in November 2019 in Chengdu (Sichuan Province) (Global Forum of Leaders for Agricultural Science and Technology, GLAST-2019, and the Symposium on Medicinal Plant), where they shared their experience and got acquainted with the state of medicinal plant growing in the PRC.*

*Research work carried out at SPbSAU has made it possible to identify a number of species that are promising for cultivation in the North-West of the Russian Federation and are in demand on the raw material market. In conclusion of the article, the main tasks for the development of medicinal plant growing in the North-West region of the Russian Federation are noted.*

**Keywords:** *medicinal plants, medicinal plant growing, medicinal raw materials, growing, cultivation.*

The growing demand for medicinal plant raw materials all over the world and in Russia presupposes the collection of some plant species in nature, and the cultivation of others. In the USSR, more than 50 species of medicinal plants were grown, but most of the raw material base was harvested in natural conditions. During the reforms of the 90s of the last century, the proportion of wild plants in the total raw material base increased from 52% to 83.2%, this was due to the ruin and disintegration of specialized farms engaged in the cultivation of medicinal plants [1-4].

The flora of the North-West includes 2,730 species of wild and cultivated plants, of which 2,580 species of plants are given for the territory of the Leningrad region [5], of which more than 100 species are medicinal, and 70 are included in the State Pharmacopoeia. Currently, the vegetation cover is under strong human influence: atmospheric pollution, the use of territories for mass recreation of the population, deforestation, fires, grazing of animals - all this causes its changes. Long-term procurement of medicinal plants in traditional collection sites leads to the threat of destruction of their natural reserves, and most importantly - to a decrease in the biological diversity of species. Areas and numbers of many species of medicinal plants began to decrease due to the destruction of their habitats. Some plant species suffer greatly from trampling and uncontrolled harvesting, especially in suburban forests (lingonberry, blueberry lily of the valley, juniper). Now, very few species can be recommended for harvesting in nature, for example, leaves and buds of silver birch, leaves of coltsfoot and stinging nettle, and some others. Most of the species of medicinal plants do not have a secured raw material base in the North-West (valerian officinalis, highlander bird, sweet clover, St. John's wort, wild strawberry, etc.). Rare for the Leningrad Region and endangered plant species, including medicinal ones, require protection (calamus marsh, common ram, sandy immortelle, yellow egg capsule, spring primrose, club-shaped clubroot,

etc.). According to the International Union for Conservation of Nature (IUCN), the number of endangered species will only increase and will reach 60 thousand by the middle of the XXI century. Medicinal plants, as the most vulnerable, will make up the majority of this list [6].

It is quite obvious that the problem of preserving the biodiversity of plants, including medicinal plants, the threat of destruction of their natural resources, as well as the rapid climate change lead to an understanding of the necessity and advisability of cultivating medicinal plants in all soil and climatic zones of the Russian Federation.

The cultivation of medicinal plants has a number of advantages, the main ones being the achievement of high yields, the quality and uniformity of raw materials, its environmental safety, the use of mechanization means, simultaneous and fast harvesting, and the organization of fast drying of large quantities of raw materials. This assumes the use of zoned high-yielding varieties resistant to pests and diseases [7].

Many regions of the Russian Federation are successfully restoring the medicinal plant growing industry [3], but in the North-West of the Russian Federation, this process is slow, it requires a lot of effort and attention from the state and specialists of various profiles.

Saint-Petersburg State Agrarian University contributes to solving the problem of restoring medicinal crop production in the Northwest region. Recently, such disciplines as "Medicinal and essential oil plants", "Honey and medicinal plants" have been included in the curriculum for training bachelors. University staff give advice to farmers and gardeners, lecture, conduct classes on the cultivation of medicinal plants. A collection nursery of medicinal and essential oil plants was created at SPbSAU. It serves as a base for scientific research of teachers and graduate students, undergraduates and bachelors. On the basis of the collection nursery, students undergo educational and industrial practice.

Saint-Petersburg State Agrarian University successfully cooperates with the Scientific Research Institute of Industrial Crops of the Sichuan Academy of Agricultural Sciences (Chengdu, People's Republic of China). SPbSAU representatives were participants in the Sixth Global Forum of Leaders for Agricultural Science and Technology and the Symposium on Medicinal Plants, which took place in November 2019 in Chengdu, Sichuan Province (Global Forum of Leaders for Agricultural Science and Technology, GLAST-2019, and the Symposium on Medicinal Plant). Within the framework of the symposium, scientists from different countries shared information and exchanged experience in the field of cultivation technology, ecology, chemical composition of medicinal and essential oil plants [8].

Employees of Saint-Petersburg State Agrarian University for many years have

been conducting a comprehensive study of medicinal plants in culture, determining their yield. Particular attention is paid to the quality of raw materials, their environmental safety. Environmental pollution with various chemical compounds leads to the accumulation of toxic substances in different parts and organs of medicinal plants and, ultimately, to the contamination of medicinal raw materials. Such raw materials pose a danger to human health. Therefore, the identification of the content of heavy metals and their localization is a significant part of our research.

