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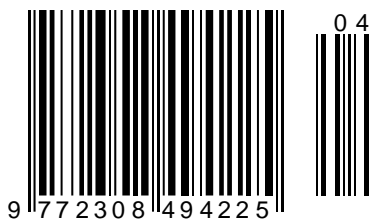
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Article



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USE OF NEW EFFECTIVE LOCAL ANTIOXIDANTS FOR RUBBER MIXTURES AND STUDY OF CHEMICAL, PHYSICAL-MECHANICAL PROPERTIES

Abstract: Microcrystalline paraffin raw material was used in the preparation of rubber compounds instead of Antioxidant SUNNOC raw material, and after all laboratory tests were positive, production testing was carried out. Studies have shown that the microcrystalline paraffin raw material improves the physical and mechanical properties of rubber compounds, has a positive effect on the aging process.

In addition, the use of microcrystalline paraffin raw materials leads to lower cost and higher economic efficiency, which is why they are now being introduced and used in production.

Key words: Microcrystalline paraffin, SUNNOC Antioxidant, 101-H and 101-L rubber compounds, standard formulation.

Language: English

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Introduction

The Action Strategy for the further development of the Republic of Uzbekistan sets the task "Creation of technologies for obtaining import-substituting products from local raw materials and secondary resources". Our country needs to increase the number of local producers and increase the competitiveness of the raw materials they produce. According to the localization program in cooperation with the Tashkent Research Institute of Chemical Technology and the First Rubber Plant, LLC microcrystalline is a local import-substituting raw material to improve the

physical and mechanical properties of rubber products, resistance to various external influences, wear and tear. Scientific and practical work has been carried out on the use of paraffin in place of imported antioxidant raw material SUNNOC. IN the present work, 2-propyl-, and 2-heptyl-, 1H-benzo[d]imidazole were prepared by condensation reaction of o-phenylenediamine with n-butanoic acid and n-octanoic acid, respectively. The prepared products were characterized by FT-IR, 1H-NMR spectroscopy and melting point. These products were incorporated into acrylonitrile butadiene rubber

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(NBR) composites with two different fillers (Silica and High Abrasion Furnace carbon black HAF) as an antioxidant additive with different concentrations from 1up to 2 phr as a comparison with 2,2,4-trimethyl-1,2-dihydroquinoline (TMQ) as a traditional antioxidant. Their effects on the rheometric, physico-mechanical and electrical properties of NBR composites were evaluated. Thermo-oxidative aging was carried out for NBR composites and distribution of the prepared products observed by Scanning Electron Microscope (SEM). The results showed that the prepared products can act as highly efficient antioxidants in acrylonitrile butadiene rubber vulcanizates comparing with commercial antioxidant TMQ and revealed that there was enhancement in mechanical properties of NBR composites that containing the prepared products, as well. The results also illustrated that the optimum ratio from 2-alkylbenzimidazole incorporated into acrylonitrile butadiene rubber vulcanizates is 1.5 phr if compared with the same ratio from traditional antioxidant (TMQ)[1]. Unsaturated chain structure of natural rubber makes it a poor defense against thermo-oxidative aging. Synthetic antioxidants are commonly used in rubber compound recipes to prevent/retard aging of the rubber material during its service life. However, synthetic antioxidants cause some negative effects on human and environmental health; they tend to be replaced by natural alternatives. In this study, the short- and long-term antioxidant effects of henna and its basic active components, lawsone and gallic acid, have been investigated individually for natural rubber cured with semi-efficient sulfur vulcanization system. The composition of henna was determined by gas chromatography-mass spectrometry (GC-MS) analysis. Qualitative and quantitative analysis were performed using Fourier transform infrared spectroscopy (FTIR) and X-ray photoelectron spectroscopy (XPS) to highlight structural changes on aged vulcanizates. The authors attempted to correlate the suggested aging mechanism with rheological, mechanical, and morphological properties. Results showed that both lawsone and gallic acid were impressively successful regarding their anti-oxidation activity. In addition, henna, which contains a sufficient amount of lawsone and gallic acid, has been suggested as a competitive natural alternative to the common synthetic stabilization system for natural rubber, considering its sustainable commercial abundancy[2]. Generally, in most countries, there are no strict regulations regarding tire disposal. Hence, tires end up thrown in seas and lands as well as being burnt, harming the living beings, and are therefore considered a very dangerous pollution source for the environment. Over the past few years, several researchers have worked on incorporating shredded/powdered rubber tires into cement-based material. This strategy shows a dual functionality: Economic-environmental benefits and technological

functionalization of the building material. Rubber-modified cement materials show interesting engineering and architectural properties due to the physical-chemical nature of the tire rubber aggregates. However, the abovementioned performances are affected by type, size, and content of polymer particles used in the cement-based mixtures production. Whereas an increase in the rubber content in the cement mix will negatively affect the mechanical properties of the material as a decrease in its compression strength. This aspect is crucial for the use of the material in building applications, where proper structural integrity must be guaranteed. In this context, the development of innovative manufacturing technologies and the use of multi-physics simulation software represent useful approaches for the study of shapes and geometries designed to maximize the technological properties of the material. After an overview on the performances of 3D printable rubber-cement mixtures developed in our research laboratory, a preliminary experimental Finite Element Method (FEM) analysis will be described. The modeling work aims to highlight how the topology optimization allows maximizing of the physical-mechanical performances of a standard rubber-cement component for building-architectural applications[3-7]. This paper discusses the application of piezoceramic bender elements (BEs) for measurement of shear wave velocity in the time and frequency domain in a triaxial cell under different isotropic confinement. Different interpretation methods were used in the tests and their results were finally compared with each other. Two types of anthropogenic material were tested: pure Recycled Concrete Aggregate (RCA) and RCA-rubber chips mixtures (15% of rubber addition). Presented study is an attempt to describe dynamic properties, in terms of shear wave velocity (VS), of the aforementioned anthropogenic material using the technique commonly applied for natural soil. Although some research is currently being carried out, in order to evaluate physical, chemical and mechanical properties of RCA and rubber-soil mixtures, still little is known of their dynamic properties. Hence, this work will provide the experimental results of shear wave velocity of RCA and its modified version. The results show that tires chips significantly decrease the VS values of modified RCA. They help to reduce the near field effect, but the received parameters are more incoherent. The VS values were found to be influenced by interpretation technique, mean effective stress and wave's propagation period. The maximum VS values were obtained mostly from the frequency domain method, although time domain analysis gives the results that are more coherent[4]. In this paper, the ethylene propylene diene monomer (EPDM) rubber-based dough recipe for a conveyor belt used in high temperature conditions was developed. As a first step, the silica loading effect on the mechanical and

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rheological properties was determined. After selecting the proper coating dough recipe, dough properties were investigated for filler mica, instead of silica, and the influence of paraffinic oil was tested for both silica and mica fillers. The properties of the EPDM rubber blend were investigated with rheometer tests on the semi-finished materials and with mechanical and physical tests (tensile strength, elongation at break, density, hardness, abrasion, heat ageing tests) on the finished coating materials after a vulcanization process. Thermal degradation behaviors of materials were analyzed by the thermal gravimetric analysis (TGA) system, and determination of chemical structure was analyzed by Fourier transform infrared spectroscopy (FTIR). The physico-mechanical characteristics of EPDM rubber blends were increased with silica loadings. EPDM rubber demonstrates thermal resistance in the temperature range of 150 °C – 160 °C under normal conditions. As a result of the studies conducted, the heat resistance of the coating rubber material was raised to 200 °C by adding silica and paraffinic oil with a higher flash point into the EPDM dough mixture formulae[5]. The resistance of biodiesel fuels to autoxidation can be improved by mixing them with antioxidants. In this study, the effectiveness of 10 conventional antioxidants added to rubber seed oil biodiesel was investigated. According to the Chinese Pharmacopoeia (2015 version), the soluble interval was evaluated and Rancimat method using EN 14112 was adopted to determine the antioxidative effect of conventional antioxidants in rubber seed oil biodiesel. Moreover, this study also

revealed the oil-soluble properties of conventional antioxidants in biodiesel at different temperatures and investigated the change rule of their oil-soluble properties. The results indicated that 10 common antioxidants could improve the antioxidative performance of rubber seed oil biodiesel to a certain extent; however, their effects were quite different. At room temperature (20 °C), conventional antioxidants exhibited relatively poor oil-soluble properties, with great discrepancy. The decreasing order of oil-soluble properties of 10 conventional antioxidants in rubber seed oil biodiesel is as follows: BHA > TBHQ > D-TBHQ > PA > PG > OG > VC > MT > AP > GA. With increasing temperature, the oil-soluble properties of 10 antioxidants somewhat improved; however, their soluble interval changed only slightly. A weak relationship was observed between the antioxidative performance and oil-soluble properties of 10 conventional antioxidants. Noteworthy, in practical production applications, the antioxidative performance and oil-soluble properties of antioxidants are important factors in the selection of appropriate antioxidants [6].

