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

Materials of the International Conference

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参与者的英文报告

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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 56 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”

俄罗斯消费者在国际野生植物市场的合作
CONSUMER COOPERATION OF RUSSIA IN THE INTERNATIONAL MARKET OF WILD PLANTS

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(branch of the Russian University of cooperation)

注解。该主题的相关性和新颖性可以通过国家利用自然和气候条件的潜力对野生水果作物和森林蘑菇的生长以及这些产品在国民经济中的地位的重要性来解释。俄罗斯的自然资源大量支持生态清洁野生植物的生长。在天然森林上，每年可以收集大量野生水果和浆果作物，蘑菇，坚果，草药和其他有用的人类产品。并非所有产品的收集都在适当的水平上进行组织。结果，国内外市场的食品供应系统没有获得大量的野生产品。该领域的监管和法律支持不足阻碍了野生植物国内市场的发展。很少有组织和经济措施刺激野生水果，浆果，蘑菇，坚果和其他产品的收集和加工。利用现有潜力扩大野生植物市场的方法之一是更积极和充分利用现有资源和形式的合作采购办事处，俄罗斯中央联盟消费者协会的接待点。从农村地区的野生水果作物和野生蘑菇的制备以及从事聚集的临时工作队的公共行政和合作企业的扩大，提出更积极的监管和经济支持。

关键词：市场基础设施，野生水果和浆果作物，森林，森林蘑菇，野生植物，俄罗斯中央联盟消费者协会，合作企业家，采购和营销合作社，zagotkontory，采购点，浆果种植园，贸易，野生植物收获，采购价格，分销渠道，仓储，野生植物国内市场。

Annotation. *The relevance and novelty of the topic is explained by the great importance of the state use of the potential of natural and climatic conditions for the growth of wild fruit crops and forest mushrooms, the place of these products in the national economy. Natural resources of Russia favor the growth of ecologically clean wild plants in large volumes. On natural forests annually can collect significant amounts of wild fruit and berry crops, mushrooms, nuts, herbs and other useful products for humans. Not everywhere the collection of these products is organized at the proper level. As a result, the food supply system in the domestic and foreign markets do not receive a significant amount of wild products. Insufficient regulatory and legal support of this sphere hinders the development of the domestic market of wild plants. Little is produced by organizational and eco-*

nomic measures that stimulate the collection and processing of wild fruits, berries, mushrooms, nuts and other products. One of the ways to use the existing potential to expand the market of wild plants is a more active and full use of available resources and forms of cooperative procurement offices, reception points of consumer societies of the Central Union of Russia. Proposes a more active regulatory and economic support of these activities, from both the public administration and the expansion of cooperative enterprise in the preparations of wild fruit crops and wild mushrooms in rural areas and temporary work teams engaged in gathering.

Keywords: *market infrastructure, wild fruit and berry crops, forests, forest mushrooms, wild plants, consumer societies of the Central Union of Russia, cooperative entrepreneurship, purchasing and marketing cooperatives, zagotkontory, procurement points, berry plantations, trade, harvesting of wild plants, purchase prices, distribution channels, warehousing, domestic market of wild plants.*

The purpose of the work is to identify the place and role of consumer cooperation, consumer societies and unions in the market infrastructure of wild fruit and forest mushrooms and wild mushrooms in the formation of wild resources for the development of the domestic food market.

Russia can become an active participant in the international market of environmentally friendly wild fruit and forest mushrooms and forest mushrooms, since there are extensive natural conditions for growing wild plants here - forest tracts, whose area is 1.2 billion hectares. Huge territories of forests and swamps in Russia create favorable conditions for the growth of environmentally friendly wild berries and mushrooms. The natural and climatic conditions of Russia and the presence of large arrays for growing wild plants are a huge potential for satisfying the demand of consumers of environmentally friendly wild fruits, berries and wild mushrooms in the domestic market, which expands the possibilities for building up activities in this sector of the national economy. Commercial stocks of wild plants in Russia exceed 8 million tons, including berries - 4.7 million tons, of which: lingonberries - 1.51, blueberries -1.31, cranberries -0.8, blueberries - 0.51, cloudberries - 0.23, raspberries - 0.07, others - 0.28 million tons; mushrooms - 2.1 million tons, nuts - 1.6 million tons. In 2016, 35 thousand tons of wild-growing berries were harvested in Russia from an area of 17.1 million square meters. m, which in terms of area is the lowest indicator compared to other players. In Russia, only 3-4% of available stock is going to wild plants. [10].

The domestic market of wild plants has great potential for successful development due to the intensification of cooperative fishing, independent of import supplies. In the context of increasing population demand for environmentally friendly products, the relevance of the development of the market of wild fruit crops and

wild mushrooms is increasing. In this regard, the study of economic indicators and the market structure of fruit crops and forest mushrooms, its development trends in modern conditions, is of particular scientific and practical interest for the development of scientifically based areas of its functioning and long-term development.

The market of wild fruit crops and wild mushrooms acts as a segment of the food market and is one of the links in the food supply system. In filling the market with wild fruits, berries, nuts and wild mushrooms, cooperative entrepreneurs in the food supply sector, which have not only economic, but also social significance, can play a significant role.

At this stage, the leader of the Russian market of wild plants, wild berries and mushrooms is the RusBioAlliance group, which includes six sites in the Republics of Karelia and Komi, the Arkhangelsk and Vologda regions. The company's activities are focused on the collection and deep processing of wild berries and mushrooms in more than 10 regions of Russia. In 2018, revenue from wild plants in the company amounted to about 6 billion rubles. [1].

The main volumes of wild berries and mushrooms on the domestic market come from the Republic of Karelia and Komi, Perm Territory, Vologda, Arkhangelsk, Pskov, Leningrad, Novgorod, Murmansk and Kirov regions, which have significant potential of wild plants. Consumer cooperation of the Central Union of Russia takes an active part in organizing the collection and delivery of wild crops to collection points. Consumer societies through the system of cooperative pick-up points during the period of mass gathering of wild plants ensure their uninterrupted acceptance and shipment for processing and storage.

It should be emphasized that the constant participants in the domestic market of wild plants are consumer societies, procurement offices and consumer cooperation points of the Central Union of Russia. So, in 2018, consumer societies of the Central Union of the Russian Federation purchased 285.4 tons of wild fruits and dried and fresh berries (translated into fresh), 189.4 tons of cranberries and lingonberries, 9.3 tons of dried mushrooms, and fresh mushrooms. salted and pickled (translated into fresh) - 125.1 tons, wild nuts - 27.3 tons. The largest number of wild fruits and dry and fresh berries (in terms of fresh) were harvested by consumer societies of the Siberian Federal District - 156.3 tons, which is 54.8% of the total harvest of the Central Union of the Russian Federation. The second place in terms of purchases of this type of wild-growing crops is occupied by consumer societies of the Volga Federal District - 94.9 tons, or 33.3%, the third place belongs to consumer companies of the North-West Federal District - 17.0 tons, or 6.0%. Thus, consumer societies of the three federal districts account for 88.7% of mushroom purchases.

So, the main share of cranberries and lingonberries was purchased by consumer societies of the North-West Federal District - 89.8 tons, or 47.4%. The main supplier of purchased dried mushrooms are the consumer companies of the Sibe-

rian Federal District - 6.3 tons, or 67.7%. The largest number of fresh, salted and pickled mushrooms (translated into fresh) was purchased by consumer companies of the Siberian Federal District - 44.8 tons, or 35.8%, of the North-West Federal District - 18.9 tons, or 15.1%, of the Central Federal District - 16.6 tons, or 13.3%. The main quantity of wild-growing nuts was purchased by consumer companies of the Central Federal District - 11.0 tons, or 40.3%, consumer companies of the Volga Federal District harvested - 9.3 tons, or about 34.1% (table 1).

Table 1 - *Purchases of wild-growing products by consumer societies of the Central Union of Russia, 2018, tons*

Name of federal districts	Dry and fresh wild-growing fruits and berries (translated into fresh)	Cranberries and Lingonberries	Dry mushrooms	Fresh, salted and pickled mushrooms (transformed into fresh)	Wild nuts
Central Union of the Russian Federation	285,,4	189,4	9,3	125,1	27,3
Central	4,1	5,7	0,1	16,6	11,0
Northwestern	17	89,8	0,5	18,9	0
South	6,3	0	0	1,2	0
Volga	94,9	17,4	1,2	16,4	9,3
Ural	0,9	24,6	0,7	6,0	3,6
Siberian	156,3	23,5	6,3	44,8	0,6
Far Eastern	5,9	28,2	0,5	19,1	2,7

Source: compiled by the author based on materials from the Central Union of Russia.

Consumer cooperation takes a significant place in the field of harvesting wild forest and marsh berries in regions where there are favorable environmental conditions. In the Northwestern Federal District, the main supplier of harvested wild fruits and berries, dry and fresh (in terms of fresh) are consumer societies of the Arkhangelsk region - 49.0 tons, or 67.1% in the district. In second place are consumer companies in the Leningrad Region - 9.66 tons, or 16.4%, and in third place - consumer companies in the Komi Republic - 9.66 tons, or 13.2%. The largest number of cranberries and lingonberries was prepared by consumer companies in the Arkhangelsk region - 164.00 tons, or 76.2% in the district. [6].

In recent years, business organizers have shown interest in growing wild berry crops. So, in the Kholmogorsky district of the Arkhangelsk region, on the Dikoe peat bog, it was decided to grow bog cranberries on an industrial basis for mechanized harvesting. This business was recognized as relevant here, as in this

natural-climatic zone there are excellent conditions for the industrial cultivation of forest berries, including cranberries. At this stage, in the Arkhangelsk region, the growth of bog cranberries is not regulated. The main collection of cranberries is carried out, as a rule, by the local population. Fruit harvesting is carried out spontaneously, cranberry yields fluctuate sharply over the years, as they depend on weather conditions. Harvesting cranberries and its implementation allows you to earn income, and harvesting itself is an ordinary family business. The crop of Kostroma varieties of bog cranberries grown on varietal plots varies from 9 to 15 tons per 1 ha, which is 10 times higher than the cranberry crop obtained in natural wild conditions. The highest quantitative and qualitative indicators are the fruits of cranberry varieties: "Gift of Kostroma", "Beauty of the North", "Severyanka", "Sominskaya", which are not only inferior, and in some cases even better than American varieties in terms of ripening time and quality of berries.

Cultivation of Russian varieties of bog cranberries at the Dikoe peat deposit under industrial conditions in the Arkhangelsk Region is carried out in collaboration with scientists from the All-Russian Research Institute for Forestry and Forestry Mechanization (FBU ARRIFFM). The project was initiated by PiTEK-Bio CJSC. The construction of the industrial plantation of “Cranberry Swamp” began at the end of 2016. The size of the cranberry plantation is 500 hectares, including the size of the first stage - 200 hectares, the construction of which took 150 million rubles. For the efficient use of production capacities of the indicated scale, it will be necessary to create a network of cranberry growing and processing enterprises in the region. The cultivation of domestic cranberry varieties in the region on the territory of the Dikoe peat bog indicates the emergence of a new production line in the Arkhangelsk region.

Cooperative approaches are used in organizing the cultivation of wild plants. Thus, the “Arkhangelsk Cranberry” project is an agricultural consumer cooperative in which a significant number of citizens of the rural territory of this region can participate on a voluntary basis. Cranberry products suppliers from America are one of the main competitors of the Arkhangelsk Cranberry cooperative in the domestic market. However, the Arkhangelsk cooperative has its advantages over importers, expressed in the fact that the cost of the “Arkhangelsk cranberry” is lower, since there are no costs for the construction and operation of pumping stations and dusting of the root system of cranberry plants. Cranberry fields of the cooperative "Arkhangelsk Cranberry" can be considered as a collective berry. Mutual fund of 400 million rubles. it is planned to spend on the construction of 200 hectares of plantations for the turnkey cultivation of cranberries. The project provides for own cranberry growing specialists, using a natural reservoir with fresh water. The distance from the cranberry plantation to the federal highway M8 and rural settlements is taken into account, the creation of its own laboratory for the cultivation of mother plants and nurseries is organized. [10].

The project envisages the construction of a road to the M8 highway in the first year, amelioration, establishment of a nursery, the creation of a laboratory, the formation of social and industrial infrastructure, the purchase of new machinery and equipment. In the second year, it is planned to create checks, grow seedlings, and purchase machinery and equipment. In the third year - to plant seedlings, build hydraulic structures and an irrigation system. In the fourth and fifth year, take care of cranberry plants and purchase harvesting machinery and equipment. [2].

In the organization of the production of cranberries with the intervention of a business, certain steps were followed. So, in 2016 cranberry plantations were built, in 2017 the first cranberry seedlings were planted. The entry fee of the shareholder was 3500 rubles. Each shareholder received 280 square meters. m plantation of cranberries. Estimated cranberry yield from 1 sq. Km. m amounted to 1 kg of berries, which can be sold at 250 rubles. for 1 kg. At the same time, the shareholder can sell, present or inherit his share. [2].

Currently, the main buyers of wild mushrooms in the population are individual private entrepreneurs and consumer cooperatives. Often, individual pickers of wild mushrooms realize the gifts of nature collected in the forest on the side of the road. In the market of wild mushrooms, it trades many different types of intermediaries, buying products at low prices from pickers who organize their processing and selling at a higher price. Cooperative entrepreneurs, when opening a mushroom business, include their own deep processing of mushrooms in the technological chain. At the same time, there is the possibility of longer storage, quality preservation and use of warehouse equipment.

Harvesting wild mushrooms is a seasonal business. The yield of wild mushrooms, like crops, depends on weather and climate conditions, including drought. In lean years, mushrooms grown on plantations of mushroom farms are used to load equipment for processing wild mushrooms. This is most often champignons. In European supermarkets, the price of 1 kg of frozen mushrooms is about 30 euros. The cultivation of wild forest mushrooms is much less common. It is economically most profitable to gather wild mushrooms in the forest as gifts of nature. In many countries of the world, mushroom picking is free, and the proceeds from the sale of money are not taxed. However, the independent trade in mushrooms is prohibited. Some entrepreneurs attract pickers for a certain salary to collect wild forest mushrooms.

In Russia, the harvesting and processing of wild mushrooms is carried out by consumer societies of the Central Union of Russia. Thus, the harvesting of these species of wild plants by consumer societies of the Central Union of the Russian Federation from 2014 to 2018. increased from 7.58 to 9.3 thousand tons, or by 22.7%. Consumer companies of the Siberian Federal District significantly increased the harvest of dried mushrooms during this period from 1.75 to 6.3 tons, or 3.6 times. Consumer companies of the Central Federal District (5 times) and the

Far Eastern Federal District - 1.3 times increased significantly the volumes of wild dry mushrooms harvested. At the same time, the purchases of dried wild mushrooms were reduced by consumer companies of the North-West Federal District from 0.98 to 0.28 tons, or 71.1%, of the Ural Federal District, 2.2 times (Table 2).

Table 2 - *Dynamics of purchases of wild-growing dried mushrooms by consumer societies of the Central Union of Russia, tons*

Name federal districts	Years					2018 in% to 2014
	2014	2015	2016	2017	2018	
	7,58	7,96	6,53	23,01	9,3	1.2 times
Central Union of the Russian Federation	0,02	0,05	0,20	0,09	0,1	5 times
Central	1,20	0,66	0,75	0,28	0,5	41,7
Northwestern	2,79	2,44	2,81	1,28	1,2	43,0
Volga	0,31	0	0,20	0,06	0,7	2,2 times
Ural	1,75	1,17	1,65	20,71	6,3	3,6 times
Siberian	0,51	3,64	0,92	0,49	0,5	98,0

Source: compiled by the author based on materials from the Central Union of Russia.

An analysis of the work of consumer societies on the purchase of dried mushrooms shows that the share of consumer societies in the Siberian Federal District in the total volume of harvested wild dried mushrooms by the Central Union of the Russian Federation is 67.7%, or 6.3 tons, of which about 6.3 tons are in the Tomsk Region. whose consumer companies during the period under review increased purchases of these products from 0.20 to 6.3 tons, or 31.5 thousand times.

The segment of frozen mushrooms is developing at a faster pace. Currently, more mushrooms are consumed in the country than officially collected. Import volumes of mushrooms, both fresh and processed, are growing at least 52 thousand tons. The largest importer of blanched, pickled and frozen mushrooms to Russia is China and Poland. Deliveries of mushrooms and truffles from the EU, USA, Australia and Norway were slightly reduced due to the embargo imposed by Russia on the import of products in response to sanctions.

It should be noted that the market of wild mushrooms in Russia is growing dynamically. According to estimates, only the potential of wild forest mushrooms in the Tomsk region with an average yield significantly exceeds the current harvesting volumes in the country. Currently, no more than 5% of the available natural mushroom resources of the region are used without damage to the environment. A small portion of the processed wild mushrooms is exported. Siberian wild forest mushrooms are in great demand in Italy and Germany.

Wild mushrooms are harvested mainly in three regions of the world: Eastern Europe (mainly in Russia), in Asia (mainly in China) and in South America. In other countries, wild mushrooms are not harvested due to insignificant natural resources, which led to the spread in these countries of the cultivation method of growing mushrooms. The collection of wild forest mushrooms in Russia allows you to earn and bring good income for the population. [10].

In a number of areas rich in forest mushrooms, individual organizations temporarily reduce their work during the period of mass collection and are actively involved in the collection of wild mushrooms and handing them over to procurement points at a purchase price. The population, as a rule, carries mushrooms to the procurement office that pays more. In this regard, the procurer has to raise prices in order to survive in the fight against competitors. Depending on the regions of the country, the purchase prices for wild forest mushrooms are very different. In the Central region of Russia for 1 kg of fresh porcini mushrooms the collector is paid up to 300 rubles., Chanterelles - 100 rubles. etc. With a high yield of mushrooms, prices are reduced. Chanterelles, which have a higher price and are in great demand on a par with porcini mushrooms, both in the domestic and European markets, are most beneficial for mushroom pickers. At least 5 thousand tons of chanterelles are exported from Russia to the European market annually. [2].

Not all countries have free access to the collection of wild mushrooms in the forest. For example, in Italy it is necessary to obtain a special permit to collect mushrooms in the forest, issued only to those who studied in a short course in mushroom science and passed the exam.

In the domestic market of wild forest mushrooms, fresh mushrooms occupy about 22%, canned mushrooms about 28%, the rest of the market is occupied by frozen and dried mushrooms. Among Russia, 86.7% of cultivated mushrooms are champignons and oyster mushrooms. Taste qualities of mushrooms increase from "shock" freezing at -40 C, storage in freezers (-18 C), when defrosting, mushrooms retain their taste and pristine appearance. [2].

It should be noted that procurers of consumer societies in the Siberian Federal District significantly increased purchases of fresh, salted and pickled wild forest mushrooms. Thus, consumer societies and unions of the Tomsk region increased harvesting of forest mushrooms - from 1.70 to 35.7 tons, or 21 times. The procurement of this type of product was 4.6 times increased by the cooperators of the Siberian Federal District. While consumer societies of the Omsk regions significantly reduced the harvest of wild mushrooms. It should be noted that in recent years, commercial interest in the harvesting of Russian wild forest mushrooms from entrepreneurs of foreign countries has been growing. Market mechanisms in the development of the mushroom market have intensified. So, Swedish, Finnish and Norwegian companies began to direct their direct investments in the North-West Federal District of the Russian Federation to develop the wild plants industry.

Findings. In Russia, a full-fledged market of wild plants has not yet developed. The stability of harvesting volumes of wild fruit crops and forest mushrooms largely depends on the yield, which is affected by weather conditions, which are not favorable every year. In this regard, large wild-growing companies focused on long-term work in this sector of the economy should take into account the complexity of fishing and diversify their activities in several areas: firstly, include in the scope of its activities several geographical regions that have different climatic zones; secondly, to create a modern material and technical base for the collection, transportation and processing of mushrooms, to build an effective logistics scheme for promoting products to the consumer, using the speed and quality of operations; thirdly, to form reserve sources of guaranteed supply of raw materials, to acquire cultivated species so that if necessary it would be possible to load existing production capacities; fourthly, in connection with the seasonality of wild-growing, it is necessary to form your own procurement network, determine your clientele, capable and ready to join in the work on their harvesting in the season of mass gathering of wild plants.

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客运领域各种运输方式的具体情况
THE SPECIFICS OF VARIOUS MODES OF TRANSPORT IN THE FIELD OF PASSENGER TRANSPORTATION

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注解。 客运在每个国家的交通系统中占有重要地位，不仅具有经济意义，而且具有社会意义，因为它是社会生命支持的重要组成部分。 客运通过各种交通工具进行：铁路，公路，海运，河运，空运，城市电力，特殊运输。 客运的主要任务是通过合理的经济成本最大限度地满足争议和人口需求。 每种类型的运输都有自己的客运领域的特点和特征。

关键词：公共交通，国际运输，铁路，公路，航空，水运。

Annotation. *Passenger transport occupies an important place in the transport system of each country and has not only economic, but also social significance, because it is a paramount element in the life support of society. Passenger traffic is carried out by various means of transport: rail, road, sea, river, air, city electric, special. The main task of passenger transport is to maximize the satisfaction of the dispute and the needs of the population with rational economic costs. Each type of transport has its own characteristics and characteristics regarding the sphere of passenger transportation.*

Key words*: public transport, international transport, rail, road, air, water transport.*

1. INTRODUCTION

Transport serves almost all spheres of international relations. Expanding the areas of national cooperation, fueling integration processes and increasing the volume of international traffic require suitable conditions for unhindered operation while passing transit cargo and passenger flows, which are associated with interstate economic ties [1,4]. The growth in international traffic brings a positive effect from the use of the national transport system, stimulating its reproduction and improvement.

2. RUSSIA - A TRANSIT TRANSPORT JUNCTION BETWEEN EUROPE AND ASIA.

The globalization of the economy and related processes for improving foreign economic contacts require the development and testing of a radically new approach to updating the transport system of the Russian Federation. According to forecast estimates, the leading financial and commodity flows of the world economy from the 21st century will be concentrated in such regions as the USA - Europe - Southeast Asia and China. And the most important task of the Russian Federation will be the realization of its advantageous geographical position, which is a natural transit hub between Europe and Asia [5,6].

At present, the Russian Federation is still experiencing a period of uneven economic development in the regions and regions of the national economy. As a result of which there is a constant change in the transport mobility of the population, and this is steadily leading to the need to form mechanisms for choosing the most efficient passenger transport.

In the system of world trade, transport plays an important role and acts as an intermediary connecting the supplier with the buyer of a product or service. A significant part of transport operations involves the use of vehicles of various types in order to deliver cargo from a source of raw materials to the final consumer, as well as passengers from the point of departure to destination.

As part of the implementation of the plan for the development of the railway network, the Ministry of Transport of the Russian Federation, together with Russian Railways, has worked out the technologies and deadlines for putting into operation projects of high-speed highways and high-speed train traffic on specific routes. These projects are directly related to the long-term development program by 2030, which provides for:

1. Commissioning of high-speed traffic on specialized railways with train speeds of up to 300-400 km / h in the following directions: Moscow - Kazan - Yekaterinburg - Chelyabinsk, Moscow - Krasnoye and further to Europe. [3].

2. Updating the already constructed and constructed infrastructure for organizing high-speed traffic in the following areas: Moscow - Bryansk, Moscow - Kursk - Belgorod, Novosibirsk - Barnaul, Yekaterinburg - Nizhny Tagil [2].

Russian transport as an integrated system consists of three subsystems: public transport, non-public transport and individual transport (Figure 1).

Public transport is that branch of the national economy that meets the needs of various sectors of the economy and the population of the state in the transportation of goods and passengers. Public transport includes: road, rail, water (sea and river), air and pipeline transport.

Non-public transport is a sphere of internal transport that unites vehicles of all types that belong to non-transport enterprises. It is often an integral part of various production systems.

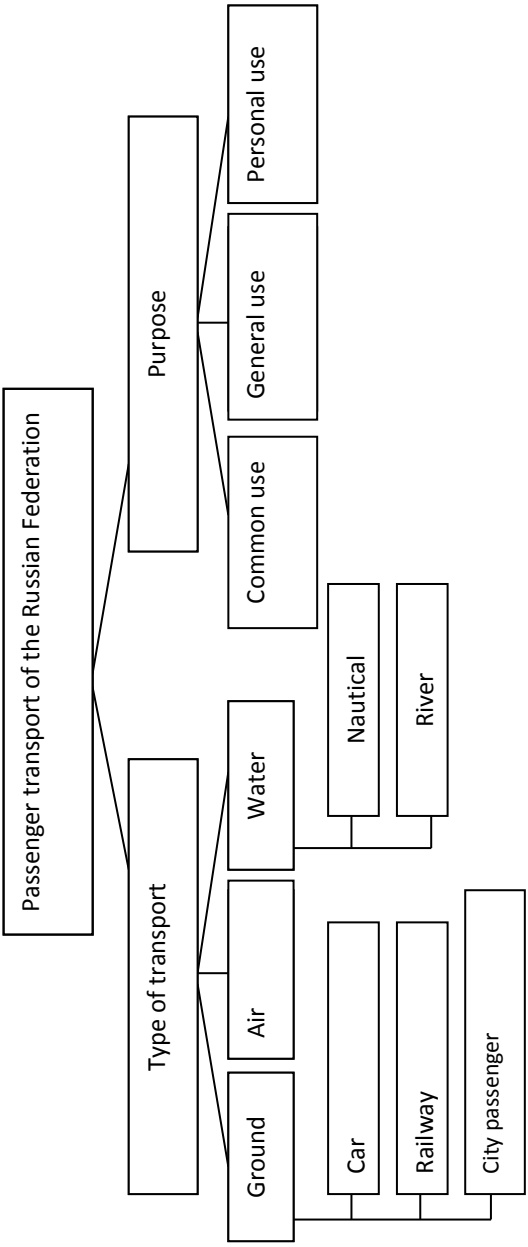

***Figure 1** - Classification of passenger transport*

Individual transport means vehicles owned by citizens of the state that are used by them for personal purposes.

3. FEATURES OF DIFFERENT TYPES OF TRANSPORT IN THE FIELD OF PASSENGER TRANSPORT

Each type of transport also has its own characteristics and characteristics regarding the sphere of passenger transportation. The type of rolling stock, technical and operational characteristics, cost, maneuverability, degree of profitability and payback, duration of transportation, and others, differ.

Road transport is characterized by a high degree of maneuverability and an unlimited geography of transportation: it can deliver cargo and passengers door-to-door without attracting additional intermediaries. Also, road transport is considered universal, due to the wide range of rolling stock options from the brand of the car to the capacity and load capacity. Road transport has a diverse level of comfort, which is expressed in the amenities and additional services: in the car class and in the professionalism of the driver.

Of the minuses: limited carrying capacity due to a certain load on each axle of the wheel and on the roadbed. Do not forget that the price of road transport depends on the cost of fuel, which, unfortunately, is steadily increasing in price. Therefore, despite its maneuverability, road transport is an expensive form of transportation.

The above advantages and disadvantages play an important role in the formation of the market for passenger road transport.

Air transport is a leader in passenger transportation over long distances. Air transport has two advantages: speed and off-road. High speed is inherent in air transport, based on technical specifications. In air transport, the transport service will take the least time compared to other modes of transport. The term "off-road" means the absence of roads in their usual sense.

However, air transport is energy-consuming, so due to the huge fuel consumption there is a sharp increase in the cost of a single transportation process. In addition to the dependence of the cost on the price of fuel, the air transport according to the technical plan has clear restrictions, or rather, restrictions on capacity, determined by the size of the passenger and cargo compartments and the total carrying capacity of the aircraft, which under no circumstances can be changed. This subsequently also increases the cost of the flight of the passenger purchasing the ticket.

Air transport is the leader in terms of passenger traffic in international traffic and remains the main competitor of railway transport.

Water transport is considered less popular compared to other modes of transport because of the long travel time and sufficient limited use. In the field of passenger transportation, sea and river transport occupies less than 10% of the tourism market in the context of the Russian transport sector [7, 8]. This unpopularity is due to the lack of developed infrastructure of waterways, ships and moorings.

Of course, despite the negative dynamics of distribution, companies involved in servicing and selling travel packages do everything possible to maintain the viability of the market and improve the quality of services provided.

Let us compare the unreviewed railway transport with other modes of transport in table 1.

Table 1 - *The relative characteristics of passenger modes of transport*

Selection criteria	**Type of transport**			
	Railway	**Water**	**Car**	**Aerial**
Security	High	Average	Average	Average
Speed	Average	Lowest	Average	The highest
Shipping cost	Average	High	Low	High
Delays	Very unlikely	Are likely	Very likely	Partially probable
Geographic accessibility	Partially limited	Limited	Virtually unlimited	Partially limited
Comfort and service	Mid range	Wide range	Wide range	Narrow range

Rail transport can guarantee almost uninterrupted transportation of goods and their safety more than water or air transport, because it is land transport and transportation depends only on the natural environment.

Unlike automobile, rail transport is designed to transport large quantities of goods over long distances, so its main characteristic remains railway transport.

High carrying capacity is considered the main technical advantage of railway transport, so it plays an important role in countries with a vast territory, such as Russia.

The scale of rail transportation ensures the relative cheapness of both passenger and freight transportation.

Also, rail transport is the most capital-intensive, since the cost of infrastructure construction is directly reflected in transport tariffs in the form of depreciation charges. And the scale of transportation makes it possible to set tariffs at a lower level, taking into account the data of deductions.

Of the minuses of railway transport:

• lack of maneuverability, as a result of which it is necessary to use an additional mode of transport, usually automobile, to deliver a passenger or cargo to its final destination;

• slow payback of projects, about 6 - 10 years;

• labor productivity is lower than in air transport;

• insufficient level of quality of provided transport services provided to customers.

4. CONCLUSION

The problem of choosing passenger transportation methods is one of the initial ones in the formation and subsequent control of production and economic systems and settlements of the state. This is due to the fact that the transport system of cities differs from each other due to such features as: geography, location plan of buildings and structures, location of natural resources, economic and social priorities. As a result, the choice of each passenger, in specific and already known circumstances, occurs by analyzing the advantages and disadvantages of each type of transport in the context of the route constructed.

At the moment, competition between rail, air and road transport has significantly increased in the organization of passenger traffic. All this provides an additional incentive for the development and testing of innovative technologies, the introduction of a new format for the provision of transport services, the rational application of the rules and fundamentals of logistics in organizing passenger transportation. This will simplify the selection of a suitable and satisfying customer transport, taking into account its technical, economic and operational features, as well as the level of competitiveness.

An expert assessment of the importance of various factors proves that when choosing a type of transport, the main indicators for the consumer are: safety and reliability, compliance with traffic schedules, transportation costs, as well as a range of comfort and service. However, in each case, the ranking of factors is carried out in accordance with the requirements of the buyer.

Each type of transport is characterized by a specific sphere and geographical area of its use based on technical and economic features, the location of transport infrastructure in the territory of the state. Transport is an integral system of interconnected transport and logistics complexes involved in the transportation of passengers and goods.

Making a conclusion about the specifics, purpose and capabilities of each type of transport, their competitive advantages and potential horizons for innovative development become apparent.

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外商直接投资对中国经济发展的影响

IMPACT OF FDI ON THE DEVELOPMENT ON CHINESE ECONOMY

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抽象。 中国作为外国直接投资（外国直接投资）的主要投资者和进口国以及包括金砖国家和上海合作组织在内的许多国家的贸易伙伴，在世界经济中发挥着主导作用。 这个问题很重要，但仍然没有充分研究，也没有在经济研究中反映出来。 作者开发并测试了中国与其他国家投资合作的确定方法以及外商直接投资对中国经济发展的影响。 中国与其他国家的投资合作对其经济发展产生了很大的影响。 中国继续深化与其他发展中国家的经济联系，开放金融市场，以缓解全球不确定性的上升趋势。 在美国对中国实施贸易战的背景下，中国与金砖国家和上海合作组织等国家的投资合作发展非常重要。

关键词：中国，FDI流入和流出，SCO

Abstract. *China is playing the leading role in world economy, as a main investor and importer of FDI (foreign direct investment) and trade partner of many countries, including the BRICS and SCO countries. This problem is important, but still insufficiently studied and not enough reflected in the economic researches. Author developed and tested the methodology of the determining of investment cooperation of China with other countries and the impact of FDI on the development of Chinese economy. Investment cooperation of China with other countries exerts very strong impact on the development of its economies. China continues to deepen its economic ties with other developing countries and open up its financial market to serve as a cushion against rising global uncertainty. Development of investment cooperation of China with such countries as BRICS and SCO is very important in the context of trade war imposed by USA against China.*

Keywords: *China, FDI inflow and outflow, SCO*

1. Introduction

International Monetary Fund defines FDI as a category of international investment that reflects the objective of a resident of one country in an enterprise owned by a resident in one economy (the direct investor) obtaining a lasting interest in an enterprise resident in another economy (the direct investment enterprise) [1].

The motives of foreign investment are economic (the desire to maximize profits), strategic (conquering perspective markets and new sources of raw materials) and psychological (associated with the modern management system). FDI is an important element of the development of a country's economies, contributing to the growth of GDP and an increase in employment.

Effective investment cooperation of the countries is a fundamental factor of their stable economic development and competitiveness in the world economy. A special role in the modern global economy is acquired by new institutional structures (for example, BRICS and SCO). China is a main trade and investment partner of many nations.

2. FDI Inflows to China

According to UNCTAD, in 2018, China was the second economy in the world (after the United States) in terms of FDI Inflows ($139 Bln.) [5]. In 2001–2018, the FDI inflows to China increased 3.2 times [5, p. 4]. In 2018, the share of FDI inflow to China was 10.7% of the global data. The growth of investment in the Chinese economy in 2018 was associated with an increase of 1.3 times the number of branches of foreign firms (up to 35.6 thousand). FDI inflows were observed in the free trade zones of the country. The growth of FDI inflows to China contributed to the development of industries with high added value. Great importance was attached to the FDI inflow into the high-tech sector, in the development of the digital economy (into the production of electronics, medical devices, communications equipment, computer equipment, pharmaceutical products). Foreign investment in the development of China's high-tech sector was increased 1.6 times in 2017 to $ 40 billion. For example, one of the high-tech investments in China is the expansion of the NAND flash chip production line in Xi'an by the Korean company Samsung Electronics ($7.2 Bln.). [4].

Analysis of the correlation of FDI inflows to China from the global economy and the growth of China's GDP in 2001–2018 revealed a high correlation between the above parameters (0.946) [2], [7]. The growth of China's economy is closely linked to the inflow of FDI, which has a great influence on the growth of GDP. The presence of a correlation relationship between the above parameters confirmed the possibility of conducting a regression analysis between the FDI inflows to China from other countries of the world with the volume of its GDP.

In 2001-2018, the resulting regression equation for the factor sign (the volume of current FDI inflows to China from other countries) and the resultant sign (the volume of GDP of China) allowed us to determine the regression coefficient and conclude that the increase of the volume of current FDI inflows to China from other countries of the world by $ 1, on average, leads to an increase of China's GDP by $ 159.8 (Fig. 1).

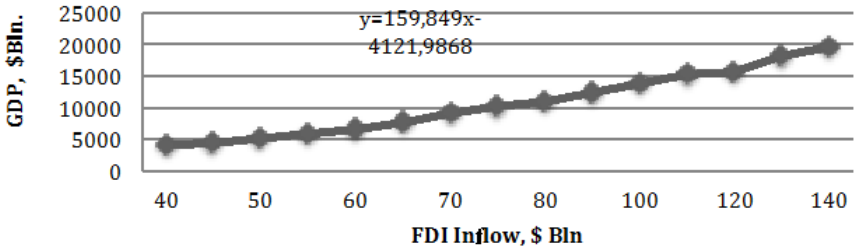

Fig. 1 - *The regression equation between FDI inflows to China from other countries of f the world and its GDP for 2001-2018*

Source: Compiled by author: [2]; [7]

The receipt of foreign direct investment from developed countries allows not only increasing the inflow of funds necessary to carry out important economic tasks, but also gaining access to modern production management methods and new technological processes and know-how, updating and modernizing production, and protecting the environment, and, consequently, develop their national economies, create new jobs, carry out advanced training of labor and growth labor productivity and produce competitive products.

The orientation of countries and their dependence on the FDI inflows can also be traced with the help of the rate of net inflows (which is the ratio of the difference between the FDI inflows and outflows to the FDI inflow, in percent). In 2018, in China it was 6.5% (balanced).

For the first time in 2011, the volume of FDI inflows in the Chinese service sector exceeded the volume of foreign investment in industrial production. A fifth of all current foreign direct investment has been in the Chinese private sector. Investments were increased in the backward economic areas of the country, for example, located in the western part of China, where labor costs are lower. The aim of the FDI inflows to the backward economic areas was not only additional capital, but also foreign innovative technologies, contributed to the improvement of the economic situation in the country. Despite the fact that the Chinese government sought to ensure a better spread of investment throughout the country, the central part of China developed faster than other regions.

The main foreign investors in China are Hong Kong (province of China), Singapore, the United States, Taiwan, South Korea, and Japan. China is interested in the the import of FDI from developed countries (USA, Japan), which, together with investments, transfer advanced technologies to the country. Receiving modern technologies, China successfully copied and adapted them, which caused dissatisfaction with the United States and led, starting from 2017, to an aggravation of trade and investment relations between China and the United States.

In 2015, the United States invested $ 13.1 Bln. in Chinese economy. During 1990-2015, American companies in China made 6.7 thousand investment transactions worth $ 228 Bln. Implementation of American investment projects made it possible to create 1.6 million workplaces in China. The structure of the American investment in the Chinese economy was as follows: 13% was made in the chemicals production, 13% in the manufacture of transport equipment, 9% in the creation of computers and electronic devices, 8% in the wholesale trade, 6% in the credit organizations, 5% - in the production of food, 5% - in the production of various types of equipment, the remaining 41% - in other production areas [6].

An example of the introduction of Japanese FDI in China, is the activity of the Japanese concern Nissan Motor Co., Ltd. The concern, attracted by a relatively high-quality and low-cost workforce, is working together with a Chinese partner, the automobile company Dongfeng Motor Co., Ltd, aimed at increasing the cars production in the country to 1 million a year. This, in turn, will positively influence the acceleration of scientific and technological progress, the renewal and modernization of production capacities, the growth rate of economic development and the improvement of China's balance of payments.

The attractiveness of China for foreign investment is characterized as follows: China's economy is one of the largest in the world; China has been demonstrating high economic growth over the years; value-added chains have been widely developed in the country; China has an extensive domestic market; the country has a large number of cheap labor resources; China has a developed transport infrastructure.

Over the years, major global manufacturers from the developed countries have been actively investing and developing modern industries in China (supplying the country with new technologies and modern management methods), which at that time had an extensive and cheap labor force. However, receiving innovative technologies, China faced the problem of repatriating the capital of foreign companies and transferring the profits of these companies abroad, leading to deterioration in the balance of payments.

In turn, foreign companies that have been exporting FDI to China for a long time also faced a number of problems - a decline in employment and capital outflow from the country.

2. FDI Outflows from China

In 2001-2018, the volume of FDI outflows from China increased by 18.9 times (to $ 127.6 Bln.) [5, P.7]. In 2018, China was in the TOP-20 world leading exporters of current FDI (second place in the world) - $ 130 Bln. China invested in the economies of many countries around the world.

In 1990–2015, Chinese companies invested US $ 64 Bln. in 1.2 thousand US projects. The implementation of Chinese investment projects allowed creating

more than 100 thousand jobs in many US states. In 2015, for the first time, the volume of Chinese investment in the United States exceeded the volume of American investments in China. The structure of Chinese investments in the American economy was as follows: 39% of investments were made in the financial sector, 24% in the extractive industry, 17% in the manufacturing industry, in real estate - 8%, in the wholesale and retail trade - 7%, utilities - 5% [6].

Chinese companies continued to diversify investments across countries and industries of the world to improve the economic efficiency of their investments, gain access to cheaper labor and sources of raw materials, obtain innovative technologies, access to strategic resources, expand and develop new markets, expand global political and economic influence of their TNCs, reducing country and business risks of doing business.

China pays great attention to the problem of promoting its economic and political interests, seeking to take a leading place in the global economy. China participates in the fuel and energy complex of Central Asia not only because of its needs for energy resources, but mostly because of the desire to promote its economic and political interests in the states of this region.

Significant funds Chinese companies have invested in infrastructure projects in Southeast Asia. For example, Huadian Power International Corporation has invested $ 630 million in the creation of the first phase of the largest energy company in Bali in Indonesia. Chinese companies invested $ 7 Bln. in the development of the Indonesian infrastructure, and the same amount in the construction of 410 km of high-speed railway in Laos, which in 2018 connected Kunming (urban district in the Chinese province of Yunnan) and Vientiane. Also funds were invested in the construction of the China-Myanmar railway.

China is interested in increasing investment in the SCO countries. Railway China - Kyrgyzstan - Uzbekistan will become a part of the international relations of the SCO with the regions.

Recently, there has been a withdrawal of foreign direct investment from China (mostly from industries with high labor costs - from light industry - the production of clothing and footwear).

3. Withdrawal of Foreign Investments From China

Recently, labor-intensive production began to be placed more often not in China, but in Mexico, Vietnam, Indonesia and other developing countries, due to the fact that with the advanced training of workers, their qualification in China increased, and consequently, labor costs also increased.

Many manufacturers from the United States and other developed countries for many years transferred production of mainly labor-intensive goods to countries with low labor costs (to China and other countries of Southeast Asia) - mainly it was the production of clothing, shoes, toys, etc. Then the goods were imported by the countries, that exported FDI to produce these goods. Local producers can-

not withstand price competition (as they are small and medium-sized enterprises that are not able to transfer their production abroad). And the competition "price-quality" is also not in their favor. Enterprises are closing, which leads not only to unemployment, but also to a change in the sectorial structure of the economy.

Over the past forty years, the volume of the production of mass consumer goods in the USA has significantly decreased, for example, the production of footwear, cotton and woolen fabrics has decreased almost 5 times. The most labor-intensive consumer goods production was transferred to other countries with an excess of labor resources.

Perhaps the consequences of the recent global economic crisis for developed countries would not be so devastating if in these countries the proportion of the employed population in the labor-intensive industries mentioned earlier would be higher (that is, consumer goods would be produced in the developed countries and not in China and other countries of Southeast Asia).

Governments of the developed countries are interested in creating favorable conditions for the return of capital. An important incentive to attract foreign investment in the United States is the large capacity of the American market, the high degree of protection of foreign direct investment, the development of high-tech industries, and the high scientific and technical level of the economy.

In 2011, the US government has developed a temporary repatriation program aimed at improving the US economic climate. The tax rate on profits of American companies, returned to the United States from the activities of their foreign branches, was reduced from 35% to 8.75%. These measures will allow collecting additional tax revenues (1.4 trillion dollars) into the state budget. If repatriated profits will be used to create new jobs in the United States, the tax rate can be reduced to 5.25% (with an increase in the wage fund to 10%).

The stimulus measures of the American government, aimed at returning capital from foreign branches back to the USA, have borne fruit. For example, in 2010-2013, some American industrial enterprises within the framework of re-sharing were transferred from China back to the United States, which affected the increase in exports of foreign investments from China [3]:

• ACE Clearwater Enterprises, which manufactures parts for aerospace and energy, was transferred back to the US due to problems with quality control in China.

• In connection with the introduction of automated processes, Altierre Digital Retail (produces digital displays) has withdrawn its production from China back to the USA, where it was possible to attract highly skilled workers to complex production processes.

• In order to respond more quickly to rapidly changing customer needs, Bison Gear & Engineering Corp., which manufactures motors for ice makers, solar panels and other products, was transferred from China back to the United States.

• Light Saver Technologies was transferred to the United States, as the cost of producing energy-saving lamps (2-5% less than in China).

• Reducing transportation costs and the rapid change in production technologies of Offsite Networks made it more efficient to manufacture in the United States.

• High costs of transportation and non-compliance with Western standards in the production of solar cells made it more profitable to transfer Solar World from China back to the US, where labor productivity was higher.

• The American company NCR Corporation has withdrawn its production from China back to the USA due to the need to bring production closer to the consumer and reduce operating costs.

Production from other developing countries was also carried out from China, for example, in Southeast Asia (in Cambodia, Vietnam, Bangladesh, where labor costs are three times less than in China) were carried out by both foreign companies and Chinese TNCs. This process was associated with rising production costs in China and, as a result, with a decrease in productivity growth and the efficiency of foreign investment in the country.

A new round of withdrawal from China of companies by foreign investors began in January 2017 after US President Ronald Trump recommended that American investors withdraw companies from China back to the United States as a result of the beginning of a "trade war" between the United States and China.