Under the conditions of a changing climate, it became possible to promote new types of medicinal plants to the North-West of the Russian Federation, where they did not grow before, and in the future, their industrial cultivation. In our studies, both traditional medicinal plants and introduced species have shown good results: *Lithospermum erythrorhizon*, *Inula helenium*, *Scutellaria baicalensis*, *Dracocephalum vulgare*, *Solidago canadensis*, *Hyssopus officinalis*, *Coriandrum sativum*, *Rhodiola rosea*, *Silybum marianum*, *Echinacea purpurea* and other types.

So, for many years we have been cultivating and studying *Agastache foeniculum* - fennel grate (*Lamiaceae*) - a perennial herb that grows wild in North and Central America. *Agastache foeniculum* – promising essential oil and spicy-aromatic plant for the Leningrad Oblast, which can be used in the food, perfumery and cosmetic industries, as well as in medicine. The study showed that it is characterized by wide ecological plasticity, does not suffer from late spring and early autumn frosts, the total duration of ontogenesis is 4-5 years. The aboveground mass serves as a raw material for obtaining essential oil, which contains anethole, vitamins, and mineral salts. Under conditions of introduction, *Agastache foeniculum* reproduces well by seeds, the coefficient of seed productivity reaches 95%. The seeds have a high germination capacity and do not require pre-sowing treatment. It can also be propagated vegetatively by dividing the bush. The yield of the aboveground mass for obtaining essential oil in the 3rd year of plant life is 3.5 t/ha, the content of essential oil is 1.04%. The essential oil contains 34 components, the following predominate: methyleugenol - 38.25%, carvacrol - 24.22%, geranial - 20.46%, pulegon - 17.68%, limonene - 15.71%, isomenton - 15, 54%, anethole - 4.56%, etc. [9].

Another perspective species for the Northwest – *Lithospermum erythrorhizon* – red-rooted stoneseed (*Boraginaceae*) – perennial herb. In Russia, it grows in the Far East, and also grows in China, Japan and Korea. In Korea and Japan it is cultivated as a medicinal plant, roots, leaves and fruits are used in traditional medicine. The roots contain the pigment shikonin, which is widely used in the cosmetic industry. Studies have shown that *Lithospermum erythrorhizon* is characterized by a wide ecological range of adaptation and has proven itself well in the natural and climatic conditions of the Northwest; the total duration of plant ontogenesis

reaches 11 years. Stoneseed seeds have a combined type of dormancy and require pre-sowing treatment for rapid germination, they contain more than 32% fatty oil.

Homeland of *Echinacea purpurea* (Asteraceae) – North America. *Echinacea purpurea* is widely used in medicine and has antibacterial, antiviral, immunostimulating and other effects. *Echinacea purpurea* is very promising for cultivation in the Leningrad Oblast. According to the research results, harvesting for aboveground raw materials (Herba Echinaceae purpureae grass) can be carried out from the second year of plant life, and during the growing season, 2 cuts can be made, the total yield is 6.2 t/ha. It is profitable to harvest rhizomes and roots (Rhizomata et radices Echinaceae purpureae) at the 4th year of life, yield 3.4 t/ha [9].

Currently we see the main tasks of the development of medicinal plant growing in the North-West of the Russian Federation in the following [10]:

- in uniting all interested parties and creating a Regional Center to coordinate and direct work on the production and processing of environmentally friendly medicinal plant materials;
- in conducting research in Oblast of seed production of medicinal crops, with the development and implementation of a system of promising technologies and modern methods of cultivation of medicinal and aromatic crops in order to obtain high-quality seeds;
- in the creation of a system of seed production of varieties of valuable medicinal and essential oil crops;
- in the training of qualified specialists in medicinal plant growing;
- organizing ongoing training courses for farmers involved in the production of medicinal plant materials and providing them with advice on an ongoing basis.

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云杉林的树状生态评估结果  
**RESULTS OF DENDROECOLOGICAL ASSESSMENT OF SPRUCE  
FORESTS**

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对于俄罗斯在每种类型的森林生长条件下的林业而言，年轮形成的特征都很重要。年轮的大小是针叶林生产力的指标之一。松树和云杉人工林生长在沃洛格达州 (Vologda Oblast) 的重要地区，该地区的地理位置位于俄罗斯联邦的西北部。在这些针叶树中，云杉的需求量最大。这个事实是研究课题的选择。在实施过程中，发现云杉的平均径向生长为1.29毫米，年轮的大小每年变化很大，因为标准偏差为0.98毫米。最大和最小生长的年份通常是重合的，只是有时在不同的云杉树木中，沿着半径的生长动态存在几年的偏差。该研究没有揭示树木生长速率与长期温度变化之间的显著关系，这是由于以下事实：在针叶林地帯，其长期过程没有急剧变化，并且树木已长期适应气候条件。实际上，所研究的云杉林的年轮宽度也不取决于降水的长期变化性，这是由于这类森林形成的排水良好的土壤地面条件所致。这种森林的土壤和水文条件有利于从土壤表面去除多余的水分。

关键词：云杉林，年轮，树木年代学，温度，降水。

**Abstract.** *For forestry in Russia in each type of forest growing conditions, the features of the formation of tree rings are important. The size of tree rings is one of the indicators of the productivity of coniferous stands. Pine and spruce plantations grow on a significant area of the Vologda Oblast, which is geographically located in the northwestern part of the Russian Federation. Spruce is in the greatest demand among the population among these coniferous trees. This fact served as the choice of the research topic. In the course of its implementation, it was found that*