Experimental part

Experimental tests of microcrystalline paraffin raw materials based on technical standards (GOST 6617-76) were conducted in the laboratories of the Tashkent Research Institute of Chemical Technology and the First Rubber Engineering Plant LLC, and the results are given in Table 1 below.

Table 1. Results of microcrystalline paraffin raw material tested in the laboratory of chemical analysis

№	Test names	Indicators		Technical method	Compliance indicators
		ГОСТ 6617-76 by request	In practice		
1	Freezing temperature, °C	61-69	63.2	ASTM D938	Appropriate
2	Kinematic viscosity 100 °C да	5.5-8.5	7.8	ASTM D445	Appropriate
3	Ash composition % ≤	0.3	0.06	ASTM D4574	Appropriate
4	Loss of mass ≤%, 125°C да	0.3	-0.008	ISO-787-2	Appropriate

The results of the chemical analysis revealed that the raw material meets the requirements of conformity and technical requirements. After chemical analysis, 101-H and 101-L rubber compounds were prepared in the laboratory under the standard recipe for the use of microcrystalline paraffin raw material, which replaces the antioxidant SUNNOC raw material, in a small mass in the physics-mechanical test laboratory. was

performed on the device. The rubber mixture from the valve is poured into a vulcanizing flat press machine at 55 gr. was removed from the rubber mixture and placed in molds and baked at 150 °C for 15 minutes at a pressure of 6-7 MPa. The mature rubber mixture from the vulcanizing flat press was cooled to room temperature for 16 h and samples were taken for testing. (Figure 1a and b).

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Figure 1a.

Sample baked in press form under pressure of 6-7 MPa for 15 minutes at 150 °C.



Figure 1b.

Sample for testing on the device "Electronic breakthrough machine" AI-7000".

Results and its discussion

In the laboratory conditions of the cooled rubber mixture on the device "Electronic rupture machine" AI-7000 "were tested such parameters as tensile strength, relative elongation at break, elasticity, modulus of elasticity; The kinetics of the

vulcanization process and the hardness of the device "Measurement of solidity on Shoru N14 / 1" were studied in the device "Rotary rheometer (Vulcanization device without rotor) M-3000A" and the results are given in Table 2.

Table 2. Results of hardness, relative elongation, tensile strength and kinetics of vulcanization of rubber mixtures obtained under laboratory conditions

№	Rubber compound brand	Hardness	Delay in relative expansion N/mm	Strength in rupture ≥MPa	1800C*4min			
					The vulcanization process			
					T10 s	T90 s	ML dNm	MH dNm
1	According to the normative documents	≤85	≥ 500	≥ 26	84	150	5.0	15
					61	116,5	3,2	11,5
					38	83	1,5	8
	101-H	64	561,66	27,09	51,41	114,61	2,38	12,71
2	According to the normative documents	≤ 85	≥440	≥17	36	75	2	10
					55	112,5	4,3	15
					74	150	6,5	20
		101-L	65	585,66	18,55	47,69	101,90	2,65

In Table 2, it can be seen that the hardness, relative expansion elongation, elongation-elongation strength and vulcanization process kinetics tests of 101-H and 101-L rubber compounds under laboratory conditions meet all technical requirements.

Results of laboratory tests of 101-N, 101-L rubber compounds obtained as a result of wear processes. Are given in Table 3.

Table 3. Results of physical and mechanical performance of rubber compounds obtained after the aging process

After the aging process					
Rubber compound brand	Loss of friction	Rigidness	Power at interruption	Delay in relative expansion	Strength in rupture
According to the normative documents	mm	≤	N	%≥	≥MPa
	≤115	64	≥	≥375	≥20
101-H	77	77	219,41	528,62	27,43

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According to the normative documents	≤185	≤64	≥	≥330	≥13
101-L	120	65	149,29	475,2	18,66

Laboratory tests of 101-H and 101-L rubber compounds obtained under laboratory conditions on hardness, relative expansion elongation, elongation, elongation, strength, vulcanization process kinetics (Table 2), post-wear processes (Table 3) 101-N, 101-

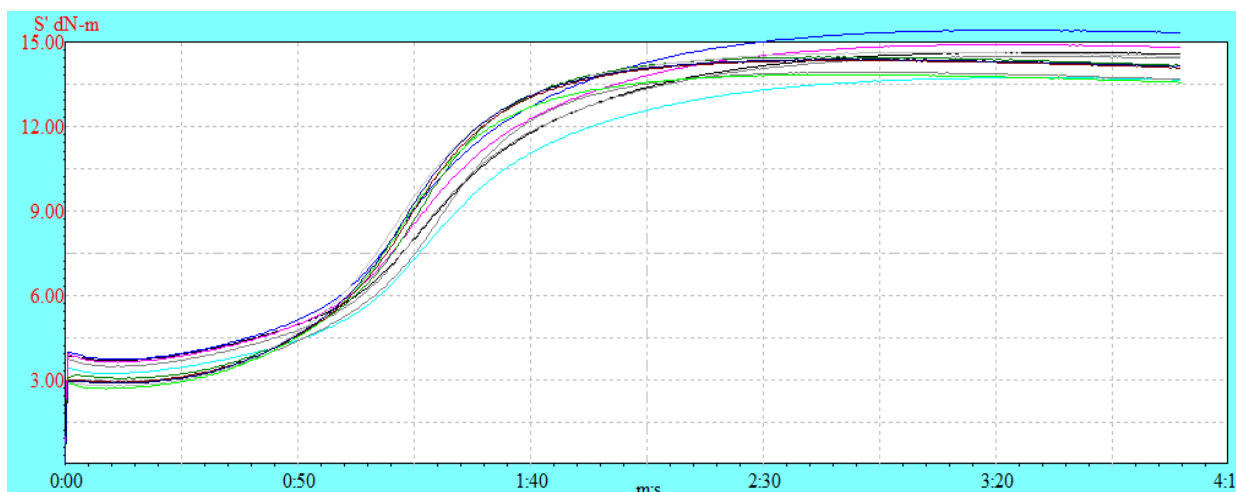
L rubber compounds were prepared and tested in the rubber compounding shop in the technology of production of mixtures, and the results of the obtained results are given in Table 4.

Table 4. Test results obtained in a rapid laboratory of rubber compounds used in production (technology)

№	Rubber compound brand	Hardness	Relative elongation	Strength in rupture ≥MPa	1800C*4min			
			N/mm	MPa	Volcanization kinetics			
					T10 s	T90 s	ML dNm	MH dNm
1	According to the normative documents	≤85	≥ 500	≥ 26	84	150	5.0	15
	101-H	65	568,27	24,93	61	116,5	3,2	11,5
					38	83	1,5	8
2	According to the normative documents	≤ 85	≥440	≥17	43,34	106,74	3,16	12,05
					36	75	2	10
					55	112,5	4,3	15
	101-L	65	630,94	19,4	74	150	6,5	20
					34	102,15	3,72	14,29

In technology, the results obtained when using microcrystalline paraffin raw material instead of the antioxidant SUNNOC raw material for rubber compounds were determined in accordance with technical test standards. Graphical lines of

vulcanization kinetics "Rotary rheometer (Vulcanization device without rotor) Model machine: M-3000A" was obtained and graph 1 shows the graphical lines of vulcanization kinetics.



1-graph. Location of graph lines during vulcanization.

The location of the graph lines of the vulcanization process kinetics shows that the microcrystalline paraffin did not adversely affect the vulcanization process, which can be explained by the fact that the graph lines lie in the same plane.

Conclusion: The physical and mechanical properties of the rubber mixture obtained on the basis

of microcrystalline paraffin raw materials, such as vulcanization process kinetics, hardness, tensile strength, relative elongation at break, modulus of elasticity, were studied and found to meet all technical requirements and norms.