Among the world's leading companies that began to withdraw their investments from China in 2015-2017, for example, are the American company Seagate, which manufactures hard drives for computers, which closed their production in Suzhou (employed 2 thousand workers). In addition, the following companies began to withdraw their production from China: Japanese corporations - Sony, Panasonic and Sharp electronics; British clothing manufacturer Marks & Spenser; German group of companies Metro AG, which manages the fourth largest retail chain in the world; French cosmetics company L'Oreal; American cosmetics company Revlon; American company Microsoft engaged in software development.

China, seeking to expand its high-tech production and not needing the high technologies of developed countries, began to gradually eliminate tax breaks for foreign companies (the tax rate was changed from 15% to 25% for all companies). In addition, the requirements for the activities of high-tech companies (in the field of computer security) were tightened. The abolition of tax breaks and an increase in the cost of labor has influenced the decisions of many foreign companies to transfer enterprises from China to other countries of the world.

Despite the fact that many foreign companies are withdrawing their labor-intensive production from China, the ongoing reforms in the country aimed at improving the investment climate have influenced the decision of some Western

companies to place high-value-added enterprises in China related to the non-financial sector, requiring skilled labor. For example, in 2017, the company Boeing (Boeing) began to create an assembly plant in China - the first such project outside the United States.

4. Findings

For many years, China has been an attractive country for many foreign investors who have used a large amount of cheap labor in their companies. The main positive results of attracting foreign investments in China are:

- The growth of the economic development of the country, increase of the economic potential.
- Optimization of the structure of the economy.
- Modernization of Chinese production.
- The possibility of a sharp quantitative increase in investment.
- The organization of the competitive products due to the introduction of modern technologies and know-how into production.
- Using domestic investment to conduct national research and development.
- Creation of new jobs.
- Increase productivity.
- The introduction of modern forms and methods of management.
- Improving the skills of the labor force.
- Introduction of clean technologies, environmental protection.
- The development of research projects in the country.
- The development of domestic investments.
- The removal of social tensions.

As China's economy developed, the standard of living in the country increased, which led to an increase in labor costs in China. Foreign companies, due to rising labor costs and lower tax breaks in China, began to withdraw their production to other countries, which affected the slowdown in the growth rate of the Chinese economy. In addition, in connection with the beginning of the "trade war" between the United States and China, the FDI in China has decreased significantly. Therefore, China is interested in deepening the development of mutually beneficial cooperation with other developing countries, for example, with the BRICS and SCO countries.

China is focused on developing economic partnership with these countries, on cooperation in the energy sector, in science and culture, maintaining stability and security. China considers the SCO as an opportunity to expand reliable markets for its products, advocates for the removal of trade barriers, interested in creating a single integration space within the SCO. China, having a great influence on the development of the SCO, is interested in creating a free trade zone, in developing infrastructure for trade and investment. One of the instruments of economic cooperation of countries in the SCO space is the formation of common approaches to the Chinese initiative "One Belt, One Road".

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论酒店业发展的创新概念
ON THE ISSUE OF INNOVATIVE CONCEPTS OF HOTEL BUSINESS DEVELOPMENT

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注解。目前，在国外和俄罗斯，国际和国内连锁酒店都在积极扩张。与此同时，随着生活节奏的不断加快，消费者的喜好也在不断变化。现代旅行者希望摆脱日常生活，而不仅仅是在酒店过夜，而是获得新的情感，新的印象，甚至体验灵感。因此，在酒店业中，出现了针对酒店品牌开发和推广的新营销策略，以满足忠实消费者的现代需求，并有助于吸引酒店市场中未得到的细分市场。本文在分析专家意见的基础上，阐述了“精品酒店”，“生活型酒店”，“软品牌”的概念。这组作者认为，在全球化背景下，酒店品牌发展最有趣，最有前途的营销策略是软品牌战略。在俄罗斯，软品牌也可以拥有美好的未来。

关键词。酒店业务，酒店市场，国际连锁酒店，全国连锁酒店，独特的独立酒店，酒店品牌，酒店服务消费者，酒店业务发展理念，精品酒店，生活时尚酒店，奖杯酒店，软体品牌。

Annotation. *Currently, abroad and in Russia there is an active expansion of international and national hotel chains. At the same time, with an ever-accelerating rhythm of life, consumer preferences are significantly changing. Modern travelers want to escape from the routine and not just spend the night in a hotel, but get new emotions, fresh impressions and even experience inspiration. Therefore, in the hotel industry, new marketing strategies for the development and promotion of hotel brands are appearing that meet the modern needs of loyal consumers and help attract unreached segments of the hotel market. Based on the analysis of various opinions of specialists, the concepts of “boutique hotel”, “life-style hotel” and “soft brand” are clarified in the article. According to the authors, the most interesting and promising marketing strategy for the development of hotel brands in the context of globalization is the soft brand strategy. In Russia, soft brands can also have a good future.*

Keywords. *Hotel business, hotel market, international hotel chains, national hotel chains, a unique independent hotel, hotel brands, hotel services consumer, hotel business development concepts, boutique hotel, lifestyle hotel, trophy hotel, soft brand.*

Today, the main market for hotel services abroad and in Russia is occupied by such international giants as Accor Hotels, Hilton Worldwide, Marriott International, Radisson Hotel Group, InterContinental Hotels Group, etc. It is these hotel chains with their huge long-term professional activity, with a spotless reputation in the hotel business, clear and strict standards of service that are extremely popular, because they create unshakable confidence among hotel guests in receiving quality services and high service. Indeed, staying at any hotel of well-known hotel chains, you can be sure of the standardization of the services of these accommodation facilities. Consumers remember a clear brand image of this network. They well understand and know the capabilities of the hotel, the variety and quality of services of this hotel enterprise. In other words, these hotels have their own unique individual brand.

Over the past ten years in Russia there has been a rapid development of the hotel business. Both independent private hotels and brands of international and national hotel chains appear on the market. During this time, branding has become a very important part of the Russian hotel industry.

According to the annual research of the Russian hotel market, conducted by the international consulting company EY, at the beginning of 2019, 197 hotels were operating in Russia under the management of international hotel operators and 107 hotels under the management of national hotel operators. According to experts, "if all the hotels declared by international operators are open, then by 2025 their number will be 270 objects in 53 cities of Russia" [3].

For example, IHG, which announced a new stage of its large-scale development in Russia, the CIS countries and Georgia, opened the following hotels only in 2018 and the beginning of 2019: Crowne Plaza in Ufa, Holiday Inn Express in St. Petersburg, Holiday Inn Express Baumanskaya in Moscow, Crowne Plaza Moscow - Park Huaming, Holiday Inn Perm, Holiday Inn Express Yerevan in Armenia; and 18 more hotels are planned to open in the specified region in the coming years. The international hotel operator Wyndham Hotels & Resorts plans to open the first Ramada brand aparthotel in St. Petersburg. By 2021, Marriott International intends to take control of more than 1.7 thousand hotels worldwide, including at least 10 in Russia [7].

At the same time, hotel market experts, in particular Alexey Musakin, managing partner of Cronwell Hotels & Resorts, note that “if earlier international brands entered only cities with a population of one million, then half a million, the bar has now fallen to cities with a population of 100-300 thousand people ”[6].

It is no coincidence that at the beginning of the article we spoke about the expansion of international and national hotel chains. In 2018, AZIMUT Hotels, an actively developing national hotel brand, was ahead of international operators in terms of growth dynamics in the domestic market. As a result, Forbes magazine for the first time included the Russian hotel chain in the TOP-10 of the largest hotel chains operating in Russia [15]. Also, since 2017, Azimut Hotels is the only Russian company included in the TOP-300 international hotel chains by the number of rooms, where it occupies 155th place [13].

Last year, the company launched 8 new hotels: AZIMUT Hotel Pereslavl (Pereslavl-Zalessky), AZIMUT Hotel Suzdal, AZIMUT Hotel Penza, AZIMUT Hotel Prometheus Nebug (Tuapse), AZIMUT Hotel Mirny, AZIMUT Kyzyl Hotel (Republic of Tuva), AZIMUT Hotel Nalchik (Kabardino-Balkarian Republic), AZIMUT Hotel Kemerovo. AZIMUT Hotels simultaneously manages owned hotels, takes hotels in trust and operates under a franchise. At the moment, the network is represented in 29 cities of Russia, Austria, Germany and Israel and has 38 hotels with a total number of rooms of more than 7 thousand rooms. About 10 network projects are at different stages of development in Russia, the CIS, Europe and the Middle East [1].

Currently, with the growth of the hotel services market, and most importantly, with an ever-accelerating pace of life, consumer preferences are significantly changing. “The life of a modern person in the urban environment of the 21st century with its daily routine reality contributes to the emergence of so-called “sensory hunger” in people. To satisfy him, people seek to escape from the monotonous reality surrounding them. This phenomenon has received the name “escapism” in modern science (from the English “escape” - to escape, to be saved), i.e. leaving, even fleeing from regulated (work, home), is not just boring, but often depressing routine ”[9, p.3].

Demand creates supply, and the greatest variety and number of option offers for seekers and tired citizens is observed in the hospitality and tourism sectors. As experts point out, modern travelers want to “not just spend the night in a hotel, but get new emotions, fresh impressions and even experience inspiration consciously or unconsciously ... The unique design of the hotel, its atmosphere can be unforgettable - and then it becomes a“ special place on earth ”, where you want to return ”[5, p. 94].

Thus, the challenge facing modern hoteliers is to satisfy consumers as much as possible, aimed at the uniqueness of the location and means of accommodation. “People appreciate and remember for a long time those places where they experienced strong and positive emotions” [5, p. 95].

That is why in the hotel industry there are a variety of concepts for the development and promotion of hotel brands that meet the needs of the segments covered by consumers, and contribute to attracting new segments of the hotel market.

So a popular concept for the development of the hotel business is the creation of boutique hotels, which at one time became an alternative to the same luxury chains. Among pioneers of this format, which entered the market back in the 80s of the last century, Ian Schrager with his New York projects: Morgans Hotel and designer boutique hotel "Royalton Hotel". The main idea of the boutique hotel is the uniqueness of the services provided. The unique hotel rooms of such a hotel may have names instead of numbering (for example, "Venice", "Morocco", "Paris" and others at the Alexander House boutique hotel, St. Petersburg).

The analysis of theoretical literature and business periodicals showed that the issue of defining the concept of "boutique hotel" is debatable [10; 16; 17; 18]. "... This is such a vague concept that everyone puts everything they want into it," says Aron Libinson, IHG Vice President for Development and Operations in Russia and the CIS. "Someone is talking about the marketing component and the calculation for a certain target audience. Someone means the small size and participation of designers in the work on the interiors. I believe that a boutique hotel is not just a story about design. This is a design for a guest who wants to find a second home in the hospitality industry ... What a boutique hotel should be a priori perfect is as a service: five-star standards, multiplied by the most personalized attitude ... the guest here is not just a source of money, it is lively a person whom another living person wants to invite to visit" [16, p. 21].

The generally recognized boutique hotels in Russia are: Alexander House in St. Petersburg, Ostrovsky Dock in Kostroma, Merchants' Courtyard in Irkutsk, etc.

A new trend in modern international hotel business is the allocation of the so-called "Trophy Hotels" (literally - trophy hotels). In our opinion, the translation of "Trophy Hotel" as a "trophy hotel" into Russian does not quite correspond to the truth. because the word "trophy" in our country usually means "obtained in battle, in hunting, in competition."

"Trophy Hotel" should have the following characteristics: located in the historical part of the city; be a protected architectural monument, and in some cases a symbol of the city in which it is located; have a well-deserved reputation, backed by decades of the highest level of service in customer service [14]. In addition, it is famous for the fact that famous historical and media personalities stayed in it.

Currently, there are more than 60 hotels in Russia located in historical buildings over 100 years old. At the same time, hotels of this kind are found not only in million-plus cities. Of these, 41 hotels are located in St. Petersburg, 13 in Moscow, one each in Volgograd, Essentuki, Kaliningrad, Nizhny Novgorod, Samara, Sergiev Posad, Tomsk and Khabarovsk [4]. But almost all of these hotels have become upscale hotel enterprises in the last 15-20 years, and before that, in Soviet times, these historic buildings were used for other purposes (communal apartments, public authorities, shops, etc.). The exceptions are the Astoria and Europe hotels in St. Petersburg, the Metropol and the National in Moscow. To hotels of this kind with a big stretch include the hotel "Central" in the city of Bryansk.

Over the past ten years, one of the dynamically developing concepts of the hotel business has been lifestyle hotel ("lifestyle" hotels). " Life-style hotels are hotels for a specific target audience, focused on a special lifestyle, their own thematic needs and tastes. “Unusual”, “ultramodern”, “avant-garde”, “fashionable” - these are characteristic adjectives in the description of life-style hotels.

According to the famous expert of the international hotel business, Daniel E. Craig, lifestyle hotels are a new generation of boutique hotels that are developed by international hotel chains in order to return lost segments of consumers and enter new markets [19; 20]. As Dmitry Pakutin, director of construction for the regional division of AccorHotels in Russia, Georgia and the CIS states, “We are becoming more flexible even within the framework of the standard concept ... we are beginning to adapt to the market, according to what our potential guests want to see and what our competitors are doing " [eight]. As a result, Accor has several lifestyle brands: JO & JOE, 25Hours, Mama Shelter. The latter already exists in 11 cities and 6 countries. In Russia, none of them has not yet been presented, but the company announced its plans to develop these brands in Russia.

Almost every international hotel chain today has brands of lifestyle hotels: Marriott - “Edition Hotels”, “W”, “Aloft”; Hyatt - “Andaz” and others. In Russia, in particular in modern St. Petersburg, the Indigo brand of the IHG hotel chain is an example of lifestyle hotels.

Another promising direction in the search for optimal options for the effective development of the modern hotel business is the use of the concept of “soft brand” (literally - a soft brand), aimed at independent hotels wishing to maintain their uniqueness within the international hotel chain. The advantages of the “soft brand” business model for independent hotels are that they get all the advantages of a centralized distribution, revenue management system, marketing programs and much more, for example, “in addition, they most often do not need to change the PMS system, which when coming under other brands are often the key. ”[11] Advantages for an international hotel operator when creating this kind of brand are the opportunity to diversify their “product portfolio” to retain already loyal consumers and attract new segments. In fact, for global hotel companies, the soft brand is an attempt to gain a foothold in the segment of unique independent hotels.

Many global hotel chains have successfully launched soft brands: The Luxury Collection by Starwood (and now by Marriott), Autograph Collection by Marriott, Curio Collection by Hilton, Unbound Collection by Hyatt, Mgallery by AccorHotels, BW Premier Collection by Best Western, etc. .

However, until recently, soft brands in the hotel industry focused mainly on the luxury and upper upscale segments, being implemented outside the upper-midscale segment” [12].

Today, hotel companies strive to create several software brands in order to cover the widest possible range of price segments: from economy to luxury. For example, Best Western since 2016 offers a soft brand for the upper economy and midscale segments [2].

In Russia, soft brands can also have a good future. They can help investors and hoteliers to implement successful projects in large cities and stimulate the successful development of quality real estate in resort areas, where there is great demand from wealthy business people on vacation and their families.

In our opinion, the most interesting and promising direction of development of the modern hotel business is precisely the concept of soft brand, which allows the unique hotel to maintain relative independence in the era of active expansion of global and national hotel chains.

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芬兰大公国和现代芬兰的腐败历史
THE HISTORY OF CORRUPTION IN THE GRAND DUCHY OF FINLAND AND IN MODERN FINLAND

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注解。自古以来，权力和腐败是不可分割的。腐败现象过于复杂和多方面，无法提供全面而又充分详细的定义。联合国将腐败视为影响所有国家的复杂社会，文化和经济现象，但没有对该术语作出更详细的解释。 “腐败犯罪”的概念在芬兰立法中没有单独的定义。科学家和实践者仍然没有就关键问题达成共识：如何客观地确定反腐机构的有效工作及其对国家腐败形势的影响。据提交人称，研究芬兰腐败的历史，原因和程度将有助于了解其在国家的演变，原因和影响，以确定芬兰反腐败立法领域的监管框架。

关键词：芬兰大公国，腐败，议会议员腐败犯罪，国际合作。

Annotation. *Power and corruption are inseparable since ancient times. The phenomenon of corruption is too complex and multifaceted to provide a comprehensive and at the same time sufficiently detailed definition. The UN views corruption as a complex social, cultural and economic phenomenon affecting all countries, but does not provide a more detailed explanation of the term. The concept of a “corruption offense” does not have a separate definition in Finnish legislation. Scientists and practitioners still have not come to a common opinion on the key issue: how to objectively determine the effective work of the anti-corruption institution and its impact on the corruption situation in the country. According to the author, studying the history, causes and extent of corruption in Finland will allow understanding its evolution, causes and influence on the state to determine the regulatory framework in the field of anti-corruption legislation in Finland.*

Keywords: *Grand Duchy of Finland, corruption, corruption crimes of deputies of Parliament, international cooperation.*

Studying the history of corruption as a phenomenon after the Grand Duchy of Finland joined the Russian Empire will help understanding the tendency and level of corruption in Finland in the 21st century, as well as assessing the effectiveness of anti-corruption measures to create its own specialized institutions to prevent and combat corruption and reduce its level. The accumulated historical experience

of Finland, international experience and coordination of international cooperation will help to provide additional guidance in the implementation of the criteria for the effectiveness of anti-corruption institutions in fighting corruption.

Studies by Finnish historians indicate the emergence of corruption long before the formation of the Grand Duchy of Finland.

The local Swedish merchants, who received in 1710 Peter I guarantees of privileges for the oath to the Russian throne, began to actively hold official positions in magistrates and courts, and from 1744 after the transformation of the Vyborg guberniya at the behest of Empress Elizabeth and in the provincial government.

So, Ph.D., associate professor in the field of municipal politics, Silvo Kaasalainen reports that scholars and historians know that as early as the 18th century in Sweden-Finland, government posts were brazenly bought and sold[1].

For example, Markku Kuisma, a Finnish professor of history, Ph.D., writes that as early as the 1770s, businessmen were playing a dual role in appointing crown fochts [2]. This, however, did not lead to the emergence of special problems with the removal from office, even though they had "important administrative tasks to regulate sawmill from determining the amount of taxes to controlling production"[3].

In March 1808, the Emperor and Autocrat All-Russian Alexander I announced to foreign states that he decided to unite Finland with his empire. On 5 (17) June 1808, Alexander I issued a manifesto "On the Accession of Finland", which stated that the emperor decided that Finland, under the rule of the Russian emperor, should live under the protection of its old constitutions and privileges. The members of the Sejm took the oath that "they recognize as their sovereign Alexander I the Emperor and Autocrat of the All-Russian Grand Duke of Finland, and they will preserve the fundamental laws and constitutions of the region as they currently exist »[4].

According to Markku Kuisma, the merchant class, which was engaged in sawmill production in the late 1700s, was able to take power over a "plutocratic" or rich city administration. Large merchants and shipowners also had better chances to influence government decisions and manage their own interests [5].

[1]Kaasalainen Silvo. Virkanimitysruletti : miksi sopivin voittaa parhaan? Barrikadi-sarja No 22. WSOY. Werner Söderström Oy. Helsinki. 2011.

[2]A state official in the Grand Duchy of Finland as the highest police officer, who was also a prosecutor, tax collector and bailiff. He also represented the executive branch in which the governorship generals acted as well as entrepreneurs (post was abolished only in 1945).

[3]Kuisma Markku. Kauppasahojen perustaminen Suomessa 1700-luvulla: Tutkimus päätöksentekoprosessista. Väitöskirja. Helsinki. Societas Scientiarum Fennica. 1983. p.19.

[4]Rafael Erich. Suomen valtio-oikeus. Tietosanakirja. Osakeyhtiön Kirjastopaino. Helsinki 1924. p.42-43.

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Kuisma describes the history of the relationship between business, politics and government elites in the 1800s, when the "industrial aristocracy" and the new business class developed. The industrial aristocracy and the class of entrepreneurs were connected by family and family contacts with the old elite of officials, the class of teachers and owners of family estates and at the same time had political power. The advanced son of a lawyer or the son-in-law of the professor, the uncle of the capital senator who owns the sawmill, the governor's godson and cousin of the judge, the brother-in-law's brother-in-law who took the post of industrialist, and the Secretary of State of the Interparliamentary Assembly of St. Petersburg formed a network of interconnected, loyal and interdependent organizations of the Inter-Parliamentary Assembly of St. Petersburg. or wanted to influence the decisions of the power system .[6]

Kuisma concludes that a brief historical overview shows that the business community, especially the "timber industry bourgeois", tried to influence government decision making from the end of the 18th century, giving gifts and corrupting officials. This practice was not new or unprecedented [7].

After the defeat of Russia in the war with Japan, the internal political opposition to the imperial regime intensified. Unrest spread to Finland, where at the end of October 1905 a general strike began. The unrest led to the royal manifesto on the establishment of a parliament in Finland on the basis of the universal right to vote, with the authority to ensure the legitimacy of the measures taken by the government of the country. The parliamentary reform of 1906 accelerated the creation of political parties and over the past decades political parties have become a central part of all political activity. After the adoption of the law on parties in 1969, the parties were also a legally integral part of state institutions that still influence government decision-making.

Before the parliamentary elections of 1922, the trade and industry election commission announced that it would finance the campaigns of bourgeois parties, subject to the nomination of candidates approved by business as general candidates.

During the parliamentary elections of 1939, the industry began to plan the collection of electoral funds to influence and direct agitational work on the peasantry and the "middle class "[8].

The amount of bribes received in 1970–1980 by officials in Finland according to the charges ranged from 1,000 to 28,000 Finnish marks (168–4,706 euros). At the same time, according to the Statistical Center, the average monthly salary (in terms of Finnish marks) in Finland in 1960 was 77 euro, in 1980 it was 625 euro [9] .

[6]Ibid, p. 178.

[7]Kuisma Markku. Kauppasahojen perustaminen Suomessa 1700-luvulla: Tutkimus päätöksentekoprosessista. Väitöskirja. Helsinki. Societas Scientiarum Fennica. 1983. p. 150.

[8]Ibid., p. 85.

[9]URL: https://www.stat.fi/artikkelit/2012/art_2012-03-12_004.html.

In addition, in the courts of Finland quite often criminal charges of corruption offenses were considered simultaneously with the charges under economic articles, therefore there is no exact data on the number of convictions in receiving and paying bribes.

Hidden crime in Finland was studied in 1973 by a professor at the University of Tampere, Pertti Hemanus. From his point of view, "Hidden crime is a problem in the fight against bribery and corruption in general. The information obtained from statistics does not give a complete picture of the reality of corruption "[10].

Ahti Laitinen, a doctor of political science and a professor of criminology, wrote about the role of the president back in 1986: "Although in practice the president submits a foreign policy report to both the Foreign Affairs Committee of the Parliament and the government, in practice the role of Parliament in managing foreign policy is secondary. The weakening of the position of Parliament in the system of relations of state power is partly due to the circumvention of the policy around the president, which was especially noticeable in Finland in the 1960s and 1970s."[11]

In the early 1980s, the change of power of higher state institutions was initially caused only by a change of president, and then rather quickly progressed to significant changes to the constitution and the separation of government power. Already in the 1970s and at the turn of the 1980s, a period of change and transformation of the elite began.

The topic of bribing civil servants became widely discussed in the second half of the 1970s in connection with the so-called Salora case. According to the court's decision, Salora's CEO Jouko Nordell bribed politicians and senior officials and paid for their travel abroad. 6 million Finnish marks passed by the financial statements. As a result, the company's general director received 3.5 years in prison for bribing five ministers, two heads of office, the mayor and 30 employees of the tax department.

In the 1980s, wide public attention was directed to discussing a number of cases of bribing officials, trust and impartiality of government.

In 2009, Finnish State Attorney Jukka Rappe stated that there is no structural corruption in Finland, but there is a well-established scheme of "cronyism" (hyvä veli –verkosto) according to the " you to me - I to you". Corruption in power was the subject of many Finnish political scientists and lawyers in the years 1970-1980.

During the presidential term of Urho Kekkonen, many government ministers Harri Hermanni Holkeri (30/04/1987 -26.4.1991) received high-ranking positions. For example, Kalevi Sorsa on the Executive Board of the Bank of Finland, Erkki Liikanen was appointed ambassador to the European Union, Ilkka Suominen as director of Alko, Pekka Vennamo as director general of the post office and televi-

[10]Hemanus Pertti. Joukkotiedotus piilovaikuttajana. Delfiinikirjat. Helsinki: Otava, 1973. p. 109.

[11]Laitinen Ahti. Yhteiskunnallinen vallankäyttö ja korruption mahdollisuudet. Turku. 1986. p.54.

sion broadcasting, Helena Pesola as director of the pension department, and Kai Bärlund as director general of the environment center, and 1995-2007 Head of the UNECE Environment Commission.

Previously appointed Minister of the Interior (1982–1983), Minister of the Environment (1983–1987) Matti Ahde, after the expiration of his term as deputy speaker of the Finnish Parliament in 1990, was immediately appointed managing director and elected a member of the board, and then chairman of the board in 1990 -1999 State Association of slot machines of Finland RAY.

Also note that Holkeri government reforms have significantly increased the number of civil servants in the ministries. At the beginning of the Harri Holkeri government (1988-1991), the government apparatus numbered 214,000 civil servants, and in 1990 it was 147,000 people, and by 1995 it was 124,000. For comparison, in 2010 the number of civil servants in Finland exceeded 80,000.

The condition of the long-term stability of the activities of public servants in Finland is partly reflected in the fact that the State Civil Service Act of 1924 remained in force for more than 60 years - until 1986.

One of the effective social technologies to combat corruption is the formation of a public consciousness of zero tolerance for corruption crimes in Finland. This is possible only if the formation of an anti-corruption outlook, and therefore the main role belongs to the media.

An analysis of scientific publications and generalizations of court practice lead to the conclusion that corruption in Finland has a very high latency. Reports of the Ministry of Justice, the highest police school indicate the real situation of corruption in Finland, including the hidden corruption in many areas of the municipalities. Bribery, however, is only one form of corruption. Corruption is also noted in cases of "acquaintance" relations, in cases of nepotism or nepotism, as well as violations of good management and administration practices.

Special mention should be made of the special role of journalists and the frequency of coverage of Finnish media on television channels of information on corruption facts among members of parliament, senior police and prosecutors, and representatives of big business with further coverage of court hearings and court decisions.

For example, journalists Tuomo Pietiläinen and Niko Vartiainen presented in their investigation a pre-election analysis of the Finnish representatives of the municipal government.

"Now there are 395 politicians in the municipal councils of Finland who over the past five years have been convicted of committing a total of 705 offenses during the period 2012-2017. Of these, 99 politicians were sentenced to prison or to a suspended prison sentence. During this period, Finnish politicians received charges of beating and causing harm to life and health in 140 crimes. The degree

of intoxication of 2.5 ppm of alcohol and more was recorded in seven politicians, and the maximum level of alcohol was 3.11 ppm was recorded in Finnish politics in 2015 ”[12].

Before the parliamentary elections in 2019, journalists presented new data: in the period 2005-2019. 318 deputies who are candidates for parliament in the elections of April 14, 2019, were charged with criminal offenses, which accounted for 12.9% of the total number of 2,468 candidates for deputies. Among women candidates, criminal charges accounted for 14%.

For example, only in one party of the Seven Stars Movement out of 175 declared candidates, 103 had criminal charges. The sentence of imprisonment for 3 years and 4 months for aiding in a serious drug offense was received on February 11, 2018 by a candidate for the Parliament of Kim Holviala, awaiting a review of the case in the appellate court at large. For attempted murder and the threat of murder or the infliction of grievous bodily harm, the candidate for Parliament Sami Salonen was sentenced to 3 years and 6 months in prison. The maximum penalty among female candidates for Parliament is the county court determined Minna Engström for a period of 1 year and 4 months for a serious economic crime and further banned business activities until the end of 2021[13].

Analyzing the judicial practice in Finland, it can be concluded that the courts of all instances apply much less severe penalties, for example, imposing minor fines.

To prevent corruption, it is necessary to develop policies, analytical research, monitoring and coordination of actions to combat corruption, as well as monitoring their implementation and evaluating their effectiveness.

It is necessary to prevent conflicts of interest, check the declarations of property of officials and ensure public access to this information. The mechanisms for the implementation of these functions can be financial control, measures to prevent the legalization of proceeds of crime, measures to achieve transparency in public procurement.

The preventive function is to increase the transparency of the public service, ensure open access to information by the public and ensure control over the financing of activities and elections of political parties.

The educational and educational function includes the development and conduct of educational programs for the public and public servants, and work with the media, public organizations and the public.

In conclusion, it is necessary to emphasize that there is no single recipe for resisting corruption. The fight against corruption requires close coordination of international cooperation and law enforcement agencies, analysis of statistical data on corruption cases, the provision of legal assistance, the execution of extradition court decisions and international readmission obligations.

[12]Pietiläinen T., Vartiainen N. Kuntapäättäjien rikoksia piilossa äänestäjiltä. HS. 24.9.2017.

[13]Tuomo Pietiläinen, Kari Räisänen, Joonas Laatinen. Sadat edusuntaan pyrkivät olleet syytteessä rikoksista. HS. 7.4.2019.

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连续教育教育体系向集群发展模式转变的阶段
STAGES OF TRANSITION OF THE SYSTEM OF CONTINUOUS PEDAGOGICAL EDUCATION INTO A CLUSTER DEVELOPMENT MODEL

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注解。世界教学实践证实了集群方法对教育系统发展的有效性。由于独特的结构和创新的内容，连续教师教育系统发展的集群模式将提高教师的专业培训水平。然而，在教育科学和实践中，连续教育教育系统向集群发展模式转变的问题尚未得到解决。在分析理论研究成果的基础上，对内容进行了具体化，提出了连续教育教育体系向集群发展模式转变的主要阶段。假设组织工作和继续教师教育集群模式的进一步发展将为教师的传统角色转变，从专家的生殖生产过渡到创造性人格的形成创造条件。 。

关键词：教师教育，继续教育，教育系统，集群，集群模型

Annotation. *World pedagogical practice has confirmed the effectiveness of the cluster approach for the development of educational systems. Due to the unique structure and innovative content, the cluster model for the development of the system of continuous teacher education will increase the level of professional training of teachers. However, the problem of transition of the system of continuous pedagogical education to a cluster development model in pedagogical science and practice has not yet been solved. Based on the analysis of the results of theoretical research, the content is concretized and the main stages of the transition of the system of continuous pedagogical education to a cluster development model are developed. It is assumed that the work on the organization and further development of the cluster model of continuing teacher education will create the conditions for the transformation of the traditional role of the teacher, the transition from the reproductive production of specialists to the formation of a creative personality.*

Keywords: *teacher education, continuing education, education system, cluster, cluster model*

At the previous stages of the study, a predictive assumption was put forward that the transition of the system of continuous pedagogical education into a cluster development model is able to ensure the implementation and development of the principles of continuity, continuity and consistency, and thereby create conditions for more effective training of competitive and professionally mobile teachers. To find ways to solve the problem of transition of the system of continuous pedagogical education into a cluster development model, analysis of the results of scientific research, forecasting, and comparison were applied. The research methodological base was composed of cluster, system-synergetic and competency-based approaches.

Based on the results of the study, the features are revealed, the differences, opportunities and advantages of the cluster of teacher education for the effective training of competitive teachers are shown [1]. The system of dialectically interconnected conditions for the transition of the system of continuous pedagogical education into a cluster model of development — the presence in the region of motivated potential preclusters — has been defined, developed, and scientifically substantiated; the presence in the region of motivated leaders - preclusters; the presence of sufficient and necessary resource support for the cluster formation environment [2]. The structure of the cluster model for the development of continuing teacher education has been developed. The core of the cluster includes leaders - preclusters implementing traditional, formal teacher education - these are leading secondary education institutions, higher pedagogical colleges, higher education institutions implementing educational programs of higher and postgraduate education for teacher training, branches of the "Orleu" National Center for Continuing Education and regional education authorities. The space of the cluster is constituted by institutions and organizations with the help of which such types of pedagogical education as informal and informal are implemented.

The scientific results indicated above were obtained on the basis of identifying, analyzing, and concretizing the main possibilities of the cluster approach favorable for the development of a system of continuous teacher education.

1. The cluster approach is able to strengthen the system-synergetic interaction of system components, to contribute to the appearance of a unique result that would not be possible in the context of the traditional (linear) construction of a system of continuous teacher education. In particular, the components of a cluster system during its functioning and development can perform additional and cross-cutting functions (for example, take on some of the functions of an element of a system that is temporarily experiencing difficulties).

2. Within the framework of the cluster development model, the free access of any member of the cluster (both a leader and a potential precluster) to digital and network resources is realized as efficiently as possible, which, in turn, will mini-

mize problems associated with geographical, temporal, technical, personnel and other issues. For example, organizations and institutions from other regions can enter the cluster of continuing pedagogical education online.

3. The development of the system on the basis of the cluster approach is able to ensure not only the continuity of teacher education, but also its continuity, since it is the cluster development model that creates the conditions for a coordinated, focused and effective implementation of all types of continuing teacher education (formal, non-formal and informal).

As an analysis of the literature [3,4] showed, the given capabilities of the cluster approach in developing ways and means of modernizing the system of continuous pedagogical education were not given due attention before, and some of them were generally identified for the first time. Thus, a predictive assumption was put forward that the use of the above opportunities in educational institutions that train teachers will help create the conditions for the transformation of their role (in the traditional sense). The introduction of a competency-based approach requires teachers to skillfully and efficiently organize a continuous process of forming the competencies of students and pupils. Therefore, at the next stage of the research work, it was necessary to develop the main stages of the transition of the system of continuous pedagogical education into a cluster development model.

In our opinion, the transition of the system of continuous pedagogical education into a cluster model of development is a complex and multi-faceted process, which consists of three main stages - analytical, transformative and control. The names of the stages are arbitrary, the time periods for the implementation of each stage are not defined or are determined conditionally, the boundaries between the stages are unclear. For example, analytics accompanies absolutely all the processes that occur during the transition of the system of continuous pedagogical education into a cluster development model, therefore it is illogical to limit the analytical work to the framework of only the first stage. Nevertheless, we consider it possible to define the first stage precisely as “analytical”, since it is within its framework that documents, programs, models and methods are studied, compared, developed and pre-evaluated. In turn, each of the stages has its own goals, objectives and content.

The analytical stage involves the creation of an initiative group, the increase in the efficiency of motivation for preclusters, informing the pedagogical community, the development of methods for analyzing preclusters and a model for the formation of a regional cluster of continuing teacher education, and risk analysis.

At this stage, an initiative group is created from among teachers - scientists and practitioners, who are united by a common goal of improving the quality of continuing teacher education, but offer different ways and means to achieve this goal, in accordance with work experience, scientific achievements, knowledge and competencies.

Since the motivation of preclusters is an important factor determining the interest in the cluster and the desire of its participants to fulfill their functional duties at a higher level, the growth in the effectiveness of motivation for preclusters will have a positive impact on the level of integration and interaction within the cluster. It is useful to study the motivation system of each potential precluster, suggest a classification of its main elements, analyze regional preclusters, and develop recommendations for implementing the cluster approach. At this stage, the advantages of the cluster approach are discussed, ideas are generated, hypotheses are formulated, plans, programs, forecasting assumptions for the formation and development of a cluster of continuing teacher education, including possible risks and difficulties, are proposed and discussed, and expected results are specified.

Also, as part of the analytical phase, organizations and institutions that can play the role of leaders - preclusters of the region are identified and considered, and an initial version of the cluster core is proposed, within which responsibilities and authorities are distributed. The expected result is the development of a unified opinion on the advantages of the cluster of continuing pedagogical education, the development and approval of a working version of the program for its formation, the identification of applicants for the role of leaders - preclusters for the subsequent formation of the cluster core.

Next, a precluster analysis technique is developed. Its purpose is to identify regional potential preclusters and select the most promising ones. This technique includes a system of criteria and indicators intended for comparative, factorial, quantitative or qualitative analysis of preclusters. The criteria and indicators are: focus on improving the quality of teacher education; level of competitiveness; openness to cooperation; quality of resource support; innovative activity; the presence of their own history and traditions; leadership position; effective management; activity level in the digital environment. The main expected result is the development of tools for selecting the most promising preclusters.

Then, a model for the formation of a regional cluster of continuing teacher education is developed. When developing a model, the role of each precluster is revealed and specified, the range of tasks that it can solve is determined, and the functional relationships between the preclusters are identified and analyzed. In the future, the development of precisely these ties will ensure the synergistic interaction of the participants. As a result, the strengthening and development of functional relationships within the cluster is predicted.

Also, during the analytical stage, the main strategic document is developed, which defines the goals, objectives, time frame, stages and expected results of the clustering of the system of continuous teacher education, makes predictive assumptions about the possible risks, problems and difficulties of the functioning of the cluster, and suggests ways to overcome them. Here, those functions can be defined that can temporarily, if necessary, be performed by those cluster members who are not required to perform these functions.

The second stage of the transition of the system of continuous pedagogical education into a cluster development model is the transforming one. It includes the actual "launch" of a cluster model for the development of a system of continuous teacher education at the regional level. This process includes the implementation of the developed models of the motivation system, methods for analyzing pre-clusters, and models for the formation of a regional cluster of continuing teacher education based on documented procedures. The interaction of the cluster participants is expected to be carried out, inter alia, by the principle of integration, in particular, the integration of education and business, since both the higher educational institution and the enterprise are interested in training competent specialists. Within the framework of the cluster, it will be possible to minimize the problems of organizing professional practices: the lack of economic interest of the enterprise in the quality organization of practice; lack of leverage for higher education institutions to influence the practice base in order to influence the quality of practice organization; lack of government regulation of business participation in training. Since the indicator of the stability of relations in the cluster is the intensity of the use of flows, in order to increase the degree of interaction between the cluster participants in the system of continuous pedagogical education, it is necessary to optimize and control flows within the cluster. All cluster members must adhere to certain rules of behavior, principles of intracluster interaction.

The third, control stage of the transition of the system of continuous pedagogical education into a cluster development model includes monitoring and correction of the developed models, methods and documents, as well as an assessment of the results of the work carried out as a whole. The main expected result of the control stage is to obtain a conclusion about the effectiveness of the developed models and methods.

Thus, according to the results of the next stage of the study, the main stages of the transition of the system of continuous pedagogical education into a cluster development model — analytical, transformative and control — have been developed. These stages were developed taking into account the possibilities of transferring the system of continuous pedagogical education into a cluster development model: strengthening the system-synergetic interaction of system components and the emergence of a new unique result; effective implementation of free access of cluster members to digital and network resources; ensuring the continuity and continuity of teacher education by expanding the network of channels of teacher education. The implementation of the above stages of the transition of the system of continuous pedagogical education into a cluster development model based on the use of the previously unaccounted for cluster approach will help create the conditions for the transformation of the traditional role of the teacher, as the organization of the process of formation of competencies of students and pupils will be more effective.

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形成包容性教育
THE FORMATION OF INCLUSIVE EDUCATION

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注解。 本文致力于在现代社会中形成包容性教育的实际问题，包括和实施教育活动方法，技术和方法。 包容性教育发展的现代趋势具有一定的“历史时代”和深刻的社会文化根源。 创造现代特殊教育条件将确保每个学生在发展和素质教育的特殊性方面享有平等机会。 毕竟，进步是人们可以做的事情，而不是他们做不到的事情。

关键词：包容性，学生，发展特征，包容性教育，全纳教育，包容性学校，社会化，社会适应，文化，人文。

Annotation*. The article is devoted to the actual problem of formation of inclusive education in modern society, the inclusion and implementation of methods of activities, techniques and approaches to education. Modern trends in the development of inclusive education have a certain "historical age" and deep socio-cultural roots. The creation of modern special educational conditions will ensure equal opportunities for each student with the peculiarities of development and quality education. After all, progress is in what people can do, not in what they can't.*

Keywords*: inclusion, students, features of development, inclusive education, inclusive education, inclusive school, socialization, social adaptation, culture, human humanity.*

Inclusion is becoming an integral part of modern education.

The term “*inclusion*” itself came into being due to the adoption in 1994 of the Salamanca Declaration on the principles, policies and practical activities in the field of education of persons with special needs (Latin *include* - I conclude, include, involve; French *inclusif* - including). Inclusion as “a process in which

something is included, that is, involved, embraced, or included as part of the whole" [1]. Inclusive education involves not only the inclusion and active participation of children and adolescents with disabilities in the educational process of a regular school, but also the restructuring of mass education to ensure the educational needs of all children.

Under the auspices of UNESCO, the World Conference on the Education of Persons with Special Needs was held in Salamanca (Spain). The conference participants appealed to the governments of all countries with the proposal to adopt the principle of inclusive education in the form of a law or a political declaration, which means that all children go to regular schools, unless there are serious reasons for doing otherwise. As noted S.V. Alekhine, "inclusion in education is a stage of inclusion in society, one of the humanitarian ideas of its development. The development of inclusive education is not the creation of a new system, but a qualitative and systematic change in the education system as a whole "[1]. The Declaration, adopted by the Salamanca Conference, calls for children and young people with special educational needs to be taken into account "in connection with the development of educational measures for most children. It is in this connection that the concept of an inclusive school has arisen " [5].

The deep development processes of modern society are expressed in ensuring equal opportunities for quality education, which characterize "inclusion", in the case when a disabled child is given the right to attend a regular school and supporting services are provided, the necessary adapted educational environment is created. Full inclusion means that all students, regardless of the type of severity and nature of developmental disabilities, study together in the same general education class, receiving, if required, additional services, benefiting from co-education with their healthy peers.

Inclusion reflects a new view not only on the education system, but also on a person's place in society. Inclusive education, both historically and semantically, is more related to the problem of co-education of ordinary children and with limited psychophysiological capabilities. Thanks to the included approach, the education model is being transformed in the entire education system so that it can simultaneously meet the educational needs of each student. The most important thing is to provide adapted educational programs and create a special educational environment in an inclusive class. Ideally, an inclusive class should meet the necessary needs of these children, and, most importantly, all children in this class should be able to communicate with each other. The meaning of inclusion is to fully involve a child with developmental disabilities in the life of the class, to create optimal special conditions for him to receive an education [4].

The culture of inclusive education is revealed in the nature of the position of participants in the educational process. This position is largely determined by the

type of communication, the presence of solidarity, cooperation of all participants in the educational process. In this regard, the introduction of a special educational module on the basics of socialization and development on the basis of the principle of heterogeneity into the content of university education is considered appropriate ("The essence of heterogeneity lies in the idea of heterogeneity of the constituent elements forming together a single whole" [3]).

The problem of ripening inclusion was not only that it began to occupy the minds of progressive educators, but also in some cases that such training was successfully tested in European countries, under conditions of then still not qualified public schools. The ideas of coeducation in Western European education appeared in the first half of the 19th century.

While I.G. Pestalozzi put forward ideas:

- about the versatile development of the child in accordance with his nature and needs;
- the importance of educating children with mental retardation, physically and socially disadvantaged;
- the need and the possibility of educating all children and preparing them for future work.

The development of social institutions in Western Europe and the United States, changes in socio-economic relations by the end of the 19th century, presented increased demands on traditional education. These changes caused a reform of school education on the basis of new scientific and philosophical ideas, productive to solve pressing problems, both in society and in education (authoritarian management, lack of practical preparation for professional activity, etc.).

At the beginning of the XX century. In European pedagogy, the scientific paradigm of reformist pedagogy took shape, which absorbed and absorbed the scientific achievements of the advanced concepts of philosophical and pedagogical thought of that time. It reflected the philosophical ideas of the XIX-XX centuries. Reliance on these views led teachers to affirm the most important principle of reformist pedagogy - the principle of pedocentrism. According to this paradigm, each child is individual and unique, his development is the gradual implementation of his internal self-development program, inherent only to him, and, therefore, the educational process should be based on the needs and capabilities of the child, and not on the teacher's desire for whatever began to implement the curriculum at the time set by the administration [2].

The key ideas and principles of reformatory pedagogy, which were formed under the influence of extra-curricular science, were further developed in the 20th century, which allowed us to return to the problem of joint education of children differing in their psychophysiological capabilities. It was precisely in the pedagogical systems of reforming pedagogy that were innovative for their time that inclusive educational phenomena were again reflected.

In the 60-90s of the XX century are marked by the *period of social and legal development of inclusive education* and are characterized by the return and spread of joint education of ordinary children and children with disabilities (HIA) in the field of education. The concept of education for children with special needs was formulated and the Salamanca terms at the international level came into use by the scientific community: "inclusive education", "inclusive school".