*the average radial growth of spruce is 1.29 mm, and the size of the annual rings varies significantly from year to year, since the standard deviation is 0.98 mm. The years of maximum and minimum growth often coincide, only sometimes in different spruce trees in the dynamics of growth along the radius there is a deviation of several years. The study did not reveal significant relationships between tree growth rates and long-term temperature variability, this is due to the fact that there are no sharp changes in its long-term course in the taiga zone, and trees have long adapted to climatic conditions. The width of the annual rings of the studied spruce forests also practically does not depend on the long-term variability of precipitation, this is due to the well-drained soil-ground conditions formed in this type of forest. The soil and hydrological conditions of this type of forest facilitate the removal of excess moisture from the soil surface.*

**Keywords:** *spruce forests, annual rings, dendrochronology, temperature, precipitation.*

Dendroecology from the beginning of its development as a branch of ecological science deals with measurable quantities - the width of the annual ring. Currently, there is a noticeable increase in the use of dendroecological methods in climatic and hydrological studies. In forestry, the use of this method helps to identify the peculiarities of the formation of annual rings in each type of forest and place of growth of trees.

The aim of the study in this area was to identify the influence of long-term fluctuations in temperature and precipitation on the growth of spruce stands in highly productive forest conditions. For this purpose, the sorrel spruce forest was chosen as the object of research.

The tasks that were solved to achieve this goal were:

- selection of objects and carrying out taxation works on them;
- taking wood samples in the form of drill cores, measuring the width of annual rings of wood on them;
- carrying out statistical and dendrochronological analysis based on the measurement of the size of annual rings;
- establishing a statistical relationship between the size of the annual rings of spruce and the series of long-term dynamics of temperature and precipitation.

In the selected type of forest, two test plots were delimited, on which a complex of forest accounting works was carried out, taking into account the provisions of generally recognized methods [1], [2], [7], [8]. When conducting dendroecological analysis, it was decided to rely on the use of dendrochronology methods [4], [5], [6], [9].

It was found that the objects selected for the study are ripe, mixed, highly productive coniferous-deciduous plantations growing in the southern taiga for-



est-growing region of the European North of Russia. Pine, birch and aspen also grow along with the spruce. Undergrowth on the territory of the studied forest area is represented by non-viable spruce, uniformly distributed over the area, in the amount of 4 thousand pieces/ha.

Comparison of the dimensional characteristics of tree rings and the dynamics of their change made it possible to reveal a large proportion of similarities between the trial plots. It was decided to average the data obtained from them for further analytical work.

Statistical analysis of radial growths of wood showed that the average value of the annual ring of spruce in these forest growing conditions is  $1.29 \pm 0.03$  mm, the annual ring with a size close to 0.75 mm is most often repeated, the standard deviation for a series of widths of annual growth is 0.98 mm, the accuracy of the experiment did not fall below 2.47%, which makes it possible to conclude on the reliability of the results obtained.

The constructed tree-ring chronology of spruce has a small amplitude of fluctuations in the size of annual rings, there are no sharp growth spikes in it. This was confirmed by a small indicator of the sensitivity coefficient ( $K_c = 0.16$ ). This sensitivity indicator shows that the tree-ring chronology is classified as complacent [6]. A small indicator of sensitivity in trees was expected, since in the considered forest growing conditions, there are practically no strong growth-limiting environmental factors. This is due to favorable soil and ground conditions, which prevent the accumulation of excess water in these forest areas.

Also, individual tree-ring chronologies built for spruce trees indicated that the years of maximum and minimum growth in spruce often coincided or had a slight shift due to a delay of several years in the response of individual trees, most often to unfavorable factors. This is due to the manifestation of internal processes occurring in the considered forest area, such as the differentiation of trees in the canopy and by area, the manifestation of biological factors and the peculiarities of the soil-hydrological regime.

The most important characteristics of climate and weather are temperature and precipitation. They provide the territory with heat and moisture, and determine the productivity of forest stands. Their character of variability largely determines the growth rate of coniferous stands. To identify the relationships between the size of the annual rings of spruce and climatic variables, we used the series of instrumental observations of the Babayevsk weather station, which is located at the closest distance from the objects (in comparison with other weather stations).

To determine the closeness of the relationship between temperature and spruce growth, a correlation-regression analysis was carried out between the series of these indicators. The relationship was between the size of the annual rings of spruce and the long-term series of average monthly temperatures.

The calculation did not reveal a significant and statistically reliable relationship between the growth rates of trees and temperature fluctuations. This does not mean that temperature has no effect on tree growth. Its importance for tree growth is a proven truth. It is known that the sum of accumulated positive temperatures is of leading importance for woody organisms, since for each species it has its own different meaning. An important factor is the length of the growing season and the active growing season. The growing season starts from the moment when the average daily temperature crosses the +5 degrees mark, and ends in the autumn at the +5 degrees mark. The most important period for tree growth begins at +10 degrees and ends when the temperature drops below the declared mark. The absence of a significant relationship between the series of dynamics of the width of the tree rings of spruce indicates that there are no sharp changes in the long-term temperature variation in the taiga zone, and trees growing in these forest conditions have long adapted to this temperature regime. In the taiga zone, there are rarely extremely high and low temperatures that sharply differ from the climatic norm.