So, based on these findings, effective results were obtained when using low-cost local raw material

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microcrystalline paraffin instead of antioxidant SUNNOC raw material for the production of conveyor belts at BRZ LLC.

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SYNTHESIS OF THERMAL STABILIZERS BASED ON PHTHALAMIC ACID SALTS

Abstract: Phthalamic acid salts (FAA-Ca, FAA-Zn and FAA-Cd) were synthesized in the article. The composition and structure of the obtained substances were studied by IR spectroscopy, scanning electron microscope, and elemental analysis.

Key words: phthalamic acid, FAA-Ca, FAA-Zn, FAA-Cd, IR spectroscopy, elemental analysis.

Language: Russian

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СИНТЕЗ ТЕРМОСТАБИЛИЗАТОРОВ НА ОСНОВЕ СОЛЕЙ ФТАЛАМИНОВОЙ КИСЛОТЫ

Аннотация: В статье синтезировано соли фталаминовой кислоты (ФАК-Са, ФАК-Зн и ФАК-Сд). Состав и структура полученных веществ изучали методом ИК-спектроскопии, сканирующего электронного микроскопа и элементного анализа.

Ключевые слова: фталаминовой кислоты, ФАК-Са, ФАК-Зн, ФАК-Сд, ИК-спектроскопии, элементного анализа

Введение

В основном в качестве термостабилизатора ПВХ материалов применяются карбоксилаты металлов на основе насыщенных или

ненасыщенных карбоновых, алкоксикарбоновых, оксикарбоновых, ароматических и др. кислот, такие как стеараты, лаураты, пеларгонаты, малеинаты, мирилаты и их соли представляющих

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собой в твердых консистенциях. Применяются также и жидкие стабилизаторы - феноляты, таллаты, бензоаты, нафтенаты металлов. В составе этих соединений значительное влияние на стабилизирующую эффективность полимера оказывают металл и кислотный остаток [1-6].

Опираясь на научные предпосылки в области термостабилизации винилхлоридных полимеров и сополимеров, Ериной Е.В. созданы многофункциональные термостабилизаторы в непылящей форме на основе стеарата металлов для производства ПВХ изделий с использованием местного сырья и химических продуктов, производимых в России [7, 8]. Для этого разработаны новые способы синтеза термостабилизаторов, содержащие стеараты Me^{+2} , в непылящей форме в среде хлорпарафина и продукт реакции представлял собой в виде пасты [9]. Использование этих продуктов в качестве термостабилизаторов ПВХ позволило уменьшить содержание термостабилизатора в 2 раза, при сохранении физико-механических и технологических свойств пластика.

В работе [10] получены кальциевые соли кислотных отходов переработки подсолнечного масла, которые на 40% эффективнее стеарата кальция по термостабилизации ПВХ. Также этими авторами разработаны [39] новые синергисты к стеарату свинца на основе кальциевой соли подсолнечного масла, и эти стабилизирующие синергические смеси по эффективности превосходили в 3 раза по сравнению свинецсодержащих акцепторов галоидводородов.

В работе [11] приводятся и обсуждаются результаты исследований известные к настоящему времени по синтезу термостабилизаторов для полимеров/сополимеров винилхлорида и других галоидсодержащих эластомерных материалов, а также предлагаемые авторами технологических процессов получения карбоксилатов Ca, Mg, Ba, Cd и Pb взаимодействием вторичных материальных ресурсов активными компонентами, которых являются карбоновые кислоты масложирового и химического производства, получения олигомерных азотсодержащих термостабилизаторов и антикоррозионных покрытий, полуфункциональных ингредиентов многоцелевого назначения, а также термостабилизаторов, стабилизаторов-киккеров и антиоксидантов на основе выбранных вторичных материальных ресурсов.

МАТЕРИАЛЫ И МЕТОДЫ

Синтез солей фталаминовой кислоты. Для получения солей фталаминовой кислоты (ФАК-Ca, ФАК-Zn и ФАК-Cd) нами проведена реакция фталеевого ангидрида с аммиаком, которая после реакции образуется фталимид, полученную

фталамид гидролизовали с помощью щелочи до образования фталаминовой кислоты. В качестве солей брали хлориды металлов в мольных соотношениях с фталаминовой кислотой. Полученные соли фталаминовой кислоты осаждали из текущих растворов. Полученный осадок несколько раз промывали и фильтровали под вакуумом. Далее сушили их в течении 12 часов в сушильном шкафе при 80 °С.

Все ИК-Фурье-спектры записывали на ИК-Фурье-спектрометре IRAffinity-1S с универсальным приспособлением для отбора проб. Спектр регистрировали в диапазоне 4000-600 cm^{-1} .

Морфологию поверхности и элементный состав ФАК-Ca изучали методом сканирующего элементного анализа (SEM), взвешенные в воздухе частицы образцов исследовали с помощью сканирующей электронной микроскопии с полевой эмиссией (QUORUM Q150 RS) в сочетании с энергодисперсионным рентгеновским излучением (EDX, модель Oxford X-MaxN). 0,5 см сухих и загруженных образцов вырезали и покрывали тонкой пленкой золота (Au), чтобы сделать образцы электропроводными для анализа SEMEDX. Образцы помещали в угол камеры SEM-EDX и делали два изображения каждого образца с увеличением в 5000 и 20000 раз. После чего были получены спектры EDX отдельных частиц для определения индивидуального элементного состава частиц, после сканирования электронным пучком с ускоряющим напряжением 20 кВ, током пучка 10 мкА. Были идентифицированы пики и функция количественного определения интенсивности пиков, которые были преобразованы в весовые проценты [12].

Энергодисперсионная спектроскопия (ЭДС) представляет собой микроаналитический метод, традиционно используемый в сканирующей электронной микроскопии (СЭМ) для локального определения химических элементов в твердых образцах [13-15]. Образец изготавливается из твердого материала, стабильного в вакууме до $1,5 \cdot 10^{-3}$ Па. Затем образец бомбардируется электронами с энергетическими уровнями до 30 кэВ. Еще одно требование к СЭМ заключается в том, что исследуемый образец должен соответствовать размеру камеры микроскопа. Образцы помещают в специальный держатель исследуемой поверхностью вверх [15].

Для элементного анализа присутствующих элементов в солях фталаминовой кислоты, определяли путем точного взвешивания примерно 2 мг солей фталаминовой кислоты в предварительно сформированной оболочке, закрывали и прессовали в гранулы, а затем анализировали с помощью анализатора элементного состава LECO CHNS-932.

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РЕЗУЛЬТАТЫ И ОБСУЖДЕНИЕ

Метод синтеза получения солей органических кислот является хорошо зарекомендовавшим себя методом, и в этом исследовании был использован метод соосаждения, который во всех случаях давал белый осадок. Наши лабораторные выходы для всех солей фталаминовой кислоты составляют от 71 до 94%, соли фталаминовой кислоты синтезированные при pH 12, более кристалличны, чем соли фталаминовой кислоты, синтезированные при значениях pH, отличающихся от 12. Таким образом, pH 12 использовался в качестве стандартной точки для синтеза ФАК-М в этом исследовании. Однако, по данным лабораторных исследований диапазон pH 8-10 также считается подходящим для синтеза ФАК-М. Поэтому возможно, что при использовании диапазона pH 8-10 будет получен более высокий выход солей-ФАК, следовательно, с возможным изменением степени кристалличности.

Использование ИК-спектроскопии (обычно используемой для идентификации функциональных групп, присутствующих в структуре ФАК-М, состоящей из металлов) показало широкую полосу при $\sim 3000 \text{ см}^{-1}$, которая приписывается растяжению связей -NH во всех образцах. Однако наблюдалось смещение этой полосы NH в сторону более высоких волновых чисел. Возможно, это связано с уменьшением ионного радиуса по периоду и увеличением по группе ($\text{Zn}^{2+} = 0,076 \text{ нм}$, $\text{Ca}^{2+} = 0,100 \text{ нм}$, $\text{Pb}^{2+} =$

$0,113 \text{ нм}$). В результате электростатические силы между Pb^{2+} и NH^- (1:2) сильнее, чем между Ca^{2+} или Zn^{2+} и NH^- (1:2). По мере того, как соотношение ионов металла и электростатические силы уменьшаются, что приводит к тому, что ионы металлов колеблются с более высокими волновыми числами.