In the first decade of the XXI century. the social project "inclusive education" is beginning to be implemented, inclusion without borders - as a period of active, numerous experiences of philosophical, pedagogical, social, psychological ideas and principles. Subsequently, a *stage of reasonable pragmatism* arises. This is the time when an increasing number of countries are convinced that this type of training (inclusive education) has its own framework and limits, due to the economic capabilities of the educational system of a country. The understanding came of the need for effective education for every child with disabilities, and especially a child who has significant developmental disabilities, which, nevertheless, is a blessing that creates better conditions for receiving education, even for some children with disabilities. At the same time, during this period, the belief that inclusive education is only one of the opportunities for a child with developmental disabilities, only an integral part of the educational system, and not the entire system, is growing more and more.

In the process of formation and development of inclusive education, important principles have appeared that must be observed:

- ✓the principles of inclusive education itself;
- ✓moral and ethical principles;
- ✓sociocultural principles;
- ✓organizational and pedagogical principles.

According to the authors of the article, ethical principles are the most relevant, because Reliance on these principles in state law is indispensable in relation to social inclusion and inclusive education. Unity of people based on:

- ✓humanity - where every child, in spite of his limitations of opportunities, has the right to education and upbringing;
- ✓realism - where each person is perceived as he is;
- ✓organic integration of a holistic pedagogical process in an inclusive educational institution;
- ✓special pedagogical competencies of the pedagogical corps of the mass education system;
- ✓team version of interaction in the implementation of the integration process;
- ✓cooperation and collectivism within the framework of a single subject for all: each child, together with other students, masters a subject common to all within the limits accessible to him and contributes his share to the collective knowledge of the subject;

✓individualization, which is at the center of the educational process of pedagogical activity, - teaching a child in the inseparable unity of his physical, mental and mental organization, his general and special educational needs;

✓dialogue way of interaction: meeting and communication between people is an important and significant element of the pedagogical situation and many others

At the moment, many problems regarding the integration of education, i.e. inclusion, co-education of students with different educational needs; insufficiently carried out training and psychological support, there are no technologies for the organizational involvement of parents in the socio-educational learning process, etc.

Although there are a number of shortcomings in inclusive education during its formation, the most important thing for us is that the inclusive education process has been launched and has its positive results. Children learn and integrate into the future society, learn to communicate with other people and develop creative abilities, receive communication skills, life lessons. Of course, the whole team gets an understanding that there should be no differences between people, it doesn't matter whether you are disabled or a healthy person. After all, each person in itself is a unique, capable member of society. Here I want to recall and add in words, as an artistic metaphor about the essence of education and upbringing, the famous German philosopher of the XVIII century. Immanuel Kant: "Two things fill the soul with new and growing amazement: the starry sky above our heads and the moral code within us" [2].

Inclusive education contributes to the enrichment of a person's personal qualities, the desire to help. It is a new model of education, where students and teachers work on a common cause - affordable and quality education for all children without exception.

And in conclusion, about the importance and necessity of inclusion to society. Here is an episode from Jack London's adventure novel "Hearts of Three": "The blind philosopher raised his head, sniffed the air and stopped the girl with a gesture. Following his example, she also sucked in air.

"Maybe it's a lamp burn, Oh, Just!" She suggested.

"No, it's oil burning," retorted the blind man. "The lamp has nothing to do with it." And burns somewhere far away. I still heard shots in the gorge.

"But I didn't hear anything ...", the beginning, there was a metiska.

"My daughter, you are sighted, you do not need such a sharp hearing as I do." They shot at the gorge."

The formation of inclusive (special) education lies in human humanity:

- every person is able to feel and think;

- everyone has the right to communicate and to be heard, and his value significance does not depend on his abilities and achievements;

- all people need support and friendship;
- genuine education is carried out in the context of real relationships;
- making progress in what people can do, and not in what they cannot;
- the diversity of the world strengthens a person comprehensively [4].

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交互式培训方法是提高RKI教师专业水平的一个因素
INTERACTIVE METHODS OF TRAINING AS A FACTOR OF INCREASING THE PROFESSIONALISM OF THE RKI TEACHER

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抽象。　本文讨论了在互动环境中学习俄语作为外语的前景，作为国际项目实施的一部分。 本文作者分析了专业语言中交互式方法和学习技术的可能性。
关键词：创新教育学；国际教育；在线学习；专业语言；俄语作为外语。

Abstract. *The article discusses the prospects for learning Russian as a foreign language in an interactive environment as part of the implementation of international projects. The author of the article analyzed the possibilities of interactive methods and learning technologies in the language of the specialty.*

Keywords*: innovative pedagogy; international education; online learning; specialty language; Russian as a foreign language.*

The internationalization of higher education and the development of cross-border education, increased competition and the emergence of new players in the international education market contribute to the international mobility of foreign students. After the APEC Summit 2012, the influence of the Russian language in the educational space of the countries of the Asia-Pacific region significantly increased. Note that the Far Eastern natural resources, sea arteries, the possibilities of transport routes, the prospect of the Northern Transport Corridor, the development of the Arctic - all this is for the neighboring states of the Asia-Pacific countries - a great interest in cooperation in trade, transport, tourism, cultural and educational exchanges. In this regard, the implementation of the idea of reviving the ancient Silk Road, which was expressed by the head of China Xi Jinping in September 2013 during a visit to Kazakhstan, seems interesting and promising. As a result, the international project “One Belt, One Road”, which envisages the creation of transport corridors between the countries of the Asia-Pacific region, primarily China and Russia and Western Europe. The reform of higher education in Russia defines new requirements for the organization of the educational pro-

cess, for a teacher working in a foreign audience, for methods and technologies of teaching Russian as a foreign language.

As part of the "One Belt - One Road" project in 2016, agreements on cooperation between China, Mongolia and Russia for the construction of an economic corridor were signed. In this regard, the universities of the Far East should consider the possibility of training foreign students to work in the framework of this project. First of all, in international logistics, transport, construction, economics, management. The economic belt of the Silk Road in the areas of transport corridors is focused on the creation of infrastructure, which provides for close economic cooperation. Within the framework of the "One Belt, One Road" project, five measures necessary for this were proposed: political coordination, interconnection of infrastructure, trade liberalization, free movement of capital and strengthening of mutual understanding between nations. Consequently, the volume of popular professions with knowledge of the Russian language in the coming years will grow. First of all, in teaching the language of the specialty (logistics, construction of cross-border facilities, trade, rail and road transport, economics, management, tourism, etc.). We are deeply convinced that the language of the specialty will be in demand in these important areas of training for foreign students.

In this article we will analyze the problems faced by both foreign students and teachers of Russian as a foreign language (RAFL) in teaching the language of the specialty. By the notion of a language specialty, we mean the totality of all language means that are used in a limited specialty area of communication in order to ensure mutual understanding of people employed in this area. The language of the specialty can provide three important components of the communication process component: lexical and grammatical; morphological and syntactic; textual. It should be noted that the language of a specialty may include general scientific and special terminology. First of all, a teacher of RAFLs should take into account one of the most important features of the process of teaching a language to a specialty - that foreign students have basic knowledge of major subjects. Without this, foreign students, undergraduates may experience great difficulties, since they will not know the specialized terminology in Russian. It is known that professional vocabulary is studied, mainly on the basis of texts, therefore, purposeful selection of texts that should be focused on the latest achievements in a particular specialty will be of paramount importance. It is advisable, in our opinion, to begin the study of the language of a specialty not earlier than the second course of study (after passing TRAFL-1).

As practice shows, professional communication and the fastest provision of full-fledged knowledge of the language base of the specialty is the primary pragmatic task of teaching foreign students at the present stage, including, within the framework of the project, "One Belt, One Road". One of the main tasks of a teacher of Russian as a foreign language is to teach foreigners to master scientific

and technical knowledge using modern educational technologies. It is important to determine which forms of presentation of educational material can be used, drawing on the experience of researchers from other scientific fields, in particular, information technologies and artificial intelligence.

Special attention should be paid to combining traditional teaching methods with interactive technologies. Interactive technologies of teaching Russian as a foreign language are aimed at the learning by the foreign student of educational material through the practice of communication. The practical skills acquired by them can be useful not only in the process of learning the Russian language, but also in the process of their social and professional interaction. Interactive learning is based on interactive forms of interaction between students, during which they form collective communication skills. Interactive learning of the Russian language as a foreign language, which is one of the options for the implementation of a communicative approach to learning, is based on the active interaction of the teacher and foreign students, as well as communication in a group with each other.

An important, from our point of view, condition for successful mastering of the language of the specialty is the integration of interactive technologies in teaching Russian as a foreign language. This approach, of course, meets the needs of modern students, increases the visibility of educational material, facilitates its perception and assimilation. In recent years, the use of interactive teaching methods in the educational process has increasingly attracted the attention of scientists, various ways of using them more effectively are being proposed, the goals of education are being revised, and new educational technologies are being developed.

Let us consider the interactive methods of teaching the language of the specialty. The main goal of interactive learning is to involve foreign students in the cognitive process and to enable them to reflect on what they know and think. In order for the learning process to be more effective, it is important for the teacher to create conditions under which a foreign student (undergraduate) can feel their success, self-confidence, which will contribute to the removal of the language barrier.

It should be noted that modern pedagogy is rich in an entire arsenal of interactive teaching methods, among which are the following: work in groups; role and business games; design methodology; creative tasks; case method; presentations, etc.

In order to improve the effectiveness of educational activities, the teacher of Russian as a foreign language needs to freely navigate the variety of interactive teaching methods. Therefore, it is necessary to classify interactive teaching methods. Attempts to classify interactive teaching methods are different: Yu.S.Arutiunov, O.S.Anisimov, S.S. Kashlev, L.N. Vavilova, T.N. Dobrynina, O.A. Lazareva, O.A. Golubkova, V.V. Guzeev, E.S. Zair-Beck, M.V. Clarin, E.E. Lushnikova, V.V. Nikolina, TS Panina, A.Yu. Prilepo and others.

The main goal of interactive learning is to involve foreign students in the cognitive process and to give them the opportunity to reflect on how to solve this or that professional situation [3. p. 5]. In order for the learning process to be more effective, it is important for the teacher to create conditions under which a foreign student will be able to feel their success, self-confidence, which will help to remove the language barrier.

Many scientists, such as T.M. Balykhina, L.P. Klobukova, I.S. Cherenkova, O.V. Lutsenko, who studied the problems of teaching foreign students the language of their specialty, emphasize the need for priority attention to educational and scientific communication. Based on many years of practical experience in teaching foreign students the language of their specialty, we believe that the formation of communication skills is possible when an interactive educational model is organized in the educational process. The structure of the educational model "Interactive learning environment" allows you to work on all the components of the language of the specialty: to work out the necessary lexical and grammatical, morphological and syntactic skills and abilities within one educational space, to work on projects, on texts of sectoral orientation, video material, etc.

I would like to dwell in more detail on the role of the teacher of RAFL working in the innovation aspect. Of course, the role of the RAFL teacher in an interactive environment is no longer central. As the practical experience of teaching foreign students the language of their specialty shows, students successfully master the educational material in the process of performing any productive activity (design and problem technologies), game (theater technology), role-playing and business games [6.p.10]. It is necessary to highlight the main characteristics of a teacher working in an interactive educational space. In modern conditions, a creative RAFL teacher is, first of all, a teacher-researcher with the following personal qualities: scientific psychological and pedagogical thinking, high level of pedagogical skills, a certain research courage, developed pedagogical intuition, critical analysis, need for professional self-education and reasonable use advanced pedagogical experienceIt is necessary to highlight the main features of innovative technologies with which the teacher begins to work in a foreign audience:

* familiarity with innovations that model the real productive activities of foreign students studying the language of the specialty;

* the use of innovative technologies by the RAFL teacher is considered by the RAFL teacher as an indirect teaching of the language of the specialty;

* a teacher of RAFLs teaching a specialty language to foreign students is aware that he is working on the development of speech skills;

* teacher RAFL examines innovation (gaming, interactive technologies) in terms of the specifics of speech communication;

* selection, location, introduction, organization of learning and control of educational material in terms of the use of interactive methods and technologies of teaching the language of a specialty has certain specific features.

Thus, the RAFL teacher, working within the framework of innovations, specializes in language training on the basis of selection, organization, introduction, and control of learning material mastering. We are aware that in this case, the teacher who works with foreign students, undergraduates, today has high demands. His pedagogical creativity is defined as an activity that is distinguished by qualitatively new approaches to the organization of the educational process. Having achieved this, the teacher-researcher can predict the development of various pedagogical situations, as well as design and implement a new system of the pedagogical process. For example, the educational model "Interactive learning environment." In addition, interacting technologies are necessary, in our opinion, to develop language and speech skills (as automated components of consciously performed activities) for all areas of training foreign students, undergraduates, primarily in economics, logistics, management, transportation, a strict interactive structure is necessary. educational model. It is necessary to develop test and control tasks that simulate practical situations. Preparing foreign students for testing according to the language of their specialty, in our opinion, is an important stage in the formation of their professional competencies [4. p.33].

New international projects “Mastering the Northern Sea Route”, “One Belt, One Path” will attract the attention of foreign students, undergraduates in mastering the language of the specialty of international economics, logistics, transport, construction, etc. Consequently, it is necessary for teachers to be aware of the changing demands of modern times. In our opinion, it is necessary to develop and implement a model that allows effectively teaching foreigners to professional communication. We believe that an interactive educational model should be focused not so much on the acquisition of specific skills, but rather on the formation of professional competence, skills and abilities of activities in the framework of international projects. We see the solution of these problems in the need to enhance the teaching of the language of the specialty. The activation of the educational process of the language of a specialty is understood as the construction of such a process, which involves the organization of education on a scientific basis, the creation of conditions for creative thinking, research work of foreign students, and generates interest in their future specialty. Successfully organized process of teaching the language of the specialty contributes to the formation of new personal qualities, new social status, the acquisition of professional communication skills. It is very important to ensure the interactivity of the educational process, to minimize the passive learning of the language of the specialty. In our opinion, these are special tasks that promote the establishment of communication links: "teacher

- student", "student - student", "student - group", "group-teacher". We believe that the educational model "Interactive learning environment" can help. What are the components of the specialty language teaching that the interactive model is based on? What happens to the participants in such an educational process? First of all, you need to get acquainted with the structure of the educational model.

The structure of the educational model "Interactive learning environment"

1. Portfolio of professional words.
2. Terms of specialty.
3. Lexical and grammatical material of the specialty
4. Morphological and syntactic material of the specialty language.
5. Video material language specialty.
6. Multimedia presentations of interactive methods of teaching the language of the specialty (role-playing games, business games, project methodology, etc.).
7. Texts (branch) of the specialty language (tasks for understanding).
8. Test tasks (control) of the specialty language.

The educational process, based on the use of interactive teaching methods, is organized taking into account the involvement in the process of learning of all foreign students (undergraduates) without exception. Such joint activities mean that each participant contributes, in the course of work there is an exchange of knowledge, ideas, ways of working. Individual, steam room and group work are organized, project work, role-playing games are used, work is carried out with various sources of information, work is being done with multimedia presentations, video material in the direction of training foreign students (undergraduates). Interactive methods used by the teacher of RAFLs are based on the principles of interaction, the activity of the trainees, reliance on group experience, and obligatory feedback. An interactive communication model is being created, which is characterized by openness, interaction of all participants, equality of their arguments, accumulation of joint experience, the possibility of mutual evaluation and control. It would be a mistake to use only one method or one technology in the language classes of a specialty. It is about creating a model that allows you to achieve efficiency and quality of the educational process, because the modern system of teaching the language of the specialty of foreign students (undergraduates) is one of the priorities that highlights the principle of accounting for the chosen specialty [3.p.9]. In the first stage of the development of a future profession, in our opinion, it is advisable to use role-playing (business games) in combination with professional words and terms, multimedia presentations (based on the text in the specialty language). We believe that the RAFL teacher, who works in the interactive learning mode, should have certain qualities. He himself must not only realize the essence of the fundamental importance and effectiveness of interactive learning methods, but also own these methods, be a skilled psychologist, igrotechnik, actor, director [1.p.84].

Role-playing games of professional orientation (in the direction of training foreign students), for example, within the framework of the implementation of the international project “One Belt One Road”, allow students to be prepared for professional communication in economics, construction, logistics, and transport. The formation of their professional competence is based on a well-developed model of speech behavior in a role-playing game. According to O.A.Lazareva, role-playing game “presents to the participants certain requirements for solving communicative tasks using linguistic, communicative and sociocultural knowledge” [5. p.114]. In organizing a role-playing game, it is important for us that a foreign student trying on a particular role was able to pick up the necessary language tools in accordance with a given situation, could avoid conflict, lean towards compromise, defend his point of view. Role-playing game is a conditional reproduction by its participants of the actual practical activity of people [2. p.89]. During the main stage of the role-playing game, an enormous role is assigned to the teacher, who should contribute to the creation of a special psychological environment in a foreign audience.

Thus, professional mastery, professional competence of a teacher of Russian as a foreign language directly depends on what educational technologies it uses. The free developmental activities that the teacher-researcher undertakes in relation to foreign students in the framework of interactive language teaching of the specialty is a learning process in which the foreign student and teacher professionally improve their skills.

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专科学校统计专业学生信息文化的形成
FORMATION OF INFORMATION CULTURE IN STUDENTS OF STATISTICAL COLLEGE AT SPECIAL DISCIPLESS LESSONS

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抽象。 本文作者分析了信息文化的特征，这是与人们生活信息方面相关的文化方面之一。 信息文化的一个组成部分是正确使用信息技术工具。

关键词：信息通信技术，大学，方法论，优化，教育过程，社会经济现实，培训。

Abstract. *The authors in this article analyze informational culture characterizes one of the facets of culture associated with the informational aspect of people's lives. An integral part of the information culture is the proper use of information technology tools.*

Key words: *ICT, college, methodology, optimization, educational process, socio-economic reality, training.*

The main task of the education system in the information society is the formation of a person with a developed information culture. The beginning of the new millennium has become a symbolic corner for affirming the problems of information culture in the scientific and educational sphere, as evidenced by the intensive growth of the corresponding psychological and pedagogical research [3].

The most detailed aspects of the formation of information culture are covered in the works of LL. Bosovoy, S.A. Borodacheva, A.Yu. Kurina, V.P. Kulagina, V.V. Laptev, et al., Aspects of the use of computers in education are examined in the studies of t.v. Gabay, T. Gergeya, V.V. Davydov, B.F. Lomov, V.Ya. Lyaudis, E.I. Mashbitsa, V.V. Rubtsova, N.F. Talyzina, O.K. Tikhomirova, N.A. Shalamov et al.

Certain aspects of the problems of informatization of education and the search for ways of introducing ICT into the pedagogical process have been studied by such Tajik scientists as S.S. Avganov, H.M. Akhmedov, H.Yu. Dzhuraeva, A.R. Dodikhudoev, T.V. Ershov, K.B. Kodirov, F.S. Komilyon, I.L. Kosimov, A.E. Sattorov, B.F. Rajabov, A.P. Nazarov, I.A.S.S. Mavlonazarov, N.N. Mekhmonov, A.R. Mirzoev, S.Kh. Mirzoev, M. Mullojanov, I.I. Olimov, Z.F. Rakhmonov, K. Tukhliev, D.S. Sharapov, F.F. Sharipov, Sh. Shodmonov, N.N. Shoev and others [4].

The task of developing an information culture for students of a statistical college is inextricably linked with the process of informatization of education, mastering students with basic economic knowledge and skills, shaping their economic thinking, introducing future accountants and financiers to the professional activities. The decisive factor here is the computerization of training, the study of software products with which the experts of the financial system are connected in practice, in future professional activities.

Therefore, the socio-economic reality requires a qualitatively new type of specialists: competitive, initiative, competent, enterprising, highly qualified, sociable, with business communication skills, easily adapting to changes in legislation, mastering modern technology, capable of analyzing difficult situations and making responsible decisions, constantly raising the level of education and culture.

Information training of the individual must be continuous. Therefore, the formation of information culture should be carried out at all levels of secondary and higher education and in all areas of the studied courses [1].

In training a mid-level specialist, an important place is occupied by his information culture, which should be in the context of the general and professional culture of a financier, taking into account the trends of informatization of society, as a projection into the field of information relations of a multifaceted universal culture, as a special sphere and form of student activity related to thinking and as a general system of values and ideas, formed motives, goals, meanings, principles and rules, determining the financier's orientation in the informational trans [5].

The relevance of information culture of students is particularly increasing in connection with the introduction of vocational education, new objectives of vocational education, according to which vocational education institutions are formed as multi-level, implementing the concept of continuing professional education; should be characterized by active interaction with society through the mechanism of social partnership with the leading role of employers in it, the ability to adequately respond to the dynamics of the labor market, the structure of sought-after professions, as well as economic and socio-cultural priorities dictated by society.

Information culture characterizes one of the facets of culture associated with the information aspect of people's lives. An integral part of the information culture

is the proper use of information technology tools. Today, the natural and competent handling of multimedia technologies, the Internet, has become a key qualification that provides specialist access to the workplace, participation in public, cultural, and political life. We are talking about the competent use of information technology, which implies that specialists have a certain level of information culture.

One cannot but agree with Y. Yakovleva that the important task of modern competence-based economic education is the identification of the essential characteristics of the economic competence of the students. The economic competence of the future accountant is considered in the structure of the main categories of economic education as a cumulative, integrative personality characteristic, indicating the level of professional competence that provides professional services for the operation of economic entities of all legal forms of ownership, the state budget and extrabudgetary institutional structures, taking into account industry specifics, equipment, technology and organization of production, presented in the study ontseptualnym, instrumental and personal and professional components.

For the formation of information culture of students in the Statistical College, lessons on the discipline "Information technologies in professional activities" are held in the information center, which serves 2 educational computer classes. All computers are connected to the local network, have Internet access, Microsoft Internet Security, Microsoft Office. There are 34 lecture halls and an assembly hall with multimedia equipment and an audience equipped with an interactive whiteboard and a voting system.

Training computer classes are equipped with multimedia projectors, screens that allow you to show presentations of lectures.

For the organization of the educational process of the college, taking into account the practical orientation and profile of training, the following have been installed and used:

1. 1C: Enterprise 8.1 program (educational version);
2. automated banking system (ABS);
3. program "Taxpayer";
4. for the current knowledge control program Tester (Tester (PTS)).

For on-line seminars and conferences, ITC is equipped with headphones, webcams for work on Skype, and ITC is also equipped with copy machines, risographs, color printers.

The use of multimedia projectors connected to a computer, VCR and camcorder, allows you to move from traditional technology to a new integrated educational environment, including all the possibilities of electronic presentation of information.

The interrelation of students and teachers in group and individual work is carried out through the e-mail box, which simplifies the exchange of information.

Email can be used as a method of communication. Each teacher has his e-mail address, which is known to a group of students, and they can contact with questions on the topic being studied, get advice on writing term papers and dissertations, find out the accuracy of the information provided, its verification.

Therefore, throughout the entire period of training in an average specialized educational institution, students gain experience in working on a computer, deepen their knowledge when performing course design and its protection in special disciplines, while performing graduate qualification work and making presentations on work, in additional circles, competitions, conferences, at the lessons "Information Technologies in Professional Activities", at the courses on in-depth study of information technologies, increasing their information culture.

From the conducted study among graduate students of the Statistical College, the question "How do you rate your information culture?" From 148 respondents answered: "Very high" - 34 people, "high" - 111 people and "low" only 3 people. The results show that students throughout the whole period of study developed and increased their intellect, planning a further increase in the information culture. The question "Do you want to increase your information culture?" Out of 148 respondents, 102 students answered "yes", "I don't know" - 26 students and only 28 students think that their level of information culture does not require an increase. Further improvement of the information culture of students will continue in higher education institutions [2].

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在高中教师的准备中引入协同思想

THE INTRODUCTION OF SYNERGISTIC IDEAS IN THE PREPARATION OF TEACHERS IN HIGH SCHOOL

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注解。 文章揭示了在高中教师培养中引入协同思想的相关性，教学方法以及实现协同学中所包含的综合潜能的方法。 本文证实了将协同学作为教师系统知识形成的跨学科知识领域的必要性。

关键词：协同学，自组织理论，准备学生，更新内容，教学方法，教育过程中的协同概念。

Annotation*. The article reveals the relevance of the introduction of synergistic ideas in the preparation of teachers in high school, teaching methods and ways to implement the integrative potential laid down in synergetics. The article substantiates the necessity of introducing an introduction to synergetics as an interdisciplinary field of knowledge for the formation of a teacher's system knowledge.*

Keywords*: synergetics, self-organization theory, preparing students, updating content, teaching methods, synergy concepts in terms of the educational process.*

The current state of the system of science education is characterized by openness, complexity and information redundancy, variability of instruction and inconsistency. So, layers of the traditional explanatory and reproductive methods of teaching are preserved in it and at the same time new guidelines for world educational standards are being formed, a desire appears to bring science education closer to today's requirements. This is evidenced by the rapid change in federal educational standards of higher education, a change in the strategic guidelines and tactical tasks of modern education. Sustainable and established pedagogical approaches in teaching science to students are gradually changing under the influence of social, psychological and pedagogical factors, and the content of natural science knowledge is updated under the influence of new discoveries in interdisciplinary fields of knowledge and a change in the scientific paradigm. The discovery of the end of the 20th century in the field of nonequilibrium thermodynamics and laid the foundation for the development of synergetics, contributed to the formation of a post-non-classical scientific picture of the world, has been applied in various fields, including education.

Synergetic ideas embedded in the concept of self-organization as an interdisciplinary field of knowledge are integrative in nature. These include: the idea of development, the idea of global evolutionism, the idea of the irreversibility of natural processes and time, the idea of becoming new by the emergence of new structures based on the internal resources of the system without harsh environmental influences. The fundamental concept of synergetics is the concept of self-organization, considered as a focused process, during which the organization of a complex dynamic system is created or improved. The process of a qualitative change in the structure of the system without external influence, but due to its own internal reserves, was called I. Prigozhin self-organization [11].

The synergetic concept of self-organization operates both with well-known and widely used concepts, such as a system, development, structure, equilibrium, reversible and irreversible processes, and highly specialized, borrowed from nonlinear thermodynamics (nonequilibrium process, nonlinearity, entropy). In synergetics there are specifically new concepts unique to it: bifurcation points, dissipative structure, attractor, and others. Since synergetics includes generalized concepts and philosophical categories (development, system, structure, randomness), it is therefore possible “many scientific disciplines have good reason to consider synergetics as their part” (G. Haken, 1980).

What new have synergetic ideas brought to education? What is the methodological potential of these ideas and what is the role of the teacher in the formation of system knowledge and the formation of a modern scientific picture of the world of students? The involvement of synergetic ideas in teacher training is associated with the need to eliminate the juxtaposition of natural science and humanitarian knowledge of the future teacher, increase the consistency, effectiveness, and ensure continuity in the dissemination of synergistic ideas to students. So, E.N. Knyazev and S.P. Kurdyumov believes that the synergetic methodology will help to fundamentally change the interpretation of the educational process: “The training procedure, the way the learner and the teacher, student and teacher are connected is not transferring knowledge from one head to another, not broadcasting, enlightening and presenting ready-made truths. This is a non-linear situation of open dialogue, direct and feedback ... This is a situation of awakening the learner’s own forces, initiating it on one of its own development paths "[9]. In studies on pedagogical synergetics (L.Ya. Zorina, V.G. Vinenko, E.V. Bondarevskaya, E. Solodova, etc.), it is noted that synergetics provides an opportunity to rethink the evolution of scientific knowledge, the development of educational processes, revision of existing methods in training [7, 12].

In studies on pedagogical synergetics (L.Ya. Zorina, V.G. Vinenko, E.V. Bondarevskaya, E. Solodova, etc.), it is noted that synergetics provides an opportunity to rethink the evolution of scientific knowledge, the development of educational processes, revision of existing methods in training [7, 12].

The synergetic concept of self-organization in our study is applicable in the system of teacher training in a university in 3 directions [4]:

a) as a methodological benchmark for the construction and analysis of the development of pedagogical systems;

b) as a component of the content of science education, reflecting the changing scientific picture of the world;

c) as a factor in the selection of teaching methods and tools that together provide synergy (mutual reinforcement) of methodological influences.

The willingness to use the synergistic concept of self-organization in the professional and methodological training of a teacher runs into students' ignorance of its basic concepts. Our survey of students in different areas of bachelor's training: chemistry, biology and physics showed that elementary students could not give definitions to synergetic concepts such as bifurcation, chaos, etc. Students were at a loss for examples of self-organization of processes in the basic sciences being studied, could not name outstanding scientists this area. [5].

What channels of synergetic ideas entering teacher training at the university will allow students not only to get acquainted with synergetics, but also to use the potential of synergetics in future professional activities? First of all, they should include the training course “Concepts of modern natural science”, which reveals the idea of development and global evolutionism on the example of studying the natural sciences from the standpoint of the unity and integrity of the world. The authors of the textbooks for this course include a section on synergetics, consider universal mechanisms for the development of complex, open and nonlinearly developing systems. The content of modern university textbooks and teaching aids provides examples of self-organization of the processes under study, analogies are drawn from different areas of natural science, and interdisciplinary connections are established [8]. For example, in the textbook “Chemistry” for bachelors and future geography teachers, educational topics are presented that reveal chemical processes in terms of synergetics [7].

The complexity and non-linearity of the development of the education system is manifested in the multicomponent, diverse, hierarchical of its components, in the ability to respond to small influences that resonate with the laws of its own development, the impossibility of tight control and algorithmization of activity. Its subsystems are interconnected, and their coherent interaction creates the prerequisites for self-organization and the transition of the system to a more adaptive level.

At the level of professional and methodological training of future teachers, it is important to justify the priority of methods and technologies from the standpoint of matching their adaptability, flexibility and variability of modern education, designed to prepare graduates for professional activities in changing conditions [14].

The specifics of the object of study of synergetics, its attributive characteristics, methods and the disclosed mechanism of self-organization processes determine the interdisciplinary nature of synergetics, allow the use of analogy, isomorphic analysis as the basis for transferring the ideas of synergetics to the study of the processes of teacher training, etc. [4].

For the first time in 1966 V.G. Budanov [3] the following ways for synergetics to enter education were formulated: 1. synergetics for education (synergetics for); 2. synergetics in education (synergetics in); 3. synergetics of education (synergetics of).

The processes of cooperative interaction of the components of a self-organizing system, including the education system, can bring it to a new level of development, making it more adaptive to external influences. This is consistent with the objectives of modernization of education, affecting primarily its procedural aspects.

Synergetics describes the evolutionary processes of nature from a new perspective, allows you to take a fresh look at the development of sciences, broadens the understanding of the unity and interconnectedness of the world under study, gives a large-scale vision of what is happening, including natural science, social, cognitive processes. Synergetics in the educational system has not been sufficiently studied, the methodology of the synergetic approach in pedagogy requires further development. Researchers highlight the applicability of the integration potential of synergetic ideas in the training system in order to [2, 9, 12]:

- overcoming the linearity of thinking;
- nonlinearity of the education system itself;
- overcoming the ambiguity of the results;
- the problem of managing complex systems, etc.

Thus, the nonlinearity of human thinking in the learning process, the cyclical nature of its development, determine the individual-personal nature of learning and determine the saturation of the learning process with interactive forms of learning, reflecting the clash of new, unexpected ways to solve the issues being studied. The saturation of the process of professional and methodological preparation of teachers by interactive teaching methods reflect a clash of opinions and the birth of new, unexpected ways to solve educational problems. Therefore, the dialogue methods and interactivity of the participants in the educational process become adequate to the tasks of modern education.

The education system consists of many subsystems, it develops not only under the influence of external factors, but also under the influence of its own laws of development. In certain periods, it becomes sensitive to factors small in strength, including random ones. Therefore, strict centralization of the education system, an authoritarian approach to its functioning are characteristic of a closed system that function effectively at certain periods of its development, but are often incapable of self-development and self-organization.

Issues of implementing the conditions for self-organization of the methodological system in training relate to the interaction and mutual reinforcement of teaching methods (tactical level). In the search for methodological methods, the combined use of which in training can produce a synergy effect, we relied on the specifics of the content and process of teaching chemistry. The analysis of existing teaching technologies, our own pedagogical experience made it possible to identify techniques for enhancing the educational influences in teacher training, achieved by combining figurative and logical, qualitative and quantitative, abstract and visual in the educational material. This approach to the selection of techniques is determined by the nonlinear nature of thinking, which includes the choice, correction and evaluation. The non-linear nature of thought processes is most clearly manifested in the process of solving problems by chemical equations, in which the qualitative and quantitative aspects of chemical processes must be connected in order to establish intra-subject relationships. If the qualitative manifestations of chemical reactions are considered during a chemical experiment, then the quantitative aspects are studied in solving design problems. The synergy effect can be achieved as a result of combining them within the framework of one lesson, during the preparation of a solution to a system of information-related tasks based on a chemical experiment. [14]

The studied educational material is represented by various forms of information expression: figuratively associative (drawings) and abstract-logical (formulas, equations, schemes). The use in teaching activities of various ways of reflecting educational material, the maximum approximation in the time of study, form the basis of its holistic perception and understanding. Accompanying the study of theoretical, sufficiently abstract material with chemical graphics, curtailing the educational material in compact and overview forms - all this creates the opportunity for students to self-build knowledge, achieve their consistency. [4,5,14] The studied chemical material should be presented not only in verbal-textual, but also in figurative and symbolic-graphic form. With the introduction of multimedia tools for displaying chemical information in training, the arsenal of used display methods is increasing. What gives such a variety of tools used? First of all, the possibility of a holistic view of the object being studied creates an opportunity for students to self-build knowledge, achieve their systemic assimilation.

Thus, the introduction of synergetic ideas and the synergetic concept of self-organization can be applied at different levels of preparation of students at the university: at the level of selection of content, presentation methods through different channels of perception and at the level of providing a variety of teaching aids, methods and teaching technologies.

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民族刻板印象在俄汉跨文化交际中的作用
THE ROLE OF ETHNIC STEREOTYPES IN RUSSIAN-CHINESE INTERCULTURAL COMMUNICATION

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注解。在现代世界中，随着全球化和经济一体化的加速，建立密切关系的国家数量正在增加。中国和俄罗斯是最大的邻国。两国的交流与合作涉及政治，经济和文化等领域。教育部门被认为是非常重要的，首先，由于中国对教育的特殊态度。在每年中国和俄罗斯交换生人数增加的背景下，有效的跨文化交流的重要性。作为跨文化交流的主要障碍之一，种族定型问题值得特别关注。

本文旨在研究中俄跨文化交际中的民族刻板印象和应对策略，旨在研究寻求相互理解，同时保持中俄跨文化交际中的民族差异;消除跨文化交际中的负面民族刻板印象;提高对文化的敏感性和适应性，减轻可能的文化冲突。

关键词：刻板印象，民族刻板印象，跨文化交际，沟通障碍，俄中文化和语言接触。

Annotation. *In the modern world, with the acceleration of globalization and economic integration, the number of countries establishing close relations is growing. China and Russia are the largest neighboring countries. Exchanges and cooperation between the two countries cover the spheres of politics, economy and culture. The education sector is considered very important and, first of all, due to the special attitude to education in China. Against the background of an increase in the number of Chinese and Russian exchange students every year, the importance of effective intercultural communication is indicated. And the problem of ethnic stereotypes, as one of the main obstacles in intercultural communication, deserves special attention.*

Based on the need to study ethnic stereotypes and coping strategies in Sino-Russian intercultural communication, the article is aimed at studying the search for mutual understanding while maintaining national differences in Sino-Russian intercultural communication; to eliminate negative ethnic stereotypes in intercultural communication; to increase sensitivity and adaptability to culture, to mitigate possible cultural conflicts.

Key words: stereotype, national stereotype, intercultural communication, communication barrier, Russian-Chinese cultural and linguistic contacts.

Stereotypes have been a major problem in the field of social cognition and intercultural research since the 80s of the last century. In the field of social sciences, the book "Public Opinion" was published by Walter Lippmann in 1922, where the concept of stereotypes was systematically presented for the first time. The author argued that in order to survive in a complex society, an individual should have a brief "picture" of a complex social environment. "Picture" exists in the interaction of man and the environment, "picture" is a stereotype, and its content is determined to a certain extent by culture [4].

A stereotype is a "cognitive bias" (the term Hu Wenzhong), which affects people's true judgments about the objective world, can cause negative consequences [8]: intergroup threats, intergroup emotions, group prejudices and intergroup conflicts, which are the main variable that affects group relationships. Among them, ethnic stereotypes are one of the important types of stereotypes; they belong to typical stereotypes of cultural categories. Ethnic stereotypes are based on national culture and ethnic differences [6]. Some researchers have identified ethnic stereotypes are generalizations regarding the properties of a particular ethnic group, as well as psychological and behavioral qualities, cultural beliefs and values of this ethnic group [7].

Ethnic stereotypes are unpopular because they are rigid, fixed and do not change their identity as a result of acquired education. Ethnic stereotypes reflect specific communicative attitudes and differences in ethnic identity between ethnic groups, since they represent an understanding and cognition of the inner personality, patterns of behavior and characteristics of their habits, and the stability of a particular ethnic group. The national stereotype itself is colored by national feelings and has an emotional component, which is the reason for the existence of the memory of an ethnic group, which will be more subjective and empirically related to members of another group.

Ethnic stereotypes have characteristics and properties of common stereotypes, both negative and positive. Positive national stereotypes contribute to the strengthening of positive trust between ethnic groups, reduce the psychological distance between ethnic groups, increase mutual contacts, interactions and contribute to the

spread of national culture. Negative ethnic stereotypes impede interethnic communication, are subject to relative deprivation and ethnic competition, causing ethnic prejudice and discrimination, affecting ethnic communication and the spread of excellent national cultures.

Ethnic stereotypes have a certain share of "community". This is a product of a common national culture, it is extracted from the prototype of a "common culture," that is, universal knowledge characteristic of representatives of a particular ethnic group is an inevitable result of social influence.

Ethnic stereotypes are inert when it comes to the possibilities of their changes. Stereotypical cognition is difficult to change once it is formed and changes occur only when social, political and economic changes occur. And when relations between ethnic groups become tense, national stereotypes become more pronounced and hostile. The suppression of ethnic stereotypes requires great cognitive efforts of individuals. Therefore, the main issues for scientific research, in our opinion, are: 1) the change in negative stereotypes and prejudices between different ethnic groups; 2) a decrease in cognitive bias; 3) the weakening of aggressive consciousness and conflicts between ethnic groups; 4) the study of the psychological mechanisms underlying them.

Ethnic stereotypes are an important psychological mechanism for ethnic exchanges and interethnic interactions. If there are too many ethnic stereotypes among ethnic groups, especially negative ones, negative interethnic relations or ethnic prejudices directly affect the intercultural communication of different ethnic groups. Of course, in the socio-linguistic contact of any ethnic group, a number of dissonant stereotypes can be distinguished. In our case, we are talking about China and Russia, between which, as in other cases, there are certain differences in the economy, customs, language and beliefs. When these two peoples interact, they retain a certain degree of ethnic stereotypes. The subject of research in our work is Russian-Chinese cultural and linguistic contact. So, Russia and its citizens in the eyes of the Chinese: "Russia is a militant nation", "there are more Russian women than men and this is bad", "all Russians love alcohol", "all Russians believe in Orthodoxy". China and its citizens in the eyes of the Russians: "all Chinese people own kung fu," "all Chinese are uncultured," "Chinese are mostly poor people," "Chinese eat only rice," "all products from China are of poor quality," and so on.

The main communicative barrier is the different "baggage" of stereotypes, which are based on national culture and comes out of it. Different cultural "origins" form the basis of cultural-linguistic contacts or intercultural communication. E. Hall in his book The Silent Language (1959) described culture in detail in his work Silent Language: "Culture exists on two levels: open culture and hidden culture. Negative ethnic stereotypes in intercultural communication stem from

cultural differences, and cultural differences are complex and closely related to the ignorance of the hidden culture of representatives of different ethnic groups involved in communication ”[2].

So, the goal of our study is to determine the main reasons for the formation of ethnic stereotypes in Sino-Russian intercultural communication. The solution to this issue has practical meaning, namely, the search for an effective way to neutralize negative ethnic stereotypes makes it possible to build adequate, harmonious ethnic relations at the national level between Russia and China.

The formation of ethnic stereotypes occurs not only due to the inadequacy of interethnic communication, but also due to cognitive prejudice caused by differences between ethnic cultures, ideologies, values and ways of thinking and behavior.

A more detailed examination of the similarities and differences between the two contacting cultures - Russian and Chinese - will help to find the origins of cognitive bias.

We highlight the main differences that affect, in our opinion, the effectiveness of intercultural dialogue.

1. Dichotomy "collective - personality." Chinese culture attaches great importance to the team. Russian culture, by contrast, attaches greater importance to the individual. Chinese culture promotes collectivism, where it is customary to belittle oneself to respect the other, and Russian culture promotes individual concepts, emphasizes the independent spirit of the individual and attaches great importance to personal life. In social interactions, the Chinese pay great attention to humility in both words and behavior. Russians often do not understand this behavior of the Chinese. The Chinese are not so direct expression than Russian. These differences often cause negative stereotypes. For example, the Chinese believe that "the Russians are too self-confident and arrogant," and the Russians believe that "the Chinese are weak and insincere."

2. The relationship between nature and man. Chinese culture is a culture of harmony between man and nature, which is based on a group principle, emphasizing the harmonious unity of moral reason and natural mind. Russian culture is a contemplative view of the separation of nature and man, based on the understanding when an external object is regarded as an objective world, without emphasizing integration with it. Both peoples inevitably face communication barriers in their interactions, the cause of which are cultural differences, which leads to negative stereotypes between China and Russia.

3. Recognition of national identity. J. Brigham (Brigham J. C.) believes that the main obstacle to intercultural communication is the identification of the so-called cultural identity, that is, a communicative object must accept other people's cultural norms as its own. She pointed out: “People from different cultures come together,

everyone wears a suit, they speak English, the ways of greeting each other are similar too; such superficial resemblance is deceptive. It seems like the thought that since New York, Tokyo and Tehran are all modern cities, they are all the same. If vigilance regarding various possible differences does not arise, if the need to learn new sets of rules of action is not recognized, then one person will move from one city to another and at the same time problems will immediately appear ... [2]. In intercultural communication between China and Russia, there are similar mechanisms of mutual perception. Thus, ignorance of the individual realities of Chinese life can cause disappointment, misunderstanding and become a source of the formation of negative stereotypes that impede intercultural communication. The most striking example of creating a stereotype that deepens misunderstanding and estranges representatives of the nation from each other is the attitude of the Chinese to plants in yards, squares, where they collect leaves, flowers (dandelions, mainly), etc. Only knowledge of the urbanistic existence of many visitors from China will allow us to understand what such a "naive" attitude towards vibrant nature is just the result of the harsh everyday life of the inhabitants of large Chinese cities.

4. Features of the type of thinking. The Chinese have a combined model of thinking, they are accustomed to think from a holistic perspective, that is, to emphasize the connection of part and whole. For example, in international trade, the Chinese always show that they proceed from the general situation and weigh the pros and cons in general. In specific negotiations, the Chinese adhere to general guidelines. Usually the parties continue to discuss the details based on an understanding of the general principles. The Russians pay attention to logic and solve problems, first of all, based on the details, dividing the whole into several parts. In trade negotiations, such thinking specifically manifests itself in a thorough study of the details of the contract, although often there are no general provisions of the contract [9]. As a result, there are thoughts that "the Russians are inflexible and stubborn," and the Russians believe that "the Chinese are unprincipled."

Based on the understanding of the reasons for the emergence of negative stereotypes that impede effective intercultural communication between Russians and Chinese, it is possible to suggest ways to eliminate obstacles in intercultural communication.

Language does not exist in isolation, it is closely related to national culture, rooted in it and reflects the characteristics of culture. Therefore, in intercultural communication, communicators should not only focus on knowledge of the grammar and vocabulary of the Chinese or Russian language, but also effectively absorb the knowledge of Russian or Chinese national customs, culture and history. Russians and Chinese should be aware of and respect the differences between their cultures, develop their interest and curiosity in the cultural knowledge, lifestyle, values, behavior and other cultural traditions of the partner, that is, improve their intercultural communication skills.

In an era of global economy, representatives of different countries, despite all the integration trends, bear their cultural identity. And even if the environment changes, their own cultural characteristics will persist and will not be lost. Thus, respect and understanding of the differences in cultural and philosophical views is something that cannot be ignored when achieving unhindered communication. Confucianism deeply influenced Chinese culture: self-improvement and introversion have consciously and unconsciously become the standard of Chinese behavior, influencing their life principles and guiding their communicative behavior.

Customs is a behavioral model and the norm that people adhere to develop in certain historical conditions. Customs are a manifestation of cultural forms and have unique connotations and influences. In addition, the customs themselves are marked with distinctive ethnic signs. For example, chopsticks and cutlery are different dishes for Chinese and Russians; the Chinese defend respect for the elderly and young, and the Russians have the habit of "priority of women." Knowledge of behavior markers is another important feature of an effective communicator.