An equally important factor for the growth of woody vegetation is moisture, which forms the hydrological regime of the forest area. Its greatest amount enters the soil through precipitation from the atmosphere. For plants, water is a means of delivering nutrients from the soil to the trunk and crown of the tree. Its excess or deficiency leads to disruption of the processes of redistribution of organic substances in the ascending and descending currents of nutrients required by the tree.

We have carried out an analysis to establish the influence of the amount of precipitation falling in different months of the year on the growth of trees. He did not reveal a significant and statistically significant relationship between the width of the annual rings and the series of variability in the amount of precipitation. This is a consequence of the soil-ground conditions formed in the sorrel spruce forest. Since precipitation has a periodicity (spring and autumn rain, snow in winter), the spruce stands, most likely, have adapted to this regime. In the taiga zone of the European North of Russia, there are rarely prolonged rains, and the amount of precipitation is stable from year to year, and the good drainage of soils, inherent in this type of forest, contributes to the diversion of excess water to other forest areas. These spruce forests form in elevated and level areas of the forest that provide a sufficient slope for water flow.

Thus, in the course of our study, the following conclusions were obtained:

1. The average radial growth of spruce in the sorrel spruce forest is  $1.29 \pm 0.03$  mm, with a standard deviation of 0.98 mm;
2. In the dynamics of growth of spruce trees in the studied forest area, there is significant synchronization. The years of maximum and minimum growth of spruce often coincide, only sometimes the response of individual trees is delayed by several years;

3. No reliable and statistically significant relationship between the growth rates of spruce and the series of variability of the mean monthly temperature was found. This is due to the fact that in the taiga zone there is no sharp fluctuation in the long-term temperature variation, and the trees have adapted to the formed temperature regime.

4. Between the series of variability in the amount of precipitation and the increase in spruce, no significant and statistically reliable relationship was established. The lack of communication indicates the peculiarities of the soil and ground conditions of this type of forest, facilitating the removal of excess water from these territories.

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产卵变化的鲑鱼的营养和生物学价值  
**NUTRITIONAL AND BIOLOGICAL VALUE OF CHUM SALMON  
(ONCORHYNCHUS KETA) WITH SPAWNING CHANGES**

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对产卵变化的鲑鱼 (*Oncorhynchus keta*) 的营养和生物学价值进行了分析。结果表明, 鲑鱼的卵, 蛋白质, 水分, 脂肪含量及其技术特性是由产卵变化决定的。产卵的鲑鱼肌肉组织样本中的平均脂肪含量约为4%, 而未改变的鲑鱼 (鲑鱼) 中的平均脂肪含量约为7%。就分馏和脂肪酸组成而言, 具有产卵变化的鲑鱼脂肪并不逊色于鲑鱼脂肪。通过分析chum head fat的化学组成, 分馏和脂肪酸组成, 我们可以得出结论, 建议将这种食物残渣用于生产食用脂肪, 该食用脂肪是omega-3多不饱和脂肪酸的来源。鱼皮含有大量胶原蛋白, 可用于其生产以及食品的生产, 尤其是作为胶原蛋白来源的木片。基于对产卵变化的鲑鱼的营养和生物学价值的分析结果, 提出了合理利用肌肉组织及其加工浪费的方法。

关键词: 鲑鱼, 产卵变化鱼, 碎鱼, 鱼头, omega-3脂肪酸, 鱼皮, 胶原蛋白

**Abstract.** *The analysis of nutritional and biological value of chum salmon (*Oncorhynchus keta*) with spawning changes was carried out. It was shown that in chum salmon the content of protein, moisture, fat and its technological properties are determined by spawning changes. The average fat content in muscle tissue samples from spawning chum salmon is about 4%, and in unchanged chum salmon (*chum salmon*) it is about 7%. In terms of fractional and fatty acid composition, the fat of chum salmon with spawning changes is not inferior to the fat of chum salmon. Analysis of the chemical composition, fractional and fatty acid composition of chum head fat allows us to conclude that it is advisable to use this food waste for the production of edible fat, which is a source of omega-3 polyunsaturated fatty acids. Fish skin contains a large amount of collagen and can be used for its production, as well as for the manufacture of food products, in particular, chips, which are a source of collagen. Based on the results of the analysis of the*

*nutritional and biological value of chum salmon with spawning changes, ways of rational use of muscle tissue and waste of its processing are proposed.*

**Keywords:** *chum salmon, fish with spawning changes, minced fish, fish heads, omega-3 fatty acids, fish skin, collagen.*

## **Introduction**

Consumption of high-quality and safe fish products determines health and life expectancy, providing the population with essential amino acids, macro- and microelements, vitamins and biologically active substances. In this regard, fish as a raw material for the production of food products with desired properties is of great interest.

Pacific salmon (pink salmon *Oncorhynchus gorbuscha*, chum salmon *Oncorhynchus keta*, red salmon *Oncorhynchus nerka*, coho salmon *Oncorhynchus kisutch*, chinook salmon *Oncorhynchus tshawytscha*) are the most nutritious species among the commercial fish of the Russian Federation. 2017]. Salmon meat contains complete, easily digestible proteins, fats - natural sources of unsaturated fatty acids (eicosapentaenoic and docosahexaenoic acids), minerals necessary for the body, as well as vitamins of group B, U, PP, A, D, E, a number of biologically active substances. Various caviar products are a valuable product, which is made from Far Eastern salmonids.