Карбоксилаты ФАК-М, выделенные из реакционной среды при различных pH, после проведения сушки, имели ИК-спектроскопию приведенные на рис. 1. Из приведенных данных рис. 1 видно, что наиболее интенсивной полосой поглощения является спектры, находящееся в области $1600\text{—}1575 \text{ см}^{-1}$, в спектре ФАК-Са и ФАК-Zn карбоксилаты видны в области 1674 , 1573 и 1510 см^{-1} , а в спектре ФАК-Pb эти поглощения появляются в области 1683 , 1575 и 1508 см^{-1} , обычно эти поглощения относятся к асимметричным валентным колебаниям карбоксилатной группы.

В этих данных происходит постепенная смена относительной интенсивности указанных полос приводит к обычно называемому «сдвигу» сложной полосы. Из приведенных данных видно, что в соединениях СООМ обнаруживаются по крайней мере три, отличающихся друг от друга электронным строением, состояния группы COO^- . Также в ИК-спектре карбоксилатов металлов обнаруживается повышение волновые числа полосы поглощения, отнесенной к симметричным валентным колебаниям карбоксилатной группы COO^- , в области 1423 см^{-1} и 1419 см^{-1} .

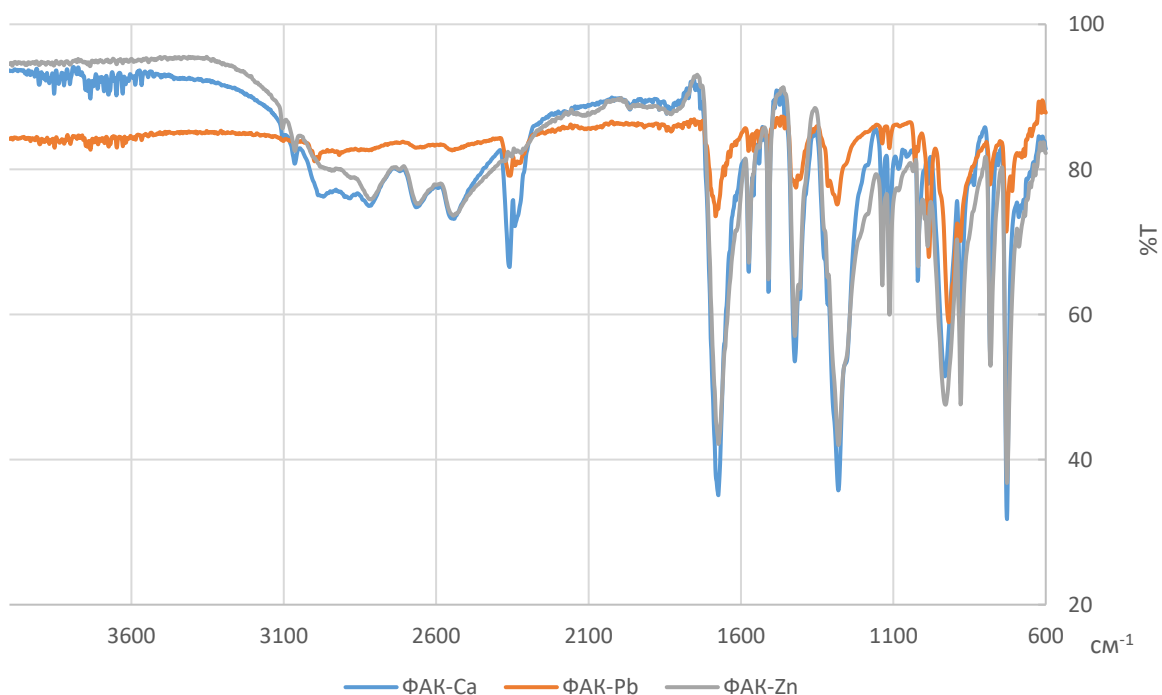


Рис. 1. ИК-спектр солей фталаминовой кислоты.

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В карбоксилатах металлов ФАК исчезает полосы поглощения в области волновых чисел 1726 и 1772 см^{-1} , где находятся полосы поглощения карбонильной группы фталаминовой кислоты ($\nu_{\text{C=O}}$) в виде карбоксильной группы (1772 см^{-1}) и карбоксильные группы которое находится в димерном (1726 см^{-1}) состояниях. Приведенные данные показывают о получение карбоксилатов металлов в рис. 1.

Судя по экспериментальному анализу С, Н, N, O, как и ожидалось, присутствовал во всех синтезированных ФАК-М. Это доказывает на то, что все не реагировавшие исходные вещества были успешно удалены из осадка на стадиях промывки дистиллированной водой.

Теоретически применяя общую формулу для ФАК-М и вычисляя ее экспериментально из анализа С, Н, N, было обнаружено, что все синтезированные ФАК содержат восемь атомов углерода. Изменение количества атомов водорода в каждом ФАК-М, основанное на предсказанных и рассчитанных результатах, указывает на то, что количество молекул воды в межслоевой области не коррелирует с ожидаемыми значениями. Таким образом, проведенные элементные и химические анализы показали, что синтезированные ФАК-М имеют экспериментально определенную химическую формулу (табл. 1), которая отличается от теоретически рассчитанной формулы.

Таблица 1. Химические формулы синтезированных ФАК-М, определенные методом элементного анализа.

ФАК-М	Выход, %	Средняя мол. масс. (криоскопически)	Элементный анализ, %					
			Углерод		Водород		Азот	
			Вычислено	Найдено	Вычислено	Найдено	Вычислено	Найдено
ФАК-Са	97,2	368,3		193,4		13,7		27,9
ФАК-Zn	96,6	393,4	192,1	192,8	12	12,4	28	28,3
ФАК-Pb	98,1	207,2		193,6		13,1		27,8

Анализ структуры поверхности ФАК-Са изучали с помощью электронного микроскопа. Этот метод основан в исследовании анализа отраженного электронного изображения. Сканирующей электронной микроскопом можно

исследовать свойства и структуру поверхности синтезированных образцов и с помощью этих данных можно получать информацию о свойствах подповерхностных структур глубиной до нескольких микрон.

Электронное изображение 21

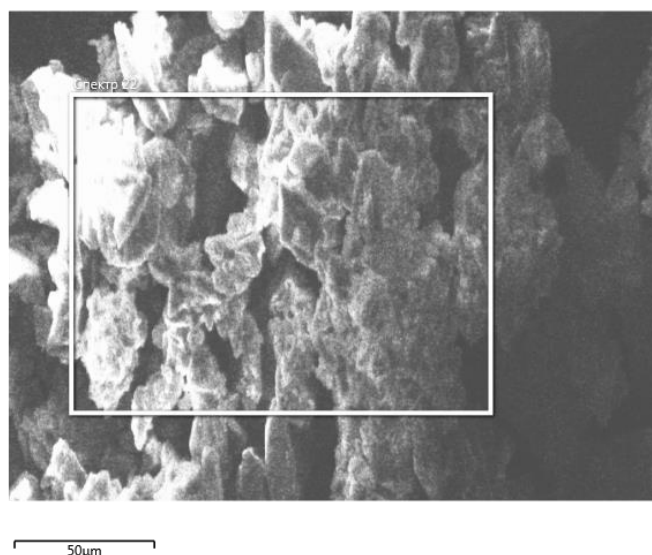


Рис.2. СЭМ анализ ФАК-Са.

На рисунке 2 показан микрофотография синтезированных образцов ФАК-Са. Синтезированный образец ФАК-Са имеет вид

кристаллы микронного размера, и в общем они состоят из кристаллитов кубической формы, но некоторые из этих веществ агломерированы.

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Поэтому в образе встречается агломераты неправильной формы. На микрофотографиях можно увидеть кристаллы ФАК-Са, однако в этом микроскопии не всегда удается обнаружить поры малых размеров менее 1 нм. Поры таких малых

размеров можно увидеть только микроскопом высокого разрешения. Полученные данные по сканирующем электронным микроскопом свидетельствует о том, что морфология синтезированного образца не меняется.