Social pragmatic mistakes can be avoided by understanding that due to historical changes, geographical environment, and a number of other reasons, China and Russia have formed their own unique cultural traditions, and they are clearly reflected in their language. Therefore, in intercultural communication between China and Russia, communicators must adhere to the principle, as the Russians say, “they don’t go to someone else’s monastery with their charter”, understand and abide by the rules and cultural norms of the Russian and Chinese languages.

Not understanding the cultural diversity and uniqueness of each national culture does not contribute to cultural coexistence. The emergence of stereotypes in intercultural communication is largely due to limited thinking and cultural centralism, which are expressed in the unconscious fulfillment by communicators of cultural prerequisites corresponding to cultural centralism on both sides. «Intercultural researchers should have the most objective position and psyche. In order not to trim another culture with their cultural standard, they should look at the similarities and differences between cultures from a historical and dialectical point of view, explain the origin of the differences with an objective and calm mood ”[10].

Studying the similarities and differences of ideas about each other will not allow stereotypes to form incorrect expectations in intercultural communication.

Since intercultural communication includes two aspects - linguistic communication and non-verbal communication - participants in Sino-Russian communication must understand the difference in non-verbal communication and consciously learn non-verbal communication, use as many gestures, expression of views, clothing etiquette and auxiliary language as possible to convey different types of information to each other for a more complete unhindered cultural communication.

Conclusion

The pace of business contacts between China and Russia is not slowing, and intercultural communication is becoming increasingly close and frequent. With economic globalization and integration, relations between countries have moved to a new level, therefore clashes caused by negative ethnic stereotypes are inevitable and sometimes painful for their representatives. The high world status of the two cultural powers does not allow mistakes in communication, on which the position of countries and their interest in the mutual advancement of each other depend.

Therefore, the study of the causes and features of the formation of ethnic stereotypes allows us to see their importance and role in the intercultural contact of representatives of China and Russia. All facets of communication - the personal factor, behavioral, cognitive, socio-philosophical - should be the subject of study of communicants to seek mutual understanding while maintaining differences and respect.

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电影“多里安格雷的画面”配音翻译成俄语的语言特征
LINGUISTIC FEATURES OF THE DUBBED TRANSLATION OF THE MOVIE “THE PICTURE OF DORIAN GRAY” INTO RUSSIAN

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抽象。 本文重点介绍了流行电影“多里安格雷的画面”的配音特征。 本文讨论了电影复制的理论方面和翻译难点。 英语和俄语翻译中文本片段的比较。 结论是将这部电影高质量地配音翻译成俄语。 也考虑了电影中内射词汇的翻译。
关键词：配音翻译，配音，电影，翻译，invectives。

Abstract. *This article focuses on the dubbing features of the popular film “The Picture of Dorian Gray”. The article discusses the theoretical aspects of film duplication and difficulties for translation. A comparison of text fragments in English and Russian translation. The conclusion is made about high-quality dubbed translation of this film into Russian. Also considered the translation of injective vocabulary in the film.*
Keywords: *dubbed translation, dubbing, film, translator, invectives.*

The object of this study is the translation of the movie “The Picture of Dorian Gray” into Russian, made by the method of duplication. Cinema works of various genres are increasingly becoming the material for linguistic research. Appearing in the twentieth century, with the development of the film industry and the massive influx of Western films, film translation invariably arouses interest and controversy among translators, practitioners, specialists, film critics and ordinary viewers.

The film translation sets very difficult professional tasks. “It has a greater opportunity for creativity, because cinema is an art, and the best examples of the genre are the masterpieces of the world culture of the twentieth century. Not to reduce the general artistic perception, not to distort the author's intention, the quality of the dialogues, speech characteristics, to convey the flavor of the era is an honorable, but not an easy mission ”[1, p.38]. According to Yu. M. Lotman, “the film translation is a synthesis of two types of narration - pictorial and verbal, and the feature film is built on the basis of different codes, all of which condition each other” [2, p. 23]. Thus, the duplicated translation considered in this article is “the translation of audiovisual works (films, cartoons, television series), in which the

foreign speech of the actors is completely replaced in another language in order to subsequently broadcast this work in countries that do not speak the original language of the work "[Ibid.]

Duplication can be of several types:

1. Each actor is voiced by another person of the same sex (however, several characters can be professionally voiced by an understudy actor, sometimes this fact can be identified only by experts);

2. All men are voiced by one man, and women by the same woman;

3. All the actors voiced by only one person.

We must not forget that "cinema is an audiovisual art, therefore, dubbing, if it does not destroy its important component, it significantly modifies the original film. The dubbing actors do not have time to fully "live" the proposed roles, they interpret their proposed text and images in their own way, therefore their play inevitably differs from the play of the original actors "[2, p. 18]. Dubbed translation is one of the most difficult and time-consuming types of film translation. According to R. A. Matasov, the following problematic categories of linguistic nature exist in the film translation: 1) reality (non-equivalent vocabulary); 2) proper names; 3) idiomatic expressions and jargon; 4) humor in movies; 5) injective vocabulary; 6) interjections and onomatopoeic vocabulary; 7) play on words; 8) terms; 9) contaminated speech; 10) multilingual movies [3]. When translating movies using duplication, the translator should pay particular attention to the main problem categories of movies, which include realities (non-equivalent vocabulary), proper names, idiomatic expressions and slang words, humor, terms, injective lexicon, interjections, pun, dialogical speech. Their adequate transmission helps to create the impression that the text was originally created in the target language, which is the main goal of the translator.

Recently, invective vocabulary has become widespread in foreign films. It refers to "vocabulary, describing the negative attitude of the speaker to the subject of speech" [4, p. 124]. L. P. Krysin points to the coarsening of speech in cinema as one of the tendencies of modern English-speaking speech [ibid, p. 125]. The dictionary of foreign words defines an invective as "a sharp, offensive speech against someone, an offensive speech, an attack" [38, p. 93]. As a rule, the purpose of invective is to lower the status of the object of speech and the level of its self-esteem. For an adequate transfer of injective vocabulary, the translator should pay attention to the semantics, scope of use, degree of reduction and degree of expression in a particular context. As a rule, the transfer of problem categories is carried out using transcription, transliteration, tracing and concretization. The peculiarity of the adequate transmission of the problem categories of the movie are significant translational transformations.

When translating problem categories, the translator needs to preserve their stylistic coloring. Adequate and correct interpretation of problem categories helps to

recreate the expressive specifics of the original movie.

The motion picture film directed by Oliver Parker, released in 2009, was chosen to analyze the translation due to not only the classic plot and the expressive speech of the characters, but also because of its wide popularity among viewers.

A young, charming young man - Dorian Gray arrives in London, where he meets a cynical Lord Henry Watton. Lord Henry inspires him that only his beauty and youth are real values in life. He has a significant influence on Dorian. In order to capture forever the beauty of Dorian, the artist Basil Hallward writes his portrait. Seeing the portrait of incredible beauty, Gray is ready to go at all, just to stay as young and beautiful. Dorian's desire becomes his curse. From now on, the portrait of Dorian Gray will age, and the young man will remain beautiful and young.

Should be noted that, despite the fact that the plot of the film is very close to the text of Oscar Wilde's novel "Portrait of Dorian Gray". However, the film is significantly different from the novel content of the replicas of the characters. Despite the common plot with the novel, the dialogues of the film differ from the original, contain a large number of unique author's inclusions.

One of the important linguistic features of the film "The Picture of Dorian Gray" was the transfer of the stylistic originality of the speech of one of the main characters - Lord Henry, which is characterized by figurativeness, expressiveness, as well as the presence of individual features in comparison with other characters of the motion picture. Most of the statements of Lord Henry in the film are distinguished by eloquence, colorful and expression, which is quite adequately conveyed in translation.

Here's how the film presents Lord Henry's dialogue with Dorian Gray during their first meeting:

- Cigarette?

- No, thank you.

- I find a cigarette to be the perfect pleasure. It is exquisite and leaves one unsatisfied.

- You're Kelso's grandson.

- Yes. Did you know him?

- I met him once. It was enough to give it a last night when he breathed his last sour breath. One assumes you inherited the witted old goat's estate?

It should be immediately noted that in the book the first acquaintance of these characters happened differently. This example demonstrates brightness, spectacularity, the presence of expressive means in Lord Henry's speech. Thus, the protagonist metaphorically describes smoking, using the epithets perfect, exquisite (special, refined). Below we present the translation of this fragment of the film. Underline we have highlighted the phrases that differ in translation.

- Smoke?

- No thanks.

- It's a pity. Smoking is a special kind of pleasure. Exquisite, but leaving a slight veil of dissatisfaction.

- Are you a grandson of Kelso?

- Yes. Did you know him?

- We saw him once. But this was enough to not at all regret his death. As I know, you became his heir?

In the film, a calm and relaxed atmosphere is conveyed, the tone of the interlocutors is neutral. Dorian Gray is intrigued by Lord Henry's extravagant personality. Russian translation is informative and expressively close to the original movie. Particularly successful is the translation of the leaves one unsatisfied replica using the addition technique - "light veil of dissatisfaction". In the following remark, the epithets sour, withered and injective zoonym old goat are used. At the same time, the translator did not manage to avoid some losses and shortcomings. Despite the adequate transmission of the meaning of the sentence, all means of expressiveness — the sour, withered epithets and the injective vocabulary of old goat — were completely omitted by the transmission.

In the next dialogue, pronounced speech contrast between Lord Henry and Dorian. - Does Victoria know you come here? - My dear boy, marriage makes a life of deception absolutely necessary. "Well, perhaps, I have a stronger conscience." - Conscience is just a polite term for cowardice. No civilized man regrets a pleasure. You see It is a way to get rid of it. Be searching always for new sensations, Dorian. Come and forbid yourself nothing. Life is a moment. There is no hereafter. So it is not always the hardest flame.

The translator gives the following text:

"Victoria knows you're here?"

"My boy, the attraction of marriage is that it turns a lie into absolute inevitability."

"I think I'm more prudent."

- Prudence is nothing more than cowardice. Prudent inaccessible pleasure. The only way to get rid of the temptations - to succumb to them. Always look for new sensations, Dorian. Do not prohibit anything. Life is now. There is no sweat. So let it burn. Is always. Hot fire.

In this dialogue, there is a contrast of a special kind associated with the speech characteristics of Lord Henry. Against the background of the usual neutral, emotionally smoothed speech of other characters, Lord Henry's speech, figurative and expressive, constitutes a significant contrast, and this can be traced throughout the entire movie. Lord Henry's conversations abound in ranting and cynical, caustic remarks. His statement contains elements of sarcasm and skepticism. Conscience is the term for cowardice. This statement is transmitted, in our opinion, somewhat

frivolously: Prudence is nothing more than cowardice. Translation option Conscience - this polite name of cowardice would be more accurate. In the translation of the Come and forbid yourself nothing, the translator uses the method of omission (the verb come), but this does not prevent the understanding of the meaning of the replica. The last sentence metaphorically represents the lifestyle, as well as the flame, expressed by the epithet “the hardest”. Accurate transmission of expressiveness allows you to keep the atmosphere throughout the dialogue. Thus, in general, the translator coped with his task: the dialogue was transmitted successfully, adequately, the emotional tone of the original is preserved.

At the same time, the translation of another fragment of No civilized man regrets a pleasure is not quite accurate. In the original, the sentence reads as follows: “Civilized people do not regret their pleasures,” and in translation it means “Pleasure is unavailable,” which differs significantly from the original.

An analysis of the translation of the film “The Picture of Dorian Gray” also showed that the original contains elements of injective vocabulary to which the translator had to find adequate correspondences. The transfer of invective vocabulary has thus become one of the important linguistic features of the translation of the studied film. Throughout the movie, invectives contributed to creating the gloomy atmosphere of the choking streets of London along which Dorian wandered.

Consider the dialogue between Dorian Gray and Sibilla after the last performance in the theater.

- I was just saying everything is so soon.
- I gave myself to you. I thought you loved me.
- And I do!
- Then make me your wife, not one of your whores!
- I just said that everything is too soon.
- I gave you my honor. I thought you loved me.
- I love you.

“I want to be your wife, not one of your whores!”

Thus, the injective expression “one of your whores” expresses the negative, degrading attitude of the speaker to the object of his utterance. In translation, the expression - "one of your whores" - literally, roughly, however, close to the text.

In English, the expression “whore” refers to the category of abusive, rude, invective vocabulary. It has an extremely negative connotation, rarely used in everyday life. Describing the tense, emotional atmosphere, the expression “one of your whores” characterizes the speech peculiarities, the offended and offended tone of one of the heroines - Sibilla.

In pursuit of a thirst for new experiences, the main character tries to find solace in the dirty London quarters of the XIX century. Being intoxicated, he sees Jim,

the brother of the lost Sibylla, everywhere. - I'm coming for you, Dorian Gray. You dirty bastard! Dorian Gray, you bastard! - Dirty pervert! I'll cut your throat!

In English, it is customary to interpret most references like you + adjective + noun as negative (unfriendly, offensive). So, the injective expression "dirty bastard" is in itself very coarse. Translated it sounds like a "dirty pervert", that our view is rather close to the original. The original is used to insult, defame the addressee of speech, as well as to create an ominous, hostile atmosphere.

In Russian, the expression "Dirty pervert!" Also has a negative connotation, sometimes found in the translation of fiction. Using an approximate translation, the translator managed to find a good match within the meaning and stylistically adequate. Interesting transfer proposals Dorian Gray, you bastard! in the translation sounds "I will cut your throat!". Using the addition as a translation tool, the translator completely changed the meaning of the original.

Throughout the movie, the constantly used invective vocabulary contributed to creating a heated and oppressive atmosphere of the places where the main character used to be.

After analyzing the translation of the dubbing of the film "The Picture of Dorian Gray" into Russian, we came to the following conclusions. In the dubbing text you can find both traditional linguistic features and unique features inherent only in the analyzed film.

The text of the film "The Picture of Dorian Gray" contains such linguistic categories that present difficulties for the translator. The injective vocabulary discussed in this article presents a certain difficulty for translation. Motion picture distinguishes the stylistic originality of speech, inimitable sarcasm and the irony of one of the characters - Lord Henry. For an accurate transfer of the stylistic identity of speech, the translator used the methods of addition, omission, concretization, which seems quite justified. Adequate transmission of sarcasm and irony was carried out using the appropriate correspondences in the Russian language. Thanks to an adequate translation, the atmosphere of confusion of the main characters and disturbing tonality persist throughout the entire film.

The use of a wide range of translation techniques and the preservation of artistic integrity make it possible to judge that the film translator has successfully accomplished the task. The motion picture "The Picture of Dorian Gray" is distinguished by high quality translation

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S.P. Shchipachev的自传散文中的自然形象和标题的诗学

THE IMAGES OF NATURE AND THE POETICS OF THE TITLE IN THE AUTOBIOGRAPHICAL PROSE OF S.P. SHCHIPACHEV

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注解。本文论述了苏联时期着名诗人S. Shchipachev的自传散文中自然形象艺术研究的特点，旨在分析诗歌诗歌的反映。作家在二十世纪头二十年重建时期的成熟，是民族性的问题。本文描述了作者自传书中加强现实主义的开端。在S. p。材料上实现房屋和小祖国动机的艺术实现的特征。 Shchipachev的自传散文被认为是，他的小说“桦树Sap”的艺术空间分析的目的是设定。在作品的分析中，注意到口头传统的优势，口语白话词汇，抒情浪漫的特点，部分田园诗般的文本结构中的作品。评估这些参数反映在一个关于他童年的抒情故事中的特殊性。得出的结论是关于特征的相关性和生产率

关键词：自然，诗歌，主题，文本，神话，情感，隐喻，小学，寓言。

Annotation. *The article discusses the features of the artistic study of images of nature in the autobiographical prose of The famous Russian poet of the Soviet period S. Shchipachev, aims to analyze the reflection of the poetics of the title. The maturity of the writer in the reconstruction of the era of the first two decades of the twentieth century, the problems of national character. The paper describes the strengthening of the realistic beginning in the author's autobiographical book. The features of the artistic realization of the motives of the house and the small Motherland on the material of S. p. Shchipachev's autobiographical prose are considered, the aim of the analysis of the artistic space of his novel "Birch Sap" is set. In the analysis of the work, the predominance of oral tradition, colloquial vernacular vocabulary, peculiarities of lyrical-romantic, partly idyllic chronotope of the work in the structure of the text is noted. Evaluated the specificity of the reflection of these parameters in a lyrical story about his childhood. The conclusion is made about the relevance and productivity of the characteristic*

Keywords*: Nature, poetry, leitmotif, text, myth, emotionality, metaphoric, primary, parable.*

In a literary text for many writers, the common thing that unites them in relation to nature is that in their work it is not only an object of contemplation, but acts as a part of life for them. The study of the images and motives of nature in the work of each particular poet is part of the study of both the national images of the world, reflected in his work, and his own concept of man, which is an undoubted value and the actual relevance of the problem. “Poetry always remains the link between nature and the rest of the world. Whatever the poet wants to say, nothing can replace him with images taken from nature: “water” and “fire”, “flower” and “star”. In modern times, poetry partially fulfills the function that mythology performed in antiquity - to represent the world created by man in his harmony with nature” [3, 41].

The genre form of the autobiographical book of S.P. Shchipachev (1899-1982) “Birch sap” (1958-62) is quite traditional. This is a lyrical story in short stories. The associativity, fragmentation, and at the same time the capacity and laconicism of the work are explained by the close connection of the lyrics and prose of the writer. Many years of poetic experience enriched his prose with visual acuity and vivid emotionality, metaphor and ambiguity. The study of the features of this transition convinces of its great fruitfulness for S. Shchipachev’s work. An appeal to prose revealed new facets of his talent, deepened and expanded his aesthetic world, making it more multidimensional.

The main autobiographical character of the book gives a special charm to the fact that, despite his early adulthood, non-childish concerns, he continues to be a child. Along with purely childish qualities (curiosity, an active beginning of the game), kindness and a sense of justice, conscience, responsibility and love for people, acute observation and subtle poetry develop in it early. A great place in the formation of these features of the hero is occupied by both the world of people and the world of nature.

The title image of the story - “Birch sap” - does not occupy an emphasized central place in the book, does not pass through it with a leitmotif. Only a few modest phrases in the eponymous chapter are devoted to him. A very small hero for the first time with his elder brother goes outside the borders of his native village to prepare firewood for the "arable" - a rich man, in order to fulfill his duty. “... Even on the way to the plot, the brother pointedly said that they would drink “sweet water” there. For a boy from a poor family in which every piece of sugar was a rarity, reporting "sweet water" was an event. “Soon we came to a tall birch, and a brother gently nibbled her with an ax. A stream of light ran along the bark. Then he made a deep cut a little lower on the birch, and birch sap quickly began to accumulate in it ... I clung to the tree, touching my forehead with the bark. When I whistled in the last drop and got up from my knees, my brother smiled: "Here it is, some sweet water! Do you like it?" I nodded my head. “Soon he will run over again” [2, 286].

At first glance, this everyday realistic sketch, with such concrete and visible, tactile and even tasteful, but rather prosaic details such as “deep cut”, “ax”, “clung to the tree, touching its forehead with the bark,” “whistled in the last a drop", "rose from his knees", etc., cannot serve as material for a serious lyrical symbolic generalization. However, this unpretentious passage plays a significant role in solving the spiritual, moral and aesthetic tasks of the book. It recalls the springtime, when the awakening of nature is in harmony with the awakening, the formation of a young man, recalls the real and poetic relationship of man and nature.

The poetics of the title, in the end, turns out to be very ambiguous and symbolic, poetically embodying the idea of life-giving eternal juices of the earth, and the mental and physical forces of a person who does not come off from the popular, natural soil. In this regard, we allow ourselves to cite the infinitely fair thought of A.P. Afanasyev: “In order to deprive nature of its lively, animated nature, to see foggy vapors in fast-moving clouds, and electric sparks in breaking lightning, you need violence of the mind over yourself, you need a habit of reflection, and therefore, to a certain extent, artificial education. Then the child and the commoner are incapable of abstract content, see and express themselves in visual plastic images” [1, p. 60].

The organic and complete filling of the hero’s spiritual life with the eternal traditional factors of a “peasant” farmer, “natural”, natural life does not lead to its limitation, but, on the contrary, prepares fertile ground in it for the perception of letters at first, and then for more and more extensive knowledge and culture.

The chapter-novel “The Green Cup” with its compressed simplicity, restrained expression and in many respects parable nature resembles “Tales for Children” by Lev Tolstoy. ...A man appears in the village offering dishes to the housewives: "... he raised a large clay cup above his head and removed it along the edge with the end of the whip - the cup sang subtly." But to get one of the villagers of an autobiographical hero this tempting thing can only be expensive, and most importantly - not at a good price: “I also stood by the cart and watched the women choose dishes and, with pity in their eyes, gave cats to the passing car. Right there, in front of everyone's eyes, he crushed them on a cord and hung them along the bed of a cart” [2, 285]. There are no angry tirades about the barbarism and inhumanity of the flayer, but each phrase is imbued with a hidden but strong protest of the autobiographical hero against all atrocities: “When he (the traveler) was about to leave, I saw my mother: she was in a hurry to the cart, holding Vaska tightly in her hands. And he rushed towards her: “- Mom, don’t, don’t need to give Vaska!” She frowned and turned away from me ... But I didn’t go to the cart anymore, ran into the garden and lay there for a long time, with my face buried in the grass. When in the afternoon we began to have dinner, there was a new green cup with cabbage soup on the table” [2, 285].

One of the first lessons of morality is the conflict between the forced cruelty of the mother and the mercy of the child. It was especially hard for the boy because he was powerless to save this animal, the good spirit of the family, although there is no condemnation of the mother crushed by need. This seemingly ordinary everyday sketch, all, with the exception of the boy's scream, is sustained in a rather restrained and even tone. At the same time, this scene is evidence of the existence of a culture of goodness and mercy, which has roots in the native folk ethics as a whole. After all, it is obvious that compassion is not alien to the mother of the hero-child, she involuntarily feels her guilt both before the cat Vaska and her son. Thus, the strong impact of this scene on the reader as evidence of the richness and generosity of the hero's spiritual world, despite the fact that the specifics of child psychology and behavior are not violated anywhere ...

In general, when reading "Birch sap", similar folklore images of animals — faithful friends and helpers of humans — and the Ershov Humpbacked Horse, Tolstoy's Kholstomer and Fru-Fru, Kuprinsky Emerald and White Poodle, Chekhov's Kashtanka and his Horse from the story come to mind "Longing", these and other similar to them wonderful images of noble and intelligent animals.

A large place in the book of S. Shchipachev is occupied by the image of a horse with the beautiful, kind and affectionate name of Igrenka, whose whole fate, inseparable from the history of the family and the main character, is told in the book. For the first time, the reader learns about this "good skate", a true friend of a very young hero and the support of the family, from the episode when a boy with his older brother leaves for cutting firewood. "I did not fall asleep right away. Terrible thoughts flickered in my head: suddenly wolves will come and eat Igrenka "[2, 295]. In this reasoning, childish kind anxiety and fear are not for themselves, but for the horse, which, as in a fairy tale, evil wolves can eat. "But I remembered that my brother had an ax in his head, and calmed down" [2, 296]. After quite a lot of times, the author again turns to Igryenko's theme and devotes a lot of realistically mean, restrained and touching lines to him in the story.

"I learned about how Igrenka appeared with us from my mother: my father traded him for chicken for another two-day-old foal. Igrenka was born as if very weak, and for some reason the mare did not let him in to the nipple" [2,322]. Father risked such an exchange, giving him almost the last chicken, hoping for good luck. And indeed, not some luck, but a passion and desire to leave the foal helped in this seemingly hopeless case. "Father brought the foal home in his arms, began to drink out of the nipple and did not let him disappear. Three years later, he made a glorious little horse, albeit of small stature" [2, 322]. Comprehensive and unhurried, and at the same time, an elastic and short story is imbued with a sense of natural boyish pride for Igrenka. It contains the lessons of kindness and love for the living and at the same time the owner's prudence: "My brother loved Igrenka

for agility ... Excited by a quick ride, he used to shout: “Well done, Igrenka! I’ll bury for the grasp!”. This meant that when Igrenka was old and unable to work, we would not sell it for meat, as was usual in our village, but we would feed him until death. (2, 322). This information, given without any comments, speaks of the moral structure of the family, not infected with the spirit of money-grubbing, that is, that had a decisive influence on the ethical formation of the hero. Therefore, the loss of Igrenka is perceived as the loss of not only the breadwinner, but also a family member. As well as the joy of his return. The world of animals, “our smaller brothers” is only one of the sides of the great poetic world of nature, which entered the hero’s spiritual life early.

It should be noted that the art world of S. Schipachev’s book “Birch sap”, as well as the very existence of his characters, is filled, saturated with images of natural elemental elements - earth, air, water and fire, which adds a lot to the artistic study of those phenomena that have an exhaustive capacity and fullness, visual acuity were recreated in the autobiographical story "Birch sap": “No matter how inconspicuous and small the streamlet that made its way into this river from the coast, we knew it. It was harder to see the bottom key hidden by the current. But we have found such. In shallow places, they made their way through a slightly noticeable living tuber of water, raising grains of sand and bubbles, and we guessed them right away, and where deeper, we guessed to the touch: when you come across such a key, it immediately breaks your legs from its icy water” [2, 233]. And again - wealth and diversity, the dynamics of picturesquely moving minute natural objects, wealth of faithfully and accurately transmitted visual, auditory, tactile, tactile sensations. A wonderful living picture of nature, in which the elements of the earthly, water, air elements smoothly and organically combined with the sketch of summer rural labor and life.

“On summer mornings, going to the field, my brother went to Noonka with a wooden lagoon, filled it with clean, icy water and plugged it with a birch bush. On hot, suffering days, the water in the lagoon, which gave a birch flavor, seemed especially tasty in the field [2, 292]. This is truly “molten prose” (K. Paustovsky), in which every word is verified, possesses strong power of emotional and aesthetic influence, is distinguished by genuine “art of seeing the world”, makes you remember the best lines of M. Prishvin and K. Paustovsky.

In creating the coordinate system of the lyric chronotope in S. Schipachev's book “Birch sap”, the vertical-horizontal ratio plays a special role: “The bare top of the mountain was whitewashed over the forest. When a black cloud was approaching from that side, the white top was often lit by lightning. Maybe that’s why they called the mountain “Vossiyanskaya”. Heavenly elements, in the minds of folk mythopoetics combining the symbolism of air (clouds) and fire (lightning), and bring to life a special name for this mountain.

Gradually, the surrounding distances approach, submit, master the hero, become more accessible, comprehensible. “We went to the Chordan forest to pick strawberries. Once climbed Mount Vossiyanskaya. We stood close together at the top, holding in our hands cups full of wild strawberries ”(an interesting two-part detail, symbolizing the combination of big and small in life - a high mountain and a small berry). “The edges of the sky suddenly receded far, and the gaze immediately encompassed all the surrounding fields with variegated narrow stripes, green forests and copses, fenced scabs, nearby and distant villages: with their white churches ... And then no hedges, no borders were visible - everything merged into a bluish expanse. ” Each time a hero opens a new distance that is not yet attainable for him. The writer increasingly fills with realistically visible details the space of near and far space. The feeling of unprecedentedly extended horizons, perfectly expressed in the story, finds a poetic embodiment in a kind of poetic equivalent:

Жил мальчик в деревне, в лесном краю,
и знал только лес да деревню свою,
да зауральского неба синь,
да гору немного повыше осин.
……..
Простой паренек темно-русый,
должно быть, тогда и влюбился ты
в мир, где есть высота Эльбруса,
упорство труда и полет мечты.
1948 (in Russian)

However, in the verse it is expressed rather simplistically and schematically. Perhaps this is due to the fact that the story, in contrast to the poem, was no longer created in the totalitarian era, but during the thaw. At the same time, in this poetic text, the author draws a metaphorical vector from the low Ural mountains to the highest peak in Europe as a measure of a system of spiritual, moral, philosophical and ontological values [4, 75], which is, in the final sense, the overriding task of this autobiographical book .

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用于实现酒精依赖预测功能的神经心理机制

NEUROPSYCHOLOGICAL MECHANISMS FOR THE IMPLEMENTATION OF THE FUNCTION OF PREDICTION IN ALCOHOL DEPENDENCE

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抽象。 本文描述了酒精依赖患者的编程，调控和控制预测功能的研究。 结论是注意力，记忆力，言语和诺斯替功能的功能普遍下降。 描述了大脑皮层相应部分的侵犯与酒精依赖中预后功能的功能障碍之间的关系。

关键词：神经心理状态，预后功能，酒依赖。

Abstract*. The article describes the study of the prediction functions of programming, regulation and control in patients with alcohol dependence. It is concluded that there is a general decline in the functions of attention, memory, speech, and gnostic functions. The relationship between violations of the corresponding sections of the cerebral cortex and dysfunction of prognostic functions in alcohol dependence is described.*

Keywords*: neuropsychological status, prognostic functions, alcohol dependence.*

Alcoholism is one of the most common diseases of the modern world. According to WHO, around the world, as a result of harmful use of alcohol, 3.3 million deaths occur annually, which is 5.9% of all deaths. Russia is among the top five countries in terms of alcohol consumption. [2] Every year, the population that consumes alcoholic beverages is growing: so, if in 2010 there were about 208 million people who use alcohol, if you predict further events, then by 2050 the number of people drinking will be 500 million [1]. The age of onset of alcohol consumption decreases, the cases of alcohol intoxication between the ages of 15 and 29 years have become more frequent.

The term “alcoholism” unites all forms of alcohol abuse, which have a negative impact on the health of the drinker, his behavior, occupational settings and relationships with others [38].

In 1817, the prerequisites for distinguishing the concept of alcohol dependence appeared, as A.M. Salvatori suggested using the term “oynomania”, which means a pathological craving for alcohol. [16]

In ICD-10, the main diagnostic criteria for dependence syndrome are (F 10.2): a strong, uncontrollable urge to drink and loss of control over the amount of alcohol consumed; increasing resistance to the effects of alcohol, which leads to an increase in alcohol consumption in order to achieve the desired effect; withdrawal symptoms such as nausea, sweating, and tremor occurring several hours after the last drunk dose of alcohol. [11]

At the psychophysiological level, the formation of alcohol dependence is associated with disorders of the central nervous system, leading to the release of neurotransmitters, causing a lack of norepinephrine and dopamine in the brain, which leads to a decrease in mood and health. Taking alcohol causes a release of catecholamine, which in turn improves the condition for a short time. [3]

From the point of view of the functioning of the central nervous system, a decrease in cognitive functions is observed: abstract thinking, conceptual assessments, memory loss, difficulties arise in solving spatial problems. There are frequent cases of alcoholic dementia, amnestic disorders (impaired operational and short-term memory). [13] With the systematic use of alcohol there is a sharp decline in intellectual functions, thinking.

With prolonged use of alcohol, dysfunction of the frontal cortex is observed. First of all, this is manifested in the disturbed thinking, it is hard for patients to perform purposeful actions, as a rule, they are only capable of handling tasks that do not have a long logical chain, and they also fail to predict the future result of their activities [12]. Alcohol abusers cannot formulate and line up the preceding events to any action, i.e., there is a violation of anticipatory reflection.[8] When alcohol is consumed, there is a disorder in the frontal region in the form of a disruption in the performance of complex motor acts, activity planning, volitional control of behavior, in dysfunction of the diencephalon the following is observed: a decrease in sensory impulses from the periphery to the center, regulation of emotional behavior, sleep and wakefulness control. In case of dysfunction of the diencephalon, a decrease is observed in: regulation of the auditory and visual activity, the integrative, motor and conduction functions. With dysfunction of the medulla oblongata, a decrease is observed in: the regulation of respiration and heartbeat, the regulation of blood circulation, the regulation of the function of digestive activity. With dysfunction of the hindbrain: the bridge and the cerebellum, a decrease is observed in: transmission of signals and impulses, coordination of movements, and maintenance of balance. With dysfunction of the limbic system, a decrease is observed in: adaptation of the organism to changes, regulation of emotions, memory, sense of smell, and intellectual activity.

In patients with alcohol dependence, there is a violation of the visual - spatial gnosis, and it is in the coordinates "right - left", "up - down" and in the actions for a given program. [7]

Under the action of ethanol there is a gross violation of mechanical memory, there is a violation of the formation of the purpose of the committed action, planning, control and programming [6]. The motivation for memorizing information is violated, as a rule, this leads to a breakdown of long-term memory. [9] The use of ethanol leads to a violation of voluntary attention, the patient can hardly switch from one activity to another. [9]

Akhmetzyanova A.I. in her study of spatial anticipation with alcohol dependence revealed a decrease in spatial anticipation and disorganization with the frontal, parietal and occipital parts of the brain as a result of alcohol consumption. [4]

When alcohol is consumed, the disorder occurs from the cerebral cortex to the deep structure, i.e., the frontal region of the brain suffers first and then the limbic system. [9].

The neuropsychological mechanisms for implementing the function of prediction in alcohol dependence are not well understood. In 2017, only one study on the prediction function for alcohol dependence was conducted.

Therefore, of particular interest is the manner in which alcohol dependence affects the neuropsychological mechanisms for implementing the prediction function.

Historical - genetic analysis shows a large number of definitions of the terms "prediction" and "anticipation": both of them are considered as a property of the psyche, with the help of which a person can get information about his own state, design and predict future events.

Anticipation is traditionally understood as the ability of a person to represent the result of his activity." [14] In the structure of anticipation, Lomova B.F. and Surkova E.N. distinguish five levels: subsensory; sensorimotor; perceptual; representational; verbose. [10]

Prediction - "is the ability of a person to use the information available in his past experience, to predict the likelihood of certain events in the present situation." [15]

The concept of "prediction" is used to describe the manifestation of the ability to anticipation. [5]

Thus, anticipation and prediction are understood as properties of the psyche, allowing to predict the likelihood of events, to anticipate the behavior of others and to eliminate the superfluous during the decision making.

The following methods were used as empirical research methods: clinical conversation, interview, survey (Test "Addictive behavior" (V. D. Mendelevich)), neuropsychological tests for: lateral organization; attention; auditory-speech and visual memory; preservation of the Gnostic, kinetic and kinesthetic functions, the

study of speech and prognostic functions. Methods of mathematical statistics: descriptive statistics (calculation of the average value, mode, average deviation, range), comparative analysis (Pearson χ^2 criterion; U - Mann - Whitney test), correlation analysis (Spearman's rank correlation coefficient). The computer program "Statistica" was used for interpretation and data processing. 10.0.

The following methods were used to solve empirical problems: general statistics, comparative statistics - analysis for three or more uncoupled Kruskal-Wallace samples, multidimensional methods: r - Spearman correlation analysis. The STATISTICA 12 package was used for statistical data processing.

The total sample size was 60 people, the study of conditionally healthy subjects was carried out while undergoing a physical examination, on the basis of the "Kursk Regional Non-Alcoholic Hospital". Experimental group (group 1) - 30 people with alcohol dependence (ICD 10 - F10.2), gender - men, average age 38.8. Group 2 and 3 were ranked according to the results of the test "Aptitude for dependent behavior of V. D. Mendelevich. The control group (group 2) - 14 people who are conditionally healthy with a tendency to use alcohol, indicators of dependence are within 99 - 116 points, no diagnosis, gender - men, average age 38.2. The control group (group 3) - 16 people, conditionally healthy, indicators of a dependence within the normal range> 99 points, no diagnosis, gender - men, average age - 36.5.

The study of attention was carried out by Schulte breakdown: as a result of the study, significant differences were found between group 1 and 2, 3 ($p \leq 0.05$), it can be concluded that concentration, stability and switchability of attention decrease, increase in exhaustion in group 1. What, in turn, it speaks of dysfunction of the median nonspecific brain structures, which are manifested in neurodynamic disorders: distraction of attention, difficulty concentrating, distractibility.

Based on the results of neuropsychological tests to assess tactile sensitivity, significant differences were found between groups 1 and 2, ($p \leq 0.05$): it can be concluded that there is dysfunction in the lower part of the cerebral cortex. Patients with alcohol dependence correctly perceive the various signs of the subject, but they cannot combine them into a single whole. Patients, unlike healthy ones, cannot determine the exact localization of touches, which indicates a decrease in the coordination of movements.

Based on the results of neuropsychological tests for the assessment of the preservation of objective, digital, facial and spatial gnosis, significant differences were found between groups 1 and 2, 3 ($p \leq 0.05$). It is possible to ascertain the presence of dysfunction of the temporal - occipital departments, manifested in the inability to recognize the undistorted images. Dysfunction of the parietal lobe of the brain, manifested in the inability to recognize the Roman and superimposed numbers. Dysfunctions of parietal - temporal - occipital parts of the cerebral cortex, manifested in the inability to recognize portraits of famous people. Dysfunctions

of parietal - occipital parts of the cerebral cortex, manifested in the inability to determine the correct time on the dial without numbers. In patients with alcohol dependence, there is a violation of the coordination component, as a result of the effect of alcohol on the frontal and prefrontal cortex.

Based on the results of neuropsychological tests for memory assessment, significant differences were found between groups 1, 2 and 3 ($p \leq 0.05$). The data suggest a decrease in long-term and operative memory in the group of patients with alcohol dependence, and in the group of relatively healthy people with a tendency to addiction, an uncritical decrease in long-term and operative memory is observed.

Solving the problem of studying the features of the programming, regulation and control functions, the following tests were used: "Fist - edge - palm", Ozeretsky's test, "Do as I do" test (criteria: pace, accuracy, differentiation, coordination).

Based on the results of neuropsychological tests on the evaluation of the functions of programming, control and regulation of mental activity, significant differences were found between groups 1 and 2, 3 ($p \leq 0.05$). We can state the presence of dysfunction of the frontal and prefrontal regions of the brain. There is a decrease in the HMF and, in particular, such characteristics as: reproduction accuracy, pace of execution, differentiation and coordination of movements, both with the right and with the left hand. The integrative organization of movements, control over the implementation of the program, arbitrary regulation of activity are disrupted.

Solving the problem of studying the neuropsychological mechanism of implementing the function of prediction in patients with alcohol dependence using the Labyrinth test, significant differences were found between groups 1 and 2, 3 ($p \leq 0.05$). We can state the presence of frontal dysfunction of the cerebral cortex, manifested in an increase in time to complete the task, an increase in the number of errors. Violations occur in the formation of the intention and prediction of the final result of the action based on past experience, in accordance with the goal and satisfying the intention.

Thus, the neuropsychological status in the group of patients with alcohol dependence is characterized by a decrease in the concentration of resistance and switchability of attention; decrease in tactile sensitivity in the form of impaired touch localization; reduction of subject, digital, facial and spatial gnosis in the form of impossibility of recognition of: Roman and superimposed figures on each other, portraits of famous people, determining the exact time on the dial, reduction of long-term and operational memory.

The function of programming regulation and control is characterized by a decrease in fidelity, pace of performance, differentiation and coordination of movements with both the right and left hand.

Neuropsychological mechanisms for the implementation of the function of prediction in patients with alcohol dependence is characterized by a decrease in the prediction of the final result of its action based on past experience, in accordance with the goal.

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传统的Poshekhonya医学
TRADITIONAL POSHEKHONYA MEDICINE

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抽象。 该出版物包含作者在2000 – 2001年在雅罗斯拉夫尔地区（Poshekhonye及周边地区）进行的实地研究的材料。 在当地民间传统中，用于治疗成年人，儿童以及宠物的传统医学食谱保存完好。

关键词：俄罗斯民俗，民俗流派，传统医学。

Abstract. *The publication contains materials from field studies conducted by the author in 2000-2001 in the Yaroslavl region (Poshekhonye and surroundings). In the local folk tradition, the recipes of traditional medicine, which are used to treat the adult population, children, as well as pets, are well preserved.*

Keywords: *Russian folklore, folklore genres, traditional medicine.*

In 2000 and 2001 the author undertook field trips to the city of Poshekhonye, Yaroslavl Region. Along with various genres of folklore, not large, but, in our opinion, very interesting notes on traditional and alternative medicine, which exists in the folk environment, were made. Some stories will be considered in this report.

1. Treatment of a hernia with a splinter on the windowsill.

Hernia was treated as follows in a wooden windowsill so that the hole is present (can be made with nail) and put the child. [That is, the little splinter should stick out of the windowsill from above, above the child's head, close to the head.] Insert the little splinter into the hole and break it "under the face". [That is, so that the part of the splinter remaining in the windowsill was not visible, not stick out of it]. And when the child outgrows this broken splinter, the hernia will pass.

Zina [neighbor] said that the first in the family can do this and the last. [That is, the first child or the last in the family, by birth.] I didn't do it myself, I don't know, but the neighbor did this windowsill (BIM).

2. Hernia treatment with non-contact mouth massage - "gnawing" with hex.

This is necessary for husband and wife - both need. [How to do it?] But you'll be washing the baby, you'll put it in the bathtub or where, here — the mother gnaws, here on the navel or there, the boys have more than anything else in the testicles, and so you bite the navel and the testicles. And the husband will be asked: "what are you chewing?" And the wife will return : "Herniated." And he said to her: "Nibble longer, so that she doesn't be anymore", And the wife says to him: "I gave you birth, I destroy you." I myself gnawed everything, cured the that way ... One grandmother taught me too ... ... Here is mine, like this over a baby ... [He shows with his mouth and teeth, and depicts how he holds a baby in his arms] ... ... [Naturally nibble?] Not natural! Just like that, well, you don't need to touch it, you don't need to touch it to the tummy. [Do not touch your teeth?] No, just like that. [That is, you only pretend to bite]. ... [When to bite - at night?] This is in the evening. Wash the baby in the evening. [Where to pour the water – does it matter?]. Doesn't matter. [How many times to speak?] Three times. And you need to do twelve dawns - this means you can do it in the morning - six days - and in the evening, morning and evening. In the evening, when you wash it, and in the morning, when you swaddle or what is there, you turn it over. In general, when time needs to be done, but it is also time, at about six in the evening and there, at six in the morning. [Sunrise, sunset?] Yes (GEI).

3. Treatment of a blain with a key.

It is necessary at sunset to set the key with a hole on the blain [beginning] and "lock" it three times clockwise. Previously, there were such keys - a round little leg that was inserted into the lock, inside a hollow one - a hole. Point this hole at blain (BIM).

4. Treatment of tetter with birch charcoal, "sweat" from the window and mucus from the washbasin.

At sunset, with birch charcoal, with the fingers of your left hand, take this [coal], circle three times: circle once and dot in the center. Three times like that. [Shows: fingers big and ring]. If it doesn't help, from the window "sweat" or with mucus from the washbasin [which accumulates inside the washbasin], since there are three varieties of tetter. I deduced my daughter's tetter, but in the hospital they couldn't do anything (BIM).

5. Wart treatment - non-contact action - "tie with a canvas thread".

The uterus, which first jumped off and tie with a canvas thread over it in the air - tie three times. Bury the thread and the warts will pass (BIM).

6. Radiculitis treatment by non-contact massage ("plucking").

And then my mother when I ... she had radiculitis: from May to September, she could not walk - she lay. And here are the descendants of this grandfather Sergei [healer] (... Maria Trofimovna was), she was very old, they brought her under my arms ... [mother told] "They brought her, she," she says, "sat down and everything

she, she says, plucked me. She talked to me, but everything from under me will pluck out something, pluck out - throw, pluck out - throw...” And she also began to walk, it became easier. That's what they knew - I don’t know. Mom was lying, and from under her, from under her, from the blanket and under the mattress - she plucked. [Shows how the sorceress healed by putting her hand not just under the mattress, but under the bed]. These were the people ... (DMI).

So: the article presents total of 6 stories - the methods of traditional and non-traditional medicine.

Let us clarify **what** is considered traditional medicine and non-traditional medicine.

Traditional alternative medicine includes everything related to natural remedies: herbs, minerals, animal components (saliva, mucus from the washstand ...), etc.

Non-traditional medicine refers to all types of energetic effects of one person directly on another or indirectly through any subject. The direct energy effect is: non-contact massage (“plucking”, “gnawing”), suggestion, hypnosis, exposure to vibrational structures, which include hexes, ritual dialogue, etc. Indirect forms of energy exposure to the field structures of a person or animal include works: with coal, a splinter, a key, a broom ...