In the North Pacific, salmon are commercialized and researched by four countries — Russia, Japan, the United States and Canada. Since 1992, the four countries have collaborated on the management and research of Pacific salmon stocks through the North Pacific Anadromous Fish Commission (NPAFC).

Despite the fact that Pacific salmon can be a promising raw material for the production of a wide range of products, the increase in the production of these types of raw materials is slowed down for a number of reasons, the main of which are: seasonal fish catch, lack of production facilities for processing raw materials and conditions for its long-term storage, significant transportation costs.

An important problem of the Sakhalin oblast in recent years is not only a decrease in the volume of salmon fishing, but also an increase in the share in the total catch of chum salmon with spawning changes [Makoedov, 2009]. In this regard, the issues of rational and more efficient use of such raw materials requires modern approaches and is a very urgent problem.

In this regard, the aim of the work was to study the nutritional and biological value of chum salmon with spawning changes and substantiate recommendations for the rational use of muscle tissue and waste from cutting.

## **Materials and methods**

Chum salmon (*Oncorhynchus keta*) with spawning changes, caught in the mouth of the Udarnitsa River, Sakhalin Oblast (September), was used as the ob-

ject of the study. After catching fish samples are frozen and delivered for research to VNIRO. In the samples, the content of protein substances was determined on an autoanalyzer "Kjeltec" model 1003 (Tecator, Sweden) by the Kjeldahl method in accordance with GOST 7636 [GOST 7636-85]. The mass fraction of moisture was determined according to GOST 7636, the fat content was determined by the Soxhlet method on an automatic extractor SER 148/6 from VELP. The water-retention capacity of muscle tissue was determined according to GOST 7636. The content of total nitrogen of volatile bases (TNVB) was determined on a K-355 semi-automatic distiller (Buchi, Switzerland). Fatty acid composition according to GOST 31665, GOST 31663 [GOST 31665-2012, GOST 31663-2012].

### Results

To characterize the technological indicators of fish samples, the size-mass composition of chum salmon was determined, which is shown in table 1.

**Table 1 - Size-mass composition of chum salmon samples with spawning changes**

№ of sample	Length, cm	Weight, g	Yield, %					
			fillet	head	fins	skin	bones	Losses
1 (male)	54,6	1732	44,26	20,67	4,09	9,49	7,80	3,69
2 female	53,9	1220	58,02	18,28*	4,80	7,64	8,40	2,86
3 female	55,8	1430	52,13	21,47	5,11	8,99	8,74	3,56
4 female	58,0	1512	53,25	19,78	5,84	8,80	9,62	2,71
Average values			51,92	20,05	4,96	8,73		

In accordance with the data presented, the yield of muscle tissue averaged (from the weight of gutted fish) about 50%, head - 20%, and skin - 9%.

Studied the chemical composition of muscle tissue and heads of 4 samples of chum salmon with spawning changes, which are shown in table 2. For comparison, the literature data for chum salmon are given.

**Table 2 - Chemical composition of muscle tissue of chum salmon samples**

Sample number, characteristic	Content, g/100g			The energy value kJ/kcal
	moisture	protein	fat	
1 male	79,79	17,05	4,36	450/110
2 female	80,65	17,91	4,79	480/115
3 female	79,50	17,40	3,54	425/100
4 female	79,00	18,64	4,83	490/120
Average sample	79,02	17,55	4,00±0,5	445/110
Serebryanka (literature data [Handbook on chemical ..., 1998])	<u>73,7</u>	<u>22,2</u>	<u>3,5</u>	<u>1,5</u>
	72,9	21,6	3,8	1,3
Chum heads	68,4±0,1	14,21±0,31	4,3±0,5	

From the data given in Table 2, it can be seen that chum salmon with spawning changes has more moisture and slightly less protein in the composition of muscle tissue, compared to the sample of chum salmon. The average fat content in muscle tissue samples of spawning chum salmon is about 4%, and in chum salmon about 7%. In terms of chemical composition, chum salmon with spawning changes is classified as a medium-fat, high-protein raw material. The heads of chum salmon obtained by cutting fish are characterized by a high protein content, and in terms of fat content they refer to medium-fat raw materials, therefore, they can be recommended as raw materials for obtaining edible fish oil. The results of the analysis of the fractional composition of the fat of chum salmon heads showed that the fat contains a significant amount of phospholipids and diglycerides, not much less than in the muscle tissue of fish, which indicates the high biological value of fat (table 3).