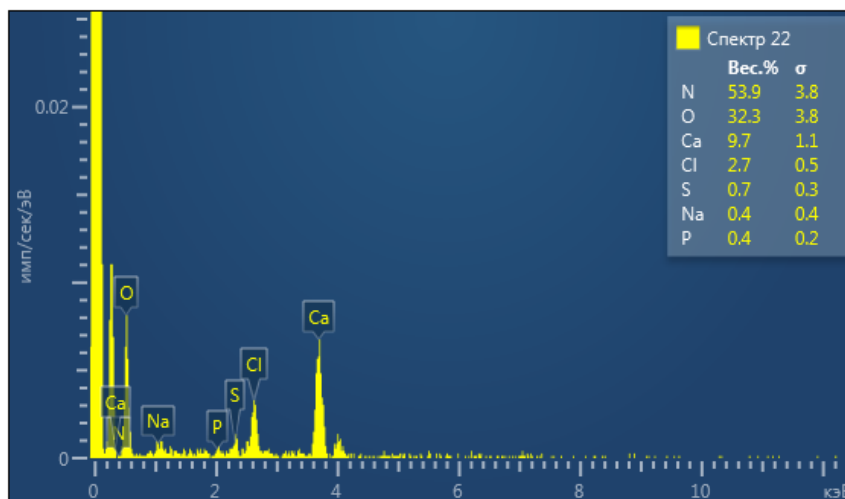


Рис.3. Элементный анализ ФАК-Са.

Методом сканирующего электронного микроскопа можно проводить качественный анализ, измеряя энергии линий характеристического излучения, также и количественный анализ, измерением относительную интенсивность линий. На рис.3 приведен элементный состав полученной с помощью СЭМ анализа. Как напомним выше методом сканирующей электронной микроскопии можно анализировать элементный состав и морфологию твердотельных веществ.

Спектры EDX показали относительное содержание семи элементов — N, O, Ca, Cl, S, Na и P, как показано на рисунке 3. Уровни содержания C были значительно выше, чем у других элементов. Углерод (C) является одним из крупнейших компонентов ФАК-Са. Эти вещества обычно содержат C и широко распространены в органических веществах.

Кроме того, повышенный уровень углерода (C) был связан с высоким содержанием остатком фталаминовой кислоты. Это сопоставимо с исследованиями, проведенными литературными данными [16]. Более высокие уровни содержания углерода в твердых частицах представляют рекомендовать как стабилизатора, поскольку они

действуют как хорошие стабилизаторы и адсорбирует выделяющейся водорода хлорида из поливинилхлорида.

Важнейшей частью СЭМ является вакуумная колонна, содержащая электронную пушку с приложенным ускоряющим напряжением и электронно-оптическую систему, фокусирующую электронный пучок на поверхности образца.

ЗАКЛЮЧЕНИЕ

Таким образом нами синтезировано соли фталаминовой кислоты (ФАК-Са, ФАК-Zn и ФАК-Cd), одновременно изучались состав и структура этих веществ методом ИК-спектроскопии и элементного анализа. Результаты этого исследования показывают, что ФАК-Са, ФАК-Zn и ФАК-Cd могут использоваться в качестве идеальных термостабилизаторов в продуктах из переработанного ПВХ. Из исследований ИК-спектроскопии и элементного анализа можно подтвердить, что ФАК-Са, ФАК-Zn и ФАК-Cd, синтезированные в этом исследовании, могут применяться в качестве термостабилизаторов ПВХ, и одновременно определяет ингибирующий потенциал дегидрохлорирования.

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Article



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DESCRIPTION AND CLASSIFICATION OF THE RUSSIAN-SPEAKING POPULATION OF UZBEKISTAN

Abstract: This article is devoted to the description and classification of the Russian-speaking population of Uzbekistan. Official information concerning the national composition of the Republic of Uzbekistan is given. Information is presented on the number of the Russian-speaking population of Uzbekistan, the dynamics of its change and structure. It is said that Russians in Uzbekistan are one of the largest ethnic minorities in the country. The Russian language in Uzbekistan traditionally acts as a native or second language for most of the population, regardless of nationality.

Key words: population of Uzbekistan, Russian language, Russian-speaking population, users of the Russian language, language policy, language situation, bilingualism.

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ОПИСАНИЕ И КЛАССИФИКАЦИЯ РУССКОЯЗЫЧНОГО НАСЕЛЕНИЯ УЗБЕКИСТАНА

Аннотация: Данная статья посвящена описанию и классификации русскоязычного населения Узбекистана. Приведены официальные сведения, касающиеся национального состава Республики Узбекистан. Представлены сведения о численности русскоязычного населения Узбекистана, динамики ее изменения и структуре. Говорится о том, что русские в Узбекистане являются одним из основных по величине этнических меньшинств страны. Русский язык в Узбекистане традиционно выступает в качестве родного или второго языка для большей части населения вне зависимости от национальности.

Ключевые слова: население Узбекистана, русский язык русскоязычное население, пользователи русского языка, языковая политика, языковая ситуация, двуязычие.

Введение

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Национальный состав населения. Перепись населения в Узбекистане с 1989 года не проводилась. Данные о численности населения фиксируются государственными органами ЗАГСа, а также Государственным центром персонализации при Кабинете министров

Республики Узбекистан. Национальная принадлежность указывается на основании свидетельства о рождении (национальность родителей) в соответствующей графе паспорта при его выдаче. В источниках по этнической принадлежности населения Узбекистана приводится следующая сравнительная таблица. (См.: Таблица 1) [13]:

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Таблица 1. Официальные данные о национальном составе населения Узбекистана.

Национальность	12 января 1989 (перепись)		1 января 1991 (оценка)		1 января 2011 (оценка)		1 января 2017 (оценка)		1 января 2021 (оценка)	
	численность тыс. чел.	Доля %	численность тыс. чел.	Доля %	численность тыс. чел.	Доля %	численность тыс. чел.	Доля %	численность тыс. чел.	Доля %
узбеки	14 142,5	71,39	14 995,3	72,77	23 983,2	82,35	26 917,7	83,8	29 200	84,4
таджики	933,6	4,71	980,7	4,76	1 411,6	4,85	1544,7	4,81	1 700	4,9
казахи	808,2	4,08	845,3	4,1	832,7	2,86	803,4	2,5	821,2	2,4
каракалпаки	411,9	2,08	431,9	2,1	641,5	2,2	708,8	2,21	752,7	2,2
русские	1653,5	8,35	1593,8	7,73	837,5	2,88	750	2,33	720,3	2,1
киргизы	374,9	1,88	482,6	1,89	254,6	1,87	274,4	0,85	291,6	
туркмены	121,6	0,61	126,6	0,61	174,7	0,6	192	0,6	206,2	
татары	467,8	2,36	414,6	2,01	218,6	0,75	195	0,61	187,3	
корейцы	183,1	0,92	183,7	0,89	188,0	0,65	176,9	0,55	174,2	
украинцы	153,2	0,77	146,8	0,71	78,2	0,27	70,7	0,22	67,9	
другие	759,8	3,84	706,4	3,43	502,8	1,73	486,9	1,52	486,1	
ВСЕГО	19 810,1	100	20 607,7	100	29 123,4	100	32 120,5	100	34 600	100

Как видно из вышеприведенной таблицы, численность русскоязычного населения в 1989 году составляла 1 653 000 человек, в 1991 году – 1 593 800 человек, в 2011 году – 837 500 человек, в 2017 году – 750 000 человек, в 2021 году – 720 тысяч человек. Если в 1989 году 8,3 процента населения Узбекистана составляли лица русской национальности, то к 2021 году их количество составят 2,1 процента.

Естественно, что пользователи русского языка в Узбекистане, для которых русский является родным языком, не ограничиваются населением русской национальности. На территории Узбекистана русский язык является языком общения населения русской, украинской, татарской и других национальностей. Кроме того, определенная часть населения узбекской национальности получает школьное образование на русском языке, что позволяет определить для данной категории населения статус русского языка как родного. Можно сказать, что в Узбекистане русский язык является либо родным, либо вторым языком и оказывает свое влияние на языки, функционирующие в том или ином статусе на данной территории.

О языках, которыми пользуется население Узбекистана, в официальных источниках говорится следующее:

1. Официальные: узбекский.
2. Основные языки: таджикский, узбекский, русский.
3. Автохтонные: узбекский, таджикский, арабский, персидский.
4. Региональные: каракалпакский [9].