In general, the hands and fingers themselves, in the folk medicine tradition, represent a huge protective and healing power. So, for example, the author repeatedly recorded in various regions of Russia the violation of the prohibition (by negligence) of “drinking by the bull” (that is, directly from the river with the mouth, and not from a handful) and, as a result, catching fatalities. (Recorded in 1995 in the Vladimir region, Sudogodsky district, the village of Gonobilovo from Shumilova Galina Petrovna - born in 1932)

Often there are practices of non-contact massage, performed with the help of the mouth, hands or contact exposure through the fingers with any additional means of assistance (key, coal, etc.). So, for example, the “gnawing” of a hernia, accompanied by a ritual dialogue, shows us how, through manipulation of the mouth, an energy breakdown is “closed” at a certain distance from the child’s body, after which the child recovers. I must say that the ritual dialogue here plays the role of an energy enhancer for parents who, in the process of dialogue, are filled with faith in virtue of their impact on the child. Thus, their energy really increases, which leads to a positive result in the dependent child. After all, often, and not without reason, you hear from grandmothers such an explanation. “It is not enough to know the hex; one must have power. For example, I know - and what?! I will say - not cure! It’s necessary to have such a force, understand? To say - and fulfilled. " (Recorded in the city of Poshekhonye from Taranets Galina Alekseevna - born in 1930).

In general, “gnawing” treatment is one of the most common in the folk environment. For example, in the 1980s, from his mother, Zaporozhets Anna Petrovna 1925 - 2007. (Dev. Vasilyeva. Originally from the Orenburg region, Ivanovo p., Yegoryevka village. In the Kuban since the 1950s), the author found out a similar recipe for “gnawing” sprains (on the arm). (True contact). At the same time, the author’s mother also remarked that “Only the first or last child in the family can be treated this way. You can even bite yourself.” And since the author herself is a “scratch” (last child in the family), this “gnawing” herself was carried out.

The treatment tetter with birch charcoal and a blain with a key combines the effect on a person with natural components and work with energies. Moreover, natural components act as a contact effect, and work with energies occurs non-contact. For example, tetter is treated with coal, but how the little coal is held: in which hand (left), with which fingers (big and ring) - all indicate a contactless energy effect. In the “healing environment” it is known that the left hand “takes”, and the right hand “saturates”, therefore it is better to treat (“pull out energy dirt”) with the left hand, and with the right - then give strength to restore, regenerate tissues, etc. (although there may be options ...). In this case, the work with the fingers is big and ring - a so-called “lock” is formed (locking on the charcoal), the specific function of the fingers is to extinguish the focus, the center of the disease (therefore, with charcoal and these fingers, they “put an end” to the center of the problem places) simply put, these fingers create centripetal forces; the index and middle ones (usually the most frequently used in healing practices), on the contrary, create centrifugal forces, they “disperse”, remove the inflammatory process around the problem area, treat them, outlining the sore spot in a circle or in a clockwise spiral. (Healers (mainly large cities) usually know that as a result of some kind of stress, the energies in the body can begin to rotate in the opposite direction, which causes the disease. And in order to cure a person, when providing the necessary assistance, it is necessary to rotate your hands clockwise. Although, sometimes, removing energy dirt, they first rotate counterclockwise, and then, adjusting the destroyed energy flow, clockwise.) Thus, using two opposite principles, the energy balance is harmonized and health is restored.

In folk healing tradition, often all fingers are used in one action at once. And this is not just a pinch. So, for example, in the 1990s. the author wrote from his maternal grandfather Vasiliev Petr Yegorovich 1899 - 1996. (Originally from the Orenburg region, in the Kuban since the 1950s) treatment of barley with the sentence “from a black eye, from a blue eye ...” where, when listing different eye colors, grandfather gradually and consistently unclenched all the fingers on his hand, previously compressed into fist.

Using the same combination of different techniques, work with a key is also built in the treatment of a blain. Along with the natural effect of iron (contact),

as a cooling component in the inflammatory process (therefore, healers often use nails, knives, other types of cold weapons as a healing item ... also a hole in the key creates the same "enclosed" space of the disease - centripetal forces), then a pinch works energetically non-contact, which even without a key is often found in the work of healers.

The treatment of the warts by a thread canvas are very common. This treatment is almost universal. In this case, the node "closes" the thread of energy breakdown and, as a result of this, healing occurs. At the same time, the thread that has collected dirt on itself should rot...

A non-contact massage treatment of radiculitis is described as "plucking", but the method is the same: the energy dirt is removed and the energy breakdown is "closed" (with your fingers the gesture is circular and collecting, then the hand is pulled to the side and it's as if "throw away" from the hand).

In Moscow in 2006, the author recorded oncology treatment in a similar way. (From Ivanikhina Zinaida Fyodorovna - born in 1954, Moskvichka. Teacher. The prescription knows from a friend.) The action is performed on a lying patient. The healer "needs to take a skein of black thread" and over a person's problem area, unwind a thread from a spool, winding it on his right hand, a small piece, and then tear off the thread. At the same time, pronounce an adapted conspiracy, which is usually used in the treatment of barley):

Cancer, cancer, tear yourself apart

And in the body of the slave of God (for example, Anna) - do not be.

So say until the thread runs out. Then burn them. "We need to do this for three days in a row, at sunset, on a waning moon."

In this case, the thread (black color has always been a strong inhibitory and cooling factor in color therapy) is used simply to memorize the desired gesture with a non-contact action: turn it clockwise with your hand (dirt collects) and "pull out" the dirt outward (when tearing the thread). This technique is very often used by healers. Thus, pain can be relieved, and, in practice, it has been noted that metastases do not really go inward, but everything goes out, but, of course, it is not always possible to completely cure a person (like with medication).

Considering the various methods of treatment, we conclude that healing practices often exist in a mixed form, traditional and non-traditional methods of treatment are sometimes closely intertwined. And, if we separate one from the other, we will get a (frequently encountered) destroyed form, with the lost initial strong healing effect.

The place and time of treatment is not chosen randomly, it is usually the middle zone. The place of the middle space: a threshold, a window, a gate ... Time is at dawn (less commonly: midnight, noon).

Middle space and time are characterized by the fact that they are intermediar-

ies between two different worlds, connect two opposite principles, in these zones contact usually occurs between the world of the dead and the world of the living. Therefore, through such unusual places and units of time, you can both damage and heal. (By the way, the healer himself is a mediator between the kingdom of the dead and the living (the first or last child in the family), which is why he has a special gift to heal, as he gains strength and knowledge nonverbally, often being born initially as such (genetic memory is included)).

The same applies to items used in treatment. This is especially true of sharp objects and those that are like an extension of the hand. The fact that evil spirits are afraid of sharp objects has been known everywhere since ancient times. Most likely, it came from medicinal conifers and plants that have thorns. As you know, many biologically active components are concentrated in the thorns of plants, so they are often used in treatment. Needles were often used in general, as grandmothers said, “for everything”. Moreover, it is known that iron piercing and cutting objects often play the role of a “lightning rod” of negative external energies, therefore they were also often used as a talisman. For example, the author’s grandmother (in the father’s line) Zaporozhets Praskovya Fedorovna 1900 - 1984, (a hereditary Kuban Cossack, a native of the village of Dinskaya in the Krasnodar Territory) taught that when you go to people “you need to fasten the pins to the dress” [fasten pins to the dress] (point down), and when “put a bow on the cities” [planting the onion in the garden], stick a knife into the ground (or put a glass of water on the ground) so that no one jinxes it.

It is known that healing practices take place during the transitional time of the day (and, preferably, the year): noon, midnight and "at dawn." Then healing water is also prepared. “At dawn”, air moisture condenses, and at this time (as at noon, midnight, at the solstice), structured, the water “resets”, “erases” the information that has accumulated in itself, and it can be charged with new information that promotes healing, which will trigger a regenerative mechanism in the body, consisting of 70 - 80% of water. (Therefore, such water was prepared and carried home strictly mutely!)

The number of healing “procedures”, as a rule, is not accidental, there may be: 3, 9, 12, 27, 36, 40 ... In this report we will not dwell on this issue in detail, although the symbolism of some numbers can be highlighted.

Number three - comes not only from Christian symbolism, since ancient times, it personified a combination of masculine, feminine and middle unifying principles. Usually, the first time a “procedure” cleanses a person of accumulated negativity along the entire line of the father’s clan (solar energy), the second time - along the line of the mother’s clan (lunar energy), and the third - purifies the energies of the person himself

The number 12 comes from calendar structures, according to the number of

months in a year and ancient hours in a day, when the time was recognized by the position in the sky of a constellation, for example, Ursa Major, which never goes beyond the horizon. Ursa Major, (together with the entire celestial sphere) per day makes a complete revolution around the North Star (plus 1 degree, which gives an offset of 30 degrees every month). Thus, the month (one twelfth of a year), according to the correspondence system, was identical to the ancient hour, lasting 120 minutes (one twelfth day).

The number 9 (like 27) came from the ancient lunar calendar, when the month was divided into three weeks for 9 days. And since the moon, according to popular belief, is the "sun of the dead" (hence the appeal to him in healing plots: "A month, a month, were you in the next world?" "Was." "Did you see the dead?" "I saw ...") , then the memorial days were formed based on the lunar calendar: 1st day, 9th day, 40th day, year, where 40 days of the solar calendar (one ninth of the year) are equated to one lunar day, and the year to one lunar week - 9 days (if you take into account the account: 360 + 5 last days of the year, which always stood apart and were considered "heavy").

Thus, observing the laws of numbers (when one “procedure” corresponded to one day, or one week, or one month ... that is, to any natural cycle), a person believed (and this is so) that he interacts with the laws universe, with the laws of time, and therefore can speed up the healing process.

Usually (with the exception of acute cases), healing practices are carried out after the full moon, in the “old” month (as well as healing herbs - mainly collected after the summer sunny peak), when all of his internal resources go to the surface layers of the field structures of a person, including including energy "dirt", that is - a disease, and at this moment it is easiest to remove.

Thus, after even a brief analysis of a small part of ethnic medicine, we come to the conclusion that it did not arise by chance, but has strictly justified actions that have been tested by time, but have lost the conceptual depth level and original integrity, and therefore are often perceived by modern people as a kind of nonsense, strange atavism, a relic of a dark pagan past that has no value. We see that the legacy that has reached us has deep roots and is an undeniable value and innermost knowledge that should be preserved, studied and used to restore and harmonize bodily and spiritual health.

Notes

BIM - Bakhvalova Irina Mikhailovna - born in 1947, local; zap V.V. Zaporozhets in the town of Poshekhonye, 2000

GEI - Gavrilova Ekaterina Ivanovna - born in 1932, local; zap V.V. Zaporozhets in the town of Poshekhonye, 2001

DMI - Doshlygina Maria Ivanovna, born in 1931, originally from the village of Bychikha, Dmitrovsky District, Moscow Region; zap. V.V. Zaporozhets in the town of Poshekhonye, 2000

在健康心理学框架内形成现代人类社会宽容的个人方法
PERSONAL APPROACH TO THE FORMATION OF TOLERANCE IN MODERN HUMAN SOCIETY WITHIN THE FRAMEWORK OF HEALTH PSYCHOLOGY

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抽象。迄今为止，一个人的社会交往中的宽容在现代社会中几乎没有表现出来。在大多数情况下，存在不容忍，误解，攻击性行为，无法在与其他人沟通时找到平衡和理解。为了找到解决方案并增加耐受性，有必要在健康心理学的方向框架内考虑这个问题。从事健康心理学方向工作的心理学家的工作任务是加强相互联系，相互理解，宽容，对话者的理解，解放和善意的表现。考虑到这个问题，本文提供了在日常生活中如何以及在何处运用耐心和宽容的实际例子，以及为什么在某些生活情况下有必要对周围的人进行大量的耐心和理解。本文举例说明了不容忍在何种情况下以及在什么情况下会对社会相互关系产生不可逆转的后果。

关键词：宽容，社会相互关系，相互理解，沟通心理学，宽容问题，健康心理学。

Abstract. *To date, tolerance in the social interaction of a person show little in modern society. In most cases, there is intolerance, misunderstanding, aggressive behavior, inability to find a balance and understanding in communicating with other people. To find a solution and increase tolerance, it is necessary to consider this problem within the framework of the direction of health psychology. The task of the work of a psychologist working in the direction of health psychology is to strengthen interconnections, mutual understanding, tolerance, understanding of the interlocutor, manifestation of emancipation and goodwill. For the consideration of this problem, the article offers practical examples of how and where it is necessary to exercise patience and tolerance in everyday life, and also why in certain life situations it is necessary to exercise a lot of patience and understanding towards people around. The paper gives an example of where and in what situations intolerance can have irreversible consequences for social interrelations.*

Key words: *tolerance, social interrelations, mutual understanding, psychology of communication, problem of tolerance, health psychology.*

The development of the balance of psychological health is engaged in a very young branch of the psychological sciences - the psychology of health. Health psychology can find application in the development of a number of preventive measures to strengthen tolerance in the individual's daily life. Mental health is considered as a stable, adequate functioning of all the basic mental functions that make up the human psyche, as well as a person's ability to adapt to the environment. [1].

When is it important to restrain yourself, and when is restraining yourself dangerous? Practical examples.

It is always difficult to restrain oneself, especially if the emotions are intense and dominant. It is most difficult to restrain negative emotions, such as aggression, anger, anger, angry, irritability, rage. Although in some cases it is difficult to restrain positive emotions.

№1. When raising children it is important to restrain yourself and not to give vent to negative emotions. If a child shouts stubbornly and aggressively demands that the parent buy a toy, the parents often shout back, although in fact it can be explained in a normal tone, why it is impossible to buy the toy at that moment. Need to restrain yourself.

№2. During the exam session, students often have frustrating and negative emotions (fear of not passing the exam, fear that prevents them from answering commission questions with confidence, fear due to insufficient preparation). In these situations, it is important to pull yourself together, not to give in to emotions and not to give up.

Number 3. To restrain yourself is dangerous in the marital relationship. If a woman constantly accuses her spouse, clings, finds fault, does not restrain her emotions, then, in the end, it may happen that the spouse leaves her, breaks up with her. In this situation, it is dangerous not to restrain yourself, as it can lead to the destruction of the family.

№4. It is dangerous for people suffering from cardiovascular diseases to restrain themselves, as the containment of emotions of rage and anger can be fatal.

№5. Suppression of negative emotions can lead to mental disorders. It is dangerous to restrain emotions to managers who have many subordinates, as this can lead to a heart attack or stroke. Accumulated emotions need to "splash out", doing sports or other neutral pursuits.

Why is it important to be patient in dealing with children?

It is very important to be patient with children, since the brain of the child is still in the process of growth and development. The child, by virtue of his psychological development, is not able to understand the requirements of an adult. Children do not have a sufficiently formed concept of what is good and what is bad. They gain experience by testing their behavior. How a child will behave depends

largely on the very behavior of an adult. For example, if an adult is screaming, then the child can later adopt this behavior as his own manner of communication. For him, this behavior will be normal, and an adult will be angry and aggravate the verbal behavior, and sometimes resort to non-verbal methods of education. It is very important for a child in different situations to explain why some behavior is good and why it is bad.

The child cannot understand us, because he has no adult experience and, of course, will insist on his own. The child wants to explore the world, everything is interesting to him, although it may seem trivial, boring and unnecessary for an adult.

The task of an adult is tolerant, correct, with a great understanding to treat the child and explain everything, because the child is also a personality and this must be respected. An adult needs to understand a child, since an adult was once a child, but a child is not, he is still on the way of his becoming.

A child is a very sensitive and fragile creature who needs a lot of love and care. Any negative emotional impact can further lead to irreversible consequences for the child's psyche. These effects can be deeply deposited in the child's psyche and in the adult period of life can cause many problems in school, work and family life. Sometimes a psychologist in his work requires a lot of effort and time to understand the reason for the behavior of a child or an adult. Sometimes it is only by retrospective analysis that connections between behavioral deviations are identified.

Is the "Socratic Conversation" method effective, considering this method as an instrument of pedagogical interaction? Where can this method be used in society?

I think that the "Socratic Conversation" method is effective. Especially this method is effective in the humanistic field of education of students, because the "Socratic conversation" should be based on the life experience and thinking of the student, where there are no right and wrong answers. This conversation helps students learn the art of thinking, asking and asking questions correctly. Also, if there are differences in the opinions of the participants in the conversation by means of the "Socratic Conversation", a compromise, mutual approach to asking questions and finding answers can be found.

This method can be used in dialogue with children when a child tells a parent, for example: "I want an expensive soccer ball". And the parent begins in the form of a dialogue to ask: "Why?" ... "Why do you not have it?" ... and, finally, the parent answers with the child: "Agreed" or "Of course." This conversation will help your child find answers to their own questions.

The method of "societal conversations" can be used by company executives when it is necessary to interest employees in a productive and active working

process. For example, if employees are lazy and passively related to work, it is possible to bring them to the idea of their duties through the "Socratic Conversation", with the final inclusion of all employees in the workshop in the search for an independent answer, why you need to work and make effective efforts.

This method can be tried to work with children when they need to learn how to build social relationships, communicate and communicate in society with other children.

Practical example:

№1 It is necessary to answer the question whether Andrei Svetlov has psychological problems. If the answer to this question is positive, on the basis of the available information about Andrei Svetlov, psychological diagnostics of his problems should be offered. Also answer the question, what tactical tools in psychology should be used to try to bring Andrei to a constructive dialogue about his potential complexes?

Psychodiagnosis is necessary to determine the presence of psychological problems. If everything is normal in psychodiagnostics, it can be concluded that the person understood what is important for him and goes on his own way, but does not tell anyone, just don't touch him and say what he needs and what he does not. Perhaps he realized that he did not want to study at an economic university, and he studies and passes exams with "excellent" if only mom was pleased to meet his mother's expectations, as she says: "I have chosen one direction , follow him! " And in the intervals of time he does his true favorite work and does not tell his surroundings about it because of fear of disapproval and lack of support.

Usually in families where the father suffers from alcohol addiction, children can become withdrawn at some point in their lives. This may be due to negative emotional experiences and aggressive behavior of family members. In such families, children, as a rule, are left without sufficient love and attention, and in the adult period they may develop different psychopathologies and lifelong injuries.

The reason for this behavior may be the presence of hidden complexes. For example, it is possible that at some stage of life an inferiority complex was formed due to family troubles. At first glance it may seem as if everything is fine and there is no reason for diagnosing an inferiority complex. But in the diagnosis of childhood injuries, an injury can be identified, and this injury can, at a young age, cause an inferiority complex.

Maybe Andrei has some personal experiences. Perhaps he is concerned about something, perhaps he is upset by some personal problems and experiences that he is not ready and does not want to share. This reason can be found only in a personal conversation with him.

As a rule, in a dialogue with a person who has closed in himself, it is hard to get at least some answer and bring the conversation to a productive conversation.

It is very difficult for psychologists to work with closed people. As a rule, in order to get some information and come to a conclusion, it is necessary that the client himself applies for psychological help. If one of the family members initiates the consultation, the result of the work of the psychologist may be unsuccessful.

To determine whether Andrei has psychological problems that could affect the occurrence of isolation, it is necessary to determine the following aspects by psychodiagnostic methods: personality characteristics of the person himself, the individual's psychological characteristics, the presence of childhood psychological trauma, the current emotional state (latent depression), the presence of inferiority complex.

Bringing to a constructive dialogue will be difficult if you insist and put pressure on a person. This may lead to further aggravation of the situation or short-term result. At the beginning of the conversation you need to show the person that you treat him well and he interested you in the conversation. It is necessary to create a trusting and welcoming atmosphere. It is best to start a conversation on an interesting topic and bring it to an open dialogue. It is important not to impose, not to interrupt and listen carefully, and then in the manifestations of "trifles" you can find the problem.

Analysis of the behavior of relatives and friends of Andrew. Do they behave tolerantly towards Andrei, are they ready to accept him as he is?

Classmate Sergei Arsenyev - in his words, we can say that classmates are interested in changing the behavior of Andrei. They do not understand the reason for his change - "it seems he should enjoy life, but he is kind of frowned." They say that he, despite his changed behavior, gets excellent marks. They are patient with respect to Andrew and are ready to accept him for what he is.

A friend of Stanislav Govorunov - believes that you do not need to go into the soul of Andrew. He believes that he has everything for a happy life, he is smart, he has talent. Stanislav would not attach much importance to what is happening with Andrei. But there is a share of excitement for the future of Andrew. He accepts him as he is.

Andrei's mother, Evgenia Aleksandrovna — I think she's an irrational person. She wants to control the situation and believes that what she wants and expects from Andrei is necessary and necessary for him. Although, if you look at the situation from the mother, she is worried about her son's future and how the mother wants him all the best, although she doesn't think what her son really wants and what he dreams of. I think that the mother does not relate with understanding to Andrew, and she does not accept him as he is. She wants her son to be what she wants him to be.

Andrei's father, Anatoly Ivanovich, behaves with a bit of impatience and, on the other hand, with a bit of tolerance, it depends on the fulfillment of Andrei's father's expectations. The father seems to be pleased that the son does not walk, comes in time in the evenings and does not create problems. On the other hand, he is not pleased that Andrei does not help them, pays little attention to his family.

But the father does not complain. The father is ready and not ready to accept his son as he is, everything depends on the side from which he looks at him. If you look from the side of the parent, then the father is ready to accept Andrew as he is, as well as his behavior and attitude towards the family.

Colleagues in the music shop and guitarist Artem Zasalny - Colleagues talk about Andrei quite positively. Artem explains that Andrew is upset and shouts, because they do not teach anything, and he cannot convey an idea to his colleagues. Tells that he has complex ideas and that it is easier to relate to everything. It can be concluded that colleagues are sympathetic to Andrew, and this can be concluded from the phrase: “Sometimes it screams, but what to do, we really do not learn anything.” Colleagues in music accept Artem as he is. Artem does not accept and does not approve Andrei.

The drummer of "Wind", Ivan Somov - he tells how guitarist Artyom does not listen to Andrei at all. He believes that Andrei is a normal guy and his songs are normal. Ivan says that everything is fine for him, and that everything suits him in relation to Andrei. We can say that Ivan sees Andrew fully adequately, does not feel discomfort and completely accepts him for who he is.

Andrei’s girlfriend, Alexandra Anisimova - The girl positively describes Andrei’s behavior as a sensitive, intelligent, good-natured person. Despite the fact that he does not come in pairs, he does everything, photocopying lectures and engaged. She thinks that there are no problems, and that she knows him better. Sometimes they quarrel, but she believes that this is normal in a relationship. It can be assumed that she is in love with Andrew, and as a consequence, bears the idealization of the partner: if there was something wrong, she still would not attach much importance to it. According to the girl, we can conclude that she is completely patient with Andrew and accepts him and his behavior as he is.

Practical example:

№2 A story about a person, where the lack of patience and tolerance led to irreparable consequences

A man of 60, who had a wonderful spouse, children and grandchildren. The man thought only of himself and his personal needs, constantly treated children critically and with incomprehension, did not engage in raising children, then treated his grandchildren without understanding children's behavior. If they jumped and talked loudly, he was annoyed and shouted to calm down.

He didn’t do anything, lay on the couch, didn’t work, drank and smoked a lot. His wife worked, supported her family, after work she did household chores, was engaged in gardening (since they had a large garden, and another large vegetable garden where they grew vegetables). When her husband came home from work, tired, he forced her to do household chores, go to the store for drinks and cigarettes. She had a sense of tolerance, despite the fact that she was tired and she

needed to rest. If she refused to go to the store, it ended in long quarrels and shouts, so that all the neighbors knew about it. While the children were small, he did not allow them to make noise, play loudly and laugh, he had no patience. He sent the children to the corner and enjoyed his egoism.

The wife of this man had a lot of patience, tolerance and understanding. She cared for him, did everything that he demanded without thinking about herself. I did everything, so long as my husband was pleased and kept the family.

When the children grew up and established their families, the situation in the house was already unbearable, the man turned into an alcoholic. And one day, when he drank a drink, he ended up in the hospital for long-term treatment, where doctors saved his life with difficulty. The wife of this man is completely exhausted, tired of the constant scandals, screams. Her patience "snapped"; there was no more tolerance and respect for her husband. She stopped caring for the house and garden, she no longer cared if the spouse would live or not. She came in complete indifference to him and his life.

While her husband was still in the hospital, she met a new man, dropped everything and left. And in the end she married another man.

Today, so to speak, the “former” spouse of this woman lives alone. Nobody comes to him, the house is in ruin and dirt. Even the neighbors do not go to ask how he was doing, because he quarreled with everyone. He does not remember when he last saw and heard children and grandchildren. He lives alone in an empty house and cries. Remembers all the bad things that caused his family. Recalls that he was a big egoist and impatient person. About how beautiful he had a spouse, children and grandchildren, but he did not know how to appreciate them.

This behavior led to irreversible consequences, such as a breakdown of family relationships, which resulted in the destruction of the family. As a result, the non-tolerance, selfishness, pride and intolerance of men led him to loneliness and poverty.

Even in conclusion, it can be added that for many years the woman treated her husband with great patience and tolerance, until one day the limit was reached, the patience ended, which led to irreversible consequences for the spouse and the whole family.

Conclusion: The significance of a positive and benevolent attitude of a person to the world around him, as a result, is a guarantee of good and positive social interconnections, both in the family and with the individual as a whole. Each of us with our behavior can bring a share of goodness into the everyday life of other people and by such a gesture make the world a little bit better and kinder. The task of the psychologist working in the direction of health psychology is to assist the individual in developing tolerance and patience both in relation to himself and to the world around him. Every psychologist working in the direction of health psychology should always remember that each person has phenomenologically individual, personal characteristics, a set of features peculiar only to him, creating the unique uniqueness of each [2].

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欧洲文化中的人类生命周期：对古代至今的观点的回顾
HUMAN LIFE CYCLE IN EUROPEAN CULTURE: A REVIEW OF VIEWS FROM ANTIQUITY TO THE PRESENT DAY

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注解。 文章讨论了古代和欧洲思想家对人类生命周期的看法。 他们的研究侧重于一个人的品质，他应该在年轻，成熟或年老时拥有这些品质。 直到20世纪，个人才鼓励智慧和精神美；如今，适应各种社会文化环境的能力正在变得越来越流行。 研究的新颖之处在于欧洲文化发展背景下人类生命周期思想的系统化和深化。

关键词：人类生命周期，古代，欧洲文化，童年，老年，社会标准。

Annotation*. The article discusses the views of ancient and European thinkers on the human life cycle. Their research focuses on the qualities of a person, which he should have in his youth, maturity or old age. Until the 20th century, intellectual and spiritual beauty was encouraged in the individual; nowadays, the ability to adapt to various sociocultural circumstances is becoming popular. The novelty of the research lies in the systematization and deepening of ideas about the human life cycle in the context of the development of European culture.*

Keywords*: human life cycle, Antiquity, European culture, childhood, old age, social standards.*

One of the most pressing issues of our time is the problem of the value of human life. The brutality of the 20th century with its world and local wars, political and ethno-confessional contradictions made today think seriously about the future of humanity. History knows periods of disregard for human life and reverence for it, which depended on the socio-economic situation and the dominant values in society. In European culture, views on the human life cycle have constantly evolved, so the purpose of the article is to briefly review these ideas from Antiquity to the present day, which is necessary for understanding the value of human life at present. This publication does not claim to be inclusive due to the breadth of the subject of research, but it attempts to show some areas of philosophical and cultural studies of the human life cycle.

Historically, theologians, philosophers, and scholars have referred to the concept of the "life cycle of man". There were whole philosophical directions that comprehended its essence (philosophy of life, existentialism, etc.), theories explaining its nature (Darwinism, creationism, mutational, cosmological, labor, and other concepts). Proceeding from its biological essence, the life cycle is a set of development phases, after passing through which an organism or system reaches maturity and becomes a source of the birth of subsequent generations, thus ceasing to exist. In the socio-humanitarian studies, the life cycle, as a rule, is understood as a change in the stages of the physiological, intellectual and psychological development of a person: birth, childhood, adolescence, maturity, old age and death. Each of these stages has certain requirements, depending on the civilizational conditions and ethnic and religious features.

In the period of Antiquity, the first attempts were made to give a periodization of the human life cycle. Thus, Pythagoras (6th century BC) proposed the following classification of the individual's ages: the period of formation — 0–20 years (spring), the young man — 20–40 (summer), people in their prime - 40–60 years (autumn), an old and extinct person - 60-80 years (winter) [6].

In the human life cycle, according to Marcus Aurelius, the most important component is the ability to intelligent life. In old age, it is lost: "Even if someone would have been given a longer life, it is unknown whether his power of thought would be sufficient to understand the circumstances of life and comprehend divine and human affairs" [12, p. 278]. The exit for Marcus Aurelius from this situation of exhaustion of reason becomes death, completing the life cycle.

A curious interpretation of the human life cycle was given by Epicurus, for whom the fear of death interferes with obtaining genuine pleasures from life. According to the philosopher, it is necessary to live "here and now", striving for physical balance and peace of mind at any age [8].

The conclusion of Seneca on the completion of the human life cycle is interesting. For him, death is logical and marks the transition to a new stage of existence. Seneca writes about the importance of a worthy meeting of death, the thought of which must be constant, because a person may die unexpectedly. Awareness of the individual every day as the last can give a sense of the value of life. "If a person says that "life is lived", then every morning he wakes up with a profit" [12, p. 38].

The famous Roman orator Cicero believed that the duration of a person's life cycle determined the onset of happiness. The older a person becomes, the more rapidly he moves towards a happy existence. The reason for this, according to Cicero, is the adaptation capabilities of the human body. Young people have poor immunity and are susceptible to disease. Representatives of the older generation, refraining from depravity and vices, experience less "fatigue" and thereby strengthen the protective functions of the body, therefore, they are more likely to be happy [15, p. 14].

If in Antiquity to enjoy life was a natural process, then in medieval Europe the rejection of all worldly things prevailed as the nature of the temporal, contradictory and sinful.

A well-known representative of early Christianity Aurelius Augustine, nicknamed Blessed (354-430), made a significant contribution to the understanding of the human life cycle. According to his teaching, man was created by God a pure and sinless being. But after the fall of Adam and Eve, evil appeared. However, evil should not be considered absolute and genetically inherent in man, since it originated as a result of sin and lack of good. Depending on the ratio in a person of good and evil, he has an independence in choosing his life path. St. Augustine believed that the only way to save the human soul from evil should be faith in God [1].

A more radical approach to the study of the human life cycle was characteristic of the medieval theologian and preacher Johann Eckhart (Meister Eckhart) (1260-1327). In his philosophy, he called for the fact that while living, a person must abandon himself for the love of God. As a result, a person acquires the true essence, and his soul becomes free and independent. According to Eckhart, Poverty was considered to be the most preferable life cycle option, an existence that did not need any material wealth, nor knowledge of being, but fed only on the love of God. In the course of his life, a person was required to be removed from all desire, things, wealth and power, and then his soul had the opportunity to reunite with the Creator. In addition, Eckhart argued the need for experiencing suffering, which was able to save a person from evil. Overcoming with the humility of suffering during earthly existence, the human soul after death received encouragement in the form of merging with God and staying in Paradise [16].

To experience the joy of earthly life was not allowed to anyone, even a child. Thus, in the period of the European Middle Ages and later in the Renaissance, the concept of childhood was absent: children were "small adults", dressed in reduced adult clothes, entered into labor and marriage relations early. This is confirmed by paintings by such artists as Giotto di Bondone ("Madonna and Child and Two Angels" (1295-1300)), Paolo Veneziano ("Madonna and Child" (1354)), Barnaba da Modena ("Madonna and Child" (1370–1375)), Izak Klas van Svanenbürg ("Portrait of a Girl" (1584)) and others. Only a few Renaissance painters, such as Raphael Santi and Leonardo da Vinci, portrayed baby Jesus Christ and angels are children, not "small adults". In fact, their creativity marked the beginning of a new period, when childhood began to be perceived as a special stage of human life.

The Renaissance also brought clarity to the understanding of the question of a person's responsibility for his actions during his life cycle. Considerable attention was given to this issue in the 16th century by the French philosopher Michel Montaigne (1533–1592). Man was perceived by him as a creator of life, who was to

find harmony with nature and mind. The search for earthly happiness was considered permissible and natural, but man should analyze all his actions from the point of view of morality and accomplish feats every day, starting with self-awareness [10].

In his work "Experiments", M. Montaigne warned about the transience of life and the unexpectedness of death. Having called death in old age a "gift", the philosopher nevertheless treated the aging of a person with disdain and asserted the importance of youthful years in accomplishing the most significant deeds in life.

In the New Age, the English philosopher and historian Francis Bacon (1561-1626) described the qualities of the ages, the main factor determining which was life experience. In work, in order to achieve high results, according to F. Bacon, it is necessary to apply the efforts of young and old people, since "in fact it is best to combine the merits of both ages (youth and old age); it will be good both for the present, for the dignity of each age can be corrected by the shortcomings of the other, and for the future, for the young can learn while the elderly are still working" [2, p. 446].

A different point of view about the life cycle of man was held by the English philosopher Thomas Hobbes (1588-1679). He believed that the qualities of a person are preserved throughout life and, moreover, are capable of growth due to studies, for example, science [5, p. 254].

With the advent of the Age of Enlightenment, the understanding of the human life cycle was carried out in the philosophy of Jean-Jacques Rousseau (1712-1778). In his book "Emil, or On Education" [11], he proposed a program of personal development, free in spirit and not accepting any violence against himself and his natural abilities. The principle of rivalry, used in the education of a young man since antiquity, engendered envy, vanity, greed, intolerance of each other and even hatred in society. Freedom was excluded from educational methods, the inculcation of which could create a natural, unselfish, tolerant, kind and happy man. Children need, according to J.-J. Rousseau, to bring up deeds, actions, showing the proportionality of human needs and the possibilities of their satisfaction. Appealing in the matter of raising children to the need to develop a free personality, the philosopher believed that it was just such a program of growing up that would help solve many social problems in the future, for example, social stratification, injustice, the absence of humanism in relations between people. The quality of the subsequent stages of a person's life cycle is determined by childhood, not oppressed by the educational "whip".

The original interpretation of the human life cycle was given by the German philosopher Immanuel Kant (1724-1804), based on the possibilities of using the mind at different ages. So, he believed that the mind by the age of twenty is used by the individual as an ability to satisfy his needs, by the age of forty as a way

of achieving goals, by the age of sixty as a manifestation of wisdom. I. Kant emphasized that wisdom at 60 years of age may acquire a negative value due to the negative assessment by a person of his actions in younger years [7].

The human life cycle in the philosophical arguments of Georg Wilhelm Friedrich Hegel (1770-1831) included three ages: “child”, “man” and “old man” [3, p. 81]. Any age, according to the philosopher, reflects the possibilities of physical, mental, social and spiritual adaptation of the individual to the world around him, where the objective circumstances predetermine the individual existence. In the understanding of the life cycle for Hegel, it became fundamental to adapt the inner world of the subject to the approaching death, causing anxiety in young years and fearlessness due to the loss of vital interests and contradictions in old age.

In the XIX-XX centuries description of the human life cycle has been significantly enriched in terms of approaches within specific scientific specialties: ethnography, philosophy, psychology, sociology, and others. The famous French ethnographer Arnold van Gennep (1873-1957) singled out the following stages: birth, social maturity, marriage, fatherhood, social advancement, professional specialization, death, which are accompanied by appropriate ceremonies. These ceremonies pursue the same goal: “to provide a person with a transition from one particular state to another, in turn, just as defined” [4, p. 9].

In philosophy, the term “life cycle” is interpreted ambiguously by various schools. Thus, in Marxist structuralism, especially in the works of Louis Althusser, the life cycle of a person is characterized by a set of various practices that dominate society, to which he is completely subordinate [17]. This devalues a person as a person and makes him extremely dependent on social standards and his needs for material goods.

In psychology, the most significant conclusions in understanding the human life cycle were made by J. Godfroy, J. Piaget, Z. Freud. In the second half of the 20th century, studies by Western psychologists G. Craig, D. Bockum, E. Erickson, L. Kohlberg clarified that the age range of childhood increased significantly compared with other historical periods, and this had an impact not only on the adulthood process, but also aging [9].

In sociology, the concept of "life cycle" is used to describe the process of development of the individual, including childhood, adolescence, maturity, old age and death. V.A. Yadov allocates three life cycles associated with the inclusion of the individual in the labor process: adolescence, adulthood and old age. As a result, personality development occurs through its close interaction with social institutions and mastering the norms of human society [13]. This interpretation of the life cycle provides for such components of being as social contacts and regulatives, without which a full-fledged personality will not form.

In his works, the French philosopher Michel Foucault drew attention to the importance of applying various regulatives in the formation of personality, which showed in detail how a person is disciplined by authority depending on the discursive practice used by it. Thus, the spread in Europe of psychiatric clinics, hospitals, factories, regular armies, schools, prisons and a new attitude towards human sexuality gives rise to other ideas about the human body, its life and death [14]. Creating a personality in the interests of the authorities contributes to a new perception of the life cycle. For example, at present the expectation of death in old age and the preparation for it through the implementation of various rituals are becoming a shameful and condemned phenomenon in society. The openness of the expression of grief for the dead is no longer sympathy, but is interpreted as a sign of bad education, insanity or weakness.

In this regard, part of the European philosophers believes that human life in the last decades has become very dependent on the economic, ideological and political spheres. The appearance at the end of the 20th century of a person burdened by the thirst for consumption forms a "false consciousness" in mass society, distorts the real picture of the world, since the modern (Western) person is irrational, although he believes in the opposite, he is afraid of his real needs and abilities. For example, the future profession is chosen on the basis of prestige, and not on the basis of the internal potential and talent of a particular person.

Summing up the brief review of studies devoted to understanding the human life cycle in European culture, it can be argued that from Antiquity to the 20th century, there was a prevailing judgment about the need for education in each individual of intellectuality, spirituality and responsibility for their actions. In the second half of the 20th century, a whole pleiad of humanities scholars who observed the process of mass culture formation proposed a different interpretation of the life cycle: the personality's desire for youth at any age, compliance with social tastes and preferences, contempt for old age and death were valued in it. But in this race for the standards of modernity, there is less and less space for the preservation of their human "I".

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纠正儿童重型颅脑损伤第一天的水平衡失误
CORRECTION OF VIOLATIONS OF WATER BALANCE IN THE FIRST DAY OF SEVERE TRAUMATIC BRAIN INJURY IN CHILDREN

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抽象。 作者对100名9个月至18岁儿童的严重创伤性脑损伤（STBI）第1天的水平衡（每日体积，肠外和口服，利尿）进行了估计。 据透露，在STBI的第1天，根据损伤的严重程度，考虑到年龄，每日足够量的输注治疗限制了注射的总水量。 可见损失量应至少保持在50%。 由于创伤后脑水肿恶化的风险限制了输液治疗的体积，因此确定了儿童STBI后第一天进行剧烈药物矫正的可行性。

关键词：重型颅脑损伤，水平衡，儿童。

Abstract*. The authors gave an estimate of the water balance (daily volume, parenteral and per os, diuresis) on day 1 of severe traumatic brain injury (STBI) in 100 children aged from 9 months to 18 years. It was revealed that on day 1 of STBI, depending on the severity of the injury, an adequate daily volume of infusion therapy is limiting the total amount of water injected, taking into account age. The amount of visible losses should be maintained at least at 50%. Limiting the volume of infusion therapy due to the risk of exacerbation of post-traumatic brain edema wasc determining the feasibility of vigorous drug correction in the first days after STBI in children.*

Keywords: *severe traumatic brain injury, water balance, children.*

Relevance. Of great importance in the pathogenesis of intracranial hypertension (ICH) at STBI are such factors of secondary brain injury as hypoxia, cerebral edema - a natural consequence of arterial hypotension, hypovolemic states

caused by traumatic shock, in turn exacerbate violation of autoregulation of cerebral blood flow, causing development of severe neurologic consequences [3,5,6]. In this regard, one of the most serious problems of intensive care in patients with STBI is the correction of deviations in water balance, in conditions of adequate anti-edema, dehydration therapy aimed at combating brain edema, which can lead to impaired renal function, up to acute renal failure [1, 2,7,8]. However, today in the literature there are not enough clear recommendations of infusion therapy on the first day, taking into account the complex pathogenetic mechanisms of development of diverse post-traumatic complications, which would significantly increase the effectiveness of treatment of STBI children.

Purpose of work. Assess infusion therapy on the first day after severe traumatic brain injury, depending on the initial severity of the condition.

Research methods. The components of water balance were studied: parenteral volume, enteral and total amount of fluid injected, amount of visible losses, changes in cardiac function (EI), minute volume of blood circulation (MVBC), total peripheral resistance (TPR), heart rate (HR), oxygen saturation index , body temperature by the method of hourly registration of parameters in the ICU in 100 children enrolled with STBI in the Republican Scientific Center for Emergency Medical Aid at the age from 9 months to 18 years in three age groups: from 9 months to 3 years (group 1), from 3.1 to 7 years (2 group), from 7.1 to 18 years (3 group). Of these, 67 were boys (67%), 33 girls (33%). Depending on the severity of the condition, patients are divided into 3 subgroups: 1 subgroup (duration of treatment in the ICU from 5 to 10 days) - 41% of the total; 28% of patients were included in subgroup 2 (duration of stay in ICU - 11-20 days); The 3rd subgroup comprised 31% of patients with the duration of intensive therapy from 21 to 81 days. According to the testimony, respiratory apparatus (VELA, DRAGER) support was started immediately upon admission, the need for hardware ventilation of the lungs was observed in all patients on subsequent days of observation. The leading factors of volemic disorders were traumatic shock of 1, 2 degrees, in 3 children damage of internal organs, complicated by internal bleeding, intraoperative blood loss in 6 children with timely compensation of blood components (erythrocyte mass, fresh frozen plasma). It should be noted that osmodiuretics, saluretics, colloids, adequate blood replacement therapy were included in the infusion therapy from the moment of admission. Intraoperative correction in this study was not considered. An assessment of the dependence of the correction of infusion therapy on the initial severity of the condition is given (according to the CRAMS scale = Results of a study of systolic blood pressure or capillary filling time + Results of a breathing study + Damage assessment + Evaluation of motor response + Evaluation of speech production). The maximum score (indicating the smallest damage) is 10, and the minimum score (indicating the greatest damage) is 0, the severity

of damage (according to Abbreviated Injury Scale - AIS) (CopesW.S., SaccoW.J., ChampionH.R., BainL. W., 1990), the assessment of the degree of acute cerebral insufficiency (OCN) was carried out on the Glasgow scale (GCS). Taking into account the lack of time for calculations in the extremely grave condition of patients and often special technical equipment for weighing and calculating, the volumes of infusion therapy are presented in absolute amount in ml per day.

Results and discussion.

As shown in Table 1, on the first day after STBI in children of the 1st subgroup under 3 years old, the volume of parenteral administration was 54.5% of the total daily fluid volume injected, in the 2nd subgroup 59% was injected intravenously and in the heaviest subgroup 61% of the total daily volume was injected per day (tab. 1,2,3). The volume of daily diuresis indicated adequate renal excretory activity 1 day after injury and amounted to 60% in 1 subgroup, in 2 to 42%, in 3–59%, corresponding to a negative balance, that is, the amount of water administered in the 1 day after STBI in infants, it was in the nature of fluid deficiency compensation in all subgroups. Significant differences in the parameters studied, depending on age, were not found in subgroup 1 (Table 1). However, there was a tendency to limit the total daily volume of infusion therapy in children of 1 subgroup under 3 years old to 600 ± 167 ml, in subgroup 2 to 830 ± 263 ml (200 ml more), in subgroup 3 693 ± 237 ml per day. Thus, at the age of 3 years with the severity of the condition on an AIS scale of 2.5 - 3.3 points, on CRAMS 6.1-8.3 points, on GCS 11.9-13.1 points the optimal volume was 600.5 ± 167.4 ml, with parenteral administration of 64% of a liquid. Diuresis at the same time amounted to 60% of the daily volume of infusion. When the severity of the condition on the AIS scale was 3.9 -4.5 points, on CRAMS an average of 5 points, on GCS 8.2 - 9 points, in subgroup 2 the optimal volume was 829.6 ± 263.7 ml, with parenteral administration of 59 % of the daily volume with the release of 42% of the water introduced per day. In subgroup 3, with severity of condition according to the AIS scale, 4.84–4.96 points, according to CRAMS 2.14–2.26 points, according to GCS 7.21–7.39 points, the optimal volume in1 day is 693.2 ± 237.3 ml, with parenteral administration of 61% of the daily volume, with a loss of 59%. The limitation of the total amount of water injected was primarily due to the risk of exacerbation of traumatic brain edema in infancy.