**Table 3 - Fractional composition of fat samples of chum salmon,% \***

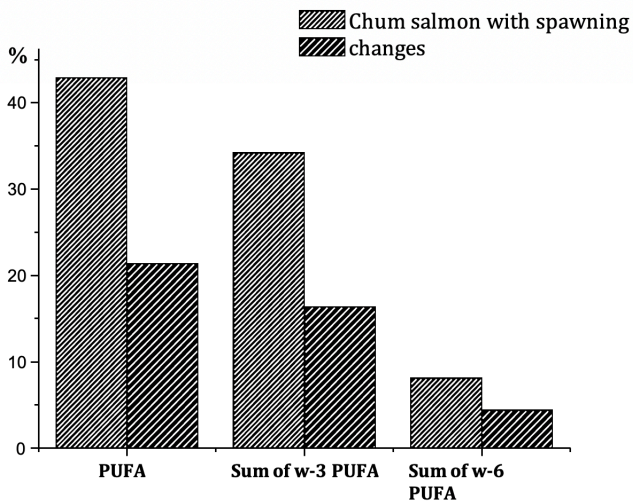
Fraction name	Chum heads	Average sample of chum salmon muscle tissue with spawning changes
Polar lipids (phospholipids)	6,5 ± 2,3	7,0 ± 0,1
1,2-Diglycerides	0,8 ± 0,4	3,4 ± 0,3
1,3-Diglycerides + sterols (cholesterol)	0,5 ± 0,3	1,0 ± 0,6
Free fatty acids	7,2 ± 2,5	32,9 ± 3,1
Triglycerides	82,2 ± 4,0	53,2 ± 4,8
Waxes	2,4 ± 0,6	-
Sterol esters	0,1 ± 0,0	0,3 ± 0,2
Hydrocarbons	-	0,9 ± 0,4
Other**	0,3 ± 0,1	1,2 ± 1,0

\* Values are presented as mean±standard deviation (n = 2)

\*\* Unknown component

To assess the quality of fat of chum salmon heads with spawning changes, an analysis of the fatty acid composition of fat was carried out and it was found that it contains a large amount of polyunsaturated fatty acids of about 22% (figure). Of considerable interest is docosapentaenoic acid, which, according to the literature, plays an important role in the prevention of cardiovascular diseases [Ipatova et al., 2009].

Thus, the analysis of the chemical composition, fractional and fatty acid composition of chum salmon fat allows us to conclude that it is advisable to use these food waste for the production of edible fat.



**Figure - Sum of polyunsaturated fatty acids omega-3, omega-6, %**

In connection with spawning changes in the muscle tissue of fish, the content of moisture, lipids, as well as the fractional composition of proteins change, which determines the consistency of muscle tissue and its technological properties, which is consistent with [Reid R.A.]. In addition, the color of the meat deteriorates, which is due to an increase in the proportion of fish with elements of breeding coloration (chum salmon with spawning changes), since the content of astaxanthin pigment decreases in the process of pre-spawning changes - it begins to pass from muscles to skin and ovaries [Zhivotovsky, 2010].

The technological properties of the chum salmon samples were assessed by the values of the water-holding capacity (WHC) given in table 5.

**Table 5 - Values of water retention capacity of muscular tissue samples of chum salmon**

Sample number, characteristic	WHC, %
1 male	53,2
2 female	53,4
3 female	55,5
4 female	55,5
Average sample of chum salmon with spawning changes	54,6
5 Chum salmon (male)	65,5



From the data obtained, it can be concluded that the technological properties of the spawning chum salmon are lower than those of the silver chum salmon, since the values of the water-holding capacity are almost 10 units lower. In accordance with GOST R 55505 "Frozen edible fish food mince", the WHC values of minced meat made from both freshly caught and frozen raw materials must be at least 50%. The data obtained allow us to recommend chum salmon with spawning changes, including frozen for the production of minced meat. However, it is most advisable to make minced meat not from frozen raw materials, but from freshly caught. This will make it possible to obtain products with higher technological properties. On the basis of minced meat it is possible to make a wide range of various products that will have a high nutritional value, and you can create an attractive presentation, improve technological properties by using various food and flavoring additives.

Fish skin is of particular interest in terms of the complex use of raw materials and as a source of collagen. It is well known that collagen obtained from fish skin has higher technological and medical properties compared to collagen isolated from the skin of farm animals [Antipova, 2015; Antipova, 2015 a]. In structure, fish collagen is closer to human collagen. Fish collagen can be used as an additive in cosmetics, or as a constituent of food additives and biologically active substances. The general chemical composition of the skin of chum salmon samples with spawning changes was investigated, which is presented in table 6.

**Table 6 - General chemical composition of chum salmon skin**

Sample name	Content,%			
	moisture	protein	fat	collagen
Chum skin	73,0±0,2	25,25±0,20	0,6±0,1	5,430±0,436

From the data in table 6, it follows that the skin of chum salmon contains a large amount of collagen, which makes it promising to use this raw material for the production of such a valuable drug. According to [Wang J, 2015], collagen peptides obtained from the skin of chum salmon were promising as a wound-healing agent administered to rats with caesarean section. After oral administration, wound healing improved, which showed its potential application as a therapeutic method for the treatment of wounds in clinical practice.

Fish skin can be a promising raw material for obtaining gelatin [Liu Y, 2017], as well as used for the production of food products, in particular chips, which will be a source of collagen. In world practice, the experience of producing chips from the skin of cod fish is known, in particular in Iceland, which are a source of protein and collagen.

Based on the results of the analysis of the nutritional and biological value of

chum salmon with spawning changes, ways of rational use of muscle tissue and waste of its processing by making the following products are proposed:

- frozen edible minced fish;
- fish heads for further processing and production of edible fat;
- frozen fish heads for sale as food products;
- fish skins for further processing or production of food products that are a source of collagen.

### **Conclusion**

The analysis of nutritional and biological value of chum salmon with spawning changes has been carried out. It has been shown that the muscle tissue of chum salmon with spawning changes contains more moisture, slightly less protein and fat. The consistency of muscle tissue and its technological properties are determined by spawning changes in the muscle tissue of fish. According to the fractional and fatty acid composition of fat, chum salmon with spawning changes is not inferior to chum salmon.