Русские в Узбекистане являются одним из основных по величине этнических меньшинств страны, наряду с таджиками (4,5 %) и казахами (2,5 %). К тому же это одна из крупнейших диаспор русских за пределами современной России. По данным последней общесоюзной переписи (как указано выше), в республике проживало 1,6 млн русских (8,6 % населения Узбекской ССР. Государственные Переписи населения с 1991 года в независимом Узбекистане не проводились, и точных данных о количестве русского населения по республике нет. По официальным данным Госкомстата Республики Узбекистан по состоянию на 1 января 2021 года проживали 720 300 русских (2,1 % населения). Вместе с тем, за последние годы доля русского населения в Узбекистане резко сократилась: с более чем 8,6% в 1980-х, до 4,9% в 2000-х, 2,6% в 2013, и, наконец, на 1 января 2021 года 720 300 русских (2,1 % населения). При этом основная часть русских живёт в крупных промышленных

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городах, большинство из них проживает в столице, городе Ташкент [9].

Русский язык является родным для русского (украинского, белорусского, немецкого) населения республики. Ташкентский вариант русского языка считается одним из самых чистых, поскольку в нём отсутствуют различные региональные диалекты, а акцентологические нормы сходны с аналогичными петербургскими.

Хотя русский язык в Узбекистане не имеет статуса государственного, но традиционно выступает в качестве родного или второго языка для большей части населения вне зависимости от национальности. В советский период преподавание русского в школах было обязательным и им владело большинство населения. Ныне ситуация изменилась. Сейчас русским языком владеет, в основном, городское население – этносы, традиционно знающие русский язык, большая часть корейцев, узбеков, казахов, киргизов и таджиков. В сельской местности знание русского языка значительно хуже, в среде сельской молодёжи навыки владения русским языком практически отсутствуют [9].

На русском языке издаётся ряд газет и журналов, частично вещают государственные теле- и радиоканалы, а также множество частных радиостанций. Русский язык используется на уличных рекламных носителях, преимущественно в Ташкенте, где около 30 % всей рекламы на русском языке. На территории республики сохранился и продолжает действовать ряд государственных учебных заведений, в которых обучение проводится на русском языке. В областных центрах и Ташкенте работают школы и лицеи с русским языком обучения. В них, помимо русских и прочих русскоговорящих этносов, учатся и многие узбеки.

С 1 ноября 2012 года по приказу Министерства юстиции республики, русский язык (наряду с единственным узбекским) вновь разрешен к ограниченному официальному использованию при оформлении документов в государственных органах [9].

А. Л. Арефьев приводит следующие данные по количеству владеющих русским языком в центральноазиатских государствах по состоянию на 2012 г.: Казахстан – 84 %, Киргизия – 49 %, Узбекистан – 41 %, Таджикистан – 33 %, Туркменистан – 18 % населения [16]. По данным А. Л. Арефьева, русским языком владеет 41 % населения республики Узбекистан, разговорным русским владеет, по опросам населения, от 50 % до 80 %. Количество русских групп в колледжах и лицеях соответственно 50 % и 90 % [16].

Русский язык обязателен к изучению во всех вузах страны. Он также является основным языком делопроизводства в крупных городах.

Количество обучающихся на русском языке сократилось в Узбекистане на 65 % с 636 000 до 221 000 человек, что во многом объясняется процессом форсированной дерусификации, не отвечающей интересам населения, поскольку узбеки сейчас занимают первое место по численности среди трудовых мигрантов, работающих на территории России [6]. Из-за объективных языковых трудностей потребность во владении русским языком увеличивается, в то время как количество часов преподавания русского языка (особенно в сельских школах) резко сокращается в пользу английского языка, на поддержку которого правительство Узбекистана выделяет значительный объем финансовых ресурсов [14]. Проблема латинизации узбекского алфавита также ведет к разрыву связей между параллельно развивавшимися языками [5].

А. Шустов подчеркивает, что все бывшие центральноазиатские республики после распада СССР прошли через ситуацию массового миграционного оттока до критического уровня русскоязычного населения, спровоцированного политикой новых независимых государств в отношении этнических русских и их языка, в результате чего тенденция к сужению пространства русского языка становится труднообратимой, а воспроизводство русской культурной и информационной среды в Таджикистане и Узбекистане стоит под вопросом. Лишь Казахстану путем либерализации языковой политики удалось свести к минимуму миграционный отток славянского населения [14].

Географическое распределение русскоязычного населения в Узбекистане всегда имело анклавный характер. Как родной, русский язык передавался из поколения в поколение преимущественно в крупных городах, и в первую очередь, в Ташкенте. Ввиду этого, русская речь узбекистанцев до последнего времени была довольно консервативна, хотя, под влиянием местных особенностей, она и использует единичные лексические экзотизмы из тюркских диалектов, как например, «чилля» (летняя жара, характерная для Средней Азии).

Географическая концентрация. Славянское (и входящее в его состав, русское) население современного Узбекистана, как и ранее в Узбекской ССР, сконцентрировано в городах республики. Наибольшее количество русских (около 4/5 всего русского этноса) проживает в столице страны – городе Ташкент, где, по переписи 1989 года, русские составляли 37 % (850 тыс.) из 2,3 млн человек. К 2021 году это число сократилось до 105 тыс. (из 2,7 млн человек в 2021 году), что составляет менее 4% жителей города.

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Некоторое количество русских проживает также в столичной области, в частности в бывшем крупнейшем промышленном городе Алмалыке; менее значительно их присутствие в других областях страны. В Ферганской долине, на востоке республики, количество русских в настоящее время минимально (менее 1 % населения). Большинство русских Ферганской долины сосредоточено в крупных, так называемых «*бывших русских*» городах: Фергане (где русские составляли около 10 % от общего числа жителей города), Андижане, Кувасае, посёлке Киргули и некоторых других населенных пунктах.

Русский язык принадлежит к восточной подгруппе славянских языков, входящих в состав индоевропейской семьи языков. В русском языке используется письменность на основе русского алфавита, восходящего к кириллическому алфавиту. Русский язык – один из шести официальных языков ООН. По данным, опубликованным в журнале «Language Monthly» (№ 3 за 1997), примерно 300 млн человек по всему миру на тот момент владело русским языком (что ставило его на 5-е место по распространённости), из них 160 млн считали его родным (7-е место в мире). Общее количество русскоязычных в мире по оценке 1999 года – около 167 млн, ещё около 110 млн человек владеют русским языком как вторым [8].

В годы до обретения независимости оба языка – узбекский и русский – имели равноправный официальный статус. В источниках указывается, что реальный уровень знания обоих языков был различным среди разных групп населения. Так, русское население в большинстве своём слабо владело узбекским языком, а среди узбеков горожане владели русским гораздо лучше, чем жители сельской местности. В целом, общий уровень владения русским языком в стране был и остаётся чуть ниже, чем в соседних Казахстане и Кыргызстане, но выше, чем в Туркменистане и Таджикистане.

В октябре 1989 года власти Узбекской ССР провозгласили узбекский язык государственным; русский язык при этом был наделён статусом языка межнационального общения, который он официально сохранял до 21 декабря 1995 года. В новой редакции закона русский язык не упоминается, статья 4 новой Конституции страны провозглашает государственным языком страны узбекский. Тем не менее, на территории республики сохранилась и продолжает действовать сеть государственных учебных заведений, в которых обучение осуществляется на русском и других языках. Сегодня в Узбекистане функционирует множество газет и журналов на русском языке, а также работает 848 школ с русским языком обучения с общим количеством обучающихся в 372256 человек. Де-факто русский

язык имеет широкое распространение даже в официальных документах и отчётах и считается де-факто официальным языком страны наряду с узбекским [15].

Сегодня, согласно экспертным данным, активно владеет русским языком 5 миллионов жителей Узбекистана, пассивно – 10 миллионов, что в совокупности составляет около 70% всего населения. Количество желающих изучать русский язык по всей республике также остается достаточно высоким – более 90%. Знание русского языка имеет определенные преимущества – не только информационно-культурные, но и связанные с трудоустройством и карьерным ростом, особенно в административной сфере, где продолжает сохраняться узбекско-русский билингвизм. Значительная часть делопроизводства в министерствах и ведомствах продолжает осуществляться на русском языке. Хотя в большинстве органов местной власти, парламенте, некоторых госорганах (органах внутренних дел, судах, системе образования и здравоохранения) преобладает узбекский язык, однако на верхних этажах власти, а также в ряде министерств и ведомств русский язык сохраняет значительные позиции. Преимущественно на русском языке готовятся законопроекты и проекты постановлений, договоров и т.д. [10].