Table 1. *Water balance in 1 day depending on age in 1 subgroup (ml per day)*

Age / Indicators	Up to 3 years		3,1-7 years		7,1-18 years	
	n=41	norm	n=28	norm	n=31	norm
Volume of water per day	600,5±167,4 (100%)	900±300	757,5±232,3 (100%)	1400±200 ml	1507,7±466,9 (100%)	2200±300
Parenterally administered	327,6±180,4 (54,5%)		555,5±314,6 (73,3%)		923,2±506,7 (61%)	
Internally administered	272,9±151,4 (45,5%)		202,0±287,2 (26,7%)		581,3±616,7 (39%)	
Urine volume	360,8±142,8 (60%)	500±150	447,0±181,0 (59%)	700±110	982,9±594,7 (65%)	1600±200
AIS, score	2,9±0,4		3,7±0,4		4,4±0,5	
CRAMS, score	7,2±1,1		5,8±0,7		4,9±0,4	
GCS, score	12,5±0,6		9,6±1,4		9,7±1,5	
Dur. of mech. ventilation	1,3±0,4		2,5±1,8		1,9±1,6	
N/D in ICU	3,9±2,5		6,2±1,3		7,1±2,0	

At the age of 3.1 to 7 years, the daily volume of fluid in 1 subgroup with the severity of the condition on a scale of AIS 3.3 - 4.1 points, on CRAMS 6.1 -8.3 points, on GCS 11.9-13.1 points the optimal volume was on day 1 757.5 ± 232.3 ml, with parenteral administration of 73% of the daily volume. In subgroup 2 with AIS of 3.4-4.4 points, on CRAMS 3.4-4.8 points, on GCS 7.6-10.4 points, the optimal volume was 735.0 ± 363.7 ml, with parenteral introduction of 71% of the daily volume. In subgroup 3, aged from 3.1 to 7 years with AIS of 4.7-5.1 points, by CRAMS 0.9-1.7 points, by GCS 6.1-6.7 points, the effective was the introduction of 974, 7 ± 368 ml per day, with parenteral administration of 67% of the daily amount. Also noteworthy is the restriction on the volume of fluid injected and in the age from 3.1 to 7 years in all three subgroups.

Table 2. *Water balance in 1 day depending on age in the 2nd subgroup*

Age / Indicators	Up to 3 years	3,1-7 years	7,1-18 years
Volume of water per day	829,6±263,7 (100%)	735,0±363,7 (100%)	1518,6±723,5 (100%)
Parenterally administered	493,6±318,7 (59%)	524,9±245,8 (71%)	904,3±502,0 (59%)
Internally administered	336,0±275,2 (41%)	210,0±231,4 (29%)	663,2±356,2 (41%)
Urine volume	352,0±157,6 (42%)	530,0±277,1 (72%)	832,0±306,0 (54%)
AIS, score	4,2±0,3	3,9±0,5	4,5±0,5
CRAMS, score	5,1±0,04	4,1±0,7	3,6±0,8
GCS, score	8,6±0,4	9,0±1,4	7,3±0,8
Dur. of mech. ventilation	8,6±1,2*	7,9±3,6*	8,6±4,4
N/D in ICU	15,6±2,1*	13,0±1,8*	17,1±3,9

As presented in Table 3, in the older group of children (from 7.1 to 18 years) in 1 subgroup with AIS scores of 3.9 - 4.9 points, according to CRAMS 4.5-5.3 points, according to GCS 8, 2-11.2 points the optimal volume in 1 day was 1507.7 ± 466.9 ml, with parenteral administration of 61% of the daily volume. In subgroup 2 in school-aged children with AIS 4–5 points, CRAMS 3.2–4.4 points, GCS 6.5–8.1 points, the optimal volume was 1518.6 ± 723.5 ml ni the 1 day, with parenteral administration of 59% of the daily volume. In the heaviest 3 subgroup of injured older children with AIS of 4.4-5.2 points, CRAMS 2-4.6 points, GCS 5.6-9.4 points the optimal volume in 1 day was 1295.1 ± 502.1 ml, with parenteral administration of 43% of the daily volume. Thus, in all age groups of children on day 1 of the stabilization of hemodynamics, the effectiveness of anti-edema therapy, and the maintenance of the excretory activity of the kidneys was supported by reduction of the daily amount of water injected. It should be noted that osmodiuretics, saluretics, according to the testimony of colloids, adequate blood replacement therapy were included in the composition of infusion therapy from the moment of admission. Correlation analysis revealed a direct relationship between the volume of parenteral administration and the amount of magnesium sulfate and lidocaine in injured children of the 3 subgroup, which was associated with the conservative part of the correction of brain edema in the acute period of STBI. That is, limiting the volume of infusion therapy in the most severe children under 3 years of age due to the risk of post-traumatic brain edema determined the feasibility of a more vigorous drug correction and prevention of an increase in ICP.

Table 3. *Water balance in 1 day depending on age in the 3rd subgroup*

Age / Indicators	Up to 3 years	3,1-7 years	7,1-18 years
Volume of water per day	693,2±237,3 (100%)	974,7±368, (100%)	1295,1±502,1 (100%)
Parenterally administered	423,4±226,9 (61%)	633,3±280,3 (67%)	815,9±566,0 (43%)
Internally administered	270,0±173,3 (39%)	401,7±376,1 (33%)	529,2±370,4 (57%)
Urine volume	405,0±196,7 (59%)	578,6±127,0 (59%)	739,2±331,1 (57%)
AIS, score	4,9±0,06	4,9±0,2*	4,8±0,4
CRAMS, score	2,2±0,06	1,3±0,4*	3,3±1,3
GCS, score	7,3±0,9	6,4±0,3*	7,5±1,9
Dur. of mech. ventilation	7,3±3,4	24,3±9,0*	22,0±5,5
N/D in ICU	31,6±9,0	40,0±15,7*	38,3±14,5

The correlations found on the first day of the post-traumatic period gave a definite picture of the state of the compensatory mechanisms involved in the hemodynamic adaptation process in the first days after suffering traumatic stress.

On the day of severe injury in children under 3 years of age, a negative effect on the oxygen saturation index of an increase in intravenous administration of 4% potassium chloride solutions in the amount of more than 11 ± 3 ml per day (-0.8222) and lidocaine 2% more than 0.42 ± 0.09 ml per day (-0.7258).

Infusion therapy on day 1 was carried out mainly by the introduction of water parenterally (0.8161), the introduction of magnesium sulfate (0.9877), which was accompanied by an increase in diuresis (0.8551). Direct correlations were also identified between the volume of intravenous infusion and the daily amount of diuresis (0.7762); intravenous lidocaine (0.7763); magnesium sulfate (0.8861); and the inverse between the amount of enteral administration of water and the amount of lidocaine intravenously (-0.7418). The greater number of correlations of the studied hemodynamic parameters, water balance assessment parameters of laboratory data in subgroup 1 (88), compared with group 2 (69), and group 3 (69) under 3 years old on the first day after STBI deserves more attention.

Thus, an integral part of intensive care on the first day after STBI is the correction of deviations of water and electrolyte balance, the adequacy of which is determined by the favorable effect on the restoration and stabilization of hemodynamic parameters on the first day of severe TBI. However, the anatomical and physiological characteristics of childhood with limited adaptive-compensatory resources of hemodynamic and other functional structures require caution in the process of compensating for water and energy losses.

A direct relationship was found between the duration of prolonged mechanical ventilation and the volume of infusion therapy (0.7206), which reflected a direct relationship between the need for mechanical ventilation and the correction of volemic deviations caused by the severity of STBI. The higher the diastasis rate on the first day (more than 27.6 ± 3.2 mg/ml per hour), the longer the respiratory prosthesis was performed (0.7643). The increase in the introduction of magnesium sulfate ions necessitated an increase in the duration of mechanical ventilation (0.7570), which characterized the inhibition of the function of the respiratory system with STBI with an increase in the introduction of magnesia more than 2.4 ± 0.8 ml per day.

The duration of intensive care in ICU was directly related to the volume of administration of 4% solution of potassium chloride (0.857) and magnesium sulfate 20% (0.746). That is, an increase in the amount of administration of more than 9 ± 5 ml per day and 2.4 ± 0.8 ml per day, respectively, with STBI in children of subgroup 1 caused a high probability of prolongation of intensive therapy in ICU conditions.

The direct relationship between the hyperthermic reaction and the volume of daily diuresis (0.7249) is a consequence of the effectiveness of correcting volemic deviations per day in children of the 1st subgroup up to 3 years.

Conclusions

In 1 day of STBI with severity of condition on AIS 2.9 ± 0.4; CRAMS 7.2 ± 1.1 (subgroup 1); AIS 4.2 ± 0.3; CRAMS 5.1 ± 0.04 (subgroup 2); AIS 4.9 ± 0.06; CRAMS 2.2 ± 0.06 (subgroup 3) and GCS 12 (subgroup 1), 8 (subgroup 2) and 7

points (subgroup 3) an adequate daily volume of infusion therapy is limiting the total volume of injected water under the age of 3 years on average to 600 ml per day in 1 subgroup, up to 830 ml in 2 and up to 690 ml in 3 subgroups. At the age of 3.1 to 7 years in 1 subgroup with the severity of the condition on a scale of AIS 3.3 - 4.1 points, CRAMS 6.1 -8.3 points, GCS 11.9-13.1 points, an optimal volume on day 1, 757.5 ± 232.3 ml appeared, with parenteral administration of 73% of the daily volume. In subgroup 2 with AIS of 3.4-4.4 points, according to CRAMS 3.4-4.8 points, GCS 7.6-10.4 points, the optimal volume was 735.0 ± 363.7 ml, with parenteral the introduction of 71% of the daily volume. In subgroup 3, aged from 3.1 to 7 years with AIS of 4.7-5.1 points, by CRAMS 0.9-1.7 points, by GCS 6.1-6.7 points, the effective introduction was 974, 7 ± 368 ml per day, with parenteral administration of 67% of the daily amount. At the age of over 7 years with a GCS score of 9 points (subgroup 1), 7 points - in 2, and 7 points in 3 subgroups, the volume of injected fluid averaged 1500, 1500, 1290 ml per day. The amount of visible losses should be maintained at least 50%. Limiting the volume of infusion therapy due to the risk of exacerbation of post-traumatic brain edema determined the feasibility of vigorous drug correction and other methods of preventing the increase in ICP in the first days after STBI in children.

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癫痫智力障碍的临床基础：单纯性癫痫痴呆

CLINICAL BASES OF INTELLECTUAL DISORDERS IN EPILEPSY: A SIMPLE EPILEPTIC DEMENTIA

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注解。对癫痫患者人格结构中精神障碍的临床和心理模式进行了分析。考虑到癫痫发作类型和疾病持续时间等疾病的这些特征：简单，复杂的部分性癫痫发作占优势，疾病持续时间长达30年。根据临床神经病学，精神病理学，病理心理学，神经心理学，电泳检查和来自脑的计算机断层扫描的数据的结果，对检查的患者进行诊断的验证。癫痫患者的临床和心理特征研究采用以下方法进行：临床观察方法，心理诊断方法：舒尔特表，Lebedinsky法，技术动词实验，突出物体和现象的基本征象的方法，排除法，分类方法，从片段折叠图片的方法。在癫痫患者中，揭示了智力活动的可靠的多维临床和心理特征。所考虑的特征对于参与对癫痫患者进行预防，治疗和康复措施的医生，临床心理学家和其他专家来说是有意义的。

关键词：癫痫，人格，智力障碍。

Annotation. *The analysis of the clinical and psychological patterns of mental disorders in the personality structure of patients with epilepsy has been carried out. Such characteristics of the disease as seizure type and duration of the disease were taken into account: simple, complex partial seizures prevailed, the duration of the disease was up to 30 years. The verification of the diagnosis in the examined patients was carried out on the basis of the results of a clinico-neurological, psychopathological, pathopsychological, neuropsychological, electrophorephalographic examination and data from computed tomography of the brain. The study of clinical and psychological characteristics in patients with epilepsy was carried out using the following methods: clinical observation method, psychodiagnostic methods: Schulte tables, Lebedinsky method, technique Verbal experiment, method of highlighting the essential signs of objects and phenomena, exclusion method, classification method, method of folding pictures from segments. In patients with*

epilepsy, reliable multidimensional clinical and psychological characteristics of intellectual activity were revealed. The considered characteristics are of interest for doctors, clinical psychologists and other specialists involved in conducting preventive, therapeutic and rehabilitation measures for patients with epilepsy.

Keywords: *epilepsy, personality, disorders of intelligence.*

Epilepsy is one of the most common neuropsychiatric diseases. A large number of scientific papers devoted to the diagnosis [1,2,3], treatment and rehabilitation of patients with epilepsy [4,5,6].

The purpose of this work was the study of mental disorders in patients with epilepsy.

Material and methods of research. The study included 56 patients, aged from 18 to 55 years, with various forms of epilepsy, in the structure of the disease which was dominated by simple, complex partial seizures, with epileptic dementia, disease duration of more than 10 years. The verification of the diagnosis in the examined patients was carried out on the basis of the results of clinical and neurological, psychopathological, pathopsychological, electroencephalographic examination and data of computed tomography of the brain. The study of mental disorders conducted using the following methods: clinical observation method, psychodiagnostic methods: Schulte tables, Lebedinsky method, technique Verbal experiment, method of highlighting the essential signs of objects and phenomena, exclusion method, classification method, method of folding pictures from segments. Statistical data processing was carried out using the program Statistica 10.0.

Dementia different psychopathologists interpret differently. Some, by dementia, understand those cases in which a disorder of the intellect is detected, that is, dementia is considered, not as a syndrome, but as a symptom: disorder of intellectual functions. At the same time it is considered that intellectual functions can be upset in isolation. Others by dementia understand the general change in mental activity, characterized by negative symptoms and expressed in reducing all aspects of mental activity: in dementia, not only knowledge, judgment, not only memory suffers, but also the affective sphere, the activity of patients, the whole person suffers.

The identity of the patient with dementia changes, loses its individuality. With such an interpretation - with dementia, all manifestations of the personality as a whole suffer - the concept of dementia acquires very broad boundaries.

In the clinic of epilepsy, there are three series of symptoms: epileptic changes of character, personality, and epileptic dementia. Character degradation and dementia constitute interparoxysmal epileptic syndrome. The severity of epileptic dementia determines the course of the disease.

Epileptic dementia refers to the pseudo-paralytic syndrome of the pathology of intelligence. The main clinical characteristics of the syndrome are: a decrease or complete

lack of criticism towards oneself and others; deep violation of the level of judgment; mental disorders mainly on the events of the present and recent past; suggestibility, increased drives, carelessness, elements of regression of behavior; affect is determined by dull euphoria, irritability, combined with marked incontinence; neurological disorders.

In the formation of epileptic dementia an important role is played by the premorbid intellectual level. Dementia is more significant and progresses faster in patients with low intellectual levels before the disease, especially in cases where the epileptic process overlaps with oligophrenia or organic brain damage. At the same time, in patients with premorbidly high intelligence, dementia is detected to a lesser extent, and later and better compensated. Changes in intellectual activity affect the social functioning of patients with epilepsy [7,8].

One of the main symptoms of epileptic dementia is a slowdown in the rate of mental processes, often combined with general bradykinesia, which we determined in an experimental psychological study, using Schulte's tables (96% of patients). At the same time, not only the slowed-down rate of sensomotor reactions was noted, but also their uniformity: approximately the same time was spent on each table, and there was no increased exhaustion of mental activity.

Already in the initial stage of epilepsy, changes in the mobility of the main nervous processes, inertness of mental activity are noted. These features are found in switching tests (Lebedinsky's technique): when alternately added to a given number of two others, when alternately matching the given words of antonyms and synonyms, animate and inanimate objects (98.7% of patients). Bradykinesia and the inertia of mental processes characterize the thinking of this category of patients - stiff, viscous, with difficulties in separating the main from the secondary.

Inertness, viscosity of thinking of patients with epilepsy clearly appear in the verbal experiment (97% of patients). This is evidenced by an increase in the latent period, frequent echolalic reactions, monotonous repetition of the same answers. Often, patients responded to words-stimuli by stereotyped rows of words or called words from their professional use, sometimes adjectives indicating the color of the subject were selected as a response.

In 36% of the studied patients, the response words belonged to the previous words — stimuli (“delayed” speech reactions).

In the verbal experiment (94.8% of patients), there are responses stamps (for example: bird - chicken, apple - pear). In 48% of patients with pronounced dementia, the responses were stereotypical, monotonous - all the patients were stimuli answered with two or three words (“good” or “bad”, “I know” or “I don't know”). In 86% of patients, verbal reactions reflected only the attitude of the patient to objects, indicated by words-stimuli. These features of associations are a reflection of the personality change of the patients, inherent in the patient's egocentrism.

In the usual conversation in patients with epilepsy, there is a tendency to excessive detail and detail. Difficulties in identifying the essential features of objects

and phenomena characterize the decrease in the level of processes of generalization and distraction observed during epilepsy. In the study using the exclusion technique, patients thoroughly characterize each of the four objects depicted in the figure and either do not find differences between them, or, on the contrary, declare that all these objects have nothing in common with each other. So, patients come to the conclusion that the wardrobe, bed, bookcase and chest of drawers are furniture, and can not find a distinctive feature that allows you to combine the types of furniture that are used to store any items. Looking at a picture of glasses, watches, scales and a thermometer, the patient gives them a detailed description and claims that he sees nothing in common between them.

Patients classify objects on a specific situational basis. The formation of several small homogeneous groups in the classification process is characteristic, for example, metal and glass utensils are distinguished, shoe items and hats form separate groups and are not combined with clothing items.

In the study by the method of folding images from the segments, patients performed the task using the trial and error method. They chose a larger segment and all the others were alternately applied to it. Moreover, patients were often guided not by the idea of a holistic pattern, but by the edges, shape and color of individual segments. All this work was done with the inherent patient thoroughness, carefully. Making sure that the two segments were incorrectly connected, the patients put off one of them and tried on the next one.

Epileptic dementia is reflected in the specific symptoms of speech disorders - in slowing down its pace, the use of diminutive words and speech stamps, in oligophasia. Sometimes in speech it is noted ornateness, the desire to embellish speech, a tendency to primitive rhyming. The combination of the symptoms described reflects the clinical picture of simple epileptic dementia.

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获得STREPTOMYCEA SPP的诱发突变体。 具有增加的抗生素活性
OBTAINING INDUCED MUTANTS OF *STREPTOMYCEA SPP.* WITH INCREASED ANTIBIOTIC ACTIVITY

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抽象。 生产新菌株的有效方法之一 – 原始抗生素的生产者是诱导诱变和选择最有生产力的微生物变体。 从艾草的根际中挑出放线菌P30的分离物。 对微生物培养物进行物理诱变 – 用UV光照射。 作为研究的结果，选择了具有针对抗性革兰氏阳性和革兰氏阴性细菌的高抗生素活性的2个克隆。

关键词：放线菌，抗生素活性，诱变，突变菌株。

Abstract. *One of the effective methods for producing new strains-producers of original antibiotics is induced mutagenesis and selection of the most productive variants of microorganisms. An isolate of actinomycete P30 was picked out from the rhizosphere of wormwood. The microorganism culture was subjected to physical mutagenesis - irradiation with UV light. As a result of the studies, 2 clones with high antibiotic activity against resistant gram-positive and gram-negative bacteria were selected.*

Keywords: *actinomycetes, antibiotic activity, mutagenesis, mutant strains.*

One of the main problems of modern medicine is the drug resistance of pathogenic microorganisms, including multiple, when there is a simultaneous resistance of infection pathogens to several drugs at once. The rapid growth of bacterial resistance to antibiotics poses a serious threat to human health and life [1-3]. According to WHO statistics, the probability of death of a disease in a patient infected with methicillin-resistant staphylococcus aureus strains (MRSA) is 70% higher than in a patient infected with ordinary strains that are sensitive to antibiotics [4].

All this happens amid difficulties in creating new drugs. The number of new antibiotics that have undergone comprehensive testing and are recommended for clinical use has been steadily decreasing with every decade. According to the WHO, from 2000 to 2013, only 22 new antibiotics were described in the world, approved by national agencies for conducting clinical trials. Of these, only two were recognized as new natural antibiotics, 10 represented transformation products of previously described natural antibiotics, and 10 compounds were synthesized artificially [5].

This is an urgent clinical and epidemiological problem due to the potential decrease in the effectiveness of antimicrobial therapy and the uncertainty of further developments, which gives an impetus to the continuous search for new promising antibiotics among secondary metabolites of microbial origin. To increase the productivity of strains of microorganisms, mutagenesis is used, followed by screening and selection of variants with the best antimicrobial parameters [6-8].

MATERIALS AND METHODS

The object of research was actinomycete P30 isolated from the rhizosphere of wormwood growing in the Almaty region, which has antagonistic properties against gram-positive (*Staphylococcus aureus* 209P, *S. aureus* UV-2 and UV-3 mutants, *Bacillus subtilis, Bacillus anthracoides*) and gram-negative (*Comamonas terrigena* ATCC 8461, *Escherichia coli, Klebsiella pneumoniae* 444) laboratory test microorganisms. The culture was grown on a nutrient medium of the following composition: KNO3-1; K2HPO4-3; NaCl-0.2; MgCO3 -0.3; FeSO4-0.001; CaCO3-1 \ 0.5; starch-10; agar-agar-15.pH 7.2. Physical mutagenesis was carried out according to the standard method [9]. For mutagenesis of mycelium, a 5-7-day culture was washed from the surface of an agarized nutrient medium with sterile water and filtered through a cotton filter to separate large conglomerates of mycelium.

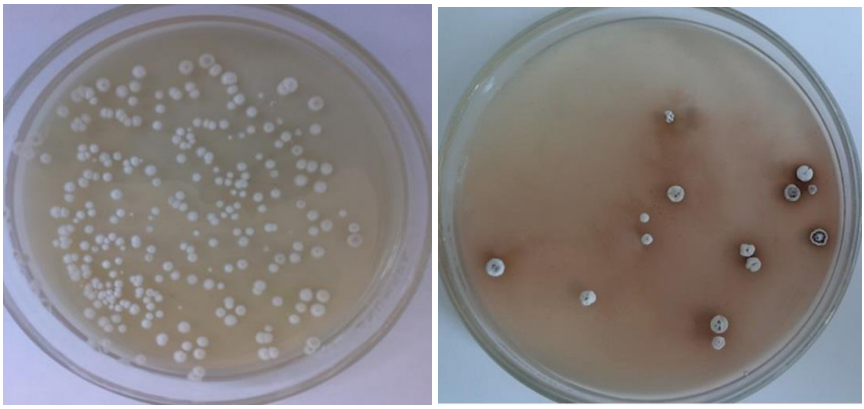
In the experiment, a 30 W PHILIPS TUV ultraviolet lamp was used (the radiation intensity of the lamp was 0.25 mW/cm2). A spore suspension (106) was aseptically poured into sterile Petri dishes 5 ml each and placed under an ultraviolet lamp at a distance of 20 cm on a 3D mini shaker (biosan) for constant mixing. The spore suspension was irradiated for 5–240 seconds, after which the plates were kept in the dark for 2 hours to avoid photoreactivation. After irradiation, a 0.1 ml spore suspension was inoculated into a Petri dish with 20 ml of agarized medium, evenly distributed over the entire surface of the agar, and cultured at 28 ° C for 6-7 days in a place isolated from light. After each irradiation, 10-20 mutants were selected. Mutants were selected according to the difference in morphological characters in comparison with the original strain P30. An unirradiated suspension was used as a control. The degree of survival was determined as the ratio of the number of grown colonies after mutagenesis to the number of colonies before it.

All types of emerging morphological forms were tested for antagonistic activity by the method of agar blocks against *S. aureus* 209 P and *E. coli.*

Active clones were grown on A4 fermentation medium with soy flour in Erlenmeyer flasks with a capacity of 750 ml in a volume of 100 ml of medium on a shaker at 200 rpm at a temperature of 28 ° C for 96 hours. The culture fluid was separated from the mycelium by centrifugation at 2000 rpm for 20 minutes. The mycelium was squeezed from residual moisture under a press. The antibiotic was isolated separately from the mycelium and from the native solution of the producer strain by the extraction method. The antibiotic was extracted from the culture fluid with n-butanol. The extraction was carried out by stirring on a magnetic stirrer for one hour. The extract was separated from the native solution on a separatory funnel and filtered. The mycelium was weighed and the antibiotic was extracted with ethanol. Primary raw antibiotics were investigated in relation to clinical strains of opportunistic microorganisms with different types of resistance to medical antibiotics: staphylococci, streptococci, pseudomonads, and Escherichia obtained in the city infectious diseases hospital. Clinical strains were identified and their resistance to drugs was determined using a BIO MERIEUX automated bacteriological analyzer "MINI API".

RESULTS AND DISCUSSION

The mutation frequency was determined as the ratio of the number of colonies with altered morphology (compared with the morphology of control colonies) to the number of colonies that did not change their morphology (Figure 1).



A B

A- control; B- after 20 seconds of UV exposure

Figure 1 - *Colonies of Streptomyces spp. strain*

As a result of the experiments, 3 different morphological forms of colonies were found, differing not only in growth rate, but also in different pigmentation and the presence of aerial mycelium: 1) the colonies are round, of different sizes, the edges are even, the aerial mycelium is white; 2) the colonies are round, the edges are uneven, the aerial

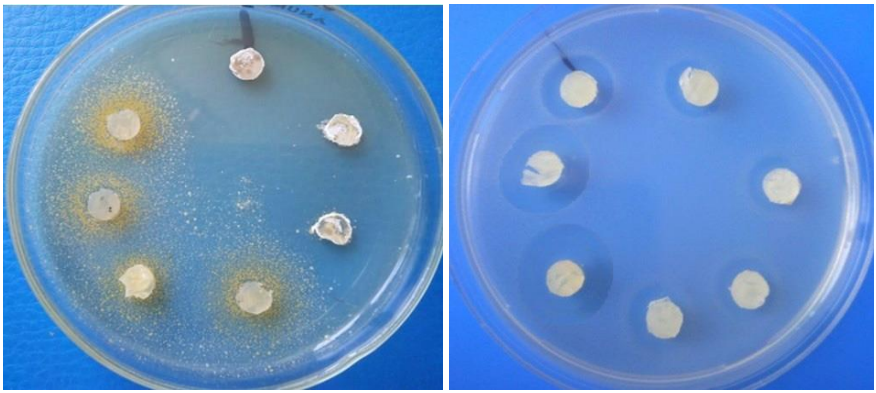
mycelium is white in the center, then the rim is gray in color without an aerial mycelium and along the edge there is a white aerial mycelium, soluble brown pigment; 3) the colonies are rounded, the edges are uneven, the aerial mycelium is white, with dark elevation in the center, the colonies are divided into segments, soluble brown pigment.

All types of morphological forms were tested for antagonistic activity against *S. aureus 209 P* and *E. coli* (Table 1).

Table 1 - *Antagonistic activity of clones obtained after UV irradiation*

Strain number	The diameter of growth inhibition zone of test microorganisms, mm	
	S.aureus	E. coli
mP30-1	25±0,1	21±0,2
mP30-3	30±0,2	27±0,1
mP30-6	25±0,1	20±0,3
mP30-7	33±0,1	30±0,1
mP30-9	25±0,3	20±0,2
mP30-10	38±0,2	35±0,1
mP30-12	40±0,3	38±0,2
control	25±0,2	23±0,3

Some of the isolated mutant strains had activity at the level of the parent strain (mP30-1, mP30-6, mP30-9), some did not have antagonistic activity (mP30-2, mP30-4, mP30-11 mP30-5). Clones mP30-10 and mP30-12 were highly active (Figure 2).



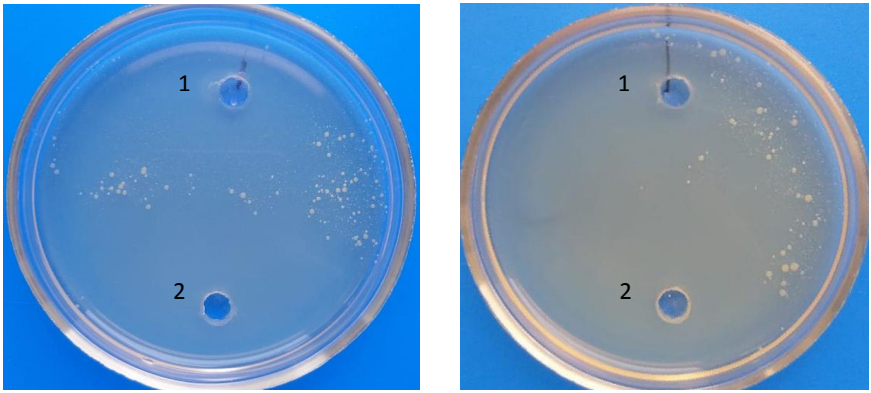
A B

A - *S.aureus;* B - *E. coli*

Figure 2 - *Antagonistic activity of mutant strains*

Highly active mP30-10 and mP30-12 clones were subsequently used in the genetic selection of *Streptomices spp*. in order to create a new producer of natural antibiotic.

Clones mP30-10 and mP30-12 were grown on A4 liquid fermentation culture medium. It is established that the accumulation of antibiotic substances occurs in the culture fluid. To isolate the antibiotic from the culture fluid, n-butanol was extracted. After evaporation of the solvent, crude antibiotics AP30-10 and AP30-12 were obtained. Antibiotic activity was checked against clinical strains of microorganisms: staphylococci, streptococci, pseudomonads, Escherichia, resistant to a number of antibiotics. Antibiotic substances formed by the mutant strains mP30-10 and mP30-12 showed high activity against clinical strains of *Streptococcus mitis* 434; B - *Klebsiella pneumoniae* 842 (Figure 3).



A B

A- Streptococcus mitis.434; B - Klebsiella pneumoniae 842;
1- antibiotic produced by clone mP30-10;
2 – antibiotic produced by clone mP30-12

***Figure 3 -** Zones of growth inhibition of clinical strains by mutant clone antibiotics*

The presence of activity in the studied natural antibiotics for clinical strains with a high level of resistance indicates the potential importance of these substances for medicine.

The study of antibiotics formed by mutant strains of microorganisms is a promising task for the discovery of drug compounds belonging to new chemical classes and possessing new mechanisms of action on pathogens of infections.

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用于功能性营养的新型果胶饮料
NEW PECTIN-BASED BEVERAGES FOR FUNCTIONAL NUTRITION

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抽象。 本文介绍了开发新型果胶饮料的实验研究结果。 选择蔬菜和浆果汁，液体果胶和天然调味添加剂作为饮料的处方基料。 开发饮料的化学成分研究结果表明，所选原料的配方比率提供了生理活性成分的最佳比例，赋予它们功能特性，并确定其在人类饮食中的包含的适当性，以减少 营养性疾病的数量。

关键词：果胶物质，果胶提取物，南瓜汁，玫瑰果，黑莓汁，功能性营养。

Abstract. *The article presents the results of experimental studies on the development of new types of pectin-containing drinks. Vegetable and berry juices, liquid pectin and natural flavoring additives were selected as the prescription base of drinks. The results of studies of the chemical composition of the developed drinks showed that the prescription ratio of the selected raw materials provides the optimal ratio of physiologically active components, giving them functional properties and determining the appropriateness of their inclusion in the human diet in order to reduce the number of nutritional diseases.*

Keywords: *Pectin substances, pectin extract, pumpkin juice, rose hips, blackberry juice, functional nutrition.*

Throughout almost the entire period of the existence of human civilization, food was mainly considered as a means intended to satisfy feelings of hunger, appetite and taste needs. However, in recent decades it has been established that the cause of the increase in the number of chronic diseases is an unbalanced diet. So, the incidence of cardiovascular diseases increased by 8-12 times, endocrine disorders by 5 times. Diabetes mellitus is already the third in the world among all diseases [1].

According to domestic and foreign studies by scientists and specialists of the World Health Organization (WHO), public health more than 50% depends on the way and conditions of life; in 10 - 20% it is due to the influence of heredity (ge-

netic factors); approximately the same effect is exerted by the external environment surrounding the person, and only about 8 - 10% falls on the health-improving work of practical healthcare [2].

In view of the foregoing, the organization of a balanced diet is relevant in modern society.

From the modern point of view, the term "functional food products" means such foods that are intended for the systematic use in the composition of food rations by all age groups of a healthy population in order to reduce the risk of developing diseases associated with nutrition, maintain and improve health due to the presence in their composition of physiologically functional food ingredients [3].

No less relevant in modern environmental conditions is the presence in food components that have detoxifying properties. According to the Korte-Dubinin scale for assessment of the toxicity of pollutants, recommended by the World Health Organization (WHO), toxic metals (135 points) are ranked first in terms of the degree of negative impact on the body.

The highest detoxification properties with respect to toxic metals are possessed by such natural polysaccharides as pectin substances [5]. In addition, pectin is a physiological component. So, in accordance with EU432/2012 regulation, pectins are recommended for lowering cholesterol and blood glucose levels by 6 and 10 g/day, respectively [6].

It is known that a beverage is physiologically effective food product. It should be noted that the market of soft drinks is one of the most dynamically developing compared to other food products.

With this in mind, the aim of our study was to develop juice-based beverage formulations with the addition of pectin substances as prolongators of biologically active compounds, as well as toxic metal detoxifiers.

To achieve the goal, the following research objectives were set:

- to study the chemical composition of the main industrial raw materials to determine the physiologically active ingredients in it;
- to model recipes of drinks balanced in composition taking into account their functional orientation;
- experimentally confirm the formulations of new types of functional drinks.

We selected pumpkin varieties cultivated on an industrial scale, concentrated pectin extract from apple pomace and beet pulp, juice from blackberry fruits, rose hips as our objects of research..

For research, we have selected the following varieties of pumpkin:

Volga gray 92. The variety is mid-season, resistant to disease, related to large-fruited pumpkin. On a powerful plant, round-flat, large (weighing 10-12 kg) fruits of greenish-gray color are formed. The bark is hard, thin. The pulp is dense, bright orange, the palatability is very high.

Mozoleevskaya 47. Related to hard bark or ordinary pumpkin. The variety is mid-season. Fruits elongated with striped bark. The pulp is dense, orange. The mass of fruits is up to 5 kg. Keeping quality is good.

Marble. Related to muscat pumpkin varieties. The variety is late ripening (about 135 days); the fruits are medium, weighing 5-6 kg, flattened, the surface is wrinkled-segmented, tuberous, the bark is gray and dark gray, with marble like dots. The pulp is intense orange, thick, hard, crunchy, very sweet, tasty. Shelf life is 8-9 months.

Ker-2. New development of Kuban breeders. The fruits are orange in color, weighing from 1.17 to 2.45 kg. The bark of ripe fruits is thin (1 mm), plastic. The subcortical layer is 1.5-2.0 mm in light orange with a yellow tinge. The ripened fruits of the pumpkin have a dense sweet pulp without a grassy taste and an attractive appearance.

To correctly assess the chemical composition of the studied pumpkin varieties, the fruits were selected in removable maturity.

Pumpkin, like other vegetables, consists of water, insoluble and soluble substances. Pumpkin fruits contain approximately 70 - 90% of water, 1.3 - 3.3% of insoluble substances (cellulose, lignin, cutin, protopectin, insoluble proteins, etc.), 7.5 - 23% and more soluble substances (sugar, organic acids, nitrogenous soluble substances, hydratopectin, water-soluble vitamins, coloring, vitamins, minerals, etc.).

In our research objects, humidity ranged from 81.3 ± 0.5% (grade Ker-2) to 84.9 ± 1.2% (grade Marble). The most important component of pumpkin fruits are sugars and organic acids.

The results of the study showed that the total amount of sugar in pumpkin varieties ranged from 5.7 (Mozoleevskaya variety) to 8.1% (Marble).

The pumpkin fruit contained three types of sugar: fructose, glucose and sucrose. Moreover, sucrose prevailed in all varieties. The glucose content is 8.6 times lower in the Marble variety (0.12%) than in the Ker-2 variety (1.03%). At the same time, the fructose content in the Marble variety is 31.5% lower than in the Volga gray variety 92.

In regard to the content of organic acids, the studied samples do not differ significantly.

However, according to the fractional composition in the variety Volga gray, 92 tartaric acid is 2.5 to 3 times more. It is known that natural tartaric acid has antioxidant properties and has a beneficial effect on metabolic and digestive processes in the body. Citric and lactic acids are absent in the studied varieties, and they do not differ in the content of malic acid (0.01%) and its content is very low.

A relatively high content of succinic acid was found in all varieties (0.26 - 0.28%). The results of previous studies have shown that succinic acid is an adaptogen (increases the body's resistance to adverse environmental factors), which is a positive factor in the development of functional products.

An important role in the prevention of various diseases is played by vitamins. It is known that the fruits of pumpkins are rich primarily in carotene. Therefore, we evaluated the pumpkin fruits by the content of this vitamin. It was found that the studied samples are indeed distinguished by a high carotene content. Its content was 440 μg/100 g of a sample of pumpkin of the Volga Gray 92 variety, and 390 μg/100g of the Marble variety. In the remaining varieties, the carotene content was in the range of 370 μg/100 g (in the Mozoleevskaya variety 47) and 300 μg/100 g (in the Ker-2 variety). The mass fraction of water-soluble vitamins - C and niacin - is relatively high and practically does not differ between varieties, and amounts to 14 and 0.1 mg/100 g of fruit pulp, respectively. The content of vitamin B_6 – is low (0.02 mg/100 g of fruit pulp). There are no significant differences between the varieties.

It should be noted that the daily requirement of the human body for vitamin C is 50 mg. With this in mind, it is clear that pumpkin fruits can be justifiably considered as a functional source of this vitamin to satisfy physiological needs (the degree of daily requirement is 28%).

Taking into account the recommended norms of consumption of the considered vitamins, the degree of security when consuming 100 g of pumpkin fruits will be: in niacin - 50%, in vitamin B_6– 1,0%.

Thus, pumpkin fruits in accordance with the requirements for food products are a functional source of vitamin C, niacin and carotene.

The nutritional value of food is determined by the mineral composition. Minerals are indispensable components of food.

In this regard, we analyzed the studied pumpkin fruits for the content of such basic macroelements as potassium, calcium, magnesium, sodium, phosphorus and microelements such as iron, zinc, copper.

It has been established that only calcium is standing out by the degree of daily supply with macrocells. The range of supply is 3.3–4.7%. The degree of daily provision of the human body with potassium when consuming pumpkin fruits is insignificant - about 2%. A low degree of daily supply is observed in phosphorus - only 1.2%.

The degree of daily provision with iron, copper and zinc is low and is in the range of 4.5 - 12%.

Taking into account the requirements for functional food products, the studied samples cannot be considered as a source of mineral substances.

A very significant component of the fruit of the pumpkin are pectin substances.

The results of the study of the total content and fractional composition of pectin substances of the selected objects are shown in Figure 1.

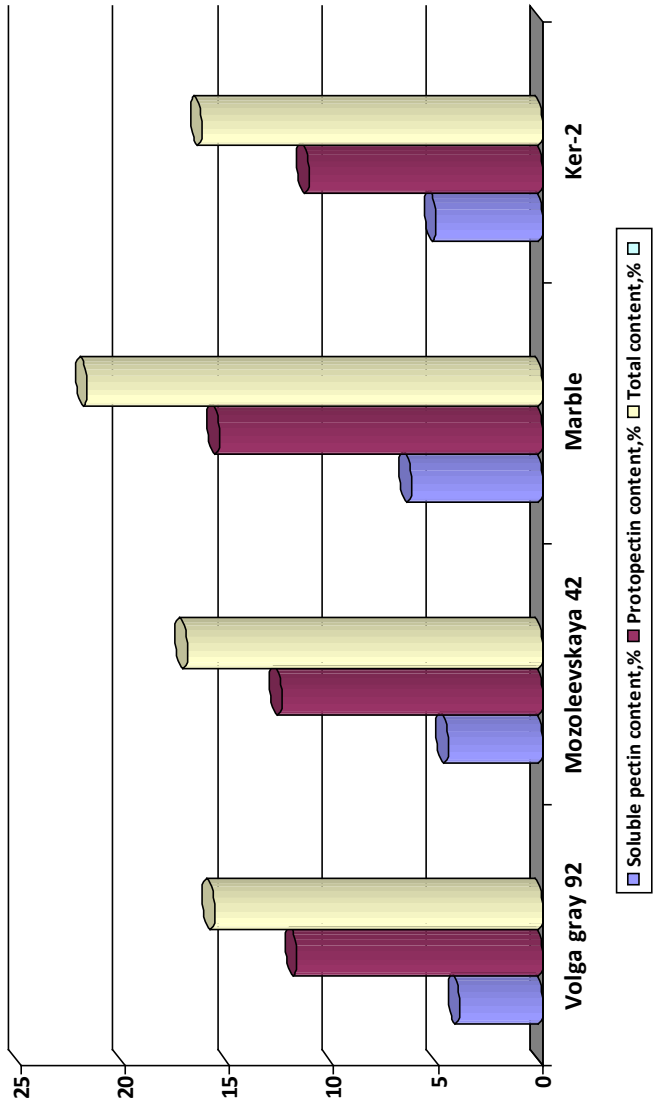

***Fig. 1** – Fractional composition and total content of pectin substances in the selected objects of study,% to absolutely dry matter*

From the presented data it can be seen that the muscat variety Marble (21.8%) is standing out by the total content of pectin substances.

In all studied samples, the fractional composition of pectin substances is represented by protopectin and soluble pectin (hydratopectin). Moreover, the content of protopectin prevails over the soluble fraction, which is natural for plant materials. The results of studies of the analytical characteristics of pectins isolated from the studied pumpkin fruits showed that pectin samples practically do not differ in the content of free carboxyl groups.

At the same time, the lowest degree of esterification was observed in Volga Gray pumpkin pectin 92 (37.94%), and the highest - on Marble pumpkin pectin (43.27%).

Thus, the isolated pectins should be classified as low esterified.

It is known that the complexing properties of pectin substances depend on the content of free carboxyl groups, i.e. the degree of esterification of carboxyl groups with methanol. The degree of esterification determines the linear charge density of the macromolecule, and, therefore, the strength and method of bonding cations.

With a decrease in the degree of esterification, that is, with an increase in the charge of the macromolecule, the connection of pectin with cations increases. Therefore, it is possible to predict a large complexing ability for the Volga Gray 92 variety.

Thus, the results of our studies provide the basis for the conclusion that it is advisable to consider pumpkin fruits as a prescription component as a source of low esterified pectins and carotene. This is consistent with the results of our earlier studies [8]. It is preferable to process large-fruited pumpkins to produce juice from it, in particular, the Volga Gray variety 92.

To expand the functional orientation as possible prescription components, we further examined blackberry juice and rose hips. This choice is due to their unique chemical composition and availability.

It was found that the juice of blackberry berries contains glucose (2.8-3.6%), fructose (3.1-3.2%), sucrose (0.35-0.58%), organic acids (up to 2.2%), in particular malic and citric acids. Blackberries are also rich in P-active substances - up to 1500 mg%. They are mainly represented by leukoanthocyanins, flavonols, and anthocyanins, which have not only capillary-strengthening effect, but also antitoxic. The latter property is manifested in binding by complexation of heavy metal ions, which is relevant in modern conditions. For the prevention of diseases, as well as maintaining the physical and mental activity of the body, P-active compounds are needed at 100-200 mg per day, for the provision of a therapeutic effect, daily intake increases by 5-10 times, i.e. up to 1 - 2 g.

In the studied blackberry juice from different manufacturers, the sum of P-active substances was 598 - 708 mg/100g. The content of flavonols was in the range of 111.6 - 129.1; anthocyanins - 309.6 - 465.0; leukanthocyanins - 116.0 - 105.3 mg/100 g.

Thus, judging by the experimental data, blackberry juice can justifiably be considered as a functional source of P-active compounds.

To enhance the antioxidant properties, the use of ascorbic acid is necessary. Ascorbic acid regulates the processes of energy exchange, weakens oxidative stress, stimulates the formation of collagen and procollagen, participates in the metabolism of folic acid and minerals, activates the synthesis of certain steroid hormones, catecholamines. Rose hips can be considered as such a natural source of raw material.

It is known that rosehip berries contain a whole complex of minerals and vitamins necessary for humans, among which the highest concentration of vitamin C (higher than in lemons, oranges, blackcurrants), which makes them valuable for medicine and a healthy diet. Rose hips contain up to 17% vitamin C, 12% carotene, vitamins B2, E, K, P, flavonoids, 18% sugar, 3.7% pectins, 4.5% tannins, organic acids, trace elements - iron, manganese, phosphorus, potassium, magnesium, molybdenum, cobalt, chromium, copper, a significant amount of potassium salts.

Liquid pectin in the form of pectin concentrate from apple squeezes with a mass content of pectin substances of 4% is produced in industrial volumes by "SunLand" (Hungary), from beet pulp, fodder watermelon and grape squeezes - by an experimental production of the Kuban State Agrarian University. When compiling the recipes, we used the profiling method with the construction of profilograms. Based on the analysis of sensor profiles, the optimal ratio of components was chosen.

When optimizing beverage formulations using mathematical modeling, in order to obtain a product that combines a balanced micronutrient composition, functional activity, and favorable taste, we first determined the optimal ratio of fruit and vegetable fillers and pectin substances that provide favorable taste qualities of drinks.