On the basis of the research and analysis of literature data, a list of products that can be produced from chum salmon with spawning changes with the rational use of raw materials and processing waste is proposed.

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技术胁迫条件下低强度激光辐照恢复牛红细胞能量代谢和钠钾ATP酶活性的能力研究

**STUDY OF THE ABILITY OF LOW-INTENSITY LASER RADIATION TO RESTORE ENERGY METABOLISM AND ACTIVITY OF SODIUM-POTASSIUM ATP-ASE OF CATTLE ERYTHROCYTES UNDER THE CONDITIONS OF TECHNOLOGICAL STRESS<sup>1</sup>**

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畜牧业的实际问题是通过任何农场都可以使用的价格合理的廉价方法来提高动物对环境因素的抵抗力。目前，在畜牧业的各个领域引入低强度激光辐射变得越来越重要。然而，低强度激光辐射对动物有机体的生物学作用的可能机制的问题仍然悬而未决。细胞的稳态参数主要取决于ATP的含量（作为各种细胞内反应的磷酸盐供体）以及 $\text{Na}^+ - \text{K}^+ - \text{ATPase}$ 的活性，后者参与细胞离子平衡的调节。这项工作的目的是在技术压力的背景下研究低强度激光辐射中牛的ATP浓度和 $\text{Na}^+ - \text{K}^+ - \text{ATPase}$ 的活性。使用波长为830nm，功率为90mW的自主激光淋浴器“MarsIK”（SPA“Petrolazer”，圣彼得堡）作为辐射源。

对应激动物体内ATP浓度和 $\text{Na}^+ - \text{K}^+ - \text{ATPase}$ 活性的研究表明，与完整动物的水平相比，指示剂含量有所下降。暴露于低强度激光辐射决定了研究参数对完整动物水平的增加。因此，这项研究证明LILR的作用可以有效地纠正人体的压力反应。

关键词：低强度激光辐照；ATP；红细胞 $\text{Na}^+ - \text{K}^+ - \text{ATPase}$ ；技术胁迫；牛。

**Abstract.** *The actual problem of animal husbandry is to increase the resist-*

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ance of animals to environmental factors by affordable and inexpensive methods that can be used by any farm. At present, the introduction of low-intensity laser radiation in various areas of animal husbandry is becoming increasingly important. However, the question of the possible mechanisms of the biological action of low-intensity laser radiation on the animal organism remains open. The homeostatic parameters of cells largely depend on the content of ATP, which serves as a phosphate donor for various intracellular reactions, and the activity of  $\text{Na}^+ - \text{K}^+ - \text{ATPase}$ , which is involved in the regulation of the ionic balance of cells. The aim of this work was to study low-intensity laser radiation for the concentration of ATP and the activity of  $\text{Na}^+ - \text{K}^+ - \text{ATPase}$  of cattle erythrocytes against the background of technological stress. An autonomous laser shower "MarsIK" (SPA "Petrolazer", St. Petersburg) with a wavelength of 830 nm and a power of 90 mW was used as a radiation source.

The study of the concentration of ATP and the activity of  $\text{Na}^+ - \text{K}^+ - \text{ATPase}$  in animals under stress showed a decrease in indicators compared to the level of intact animals. Exposure to low-intensity laser radiation determined an increase in the studied parameters to the level of intact animals. Thus, this study proves that the action of LILR can be effective in correcting the stress response of the body.

**Keywords:** low-intensity laser radiation, ATP,  $\text{Na}^+ - \text{K}^+ - \text{ATPase}$  of erythrocytes, technological stress, cattle.

## Introduction

Reducing the loss of dairy and meat products due to the low resistance of animals to stress is an important area of the country's economy, its strategic component and is included in the list of critical technologies of the Russian Federation.

The limiting factor in the manifestation of high productivity of animals is technological stress arising in industrial production. It is impossible to completely avoid stress loads on the body of animals in industrial animal husbandry, since in the process of growing it becomes necessary to carry out various zooveterinary measures, most of which are stressors for animals.

As a result, animals develop an adaptation syndrome that stimulates the mobilization of energy reserves, which leads to significant changes in the functional status of the body, the intensity and direction of metabolic processes, and, as a rule, is a starting link in the development of pathologies. All this is reflected in the productive health of cattle, and is expressed in such economic indicators as milk yield, reproduction, longevity, quality of milk and meat [1].

Further development of animal husbandry, increasing the profitability of the industry is possible only with the development of new methods for diagnosing the general stress state, studying the mechanisms of development and correction of stress reactions in cattle.

Currently, to increase the body's defenses, a wide arsenal of anti-stress drugs has been proposed: stress protectors (antipsychotics, tranquilizers, sedatives), adaptogens, vitamin preparations and others, but an important problem arising from their use is the short duration of action, side effects of psycholeptics, possible accumulation of these substances or their decay products in the animal's body. In addition, their effect is associated with the suppression of the manifestations of the stress reaction, and not with the elimination of the causes of its development, without taking into account which stress can provoke the development of pathology.

In this regard, the search for alternative anti-stress drugs, harmless to the body, characterized by long-term action, low toxicity, remains one of the primary tasks in the prophylaxis and prevention of stress.