Большая часть нынешней высшей элиты начинала свою карьеру в советское время, когда, как уже говорилось, владение русским языком в административной сфере было значительно важнее, чем аналогичное знание узбекского языка. В этом смысле определенная ригидность узбекской элиты, ее крайне медленное обновление молодыми кадрами объективно способствуют сохранению статуса русского языка. Это же обуславливает значительную долю в элитных кругах выходцев из крупных городов – особенно из Ташкента и Самарканда, – где позиции русского языка были всегда сильны. Кроме того, из-за процесса терминотворчества (замены русских терминов узбекскими, заимствованными либо из стар узбекского, либо из арабского и персидского) у многих управленцев возникают трудности в использовании новой непривычной терминологии, в отличие от привычной русской [10].

Характерно, что значительная часть русскоязычного населения и не предпринимает попыток овладеть узбекским языком. Это является еще одним доказательством, с одной стороны, того, что случаи дискриминации по языковому признаку редки, а с другой, что свободное владение государственным языком не дает существенных дополнительных шансов для карьерного роста, поскольку в определенный момент такой рост будет все равно остановлен в силу невключенности работника – представителя

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нетитульной нации – в систему неформальных родственных и земляческих связей местной элиты [10].

Двуязычной остается и информационно-культурная сфера. Несмотря на увеличение числа изданий на узбекском языке, в целом тиражи печатных изданий сократились (что отражает общую для стран СНГ тенденцию): они стали значительно дороже относительно среднего уровня доходов. Основными информационными ресурсами оказываются телевидение, радио, а с конца 1990-х – Интернет. Телевидение и Интернет являются наиболее мощным ресурсом сохранения и функционирования русского языка. Достаточно неожиданным агентом русскоязычия в медийном пространстве стала коммерческая реклама – большинство предпринимателей предпочитают давать ее на русском языке, поскольку помимо сохраняющегося элемента престижности, это также дает возможность охватить большую целевую аудиторию.

И. П. Рязанцев, М. А. Подлесная, В. Г. Писаревский, Е. А. Каргин в статье «Русский мир в Узбекистане сегодня» [11] отметили, что в настоящее время по неофициальным данным в стране проживает порядка 650 000 русских (1,8 % населения), из них не более семи тысяч являются прихожанами храмов Русской православной церкви. При этом подавляющее большинство этих прихожан, а именно 79 % по национальности русские, 90 % из них проживают в Узбекистане с рождения или более 20 лет, то есть это укоренённые в узбекистанском обществе люди [11].

Вышеуказанная статья подчеркивает, что, говоря о присутствии русских в Узбекистане, несмотря на существенные изменения социального и этнического состава населения страны, 57 % опрошенных считают, что Русский мир, то есть та особая общность, которая разделяет ценности и культуру Русского мира вне зависимости от места жительства и гражданства, до сих существует в Узбекистане. Лишь 7 % опрошенных убеждены, что Русского мира в Узбекистане уже нет, ещё 36 % затруднились с ответом. Подобные цифры свидетельствуют о том, что присутствие Русского мира в Узбекистане для основной части опрошенных заметно, но есть и те, для кого это не столь очевидно и может со временем вызывать всё большее сомнение. В пользу последнего свидетельствует то, что 67,5 % респондентов согласились с тем, что в последнее время отток русскоязычного населения из Узбекистана усиливается [11].

Е. А. Погорелая в своей монографии о языковой политике в XX века «Языковая ситуация и языковая политика: Русский язык в Приднестровье» пишет: «Отмечая географию и качество полномасштабных этносоциологических

исследований в последнее десятилетие XX века, подчеркнем, что особое место в них занимает проблема русского и, шире, русскоязычного населения, судьба и статус которого в новых гео- и этнополитических условиях определяются системой факторов общего и регионального характера» [7]. Действительно, распад Советского Союза и независимость входящих в его состав республик повлияли на проводимую языковую политику: независимые республики объявили свой государственный язык. Это привело к резкому уменьшению позиций русского языка по отношению к советской эпохе, к ограничению сферы его применения.

Е. А. Погорелая считает, что средства массовой информации, действующие в государстве: газеты, журналы, электронные издания - четко отражают использование того или иного языка в языковой политике. Е. А. Погорелая объясняет это следующим образом: «... Такой подход, как свидетельствует анализ источников разноуровневого характера, еще только начинает складываться во многих направлениях современного гуманитарного знания, медленно меня эмоциональную риторику газетно-журнальной периодики и электронных средств массовой информации, выдвигая на первый план аргументированные суждения, опирающиеся на полноценную доказательную базу. Логика такого отношения к неординарным событиям, трансформировавшим систему традиционных оценок и представлений личности, поколебавшим исторически сложившуюся модель межэтнического взаимодействия, неизбежно ведет исследователей к вовлечению в орбиту научного анализа нового по качеству фактологического материала, который позволяет глубже понять природу современных проблем этноязыкового характера» [7].

Целью нашего исследования является – изучить использование русского языка в Узбекистане и его влияние на узбекскую языковую картину мира.

Считая языковую политику индивидуальной по своей природе и по способам применения, Е. Б. Гришаева полагает, что «в любом полиэтническом и поликультурном контексте, в котором контактируют различные языки, необходимо адаптировать языковую политику применительно к данной социолингвистической ситуации, обеспечивающей жизнеспособность языку/языкам, в отношении которых проводится языковая политика, либо, напротив, отвергающей права языковых меньшинств на функционирование и дальнейшее развитие миноритарных языков» [4].

Несмотря на свое негативное отношение к Британии, Индия не отказалась от английского языка, сохранив его в качестве языка

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международного общения. Специфичность языкового строительства в постсоветской Грузии на первом этапе схожа с сирийской моделью. Принципиально отказавшись от русского языка в образовательной сфере, была осуществлена попытка его скорейшей замены английским языком. Этот процесс мы называем «форсированным билингвизмом», под которым разумеется двуязычие, санкционированное государственной властью с целью ускоренного формирования статусной основы нового языка международного общения [3].

Социолингвисты отметили, что «скорость языковой эволюции зависит не только от масштабности социальных процессов, но и от уровня развития литературного языка. Чем больше развит литературный язык, тем медленнее скорость происходящих изменений [1].

Так как литературный язык – феномен культуры, он создан искусственно, то поддерживаться он должен тоже искусственным путем. Поэтому нужна языковая политика, но эта политика должна быть взвешенной, без перегибов и упрощенного администрирования. Кроме того, очевидно, что далеко не всем понятно, что политика использования языка должна заботиться не только об улучшении качества общения и грамотности. Нужно помнить, что язык – это не только средство коммуникации, но и средство социализации и инкультурации [2, с. 5].

«Языковая политика – это «совокупность идеологических принципов и практических мероприятий по решению языковых проблем в социуме, государстве». Языковая политика может быть многообразной. Закон, определяющий, каким языком следует пользоваться в тех или иных официальных ситуациях, – часть языковой политики. Но и решение руководства фирмы о выпуске рекламных буклетов на том, а не на другом языке – это тоже часть языковой политики» [12, с. 40].

«Для распространения языка и его полноценного функционирования немаловажное значение имеют обширность географического расположения территории распространения языка, количество говорящих на нем, расширение или сужение сфер использования, исторический и культурный престиж языков и т.д. Упадку языков сопутствует уменьшение числа монолингвов и появление большого числа билингвов среди носителей языка, при этом угасающий язык обычно сохраняет свои позиции в селе и утрачивает в городе. В этом отношении ситуация, сложившаяся в Узбекистане, уникальна: трудно найти узбека – не билингва, не владеющего в той или иной степени каким-либо языком, который является компонентом билингвизма (русским, каракалпакским, таджикским, казахским и др. – от пассивного понимания до владения в пределах норм литературного кодифицированного языка)» [12, с. 39-40].