For this, three-factor simplex-centroid plans were used. Model samples prepared according to the planning matrix were tasted, evaluating them according to five indicators (attributes): color, sweetness, texture, aroma, fullness of taste. These signs for the created drink are selected as preferred, most fully reflecting the type of future drink.

The following ratios of the mass content of the recipe components in the drink were adopted: berry juice - 15%, pumpkin pectin-containing juice - 30%, liquid pectin from various raw materials with a pectin content of 4% - 40%, rosehip infusion - 15%.

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项目“危险水文地质过程风险评估和核电厂现场风险评估专家系统的开发”。评估实用性和可行性

THE PROJECT "DEVELOPMENT OF EXPERT SYSTEM FOR RISK ASSESSMENT OF HAZARDOUS HYDROGEOLOGICAL PROCESSES AND PHENOMENA ON NUCLEAR POWER PLANT SITE". ASSESSMENT OF THE UTILITY AND FEASIBILITY

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抽象。 由JSC SPb RSI“EIZ”实施的“危险水文地质过程和NPP现场风险评估专家系统的开发”项目符合第一和第二。 对项目的评估是确定其重要性，价值，确定其实施的利润和效益与替代方案相比较。 本文的内容提供了对JSC SPb RSI“EIZ”项目的有用性（对待解决问题的描述，确定的经济和质量影响，相关性和重要性，替代品分析，市场）和可行性的评估（ 项目风险管理）。

关键词：风险，水文地质风险，专家系统，项目评估，数字化，业务流程。

Abstract. *The trends of the present are digitalization and artificial intelligence. The project “Development of Expert System for Risk Assessment of Hazardous Hydrogeological Processes and Phenomena on NPP Site” implemented by JSC SPb RSI "EIZ" meets both the first and second. Assessment of a project is a de-*

termination of its significance, value, identification of the profit and benefits of its implementation in comparison with alternatives. The content of the article provides an assessment of the JSC SPb RSI "EIZ" project in terms of its usefulness (description of the problems to be solved, identified economic and qualitative effects, relevance and significance, analysis of alternatives, market) and feasibility (project risk management).

Keywords: *Risk, hydrogeological risk, expert system, project evaluation, digitalization, business process.*

One of the priority trends for the development of the nuclear industry in Russia at present is its digital transformation: digitalization of the main internal processes and functions of the state atomic energy corporation Rosatom; development and market launch of Rosatom digital products; participation of the State Corporation in the development of the digital economy [1]. Following the given motion vector, JSC SPb RSI "EIZ" (Rosatom Engineering Division Company) is currently implementing a project to develop an Expert System for assessing the risks of manifestations of dangerous hydrogeological processes and phenomena at the NPP location site [2].

The project is designed to solve the following problems:

- lack of an effective software product for solving practical problems associated with assessing the risks of manifestations of dangerous hydrogeological processes and phenomena, which is associated with high deadlines for specialists to perform work (market analysis is presented in the text below);
- the need for scientific support of engineering surveys and (or) the design and construction of buildings or structures of an increased level of responsibility (which, of course, include nuclear power plants [3, p. 8; 4, p. 48.1]) to comply with the requirements for the results of engineering surveys and design documentation in order to ensure their safety [3, Art. 15; 5, p. 10.5];
- insufficient and (or) unsatisfactory quality control of data on the object and the visibility of the provision of materials.

The product is developed as a single information system, an intelligent specialist assistant in the framework of managing possible risks of dangerous hydrogeological processes and phenomena at the sites of NPPs and other facilities, provides for the joint functioning of key elements (database, knowledge base, inference engine, etc.) and related systems (geographic information systems, numerical modeling and statistical data processing programs, external information systems).

Within the framework of the Project, the existing business process “Risk Assessment of Hazardous Hydrogeological Processes and Phenomena at the NPP Location Site”, the existing business process of risk management (hereinafter referred to as “AS-IS” (“as-is” model, model of the existing state of the process

organization)) are automated (Fig. 1, a). The target business process "Risk Assessment of Hazardous Hydrogeological Processes and Phenomena at the NPP Location Site" (hereinafter - "TO-BE" ("as it should be" model, model of the future state of the process)), looks as that shown in Figure 1, b.

The positive economic effect of the introduction of automation means consists of several points: 1. Proactive identification and reporting of the risks of dangerous hydrogeological processes and phenomena at the NPP location site and, as a result, optimization of engineering surveys and minimization of losses due to erroneous calculations and untimely provision of information; 2. An increase in the speed of processing and calculating (evaluating) risks by automating the current ("AS-IS") business process; 3. Improvment of domestic and economic indicators.

A positive qualitative effect is described by a list of indicators that will be improved during the implementation of the project: the time of collection and primary processing of the source information; completeness of identified critical risk factors; lead time and quality of risk assessment of a hazardous hydrogeological phenomenon (flooding for the first version of the system); the quality of engineering surveys within the framework of the task being solved (by ensuring their scientific support); the time spent by the specialist on the implementation of the risk processing and, in particular, the risk management process, in terms of identifying and taking response measures; the quality of management decisions made, data on the facility, the results presented.

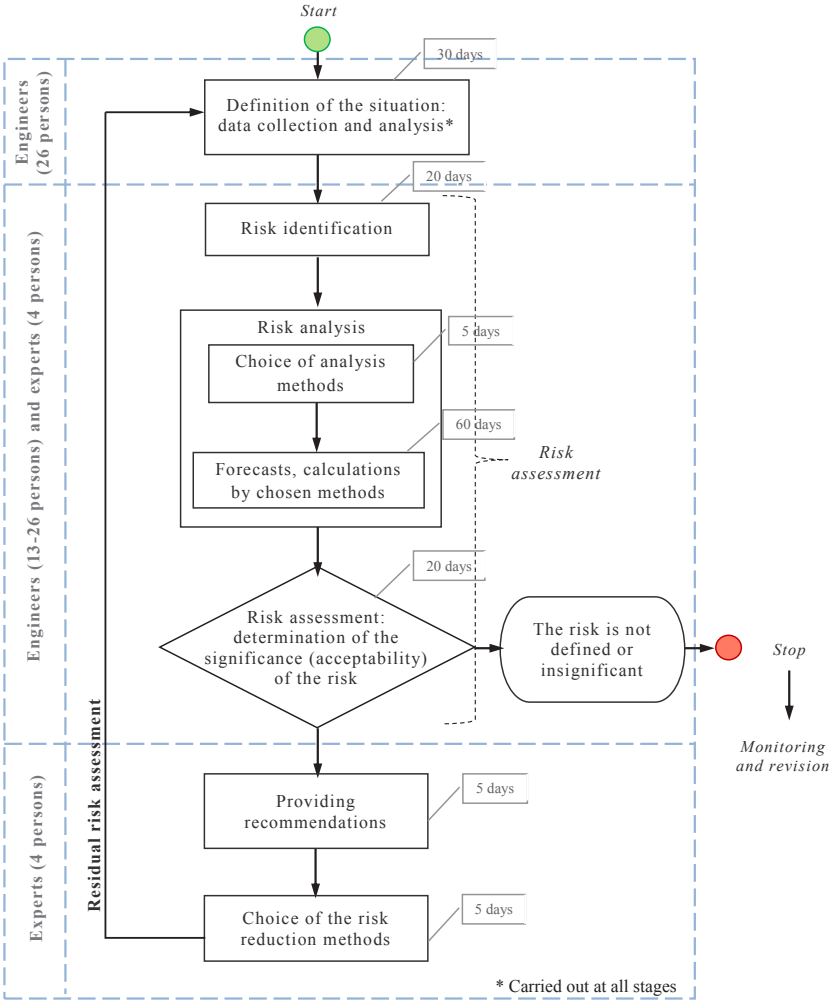
The project is relevant and of great practical importance: the process of assessing hydrogeological risk is a large-scale and comprehensive study [6, 7, 8], which is important when performing engineering surveys for construction. Incorrect estimates, decisions can lead to emergencies associated with considerable material costs and threats to environmental safety.

An expert system – is an instrument of formalization and subsequent use of professional knowledge. This determines, in addition to practical significance, the interest of the work from a scientific point of view.

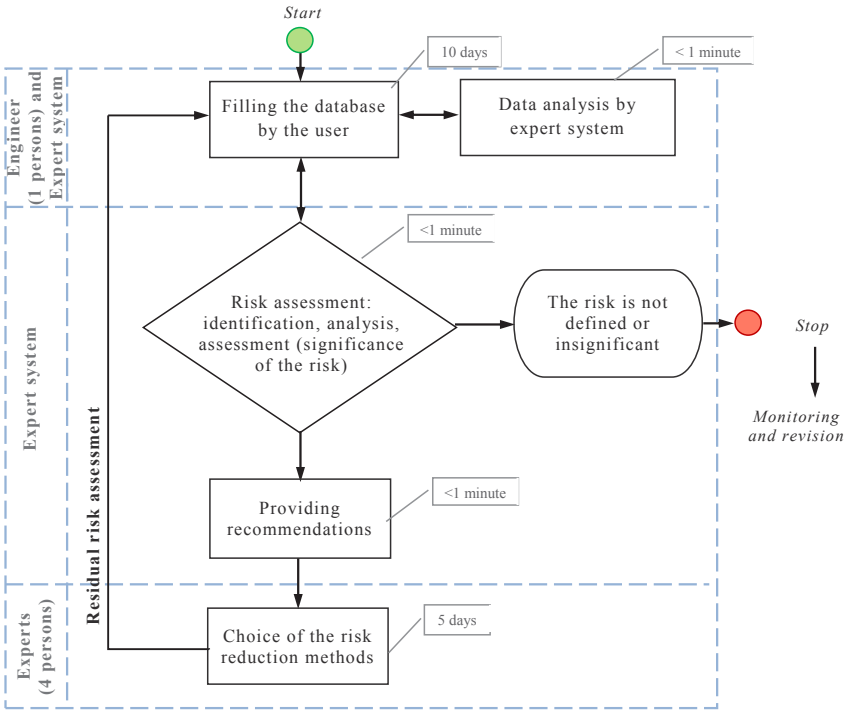
The authors of the project evaluated the scientific and technical level of work. Scientific and technical level (STL) characterizes the impact of the project on the level and dynamics of scientific and technological progress in the subject area. To assess the scientific value, technical significance and effectiveness of the project, the method of point-and-weight assessments was used (each attribute with a certain weight was assigned a certain number of points on an accepted scale). Based on the assessment of the signs of work, the coefficient of the scientific and technical level of the evaluated system was determined by the formula [9]:

$$Y_m = \sum_{i=1}^{n} a_i \, y_i$$

where Y_m — is an indicator of the scientific and technical level, determined by attributes; a_i – is the weight coefficient of the i-th attribute of the scientific and technical effect; y_i - quantitative assessment of the i-th attribute of the scientific and technical level of work (in points from 0 to 10).



a



b

Fig. 1. - *Business processes «AS-IS» (a), «To-Be» (b)*

Assessment of the research results was carried out according to the level of novelty, theoretical level, and the possibility of implementation (Table 1).

Table 1 - *Summary table of the assessment of the scientific and technical level of the project*

Weight coefficient value	STL attribute	Attribute level	Points	Point count justification
0.6	Novelty level	Novel	6	For the first time, an expert system is being developed to assess the risks of hazardous hydrogeological processes and phenomena at the NPP site
0.4	Theoretical level	Method development	6	A software product is being developed
0.2	Implementation possibility	During the first years	10	Developed during the first years and the results are immediately applied in production
		Industry	4	Nuclear industry

Based on the assessment of the characteristics of the project, the indicator of the scientific and technical level for the created expert system amounted to:

$$STL=0.6\times6+0.4\times6+0.2\times14=8.8$$

The project has a relatively high STL score of 8.8 (out of a possible 10), which suggests that the work provides scientific and technological progress in the subject area.

Alternative solutions to the complex task of assessing hydrogeological risks, that is, the risks of manifestation of dangerous hydrogeological processes or phenomena, are:

1. Calculation of many individual small tasks to achieve a practical goal as a single effective solution.

2. Hiring high-level specialists to solve complex problems in assessing the risks of hazardous hydrogeological processes and phenomena.

Alternatives to the expert system options have the following disadvantages regarding them:

- Cons of the first option: The decomposition of a complex task into several private small tasks is not always possible. To solve each individual problem, significant time and financial costs will be required. In addition, there will be a need to develop a single consolidated solution based on the results obtained in solving individual particular problems.

- Cons of the second option: Work requires analytical and predictive research, data control in order to prepare information for decision-making. The work is long, requires a larger number of performers, a well-organized team work is needed. In addition, the selection of a competent specialist is a very difficult task, which requires significant time and financial costs.

Using ES is not without its difficulties, so one should not exclude the possibility of using any of the options for solving the problem, one should make a choice "according to circumstances". However, the product being developed seems to be the most effective and cost-efficient in the general case.

The authors of the project carried out a market analysis, as a result of which no direct analogues of the proposed solution were found. However, to date, a large number of expert systems have been created [10]. They have well established themselves as a tool for solving a wide range of problems, have proven their significance and value in many important applications [11]. There are close developments that solve related problems, or similar to the proposed product in some parts, elements [12, 13, 14, 15].

Among other things, the project risk assessment was carried out by constructing the matrix of initial and residual risks (Fig. 3), processing - in the form of the development of measures to manage them (Table 2). According to the results of the project risk management process, all identified risks were transferred to the category of green zone risks (Fig. 2) - the project seems to be feasible.

According to the results of the evaluation of JSC SPb RSI "EIZ" project, "Development of Expert System for Risk Assessment of Hazardous Hydrogeological Processes and Phenomena on Nuclear Power Plant Site", the work is a young, promising, relevant and fully implementable innovative initiative.

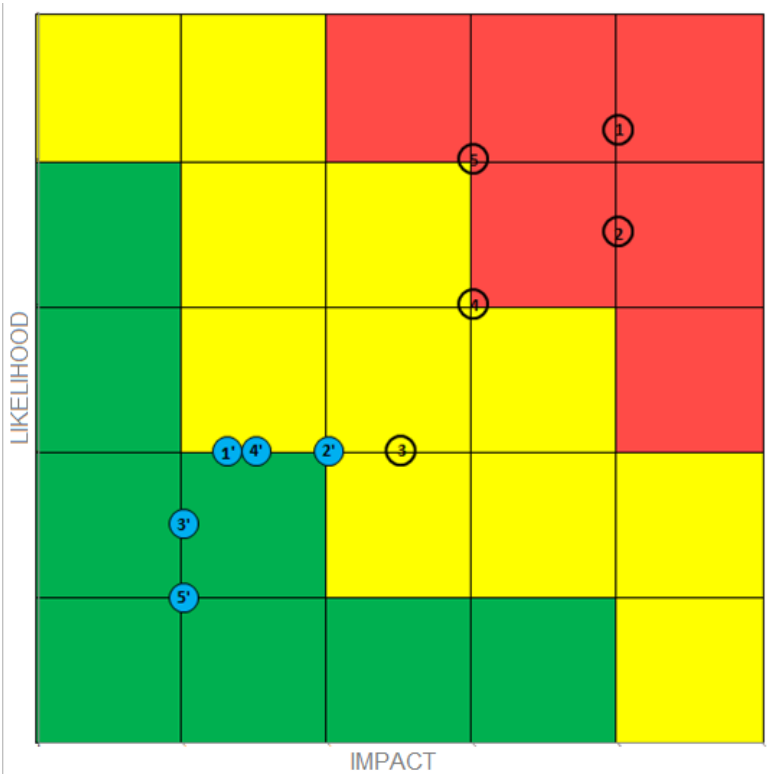


Fig. 2. - *Map of the inherent (1-5) and residual (1'-5') risks of the project*

Table 2 - *Risk register and measures for their management*

№	Risk	Management measures
1	Non-approval of the investment plan, due to insufficient funding source	1. Monitoring the process of agreeing an investment plan; 2. Monitoring the effectiveness of the use of an investment resource.
2	Delay in the project implementation period due to the high workload of the project participants due to an increase in their overall workload by current research projects at NPP sites	1. High-quality preventive work planning; 2. Monitoring of work and optimization of plans based on the results of control checks, stages; 3. Attracting an additional number of employees if necessary.

№	Risk	Management measures
3	The postponement of the implementation of the results (increase in the duration of the test stage) due to the need to carry out additional work on debugging the system, developing additional tasks due to negative results of test of the system, the occurrence of fatal problems and failures.	1. Careful work planning, including determining the composition, scope and methods of and testing the system. Preparation of relevant programs; 2. Attracting experienced programmers, monitoring and maintaining their work, prompt consideration of intermediate results; 3. Responsible performance of tests with fixing all identified errors and actions to eliminate them.
4	Difficulties in implementing the results associated with the inertia of specialists in the perception of innovations in the field of research and design, with the need to learn how to work with a new software product	1. Conducting explanatory and motivational work (seminars, meetings). 2. The use of mechanisms of motivation. 3. Formation of a complete, informative, understandable, illustrative User Guide, production of training materials, brochures. 4. Development, organization and conduct of training seminars on working with the System
5	Deactivation (obsolescence) of the system in connection with changes in the documents of the regulatory framework (RF) of the system, requirements and approaches to solving the problems of its application area	1. Monitoring changes in the RF area of the application of the system in the process of its creation, prompt response in the form of making appropriate changes to the components of the system; 2. Conducting upon completion of the project of works on ES support, its technical and consulting and reference support: 2.1. Monitoring RF changes and the main development trends of the system application area (domain, approaches to solving problems), timely response: updating, modification, system improvement; 2.2. Conducting work on the development of the system, the release of new versions, providing for the expansion of the circle of tasks and functionality.

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UDC 001.895; 656.02; 656.2; 656.3

一条腰带 – 一路走来。 铁路技术解决方案
ONE BELT, ONE ROAD. TECHNICAL SOLUTION FOR THE RAILWAY

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抽象。 本文讨论了在俄罗斯的参与下在欧洲和亚洲之间提供陆路运输走廊的问题。 分析铁路运输领域的技术发展，确保在最短的时间内为货物和乘客的运输提供安全舒适的环境。 介绍了为伙伴国铁路运输智能控制系统奠定基础的技术发展的主要方向。 触及了未来列车的应用技术领域。 给出了引入无人控制问题的描述。

关键词：铁路运输，无人驾驶，自动化，机器人，数字铁路，技术愿景，网络物理系统。

Abstract*. The article deals with the problem of providing a land transport corridor between Europe and Asia with the participation of Russia. The analysis of technical developments in the field of railway transport to ensure a safe and comfortable environment for the transport of goods and passengers in the shortest possible time. The main directions of development of technologies which will make the basic foundation for intelligent control systems on railway transport for the partner States are described. The sphere of applied technologies for trains of the future is touched upon. The description of problems of introduction of unmanned control is given.*

Keywords*: railway transport, driverless, automation, robotics, digital railway, technical vision, cyber-physical systems.*

The idea of creating a trans-Eurasian transport corridor proposed by Chinese partners in 2013 not only allows connecting two huge continents Europe and Asia, but also gives impetus to the development of vast territories, economies of a large number of countries (150 countries participated in the second forum in Beijing on

April 25, 2019), the opportunity to carry out cultural, investment and scientific and technical projects.

The implementation of this megaproject should become an example of integration of all technical and technological world developments, ubiquitous digitalization and robotization, the application of quantum technologies and cyberphysical transport systems [1], and also allow the use of new breakthrough solutions in the field of ensuring safe and high-speed transportation, introduction of technologies for predictive diagnostics of the state of the infrastructure and rolling stock, vehicle control based on unmanned technologies, the Internet of Things, Big Data [2], neural networks, modern communications and intelligent train control technologies, etc.

Now the countries participating in the Shanghai Cooperation Organization (SCO) account for about 244,000 km of railways and 70% of the world's cargo turnover, with Russian railways accounting for 28%. Therefore, it is important to use this potential to create an optimal railway corridor for the transport of passengers and various cargoes, the volume of which is constantly growing. The Russian railway network can play a significant role in the implementation of this megaproject. The problem of the difference in the gauge with China is already being resolved. Technologies for interaction of border crossings between the two countries are being jointly developed and the number of train pairs is increasing from 14 to 20 [3].

Thus, Russian Railways Logistics and the Chinese transport company Sinotrans have agreed to cooperate in the field of freight rail transport in international traffic. Container trains will be sent to Europe from Chinese provinces in which Sinotrans offices are present, including from Shenyang, Qingdao, Shilong, Changsha, and others. The parties intend to make joint investments in the development of terminal complexes, which will also help increase the volume of cargo transported along the China - Europe - China route [4].

One of the problems that hampers the active participation of Russian railways in the project is the outdated infrastructure, including Trans-Siberian Railway and Baikal-Amur Mainline. The project for the modernization of these roads implemented by JSC Russian Railways is estimated at 520.5 billion rubles, which will certainly not only develop the economy of nearby regions, but also increase the carrying capacity one and a half times (by 2024 up to 180 million tons of cargo).

Also, within the framework of the Long-Term Development Program of JSC Russian Railways, until 2025, 493 billion rubles are planned to be invested for the development of the railway infrastructure of the Eastern Polygon. According to the project, it is planned to build about 1,310.3 km of additional main tracks, 32 crossings, and to reconstruct 29 stations. [5]

If we consider the construction of the Moscow-Beijing highway, which was originally designed as part of the global London-Beijing highway, it is undoubtedly necessary to say that such an extensive route should be high-speed and ensure the fastest possible delivery of both passengers and cargo to destination. The problem for Russia in this case may be the lack of experience in the construction and operation of such high-speed highways, which will be a serious challenge for the consortium created, which includes Mosgiprotrans, Nizhegorodmetroproekt and China Railway Eryuan Engineering Group (CREEC). Design work started in 2015, and the start of construction was scheduled for October 2018, but was postponed by a decision of the Russian Government, as reported by Deputy Prime Minister Maxim Akimov.

The Moscow-Kazan high-speed rail project itself, which was supposed to be a key link in the trans-border TransEurasia highway, is constantly criticized, and the cost of the project grows from year to year and is once again postponed. At the moment, the project of construction of the Moscow-St. Petersburg high-speed railway through Nizhny Novgorod, with the potential for the development of a new railway to Helsinki, is seen as more relevant in the Russian government. Also, the new highway from Moscow is planned to be connected to Warsaw via Minsk, in which the authorities of the Republic of Belarus are interested [6].

Solving the problems of infrastructure development in the framework of the project “One Belt, One Road” implies the use of modern technical solutions. The construction of a high-speed train, which will be assembled in Russia, will be based on the solutions of two leading global companies, Siemens and Alstom. Despite the fact that these companies have developed almost all technological solutions that have been applied in high-speed rail transport in the world, the developments of our Chinese partners do not lag behind their European counterparts. Especially it concerns the creation of a prototype Maglev 3.0, which will reach speeds of up to 600 km/h, which is 200 km/h faster than version 2.0, and, in addition, this train will be completely autonomous. At the moment, these are the fastest passenger magnetic-train trains developed in China, although the speed record belongs to Japan - the maglev in this country in 2015 reached the speed of 603 km/h. [7].

Modern train manufacturing technologies imply that it should influence the environment as little as possible. Many companies are actively working to create "green" trains. Current innovative projects are aimed at reducing energy consumption, eliminating harmful emissions and, ultimately, creating a train with zero emissions. As an option, it is possible to use solutions based on the use of batteries and hydrogen for storing energy on board the train, and the combination of both diesel and contact networks with energy from on-board lithium-ion batteries will significantly reduce the environmental damage. While competing with diesel trains, hybrid trains that combine hydrogen with electricity or batteries are assumed to be the future.

For Russia, projects to create modern trains will most likely not become breakthroughs, since the main focus will be on importing foreign solutions and components, and in matters of control systems and ensuring the safety of train traffic, our specialists must provide the highest possible technological solutions. The exception is the GT1h gas turbine locomotive - a Russian experimental locomotive with a gas turbine engine, which uses an engine running on liquefied natural gas, connected to an alternator, although it has been successfully tested, but lack of the necessary infrastructure does not allow to talk about general use throughout the entire network.

One of the solutions that is actively developed on the Russian railways is the technology of unmanned train control as part of the Digital Railways project, adopted by JSC Russian Railways in 2017 [8]. These are primarily solutions aimed at safety, optimization of speed, increase in traffic volume, increase in productivity and ensuring the implementation of the schedule. Trains without a driver are also more environmentally friendly, as they provide significant energy savings when driving on an energy-optimal schedule, which is automatically built by the system on board of the train.

The control system of a shunting diesel locomotive over a radio channel from a remote workplace of an operator at the Luzhskaya station made it possible to prepare the basis for the application of an unmanned passenger train control system on the Moscow Central Circle (MCC). Testing of trains with technical ("machine") vision systems will be held this year, and in 2021 all trains of the MCC will operate in automatic mode. [9]

To detect obstacles in the movement of a locomotive along the way, technical means of "machine vision" are used: lidars, radars, infrared and SWIR cameras, stereo cameras, and ultrasonic sensors.

The following conditions and technologies are necessary for the safe movement of a train without a driver:

- onboard vision system;
- self-learning neural networks for the classification of objects and other tasks;
- high-precision train positioning;
- 3D format on-board electronic map;
- secure and high-speed communication channels (LTE or 5G networks);
- remote control by the operator in case of unforeseen situations (for GoA 3).
- automatic intelligent train control system;
- cybersecurity.

For train control systems, it is important to understand that in complex computerized systems it is becoming increasingly difficult to take into account all possible threats and dangerous events. Accuracy and the absence of errors in the specification, development and verification of software and hardware is an essential condition for ensuring the security of the entire system.

An integrated approach [10] to risk management based on risk assessment allows us to consider aspects of technical security and cyber security in general. This approach, for example, is followed by experts from UIC and a number of European railway operators [11].

The main feature of the European ETCS Level 2 system and the Chinese CTCS Level 3 system is the use of the GSM-R radio channel for transmitting control commands to the locomotives by a specialized secure computer, the so-called Radio Block Centre (RBC) [12].

Russia uses a multi-level train control and traffic safety system that combines the ideology of ETCS Level 2 with the national automatic locomotive signaling system. In the Russian version, instead of point sensors (balises), special reference points are used, placed on the digital model of the site and listed in the electronic on-board map. Based on a map, the technology integrates positioning data obtained using differential positioning and GLONASS/GPS satellite navigation systems [13].

The most important tasks of building a "digital railway" are:

- Bandwidth increase;
- Reduced trackside infrastructure costs;
- Motion optimization and adaptive planning.

The implementation of these tasks requires the development of new technical solutions in the field of train separation. One of such solutions is the transition from the conventional principles of train separations based on light signaling with fixed block sections (along track circuits) to signal-free train separation with virtual block sections. This solution can be implemented both using a radio channel and on the basis of track circuits (as was done on MCC).

In addition to the use of modern technologies to control the movement of trains, it is necessary to create conditions for the comfortable travel of passengers. High-speed wireless communications and digital services onboard in the new "digital train" can dramatically increase the attractiveness of railways for travelers making long-distance journeys.

Based on the foregoing, the technical and technological parameters of the high-speed highway connecting Europe and Asia should include the following elements [14]:

1. Infrastructure and operating technologies should ensure the movement of passenger and container (or combined) trains with a maximum speed of 300-400 km / h and a route speed of 200-250 km / h, taking into account protection from extreme weather conditions, unauthorized access to the railways.

2. The design of the rolling stock is to provide comfortable conditions for the passenger with a "digital environment", and for cargo the possibility of high-speed transportation of goods in special containers that fit into the interior of standard

high-speed cars.

3. In the construction of infrastructure and rolling stock, maximum use should be made of unmanned maintenance technologies based on the latest digital solutions, new generation materials and the widespread use of predictive diagnostics and control systems for all structural units and elements.

4. Full use of "Digital Railroad" technologies including the use of the Internet of Things, neural networks, Big Data capabilities, cloud technologies and unmanned control systems.

5. A single train control system should be developed, ensuring compatibility (interoperability) between the European ERTMS / ETCS level 2 standard, the Chinese CTCS level 3 system and the Russian multi-level control system [15].

6. The use of integrated data transmission and radio communications with packet switching (EDGE, LTE, 5G, satellite communications, Wi-Fi, Wi-MAX, etc.).

7. In order to drastically increase the speed of transportation, it is important to accelerate container loading (unloading) at the largest distribution stations (transport and logistics centers) using “platform process” without using classification stations (creation of a new generation of robotic platfprm-based loading and unloading terminals).

8. Some sections of the infrastructure and the train are to be equipped with devices that allow remote sensing to increase situational awareness en route, diagnose power lines and substations, and unload cargoes at stations using unmanned aircraft systems [16].

9. Providing information and cybersecurity to create a reliable train management system along the whole line, which will allow avoiding an emergency situation while the train is moving.

Conclusions

The TransEurasia railway is an extremely important project that can become part of the global trade and economic route “One Belt, One Road”, therefore, it is truly right for Russia to invest huge amounts of money in this strategic transport project. Thanks to innovation and research projects, the train of the future for the Trans-Eurasian transport corridor is unmanned, intelligent and environmentally friendly, creating a comfortable environment for the passengers on their way and ensuring the transportation of goods with maximum speed and just in time.

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作为现代劳动力市场二级职业教育国内竞争专业人员培训主要因素的教师，主要生产培训，辅导员工作的商业共同财富

BUSINESS COMMONWEALTH OF TEACHER, MASTER PRODUCTION TRAINING, TUTOR IN THE WORKSHOP AS THE MAIN FACTOR OF TRAINING OF DOMESTIC COMPETITIVE SPECIALISTS WITH SECONDARY VOCATIONAL EDUCATION IN THE MODERN LABOR MARKET

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GALLIA EST OMNES
DIVISA IN PARTES TRES.

"Why is there so much attention to SPE and why is this "golden rain" from the federal treasury? The answer is obvious: today the leader is a man of labor. The crisis has narrowed the money supply, and now money from speculative operations is moving into the real production area. But production cannot reach a decent pace of development due to the lack of qualified personnel. So, the accelerated development of the open source software system is, most likely, a certain order from the side of large Russian enterprises. In general, a good sign - after all, this means that the economy is experiencing a breakthrough, which nevertheless must pull it out of the pit of stagnation and stagnation. A working specialty is guaranteed employment, however, only in large cities..."

***Olga Vasilyeva**, Minister of the Government of the Russian Federation.*

The modern struggle for a place under the sun is a constant "battle of the Titans" and the continuous conduct of trade wars. And it will not be those nations that seek other guys out of themselves, who train them hard and then generously give them to their competitors, but those who manage to ensure a high level of quality of human capital. In general, while creating the conditions for the realization of their capabilities to young people in their homeland.

***Alexey Kudrin**, Head of the Accounts Chamber of the Russian Federation.*

莫斯科地区中等职业教育体制改革已成为“莫斯科地区教育”国家计划的火车头。如果在实施之初，大学毕业生就业的比例大约为43％，那么在未来它已经增长，并且今天计划将其增加[4]至65％。 PJSC“以S.A. Zvereva命名的Krasnogorsk工厂”与FBPEI MR“Krasnogorsk College”之间的合同基础建立了商业社会伙伴关系。今年有史以来第一次，大学毕业的技术人员 - 数控机床操作员在“金属加工生产技术”专业;学院提供NMO和教学，工厂提供材料基础，培训和生产集群，生产导师（工程人员）和工厂的专业工匠。毕业生表现出优秀的学习成绩;尊贵的光学，一如既往，稳定

关键词：莫斯科地区职业教育紧跟生产现代化，双重教育正在实践中，双重培训的科学和方法论支持，高校的物质基础，最新的教育教学方法，毕业生的素质 - 他们在大学学习的反馈正在增长

***Astract.** The system of secondary vocational education in the Moscow region education reform has become the locomotive of the “Education of the Moscow Region” state program. And if at the beginning of its implementation the percentage of college graduates employment amounted to about 43%, then in the future it has grown and, today, it is planned to increase it [4] to 65%. Business social partnerships have been established on a contractual basis between PJSC “Krasnogorsk Plant named after S.A. Zvereva”and FBPEI MR “Krasnogorsk College”. For the first time in its history, this year the college graduated technicians-operators of machine tools with numerical control in the specialty "Technology of metalworking production"; The college provided NMOs and teaching, the plant provided the material base, the training and production cluster, production tutors (engineering staff), and professional craftsmen from the plant. Graduates showed excellent and good quality studies; distinguished optics, as always, stability*

***Keywords**: vocational education of the Moscow Region is keeping up with the modernization of production, dual education is being introduced into practice, scientific and methodological support of dual training, the material base of colleges, the latest educational teaching methods, the quality of graduates - the feedback of their studies in college is growing.*

Introduction

«The main one of our priorities is to work on training professionals» (Minister of Education of the Moscow Region Zakharova MB).

The article you are holding in your hands was difficult to write.

It seems that this material was already touched upon in the last publication of our small pedagogical consulting. Why is it difficult to write about achievements? Because, probably, you need to write once, and everything written should become a solid canvas, and not a frequent repetition.

The system of vocational education in education is becoming the driving force of education in the Russian Federation - you can swing on a swing of success, be proud.

We will survive the success, but how to teach, organize, motivate a group of about 8,000 workers who are lacking in the production of the Moscow Region — auto mechanics, builders, electricians, machine tools workers, locksmiths?

In Krasnogorsk College, these specialties are always a competition. We need to engage in recruitment - Director of the College V.M. Demin is engaged, has a close business relationship with PJSC KMP named after S.A. Zvereva - with Director V.S. Kalyugin, and with almost all the sub-divisions of the plant.

Work is good, the training and production cluster works - excellent, students graduate with good grades - what else is needed, there is an effective youth policy - great, cheers.

However, it's too early on a swing, the motivation of the graduates is needed, they need to be fastened in the divisions of the plant, not "go on a flight" with a return to the enterprise and wasted time. And what to do with the scientific and methodological support of the duality?

Now a new NMO (scientific and methodological support) is needed: lecture notes, a combination of methods and techniques for computational and graphic work; "Chewed" manuals on subjects of the specialty "Technology of metal-cutting machines" with examples of practical production calculations on the theory of cutting, structural materials, and applied hydraulics. What is needed is not general reasoning, but real textbooks, laboratory manuals and problems, in the required quantity.

There are many cases. For example, why did they grow up in college and factory the first budget group of machine tool graduates to work on CNC machines?

You understand, they became the first, they are motivated, so leave them for practical pedagogy at the factory or college. There's no answer.

The main thing that now appears in the relationship between the college and the factory, the teacher-mentor and graduate, the training master and the production master is a mutual respect, turning into a business community.

This is also the quality of the production process.

Another important task is the provision of quality culture in the college. There may be a situation where all college employees have a single view of the quality of education problem and adhere to a single definition of this concept; when everyone understands what the quality of education means directly to him, and how to achieve high quality; when it is known in what ways his unit is moving towards quality; when there is a clear understanding that quality can be controlled, and the mechanisms for this are known. Under the culture of the quality of education should also be understood the results of the preparation of graduates, the quality of the educational process and its management, and the degree of freedom provided to students of a professional college.

Quality assurance is the process of creating certain conditions and allocating the necessary resources to achieve the quality goals. First of all, they include educational, methodological and financial support, material base, staff ability and preparedness of students, information service and others [6].

The quality of education in a professional college can also be judged by the answers to the following questions: whom are we teaching? what are we teaching? who is teaching? how do we teach what are the resources? Who runs the college and how? At the same time, the psychological problem is a very important component of high quality education: what is the motivation of the participants in the educational process: do teachers want to learn in a new way, and do students want to learn in new conditions?

The answer to this question should be one: to ensure high quality education, the motivation of the main participants in the educational process - teachers and students should be positive and socially significant. In this regard, this is not about creating a new system, but about improving the existing model for secondary vocational education institutions, although with significant changes, adjustments and improvements, taking into account the experience of other modern, ever-increasing requirements, principles and recommendations.

Thus, the basis of the key idea is to create conditions for motivation for highly effective useful work, protection of the rights and freedoms of the individual, training of practice-oriented, socially adapted to modern production life specialists; updating the content of education, and the development of mechanisms for monitoring the quality of student training; human capacity building; development of material and technical base of the college; development of a system of social partnership [5].

The article discusses the issues of scientific and methodological support as the basis for the innovative development of dual targeted vocational training of students in Secondary school. The essence, structure, composition of scientific and methodological support (NMO) of targeted professional training are disclosed, the requirements of high-tech production are disclosed as a condition for the prepara-

tion of a competent specialist in a technical field.

The conceptual provisions of the scientific and methodological design of vocational training are formulated, the methodology of designing goals and the content of vocational training is presented. It should be noted that in the pedagogical and methodological literature there is no single understanding of the structure and composition of non-governmental organizations. This circumstance leads to the subjective solution of many issues of pedagogical practice. Under the NMO of the educational process in the work is understood, firstly, ensuring the design of all its components, goals, content, forms, methods, teaching aids, and secondly, ensuring the implementation of these components in teaching practice.

Thus, the composition of the NMO includes the structural components necessary for the design and implementation of the educational process, which make it up as a whole. Scientific and methodological support of targeted vocational training of students is considered in research as a process and as a result [2, 3, 7, 10]

The scientific and methodological support of targeted vocational training is understood as the process of searching and developing organizational, pedagogical and methodological mechanisms for bringing scientific results to their practical application in the activities of subjects of education.

A three-level structure of the system of non-profit educational programs for targeted vocational training of students was developed [3, 7].

The methodological level includes the rationale for the application of the system, goal, dual, competency and modular approaches to professional training, to the design and implementation of curricula and programs, to the development and implementation of the components of the educational process

At the theoretical level, a set of principles is considered that are the basis of targeted training as the embodiment of the dual training system in specific forms, methods, teaching aids, forms of organization of students' subject-related activities in order to assimilate specific content in a particular branch of knowledge and professional activities.

At the methodological level, a theoretically substantiated and tested in practice set of forms, methods and techniques of subject activity of a teacher and students for mastering the content system, educational and program documentation are revealed; means of education; controls, guidelines.

The dual system of targeted vocational training refers to the innovative type of organization of targeted vocational training, which involves the coordinated interaction of educational and production environments for the training of specialists. This interaction is based on the unity of three methodological foundations:

–- axiological (parity of educational and production values and goals), - ontological (competency-modular approach),

- technological (organization of educational and professional activities) [3, 7,

10]. It is necessary to transfer all our achievements from point to system, and for this it is necessary to strengthen the connection between business, the state and educational organizations (Minister of Education MO Zakharova MB).

Development of a methodology for scientific and methodological support of dual targeted vocational training of students in college

The domestic vocational school has experience in conducting targeted intensive training of specialists on the orders of enterprises. Education, as a rule, is conducted in a vocational school with a full academic week, and then continues and ends directly at the workplace, at the enterprise. Training is carried out in close contact with the enterprise: full-fledged production practices, targeted implementation of course and diploma design, providing internships at workplaces, during undergraduate practice. It was in this way that the vocational education system that existed in our country during the Soviet period was built [10].

Today, such training does not fully meet the requirements of enterprises. It is known that in the world practice of vocational education, the dual vocational training system that originated in Germany has gained widespread recognition [7, 8].

The dual system includes two different educational and production environments, such as an enterprise and a state vocational school, which work together in the name of a common goal - vocational training of students. The dual system provides for the involvement in the process of training personnel of enterprises that incur sufficiently significant costs associated with the training of employees, since they are well aware that the cost of quality vocational training is a good contribution of capital. Moreover, they become interested not only in the learning outcomes, but also in the content of the training, its organization, etc.

This determines the significance of the dual system as a model for the organization of professional training, which allows us to bridge the gap and inconsistency in the relations between the production and educational spheres regarding the training of professional personnel.

For domestic vocational education, the problem of establishing a close relationship with the production sphere is one of the most acute and relevant, which is emphasized as in the works of scientists (A.N. Novikov, I.P. Smirnov, E.V. Tkachenko, etc.), and in the regulatory documents that determine the educational policy of the state in this area. That is why the extension of the dual organization principles to other levels of vocational education seems appropriate, timely and promising.

One of the cornerstones that ensure high-quality updating and development of professional training of students in secondary vocational schools as a whole, and the dual system of target vocational training, in particular, is its scientific and methodological support (NMO), which assumes a theoretical justification of

educational and methodological materials developed and implemented in teaching practice.

In this regard, there is a need for a theoretical and practical solution to the problem of scientific substantiation of the methodological support of the educational process:

1) methodological issues of the scientific substantiation of vocational education are presented in the works of S.Ya. Batysheva, A.P. Belyaeva, G.V. Mukhametzyanova, A.N. Novikova, E.V. Tkachenko, R.Kh. Shakurov;

2) certain aspects of scientific and methodological support are presented in studies on the development of curricula, qualification characteristics for workers and mid-level specialists, methods for selecting and structuring the content of educational material in a basic professional school (P.F. Anisimov, P.N. Novikov, I.Ya. Kuramin, A.N. Leibovich, L.D. Fedotova, I.A. Khaliullin);

3) the psychological and pedagogical aspects of determining the goals, content, forms and methods of vocational education are revealed in A.N. Verbitsky, B.S. Gershunsky, V.A. Ermolenko, G.I. Ibragimov, V.S. Lednev, L.G. Semushkin, N.G. Yaroshenko.

4) general theoretical issues of the selection and structuring of the content of educational material, the organization of the educational process in the basic professional school, are considered in the works of S.Ya. Batyshev, L.A. Volovich, V.S. Ledneva, N.N. Talanchuk, V.V. Shapkin.

5) new approaches to the professional training of workers and mid-level specialists in the context of standardization are proposed in the works of V.I. Bidenko, A.N. Leibovich, A.V. Leontiev, M.V. Ryzhakov.

6) as you know, the new generation of educational standards is based on a competency-based approach, according to which a modern specialist should have a certain set of social and professional characteristics that will ensure him success, mobility, adaptability, social security in the labor market and in the professional sphere (E.F. Seer, I.A. Zimnaya, G.V. Mukhametzyanova, J. Raven, A. Shelten, S.E. Shitov).

Dual training is only beginning to be actively applied in the vocational education system [4]. However, the scientific and methodological support of the dual system of targeted professional training of workers and mid-level specialists has not been developed enough [8, 10].

In the secondary vocational school, a contradiction has arisen between the need to form competitive specialists in demand in the process of professional activity and the lack of appropriate scientific and methodological support.

This contradiction caused the problem: - What are the pedagogical conditions for the design and implementation of the system of scientific and pedagogical support of dual target training, which allows the formation of competitive, demanded

by the production, competent specialists.

The purpose of the study: to identify and justify the pedagogical conditions for the design and implementation of the IME system of dual targeted training of students in secondary vocational schools of a technical profile.

Object of study: scientific and methodological support of dual targeted vocational training of students in secondary vocational school.

Research hypothesis: the design and implementation of a system of scientific and methodological support for dual targeted vocational training of students in secondary technical education must be carried out under the following conditions:

- at the organizational level, the requirements of high-tech production for a modern mid-level specialist are taken into account;
- at the theoretical and methodological level, systemic, competency-based and modular approaches to vocational training are used, aimed at implementing social partnerships, coordinated interaction of the educational institution with enterprises-personnel-personnel;
- at the technical level, the principles of the unity of the substantive (curricula and programs) and the procedural (methods, forms, organization of training) components of vocational training are implemented.

The problem, object, subject and purpose determined the following research tasks:

1. to determine the composition of the scientific and methodological support of the dual target vocational training of students in secondary secondary education;
2. to develop the content and methodology for the implementation of scientific and methodological support for dual targeted vocational training in secondary secondary education;
3. to identify and justify the conditions for the implementation of the system of scientific and methodological support of dual targeted training of students in secondary secondary education;
4. to conduct an experimental verification of the scientific and methodological support of dual targeted vocational training of students in secondary secondary education.

So, the theoretical and methodological basis of the study was determined by the provisions of the system, competency, modular, activity approaches, the totality of which allowed us to consider the educational and methodological support of the target professional training at the scientific and methodological level [10, 11].

The experimental base of the research was compiled by the Krasnogorsk College GBOU MO and PAO Krasnogorsk Plant named after S.A. Zvereva ”[8, 9].

The scientific novelty of the study lies in the fact that it:

- the composition of the NMO dual-purpose training system was determined, including:

- design and substantiation of the content of methods and forms of its implementation;

- implementation of goals, content of training in the educational process, monitoring of current and final results of training;

- the role of participation of social partners in determining the content of training, the variety of forms of social partnership of the enterprise with the educational institution;

- the importance of industry and functional specializations is determined in the development of additional knowledge and skills necessary to perform professional functions, due to the specific content and nature of the specialist's work.

Theoretical Significance:

- at the methodological level, a dual and targeted approaches to professional training of specialists of high technology and defense industry complexes were implemented;

- at the theoretical level, a set of principles has been determined (priority for the quality of training specialists), strengthening the professional orientation of the content of education due to the wide participation of social partners; collective thinking of teachers, employers and other social partners;

- practice-oriented training of students, which is the basis of targeted training as the embodiment of the dual training system in specific forms, methods, teaching aids, with the aim of assimilating students of specific content in a particular branch of knowledge and professional activity.