In the last decade, the intensive introduction of laser technologies in various areas of animal husbandry has become increasingly important. At the same time, until now, the effect of low-intensity laser radiation (LILR) has been considered at the level of hypotheses that do not fully disclose the mechanism of the emergence of a biological response to laser radiation, but only demonstrate various aspects of the general response of the body at different levels of its implementation. The scientific substantiation of the tactics of using LILR on the animal organism remains insufficient, the question of the possible mechanisms of the biological effect of laser radiation on the cells and organs of the animal organism remains open [2].

It is known that erythrocytes can be a convenient object of research, while reflecting the processes developing in other cells of the body [3]. The homeostatic parameters of cells largely depend on the content of ATP, which serves as a phosphate donor for various intracellular reactions, and the activity of  $\text{Na}^+\text{-K}^+\text{-ATPase}$ , which is involved in the regulation of the ionic balance of cells [4].

Based on the foregoing, the aim of the work was to study the LILR for the concentration of ATP and the activity of  $\text{Na}^+\text{-K}^+\text{-ATPase}$  of cattle erythrocytes.

#### **Materials and research methods**

The experiments were carried out in the conditions of the breeding farm of JSC "Rumyantsevskoe" in the Dalnekonstantinovsky district of the Nizhny Novgorod Oblast.

The objects of research were highly productive Holsteinized cows of the Black-and-White breed of the second lactation with a productivity of 5000 to 7000 thousand kg per lactation. The groups of animals were formed according to the principle of analogues, taking into account the breed, age, live weight and were in the same conditions of keeping, feeding and caring for. Tethered cow keeping system. The rations were compiled taking into account the physiological state of the animals according to detailed norms, taking into account the chemical composition of local feed. Milking of cows three times, in a milk pipe.

Using the method of analogs, 6 groups of cows were formed, six heads each.

The first group of animals was intact, groups 2,3,4,5,6 were exposed to technological stress: weighing, regrouping, changing the diet, then 3,4,5,6 groups were irradiated with LILR daily for seven days:

Group 3 was exposed to LILR for 5 minutes in the ear;

Group 4 - 5 minutes LILR effect on the withers;

Group 5 - 15 minutes of LILR exposure to the ear;

Group 6 - 15 minutes LILR effect on the withers.

An autonomous laser shower "MarsIK" (SPA "Petrolazer", St. Petersburg) with a wavelength of 830 nm and a power of 90 mW was used for laser therapy.

The criteria for assessing the health of cows were the general condition of the animals (body temperature, pulse rate, respiration), the absence of deviations from the norm during their clinical study.

ATP concentration was measured by the nonenzymatic method [5]. Inorganic phosphorus was determined in the samples by recording the color density on a KFK-3 photometer at a wavelength of 660 nm. The concentration of inorganic phosphorus was determined by a calibration curve using a standard  $\text{KH}_2\text{PO}_4$  solution [6]. The catalytic activity of  $\text{Na}^+\text{-K}^+\text{-ATPase}$  was determined by the increase in inorganic phosphorus during incubation of hemolyzed erythrocytes in an isotonic medium [7].

The results were processed using the BIOSSTAT and Microsoft Excel software packages. The significance of differences in the means was determined by the Student's t-test.

### Results and discussion

The results of the studies show that the activity of  $\text{Na}^+\text{/K}^+\text{-ATPase}$  in animals of the intact group was  $0.048 \pm 0.012 \mu\text{mol/ml}$ . In all experimental groups, the enzyme activity was reduced relative to the control, the greatest decrease in the indicator was recorded in the second group of animals exposed to technological stress, an hour later it was maximum and decreased by 89% relative to intact values, on the seventh day of the experiment, the  $\text{Na}^+\text{/K}^+\text{-ATPase}$  activity was reduced by 82.9% regarding control.

An hour after exposure to LILR for 5 and 15 minutes, against the background of technological stress, the activity of the studied erythrocyte enzyme was reduced in all groups relative to the intact group, but not as significantly as in the second group of animals. By the end of the experiment, the enzyme activity in groups 4, 5, 6 was restored to the level of intact animals.

The ATP content decreased in all studied groups relative to the intact group ( $2.37 \pm 0.28 \mu\text{mol Fn} \times \text{ml}^{-1}$ ) throughout the experiment. The greatest decrease in the indicator was observed in the group of animals exposed to technological stress, an hour later the ATP content was reduced by 73% relative to intact values. When exposed to LILR in animals of groups 3, 4, 5, 6 by the end of the experiment, the

ATP content corresponded to the animals of the intact group.

Thus, under technological stress in animals, energy metabolism is inhibited, which leads to changes in the properties of the erythrocyte membrane, cytoarchitectonics, and changes in functional activity.

The use of LILR (wavelength 830 nm) has a beneficial effect on the condition of erythrocytes. An increase in the formation of ATP is possibly due to the stabilization of the antioxidant system of erythrocytes, suppression of free radical processes at the level of membrane components. Normalization of the energy metabolism of erythrocytes, restores the activity of the membrane-bound enzyme Na,K-ATPase, which is involved in the distribution of sodium and potassium cations between the cell and the intercellular space, which plays an important role in the regulation of erythrocyte volume, affects its shape and ability to deform [8].

Thus, the action of LILR causes an increase in the activity of Na<sup>+</sup>-K<sup>+</sup>-ATPase coupled with an increase in metabolic processes in the cell, which can be effective in correcting the stress response of the body.

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