At the methodological level, a set of methods and techniques of subject-oriented activity of teachers and students, training and production masters for mastering the content of training was developed, justified and tested; flexible educational and software documentation based on

FSES 3 $^{++}$ generation; means of education; monitoring and quality control tools, guidelines.

Fundamentals of the community of the best socially oriented partners Moscow region - SBPEI MR "Krasnogorsk College", PJSC "Krasnogorsk Plant named after S.A. Zverev"

PJSC Krasnogorsk Plant named after S.A. Zvereva "is a city-forming" enterprise, one of the leading enterprises of the Russian Federation in the field of optical and optoelectronic instrumentation. PJSC Krasnogorsk Plant named after S.A. Zvereva for decades provides development, testing and serial production of devices and systems for various fields of application.

Since 2010, the company has been part of the Schwabe Holding of the State Corporation "Ros-Tech". In the framework of the Development Strategy until 2020, the company, at its own expense and from the budget of the Russian Federa-

tion, takes measures to implement a comprehensive program of technical re-equipment and reconstruction of production facilities, introduces new technologies to ensure the development and production of products at the level of world standards.

PJSC Krasnogorsk Plant named after S.A. Zvereva "has a powerful scientific and technical potential thanks to its own scientific and technical center and production units. The enterprise has a foundry, metalworking, mechanical stamping, optical, assembly production, work is underway on the manufacture of plastic parts and coating. Briefly dwell on the three most important industries.

Machining industry is equipped with a wide range of machine tools, which allows to produce:

- high-precision parts (with dimensional accuracy up to 0.002 mm) from the basic structural materials (steel, aluminum alloys, brass, bronze, titanium);
- details of the shape of bodies of revolution from 2 mm to 1000 mm;
- large-sized case parts up to 2000 mm with dimensional accuracy of parts of complex shapes up to 2 microns.

Optical production allows the calculation of all types of optical systems using spherical, diffraction, holographic, gradient elements, high-precision optical coatings, as well as elements from crystals. In the process of manufacturing optical elements and optical systems, the latest developments, high-precision technological and metrological equipment and equipment are used.

Assembly production. PJSC Krasnogorsk Plant named after S.A. Zvereva "carries out assembly, alignment, electrical installation and tuning of optical and opto-electronic devices. The production capacities of the enterprise make it possible to carry out assembly and electrical work of single and serial samples of manufactured products, followed by the necessary tests; for which specialized standard optical benches, stands for mechanical tests, heat chambers, thermal pressure chambers, sprinkler and moisture chambers are used. All technological equipment and most of the control and adjustment works and control and matrix stands are made directly at PJSC KMP.

Solving production tasks of national importance, KMP PJSC pursues an effective youth policy, paying special attention to business partnerships and cooperation with educational institutions of secondary vocational education and higher professional education. The enterprise looking to the future, of course, needs an influx of new forces, young, active personnel with advanced views, reliable qualifications and competitiveness. Therefore, youth policy is part of the personnel policy of the enterprise, the main content of which is a set of measures to create attractive working conditions, aimed at maximizing the attraction and consolidation of young production workers at PJSC KMP.

One of the main documents adopted for this purpose is the KMP PJSC Youth Policy Program for 2015-2020.

One of the most pressing, promising and quite effective sources of attracting young people is the agreement on targeted training, with a dual component, which KMP PJSC concludes with students of secondary and higher educational institutions.

Another, no less important area of the youth policy of PJSC KMP is the integration of young workers in the labor collectives of structural divisions, where they are further adapted. Young employees are provided with highly qualified mentors; on quarterly certification commissions, young specialists present the results of the work performed, as a result of which additional payments are assigned to them depending on the success of the activity. Industrial mentors from among the main production workers with a high level of qualification help to master the working profession.

Public organizations play a large role in the adaptation of young employees of KMP PJSC. The consolidation and development of young workers in KMP PJSC is another strategic line of youth policy. There are many opportunities for youth for career and professional growth, which everyone can take advantage of - it would only be a desire.

KMP PJSC has a sufficient number of young leaders, each participant in youth policy will be able to receive additional professional education at the expense of the plant and budget sources. The factory holds professional contests among young professionals and workers. To the extent possible, the housing problem is being solved: young workers are allocated living quarters in factory hostels, in a housing and hotel complex with separate 3-bed rooms. The corporate mortgage lending program is successfully working, within the framework of which (over 2 years of work), already about 100 young workers were able to acquire their own housing. At KMP PJSC, a talent pool is being formed, which includes young promising employees who have proven themselves in production, scientific, structural, technological and managerial activities.

The Commonwealth of PJSC Krasnogorsk Plant named after S.A. Zvereva" and FBPEI MR "Krasnogorsk College" to create a basic center for training workers

history of the Krasnogorsk College is inextricably linked with JSC KMP, for which over the 64 years of its existence this legendary educational institution has trained more than 20 thousand qualified technicians in the field of optical-electronic instrumentation.

Today, more than 600 graduates of various years of KOMT - KOEK-KGK Krasnogorsk College work in the plant's divisions. Among them are employees of the enterprise, which the college can rightfully be proud of.

Implementing the main educational programs for training mid-level specialists

and skilled workers in the specialty "Optical and Optoelectronic Devices and Systems", and since 2015, in the specialty "Technology of Mechanical Processing" of the training program for skilled workers and employees, the college has made its worthy and significant contribution in the development of the personnel potential of PAO KMP and the entire north-west of the Moscow Region.

Annually, college graduates are employed in the main production and scientific and technical departments of the enterprise, KMP PJSC provides active educational support to college students through the implementation of all types of practices and the conclusion of contracts for targeted contract training with the payment of "factory scholarship."

It has become a good tradition that the leading specialists of KMP PJSC take an annual part in the work of the State Certification Commission at the FBPEI MR "Krasnogorsk College are mentors of undergraduate practice and scientific managers in the preparation of the final qualification work of the WRC. It should be noted that the level of student WRC is growing year by year, which means that the training course is correct, because 5-7 graduation works are carried out, as a rule, at the level of practical implementation.

True, while they do not know how to speak well, they forget their speech, but everyone has a desire to win.

Currently, relations between KMP PJSC and Krasnogorsk College are regulated by the documents concluded in December 2015:

- an agreement on public-private partnership, in the field of joint training of skilled workers and mid-level specialists in the field of mechanical engineering, metalworking, optical instrumentation based on the elements of dual training and targeted contract training of specialists with secondary vocational education;

- an agreement on the gratuitous use of real estate in the form of a separate room with an area of 270 sq.m. on the site of the training and production workshop for the creation of a training and production training ground "Engineering Technology", which houses the educational technological equipment purchased with the help of the Krasnogorsk College GBPOU MO: the turning center with CNC with the driving tool and the “Y” axis, CNC lathe, vertical CNC machining center, a device for installing and measuring tools outside the machine with a mounting tool for tools, screw compressor.

Prospects for the development of cooperation GBPOU MO Krasnogorsk College and PJSC "Krasnogorsk Plant named after S.A. Zvereva"

In accordance with contractual obligations, the employment of college graduates in the following specialties is planned for 2019:

- optical production, technology of metalworking industries, IT-technologists. Outlined:

- expansion of the program of continuing professional education to improve the qualifications of both employees of KMP PJSC and college workers.

- updating the curriculum of the Krasnogorsk College to the requirements of the plant;

- The introduction of a dual and modular training system, when college students 50% of the time will be engaged in equipment with PU at the site of the training ground in production and training and other units of the plant;

- internship of teachers and training masters of the Krasnogorsk College at PAO KMP.

In order to ensure the modern quality of specialist training, the enterprise plans to continue the work of the educational and production cluster; to improve the technical condition of the machine park, publish methodological literature, exemplary contain training and production sites;

- in training workers to make wider use of network software training, electronic training programs based on the college information center, to form and work out a center system for conducting "end-to-end certification", i.e. a monitor ring for each student, graduate, employee of the plant; to work out a quality management system; create a system of independent assessment of the quality of training for all stages of professional education; to bring student training to 100% on the profile of the enterprise on the basis of contract-targeted training with a dual component. One of the main development priorities of PJSC KMP is the implementation of an effective youth policy.

Over the years, KMP PJSC has been pursuing a real youth policy aimed at creating favorable attractive conditions and opportunities for successful self-realization of young people at the enterprise. Today, the key components of the youth policy of KMP PJSC are:

- mentoring, when each young specialist is assigned a mentor from among the most experienced and highly qualified engineering and technical workers of the plant for a period of six months to one and a half years;

- the formation of a talent pool among young specialists, thanks to which many young employees have already become heads of various structural divisions;

- providing opportunities for postgraduate and additional professional education at the expense of the employer in accordance with the organization of dual education;

- solving social problems of youth;

-additional benefits for young employees (quarterly bonuses, bonuses based on the results of the certification commission, bonuses based on the results of work for each year for 3 years, the right to additional vacation with the maintenance of salary content for family reasons).

Particular attention at the enterprise is paid to general and individual educa-

tion. Over the long history of the enterprise, strong ties have been established with leading technical universities in Moscow, St. Petersburg, Novosibirsk, Cheboksary, Ufa, Yaroslavl, Minsk, Vladivostok, Kazan, Chelyabinsk, Feodosia.

Developed our own continuing education programs.

PJSC KMP is actively implementing a program of targeted admission and training, which implies the direction of graduates of secondary schools to specialized universities and colleges. This program is being implemented as part of the state plan for the training of scientific personnel for specialists for the organizations of the military-industrial complex for 2015-2020.

In August 2014, KMP PJSC and the Krasnogorsk College GBOEU MO began to work together to create a basic center for training personnel, where students will master educational programs for training qualified workers and mid-level specialists in the field of mechanical engineering, metalworking, and optical instrumentation based on elements dual targeted training of specialists with secondary vocational education with their subsequent consolidation at the enterprise.

In the 2016/2017 academic year, the "Plan of measures (roadmap) for ensuring the quality of vocational training for VET staff in the Moscow Region" and the "Development Program of the Krasnogorsk College for the Period until 2020" were adopted.

The purpose of the program is to ensure high quality and practice-oriented training of workers and mid-level specialists in accordance with the changing current and future tasks of specialists in the labor market and the modern needs of the society and residents of the Moscow Region as a leader.

Krasnogorsk College Development Program

The priority tasks of the Program and events, allowing to lead to systemic changes in the work of the college of its branches in accordance with the socio-economic transformations in the Moscow region, as the leading region are presented below (out of 23 positions, 10 positions are given, but very important):

1) - increasing the investment attractiveness of the college and the development of mechanisms of social partnership for the training of qualified personnel and mid-level specialists (creating educational and production clusters, expanding contractual and targeted training, independent quality control systems).

2) - the development of a practice-oriented learning system with elements of duality "at the workplace".

The participation of students in research work at the enterprise, the participation of students in scientific and practical conferences on monitoring the temporary employment of students "Employment of graduates". The formation of topics and the implementation of coursework and diploma projects with practical implementation in production.

Transition to the demonstration exam.

3) - further development of the multifunctional center of applied qualifications. Expanding the range of short vocational training programs - mechanical engineering, metalworking, optics, welding production, housing and communal services, construction and architecture.

4) - holding WorldSkills regional championships in the competencies “Fundamentals of IT-network administration”, “Web-Design” (expanding the membership, training experts, developing the teaching and material base).

5) - providing flexible monitoring of graduates on the basis of mastering high qualification categories, obtaining the second and third profession, certification of qualifications.

6) - the introduction of new effective mechanisms for the independent assessment of the quality of vocational education. Accreditation of educational programs. Creation of a system of continuous monitoring of quality assessment. Professional education in colleges and its affiliates.

7) - advanced training and retraining of management personnel, teachers and masters of industrial training. The introduction of professional standards in the field of education.

8) - modernization of the content of vocational education technologies on the basis of introducing new FSES SPE according to TOP-50, taking into account the standards and requirements of WorldSkills champions.

9) - the expansion of accessibility and forms of education for people with disabilities and children with disabilities.

10) - the introduction of new effective forms of educational technologies, moral, civil-patriotic, circle, sectional with creative inclinations to design and create mechanical, biotechnical, optical systems and technologies. Perhaps the creation of SKB aviaamodelirovaniya "Spreading wings."

Conclusions, recommendations, suggestions

The most developed in pedagogical science at present is the problem of selecting the content of education, and the least studied is the management of the pedagogical system, in particular, the management of the quality of education.

In educational institutions, there is a need for constant monitoring of the training of each study group and each student in order to make the necessary adjustments. Both the administration and teachers are interested in an adequate assessment of students' academic achievements, assessment of the teaching activities of teachers, the college as a whole.

The subject of the study is monitoring as a means of improving the quality of knowledge and education management.

Object of study - the results of the educational process.

The purpose of the study is to develop a monitoring model for correcting the course of learning material.

Monitoring tasks: to determine objective methods and criteria for evaluating the results; prepare documentation for methodological support; to develop a mechanism for information workers; create a database; get data on a certain level of quality of education; to study the causes of failure; to study the professional readiness of the teaching staff; outline the process strategy.

The new educational conditions of the management system are characterized by decentralization, the collapse of the hierarchical management system.

In market conditions, each educational institution is forced to turn to the search for "its own face" and the corresponding management structure, which has ceased to be universal. The traditional components of management - planning, organization, leadership and control, are complemented by a new functional composition, ensuring the organization of joint activities of students and teachers and aimed at achieving the educational goals of college development.

Management, therefore, must respond in a timely manner to changes in managed facilities, must have information about them. There should be feedback implemented in the form of control. Management must adapt to changes in the educational situation, to its new requirements. Monitoring is due to the need to constantly monitor the status of the educational process, its individual links, with the aim of diagnosing, analyzing, correcting, predicting management actions to achieve the planned result.

To determine the monitoring functions means to determine its role and significance in the educational process. In modern literature, there are monitoring methods and technologies, methods and its forms, but without a clear understanding of its functions. Methods and technologies for monitoring are reduced to the following groups:
- Observations of changes: effectiveness depends on the psychological competence of the teacher, his experience, professional position; the research is subjective, and this affects the quality of monitoring;
- The method of test situations - the teacher interrupts training sessions, asks them questions on the topic, stimulates cognitive actions, dispensing help to set special conditions.
- Explication - (deployment of the content of educational activities) allows you to diagnose changes in student development and promptly make adjustments to the education process.

The following monitoring methods were identified:
- interrogation methods - to obtain information about the subjects of the educational process on the basis of written and oral answers to standard questions.
- analysis of the results - written answers, graphic materials, creative work of students are studied according to a predetermined scheme.

- testing is one of the objective methods of collecting the level of development of pedagogical processes and the degree of severity of the mental development of subjects of education.

Three forms of monitoring:

- starting diagnostics of learning and education;
- express diagnostics is carried out all the time of training, according to its results, adjustments are made to the educational and cognitive activity;
- final diagnostics of the graduate's professional preparedness - his social and professional knowledge, skills, abilities, including diagnostics of the degree of development of the qualities necessary for the future specialist.

The quality criterion can be the ratio of the goal and the result. If, in assessing the quality of education, we proceed from the construction of certain technologies (directive assembly technology) of ways to verify the effectiveness of education, then the task of managing education by actual results is correct and obvious [12].

Quality has two concepts - compliance with standards and compliance with customer requirements.

The final result of the quality of the educational and pedagogical system of the college is the student performance in the disciplines of the curriculum and final qualification work.

The quality management system formulated at Krasnogorsk College

The college has formed a quality management system as a management and evaluation system for educational, educational, scientific and methodological activities for the training of mid-level specialists of qualified workers.

The quality management system is based on an independent assessment of the quality of vocational education, first of all, on the part of employers on the graduate's compliance with the requirements, standards, requirements of consumers, the assessment of professional and social adaptability and success of the graduate in the labor market. At all stages of theoretical and practical training, employers evaluate the professional competencies of graduates and indicators of the development of students' personal potential.

The main tools of quality management in college are:

- expert assessment of the competencies of graduates during the certification of students with the participation of external experts;
- Monitoring the satisfaction of the labor market with the qualifications of graduates;
- analysis and introspection of participants in the educational process;
- state and professional public accreditation.

For the first time in the 2016/2017 academic year, a new form of graduate certification was introduced - a demonstration exam. College graduates took a

demonstration exam in accordance with WorldSkills championship standards, in Web-Design and Network and System Administration competencies.

Quality control of training requires objective methods of pedagogical measurements. Pedagogical monitoring as a means of controlling the control of the educational process provides the teacher with feedback on the level of assimilation of the teaching material through regular systematic monitoring of the degree or level of training. In the context of innovative activities, pedagogical monitoring can become a mechanism in the system of the educational process, which will contribute to the stimulation, activation, development of students, will be associated with providing them with greater freedom and responsibility

Pedagogical monitoring should be systematically organized, primarily in terms of training stages and tools. A number of conditions are necessary for its organization in college:

- implementation of the control system in its forms: - current, - thematic, - intermediate, - intermediate, - final;
- Organization of control and testing facilities (demonstration exam), ensuring systematic and periodicity;
- the presence of a package of meters at all stages of control;
- testing of meters, correction of knowledge gaps.

Based on this, the college has developed a monitoring system that includes:

1. input control (the beginning of the study of the discipline);
2. current control work;
3. midterm control following the results of the first and second semesters;
4. intermediate control in the form of a differentiated classification or exam;
5. output control.

The objects of control are skills in disciplines according to work programs.

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回收工业废物作为确保环境安全的一种方式
RECYCLING OF INDUSTRIAL WASTE AS A WAY TO ENSURE ENVIRONMENTAL SAFETY

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抽象。 已经开发出一种复杂的技术来处理某些类型的工业废物，以便生产出有前途的产品，通过合理的材料使用方法，不仅可以减少环境压力，还可以提高每个人的安全。

关键词：技术废物，酞菁金属配合物，硅粉，火灾和环境安全。

Abstract. *A complex technology has been developed for the processing of certain types of industrial waste in order to produce promising products that, through a competent approach to the use of materials, will not only reduce environmental pressure, but also increase everyone's safety.*

Keywords: *Technogenic waste, metal complexes of phthalocyanine, silica fume, fire and environmental safety.*

In accordance with the concept of sustainable development of mankind, first of all, there are issues of rational use of raw materials, processed materials and energy resources. The problem of creating new principles, methods and products of industrial production, which can significantly reduce the consumption of natural raw materials and energy resources by replacing them with technogenic materials and secondary resources, switch to the use of environmentally friendly technologies, and the production of unique products of a new generation, which will significantly reduce pressure on the environment has fully ripened. A problem has ripened on the use of domestic waste - the problem of industrial recycling.

It is also known that only 2% of natural resources are processed into a suitable product, and the rest goes to waste. This means that the problem of handling generated and already generated waste is becoming global. Its solution is necessary based on the fact that waste in many cases:

1) negatively affect the environment and humans;

2) its recycling can significantly save primary raw materials (minerals) and thus effectively solve the problem of resource conservation.

Waste-free production is a tempting, but hardly feasible, task at present. In this regard, such a well-known approach as recycling, waste processing in order to obtain suitable products, in general - waste recycling deserves great attention. In this case, there will be no waste products at the end of the production process, since at each stage of the technological cycle they are either recycled, or products of consumer value are made from them. Such technologies for the production of the main product are called quasi-wasteless, compared to truly wasteless technologies in which no waste is generated at all.

In this regard, low-waste technologies are currently being developed in which the generated waste is the secondary raw material, from which products can be made that are not inferior in their characteristics of that made from natural raw materials. This allows to implement one of the basic principles of sustainable development - the rational use of natural resources. The latter is associated with the environmental safety of mankind, which is manifested at two levels: global and regional. It involves a significant reduction in air emissions and discharges (wastewater) into the oceans. In industrialized countries, it is recognized that the approach to its implementation on the basis of the well-known principle of "end of pipe" is now obsolete, it has been replaced by a new ideology based on the implementation of safe industrial development (ESID program, approved by the UN General Assembly, resolution 42/147). It is based on integrated environmental and resource-saving technologies based on the analysis of the product's life cycle (Life Cycle Analisis). It involves minimizing waste at each stage of the process and using it as a secondary raw material, which makes it possible to intensify environmental protection and significantly reduce the cost of production.

So in the metallurgical industry, which includes coke oven shops in its structure, products that are unique in composition and unused until now are formed, which can serve as raw materials for very valuable products, such as phthalocyanine metal complexes, which are universally applicable and are effective catalysts, pigments and dyes for the paint and varnish industry stabilizers of flame retardants for metal structures.

Phthalocyanine metal complexes possessing chemical and thermal stability unique for organometallic compounds most fully satisfy the requirements for such products. They can justifiably be considered as structural analogues of the prostatic groups of natural enzymes - hemoglobin, myoglobin, chlorophyll. The active centers of such complexes are ideally suited for reversible binding of small molecules and carrying out redox transformations with them.

It is known that metallophthalocyanines have the ability to oxidize carbon monoxide at temperatures up to -78 ° C. From this point of view, the phthalocya-

nines of copper, cobalt, manganese and iron seem to be promising catalysts for creating non-energy-intensive processes.

Molecular nanostructures based on phthalocyanine complexes have high activity, which makes it possible to widely use them as effective catalysts for oxidation-reduction processes in industrial synthesis, characterized by their "softness" and high selectivity. These types of catalysts are already used in a number of processes important for industry, they are highly active in the reactions of liquid-phase oxidation of hydrogen sulfide, as catalysts for the demercaptanization of fuels and gases.

The technology of demercaptanization of hydrocarbons is based on the direct mild catalytic oxidation of sulfur compounds directly in gas-liquid or gas streams in the process of primary distillation.

The purification process proceeds by passing a stream of hydrocarbon feedstock and an oxidizing agent (atmospheric oxygen) through the catalyst bed, followed by evolution of sulfur formed by fusing it from the catalyst surface. Since the obtained sulfur has an independent consumer value, this makes this process of purification of hydrocarbon raw materials from sulfur compounds practically waste-free and highly efficient [1].

The widespread introduction of these catalysts is hindered by the lack of their industrial production. At the same time, in the production of phthalic anhydride (PA) at Zapsibmetkombinat OJSC, a distillation head fraction containing 99.8% PA is formed, which has an increased color on a platinum-cobalt scale, which is a waste product. The filing of the head fraction for secondary processing and distillation together with PA reduces its quality and yield.

It is proposed to process the distillation head fraction in situ in the phthalic anhydride workshop (PAW) to produce more expensive scarce commodity products - metal phthalocyanines (MPc), in particular phthalocyanine pigments and catalysts [2].

The synthesis of MPc was carried out by baking in the laboratory. The following copper salts were tested for the synthesis of CuPc: carbonate $(CuOH)_2CO$, sulfate $CuSO4_*5H_2O$, chloride $CuCl_{2*}2H_2O$, Cu acetate $(CH_3CO)_{2*}H_2O$ in comparison with CuCl (I). The following cobalt salts were tested for the synthesis of CoPc: chloride $CoC1_{2*}6H_2O$, sulfate $CoSO_{4*}7H_2O$, nitrate $Co(NO_3)_{2*}6H_2O$. The experiments showed that essentially all the salts tested gave phthalocyanine complexes. The synthesis depended on temperature and duration: when using sulfate and copper chloride CuPc was formed after 4 hours, while the use of carbonate and acetate led to the formation of pigmented form of CuPc with a longer synthesis time - up to 30 hours. The yield of CuPc when using CuCl (I) as a complexing agent was 56-69%, C and $C1_2$ (II) – 37,1, $CuSO_4$ – 35,0-43,0 on the other reagents it did not exceed 18,0. The yield of CoPc was 29-35% [3].

The synthesis of MPc in the medium of plasticizing agents (diluents), i.e., in a liquid medium, leads to an increase in the yield of MPc. In order to increase the yield, simplify, reduce the cost of the synthesis and search technology for domestic plasticizing agent, we conducted research on the selection of the most affordable plasticizer from petrochemical products: AMT-300, transformer, compressor, turbine, spindle oil and kerosene. The choice is determined by the boiling point within the synthesis process temperature of 190-225 oC, the availability and the possibility of disposal of the spent product in the framework of CCP without its regeneration. It was found that during MPc synthesis in laboratory conditions in a liquid medium, the yield of CuPc in the case of synthesis with copper (I) chloride increased to 83-84%, and in some cases the value of the selection of more affordable, cheap raw materials produced by the domestic industry to 92%; with copper sulfate - up to 66%. The yield of CuPc substantially depended on the ratio of the plasticizing agent to the dry mass of the reaction mixture. The most acceptable in the synthesis of CuPc proved to be transformer oil with a minimum kinematic viscosity (10-13 mm/c: at 50 ° C and 3.0 mm/c^2 at 100°C), the boiling point of which is 190-300 °C. In order to increase the MPc yield in the practical implementation of the technology, the influence of urea flow rate, complexing agents of copper salts - chloride (1), sulfate, catalyst - ammonium molybdate - on the output of industrial CuPc in a transformer oil environment was studied. Relative to PA, the content in the reaction mixture was changed,%: urea from 47 to 162.0, copper salts of sulfate from 23.0 to 42.0, chloride from 15.0 to 27.0, catalyst from 0.55 to 1, 7. Rational consumption rates of synthesis reagents with respect to PA are established. The following composition of the reaction mixture is recommended for the production of CuPc,%: PA– 42.3, urea - 42.3, complexing agent - 14.8, catalyst - 0.6 [4].

Pilot industrial and industrial tests confirmed laboratory studies and showed the possibility of producing MPc in a batch process with a technical product yield of 76-84%, basic substance content of 72-74% (CoPc), 88-92% (CuPc).

The main disadvantage of phthalocyanine complexes in the crystalline state is their relatively low dispersion, which does not allow more active sites to be used in catalysis processes, which necessitates studies to obtain heterogeneous catalysts with a developed surface.

A catalytic system based on the use of a highly porous mineral carrier, such as a nanoporous carbon-carbon material obtained from by-products of coke chemistry and ferrosilicon waste, with the active component embedded in its structure throughout its volume, can be used as catalysts and catalyst supports in chemical and petrochemical synthesis processes.

There is no industrial production of phthalocyanine catalysts in Russia.

The development of a waste-free integrated technology for the use of technogenic raw materials for the synthesis of molecular nanostructures based on metal phthalocyanines, the production of catalysts on nanoporous carriers for gas purification processes and industrial effluents, and flame retardant stabilizers for metal structures based on them, is an urgent task.

Another and, perhaps, no less interesting from the point of view of chemistry and economics is the prospect of processing large-tonnage industrial waste products of ferrosilicon production - amorphous silica fume, and obtaining silicate adhesive binder used in various industries, including for obtaining flame retardants impregnation for wood, to obtain a powder suitable for extinguishing fuels and lubricants and to eliminate fires in large areas during forest fires, as well as flame retardants for polymer compositions.

To date, the proposed processing methods, namely, that the suspension for the production of liquid glass is prepared from a silica-containing amorphous substance with a particle size of mainly (10-100)·10 $^{-6}$ m in a solution of sodium hydroxide. As a silica-containing substance, ferroalloy production waste is used - microsilica, consisting of 85-89 wt.% SiO2, 5-7 wt.% –SiC and 5-7% wt. graphite. The hydrothermal treatment of the suspension is carried out by heating to a temperature of 75 °C with constant stirring at a speed of 1 r/s. [5] This process allows to reduce the heating temperature of the raw material mixture, to reduce the duration of the technological process for the production of liquid glass and to ensure the possibility of efficient use of ferroalloy production waste - silica fume. However, this technology for producing liquid glass (like many others), by hydrothermally treating silica-containing raw materials with an alkali solution, has significant drawbacks, namely: low content of SiO2 sol (up to 15%) in the reaction products, due to the fact that in the following sequence technological operations:

$$H_2O + NaOH + SiO_2$$

initially, solid alkali (caustic soda) dissolves in water, while the released thermal energy (exothermic process) is not utilized in any way and simply lost in the environment, and then, when silica fume is loaded (bulk density of about 200 g / cm3), adsorbed air is released , which in turn causes rapid foaming, and, consequently, leads to a decrease in the effective volume of the technological equipment used. In addition, the formation of silicate gel (SiO2 sol) occurs mainly on the surface of silica fume particles, since the penetration of alkali into the pores is prevented by rapidly released air, while the vitrification of the outer surface and blockage of the pores occur. In addition, the presence of carbon impurities in the raw material staining liquid glass, narrows the scope of the resulting product.

The technology developed by us (there is a complete set of regulatory and technical documentation) allows us to simplify the method of producing adhesive bonding while reducing labor and energy costs, and improving the operational

characteristics of the resulting product by increasing the proportion of silicate gel (SiO2 sol) in the reaction products.

This is achieved by the fact that silica fume containing amorphous material is mixed in an apparatus with a mixing device with water at a temperature of 55-60 ° C for 30 minutes to degass microsilica particles, then technical caustic soda (caustic soda) is added in portions while stirring. Thus, the sequence of technological operations, in contrast to the prototype, changes to:

$$H_2O + SiO_2 + NaOH$$

In this case, the temperature of the reaction mass, due to the released heat energy (exothermic process), increases to 95-100 ° C. The control of the technological process is carried out according to the temperature of the reaction mass, which should not exceed 95-100 ° C and the density of the resulting product. Upon reaching a density of 1.4 g/cm^3 (20^{o}C) a nucleating agent of liquid crystal structures (LCS), a metal complex of phalocyanine, in an amount of 0.01% w, by weight of the loaded silica fume is added to the reaction mass [6]. This leads to the structuring of the resulting product and an increase in its strength characteristics.

Changing the sequence of technological operations from $H_2O + NaOH + SiO_2$ to $H_2O + SiO_2 + NaOH$, which leads to an increase in the content of SiO_2 sol to 40% in the reaction products, the elimination of foaming, and, consequently, an increase in the efficiency of use of equipment and an increase in the energy efficiency of the entire technological process, due to the use of thermal energy released during the dissolution of alkali in water (exothermic process).

"FIC-SIBERIA" LLC, which has many years of experience in the development and production of high technology, offers a technology for producing products consisting of silicate gel and water.

Fire retardant composition, consisting of silicate gel and mineral filler, is an environmentally friendly product, which contains only mineral components. When heated into the environment, no harmful (toxic) components are released, unlike other flame retardants. Due to the fact that the composition includes only natural mineral components, they are practically not subject to aging. The fire-retardant composition is a paste-like mass and is applied in 2-3 layers and forms a durable coating. When heated, it swells and forms a porous ceramic structure that is resistant to convection flows, becoming a heat insulator, protects the metal (or other) surface from exposure to high temperatures (about 500 ° C and above). As is known, fire protection of metal structures consists in creating heat-insulating screens on the surface of building elements. Which must withstand the highest temperatures and the effects of fire. It is desirable that such a method of fire protection practically did not increase the weight of building structures. Therefore, the use of flame retardant, forming a heat shield with a thickness of 1 to 3 mm, is most effective. The production of protection work can be carried out without

violating the operating mode, without stopping the technological processes of the main industrial production. And it also allows (if necessary) to easily remove the fire-retardant coatings during the operational period, to carry out various works to strengthen the supporting structures or re-apply the fire-retardant coating, including in buildings being reconstructed.

When coating the shaft ventilation seal flame retardant, such as "Touch'n Seal" foam, maximum protection is also provided, both when heated and when exposed to direct flame.

A new fire retardant has been developed for wooden structures, in the form of impregnation, consisting of silicate gel and water with the addition of antiseptics. Impregnation is intended to protect wooden buildings and structures, as well as wood products from fire and flame propagation, preserves processed structures, preventing their decay and thereby increases the service life of buildings and wooden products. Impregnation is an environmentally friendly product and is recommended for the treatment of wooden surfaces indoors with variable temperature and humidity, hidden non-ventilated and poorly ventilated cavities, structures exposed to sunlight and wind. The coating preserves the texture and structure of wood, while tinting the surface, giving it a touch of noble antiquity.

A new fire extinguishing agent has also been developed. This composition is obtained by diluting silicate gel, obtained as described above, with water to a density of 1.15 g/m^3 and adding oxygen-containing organic compounds in an amount of 1.0% by weight. for the formation of crystalline hydrate. A solid powder with a density of 0.65-0.75 g/cm^3. is obtained. The composition is sprayed on the surface of the ignition, while the water evaporates, and the mixture foams, covering burning objects, with a layer of solid broad-pore inorganic material, thereby preventing the possibility of further ignition and smoldering. Maximum efficiency is achieved at temperatures of 550-650 ° C. This tool can be used to extinguish fires, in case of ignition of fuels and lubricants and to eliminate fires in large areas, including forest fires, both independently and as a supplement to existing fire extinguishing means.

As you can see, the path of a competent approach to the use of technogenic materials not only reduces pressure on the environment, but also increases our safety.

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从杉木木材中获取基本油和能量补充剂

OBTAINING ESSENTIAL OIL AND ENERGY SUPPLEMENTS FROM WOOD GREENS OF FIR

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抽象。 已经进行了实验研究以使用小型装置从杉木的木质绿中获得精油和杉木能量补充剂，并且评估所获得的产品的质量。

关键词：杉木木绿，小型装置，精油，杉木能量添加剂

Abstract*. Experimental studies have been carried out to obtain essential oil and fir energy supplements from woody green of fir using a small-sized installation and an assessment of the quality of the products obtained is given.*

Keywords*: wood green of fir, small-sized installation, essential oil, fir energy additive*

Introduction

In modern conditions, when Russia moves on the path of a market economy and the active development of small business, questions about the integrated use of

plant materials and an increase in the range of products in demand become urgent, in particular, these issues are fully relevant for fir production. Essential oils, in particular fir, are among the most effective natural biologically active products widely used in many fields [1 - 5]. A significant amount of research has been devoted to the isolation of essential oil from the woody greens of Siberian fir. However, the processing of woody greens is constrained by deficiencies in the technology, used equipment, insufficient consideration of the impact on the yield and quality of products of biocenotic and technological factors. In industrial conditions, essential oil is obtained in fir plants, mainly of periodic action. The distillation of oil in them takes up to 17–20 hours. A long stay of its components in the high temperature zone reduces the yield and affects the quality of the commercial product. All existing installations do not have any fundamental differences in technology. Two main types of installations are distinguished [2]: Vyatka and West Siberian. Their difference lies mainly in the location of the boiler - steam generator and distillation tank. All other equipment: refrigerators, Florentine, receivers, settling tanks, unloading devices are the same. In addition, the plants must be equipped with pumps for supplying water to the boiler and the refrigeration system.

Small-sized fir plant is mobile and solves the problem of the impossibility of carrying, which allows to use it without reference to the terrain and the room and at the same time it has high performance in terms of the quality of the oil obtained.

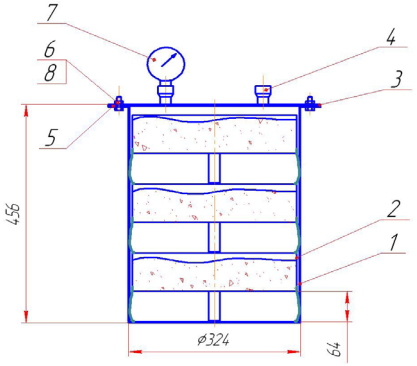
However, despite the above advantages, the proposed installation, like other fir plants, is not without drawbacks and, first of all, this is a low utilization rate of raw materials. The yield of essential oil does not exceed 4%. At the same time, spent green wood is the source of a wide range of biologically active substances - phytobiotics, which can be effectively used in animal husbandry. Leaders in the livestock industry have realized that intensive production cripples both the animal organism and the environment, reducing product quality. Now it is important to replace synthetic drugs and antibiotics with natural analogues: phytobiotics and herbal immunostimulants. The use of phytobiotic additives increases the feed intake, stimulates the production of endogenous enzymes, which improves their digestibility, maintains the productive health of animals and increases the productivity and quality of products. Among the phytobiotic additives is the coniferous-energy feed additive, which is used for the synthesis of glucose and for the direct generation of energy in the animal's body - it increases the glucose content in the blood and normalizes the energy balance. Reduces the concentration of fatty acids in the blood, inhibiting the development of the syndrome of "fatty liver", prevents the development of ketosis. Promotes rapid restoration of reproductive function after calving, normalization of the production of sex hormones, which reduces the duration of the service period and the risk of complications with new pregnancy. It is used for input into compound feeds and for balancing cattle rations by energy

(as fir-needles are a source of energy and biologically active substances of woody greens). It is a homogeneous viscous liquid with the smell of fir-needles, dark green in color. Its composition includes distilled medical glycerin, coniferous biologically active concentrate (contains biologically active substances, vitamins) [6].

Purpose of the study. Obtaining essential oils and fir energy additives (FEA) using a small-sized installation and assessing the quality of the resulting products.

Research methods

The object of the study was woody greens collected in the vicinity of the city of Krasnoyarsk. The experiments were carried out in the developed small-sized installation with a volume of 37 l, accommodating up to 6 kg of fir wood chopped to a particle size of 3-5 mm. Oil sampling was carried out for three hours. A small installation for receiving essential oils is shown in Figure 1.



1-case, 2-sieve with raw materials, 3- lid, 4- sublimation products outlet fitting, 5- gasket, 6- nut, 7- pressure gauge, 8- washer.

Figure 1 - *Installation for the production of essential oils*

The installation provides a special cylindrical tank (distillation tank) made of stainless steel, with a flat lid, three cassettes with raw materials are installed inside it. There are fittings in the lid for mounting the manometer and removing steam to the refrigerator. The cooler is connected to a flowing water with a temperature of no more than 10 10 ^{0}C. In the area of the exit of the finished product, an accumulative tank (florentina) is installed.

During the experiments, the chamber was filled with chopped wood green, hermetically sealed with a lid, and gradually heated to 100 ^{0} C and oil was distilled off for 3 hours. After distillation of the oil, the spent wood greens were transferred from the tub to the mixer and glycerol was introduced in an amount of 50% with respect to the loaded wood greens, the biomass was ground to obtain a homogeneous suspension.

The analysis of woody greens, essential oils and FEA was carried out using standard methods [7–9]. Its yield was determined volumetrically based on absolutely dry mass, density pycnometrically. The mass fraction of water in the FEA was determined by drying at a temperature of 105-110 °C, the pH was determined potentiometrically, and the density was pycnometric. The determination of the carotenoid content in the FEA was based on measuring the optical density of the solutions with an FEK-56 photocalorimeter with a blue filter. Qualitative determination of the component composition of terpenoids in the samples was carried out on an Agilent 5975C-7890A gas chromatography mass spectrometer (Agilent, USA) using an Agilent 7683 automatic sampler for liquid samples. A 30-meter quartz column HP-5 was used (copolymer 5% - diphenyl-95% -dimethylsiloxane) with an inner diameter of 0.25 mm. The carrier gas is helium with a constant flow of 1.1 ml/min. Column temperature: initial isothermal section 50 °C, temperature rise at a speed of 4 °C/min from 50 to 200 °C (0 min), 10 ° C/min to 220 °C (0 min). The volume of the injected sample is 0.2 μl.

The evaporator temperature is 280 °C, the temperature of the ionization chamber is 170 °C, and the ionization energy is 70 eV. The components were identified by comparison, by the presence and ratio of characteristic fragment ions using a database of standard samples from the NIST05-L mass spectral library and linear retention indices using the AMDIS data processing program (The Automated Mass Spectral Deconvolution and Identification System).

Chromatographic measurements were performed at the Krasnoyarsk Regional Center for Collective Use of the FRC KSC of the SB RAS.

Research results

As the research results showed, the yield of essential oil amounted to 2.0% of the mass of woody green natural moisture with a duration of distillation of 3 hours.

The results of the comparative analysis of some consumer properties of the obtained fir essential oil are shown in table 1.

Comparison of physicochemical parameters says that according to GOST [7], the obtained sample of fir oil meets the requirements, moreover, the content of bornyl acetate in it is 7% higher than the norm. In Florentine water, the content of substances extracted with hexane is 0.5 g/l. In FEA, the water content is 38.7%, the pH of an aqueous solution with a mass fraction of the product of 1% (per dry matter) is 6.3, the density of the product is -1.06 g/cm^3, and the substances extracted with hexane are 21.7 g/l. Mass fraction of carotene in the extract, in mg per 100 g of extract - 0.55.

The qualitative - component composition of the obtained oil and the composition of terpenoids in Florentine water and FEA can be judged by the results of chromatographic-mass spectrometry, shown in table 2.

Table 1 - *Organoleptic and physico-chemical characteristics of fir oil*

Indicator	Characteristic	
	GOST	Sample
1 Organoleptic		
Colour	Transparent homogeneous, easily mobile liquid without intermixture of water and sediment, from colorless to greenish	
Smell	Resinous with coniferous-grassy notes, with a pleasant touch	
Smell intensity	High	
2 Physicochemical		
Density at 20 ° C, g/cm ^{3} ,no less	0,900 – 0,915, 894	0,906
Refractive index at 20 °C,	1,4690 - 1,4720	1,470
Acid number, mg KOH/1 g of fir oil	0,5 – 1,0	0,68
Bornyl acetate content, %,	20 - 33	40

Table 2 - *Composition of terpenoids of essential oil, Florentine water and fir energy supplements*

Retention time, min	Content of the total amount, %			Chemical formula	
	Essential oil	Florentine water	FEA		
6,96	1,187	1,211	1,376	Tricyclene	$C_{10}H_{16}$
7,332	5,275	2,715	9,360	a-Pinene	$C_{10}H_{16}$
7,797	12,143	12,297	14,772	Camphene	$C_{10}H_{16}$
8,674	0,576	0,553	1,264	b-Pinene	$C_{10}H_{16}$
9,178	0,342	0,000	0,373	b-Myrcene	$C_{10}H_{16}$
9,8	4,491	2,063	3,758	3-Carene	$C_{10}H_{16}$
10,295	0,332	0,000	0,239	p-Cymene	$C_{10}H_{14}$
10,445	7,129	2,175	4,600	Limonene	$C_{10}H_{16}$
14,513	0,509	2,408	0,218	Camphor	$C_{10}H_{16}O$
15,289	11,944	72,28	5,239	Borneol	$C_{10}H_{18}O$
15,996	0,434	0,000	0,390	Crypton	$C_9H_{14}O$
19,541	38,394	2,443	50,054	Bornylacetate	$C_{12}H_{20}O_2$
21,562	0,302	0,000	0,000	a-Longipinene	$C_{15}H_{24}$
22,662	0,351	0,000	0,311	Nerol acetat	$C_{12}H_{20}O_2$
23,345	0,354	0,000	0,000	Longifolene	$C_{15}H_{24}$
23,798	0,625	0,000	2,436	Caryophyllene	$C_{15}H_{24}$

Retention time, min	Content of the total amount, %			Chemical formula	
	Essential oil	Florentine water	FEA		
24,858	0,473	0,000	1,211	a-Caryophyllene	$C_{15}H_{24}$
26,29	0,274	0,000	0,000	a-Murolene	$C_{15}H_{24}$
26,535	1,939	0,000	0,705	b-Bisabolene	$C_{15}H_{24}$
26,982	0,000	0,000	0,171	delta-Cadinene	$C_{15}H_{24}$
28,74	2,369	0,000	0,539	Caryophyllene oxide	$C_{15}H_{24}O$
31,608	2,048	0,000	0,775	a-Bisabolol	$C_{15}H_{26}O$

As can be seen from the above values, the content of the main components during the distillation process changed in accordance with their volatility.

Monoterpenes and oxygen-containing compounds predominate in the fraction of essential oil, which are found in approximately equal amounts. Among mogoterpenes, the dominants are camphene (12.14.7%), limonene (7.2%), α-pinene (5.2%), 3-karen (4.5%). Among oxygen-containing compounds, bornyl acetate - 38% and borneol - 11.94% predominate. Florentine water differs from essential oil in a higher content of borneol, it accounts for more than 72% of the sum of terpenoids, a lower content of bornyl acetate (2, 4%) and the absence of sesquiterpenes. Among the terpenoids of the FEA hexane extract, more than 50% of the total terpenoids are borne acetate, 14.8% are camphene, 9.4% are a-pinene, 5.2 and 4.6 borneol and limonene, respectively. The content of other components is less than 1%, with the exception of sesquiterpenoids karyofillen (3.6%) and delta cadinene (0.17%), the content of which in FEA is higher than in essential oil.

Thus, the use of a small-sized installation revealed a number of advantages compared to existing counterparts, allowed to increase productivity, reduce the process time and reduce production costs, as well as make production waste-free and receive, along with the traditional product - fir essential oil - a fir product additive. As shown by preliminary studies, the addition of FEA to calves during the month allowed to increase the gain by 39 5 compared with the control. This indicates the correctness of the technical solutions and the feasibility of introducing the proposed technology.

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