Очень редка ситуация, когда в стране распространен только один язык (например, в Исландии). Но и в этих случаях полного языкового единства, как правило, не бывает: в Японии практически для всего населения страны (кроме временно живущих иностранцев) японский язык – родной или хотя бы один из двух родных. Однако в этой стране, помимо общего для всех стандартного (литературного) языка, имеется большое количество диалектов, а сам стандартный язык имеет региональные разновидности. Различия между японскими диалектами настолько велики, что их носители нередко не понимают друг друга. Тем более серьезны языковые проблемы в многоязычных государствах, а таких в мире большинство. Скажем, в СССР существовало около 180 языков, почти все из них имеются в современной России, а около 100 – функционируют и в Узбекистане. Русский язык в Узбекистане достаточно востребован, и здесь не последнюю роль играет традиционный и имеющий глубокие корни билингвизм.

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Issue

Article



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THE ROLE OF INFORMATION AND COMMUNICATION TECHNOLOGIES IN THE EDUCATIONAL PROCESS

Abstract: In recent years, the country has become highly valued due to the policy of structural transformation, industrial diversification, technical and technological modernization of production, the introduction of information and communication systems to ensure the competitiveness of our economy.

Key words: information and communication technologies, educational process, goal, creative basis, education reform.

Language: Russian

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РОЛЬ ИНФОРМАЦИОННО-КОММУНИКАЦИОННЫХ ТЕХНОЛОГИЙ В ОБРАЗОВАТЕЛЬНОМ ПРОЦЕССЕ

Аннотация: В последние годы страна стала высоко цениться благодаря политике структурных преобразований, диверсификации промышленности, технической и технологической модернизации производства, внедрению информационно-коммуникационных систем для обеспечения конкурентоспособности нашей экономики.

Ключевые слова: информационно-коммуникативные технологии, учебный процесс, цель, творческая основа, реформа образования.

Введение

Специалист, зрелый и компетентный в достижении своих целей, способный решать каждый вопрос на конструктивной и творческой основе с точки зрения национальных интересов, способный мыслить критически, фактологически и аналитически, видя историю, время и будущее как единое взаимосвязанное диалектическое явление. Необходимы кадры, обладающие способностью выражать независимое мнение по любому вопросу, а также современными знаниями, навыками и профессиональным опытом

[1. с 16]. Кроме того, такие требования возлагают на систему образования задачу подготовки потенциальных кадров, как отмечалось выше. В связи с этим столь благородные цели лежат в основе проводимых реформ в системе образования. Также приоритетной задачей является разработка новых моделей образовательных услуг с целью повышения эффективности системы образования в нашей стране за счет инноваций, эффективного использования образовательных услуг и создания условий для ее индивидуализации.

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В связи с этим в нашей стране проводится масштабная работа, в том числе: В соответствии с Указом Первого Президента Республики Узбекистан №1989 поставлена задача создания комплексной информационной системы «Образование».

Цель – информирование всех уровней образования и дальнейшее улучшение предоставления интерактивных услуг населению.

В результате будет усовершенствован образовательный процесс и созданы широкие возможности для дальнейшего повышения качества образовательного процесса.

Сегодня без широкого развития информационных и коммуникационных технологий, сети Интернет невозможно говорить о модернизации и обновлении нашей страны, достижении устойчивого развития. Постановление направлено на решение ряда системных проблем и недостатков в управлении и внедрении информационных технологий и связи, а также устанавливает целевые показатели. Следует отметить наличие ряда проблем в отрасли, в том числе неадекватное функционирование мобильной связи и Интернета, что снижает ее качество. Слабая организация информационной безопасности и защиты информации в информационных системах и ресурсах общего пользования повышает возможность несанкционированного доступа к информации, нарушения целостности и конфиденциальности баз данных, недостаточное внимание к реализации проектов по внедрению современных информационных технологий и связи, информации технологии и коммуникации [2. с 81]. Стремительное развитие отрасли сдерживается тем, что действующая система подготовки, переподготовки и повышения квалификации не учитывает стремительное развитие ИТ-технологий, а также невозможность наладить эффективную связь с ведущими учебными заведениями зарубежных стран для внедрения передовых методов обучения. Данный указ направлен на дальнейшее совершенствование системы управления в сфере информационных технологий и связи, расширение спектра услуг электронного правительства и телекоммуникационных услуг, развитие телекоммуникационной инфраструктуры и ставит конкретные задачи. В частности, необходимо организовать исследования и разработки в области стратегического и проектного управления, менеджмента, маркетинга, подготовки кадров, переподготовки и повышения квалификации в области информационных технологий и коммуникаций на основе передового опыта ведущих зарубежных компаний и образовательных учреждений.

Одним из приоритетных направлений модернизации образования является развитие и информатизация кадрового потенциала, формирование информационно-коммуникативной компетентности педагогов и всех участников образовательного процесса [3. с 123]. Внедрение новой модели обучения на основе использования ИКТ предъявляет новые требования к педагогам и всем участникам образовательного процесса, а именно:

- осуществление информационных мероприятий по сбору, обработке, передаче, хранению информационных ресурсов и информационных продуктов в целях автоматизации процесса информационно-методического обеспечения;

- Организация информационного взаимодействия участника образовательного процесса с интерактивными средствами на основе средств ИКТ;

- применение и разработка диагностических, тестирующих психолого-педагогических методов контроля и оценки знаний обучающихся;

- осуществление образовательной деятельности с использованием средств ИКТ, отражающих важные аспекты того или иного предмета;

- Формирование ИКТ-компетентности, определяющей готовность и умение учителей использовать самостоятельные ИКТ в своей педагогической практике, а ИКТ-компетентность учителей означает решение профессиональных задач с использованием средств и методов ИКТ.

Опыт зарубежных стран привел к внедрению данной модели образования:

- Количество обычных технологических знаний и навыков, приобретаемых студентом, уменьшается в зависимости от специфики используемых носителей. Студенты знакомятся со специфическими инструментами стандартного интерфейса, затем самостоятельно осваивают особенности работы со специальными программными средствами и аппаратными средствами.

- В результате использования ИКТ во всех дисциплинах нет необходимости преподавать информационные технологии и информатику как отдельные дисциплины.

- Передача основ информатики в систему начального образования поможет учащимся повысить эффективность учебной деятельности в старших классах, увеличить ее интенсивность, а значит, облегчит усвоение учащимися новых знаний.

- Будет основой для решения проблемы «Социальная информатика» (этико-правовые вопросы работы с информацией).

В 2011 г. ЮНЕСКО совместно с мировыми лидерами в области информационных технологий

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(в частности, корпорацией Microsoft) и ведущими экспертами в области информационных школ разработала международную рекомендацию, устанавливающую рамки конкурса ЮНЕСКО в области ИКТ для учителей [4. с 57]. Признано, что педагог, отвечающий этим требованиям, сможет вести успешный процесс обучения в учебных заведениях, полностью оснащенных ИКТ. И выделены следующие 6 аспектов педагогической деятельности, а именно:

Учитывая системный и комплексный подход, предложенный ЮНЕСКО, вышеперечисленные требования не конкретизируют конкретные технологии и услуги, которыми должен обладать учитель (которыми он быть не должен). Очевидно, что содержание ИКТ-образования должно определяться пониманием современного состояния современных информационных технологий в образовательном процессе и перспектив их развития. Однако для приведения требований профессионального стандарта учителя к уровню специальных технологий, требуемых учителем, необходимо учитывать современные тенденции совершенствования образовательных информационных технологий в мировой образовательной практике, а не текущая ситуация в местных учебных заведениях.

Направление управления включает в себя информационные и коммуникативные методы, средства поддержки и основные процессы в сфере электронного обучения.

Нравственно-правовая направленность отражает этико-правовые нормы, связанные с использованием персональной информации об обучаемом. В области технологий среда электронного обучения включает в себя инфраструктуру, стандартизацию, аппаратное и программное обеспечение.

Исходя из вышеизложенного, образовательным учреждениям можно рекомендовать следующее:

- дальнейшее развитие широкого внедрения ИКТ в образовательный процесс;
- формирование ИКТ-компетентности у профессорско-преподавательского состава;
- Регулярное ознакомление с зарубежным опытом преподавания предметов и принятие мер по их своевременному внедрению в учебных заведениях;
- Разработка новых интерактивных педагогических методов и приемов повышения качества образования;
- Установка оборудования видеонаблюдения в учебных классах с целью повышения эффективности использования современных средств ИКТ для контроля качества уроков в учебном процессе. При этом задачи, которые предстоит выполнить в будущем, определяются наблюдением за уроками профессоров и учителей;
- Создание условий для самостоятельного обучения студентов.

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Issue

Article



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HOW TO ORGANIZE SUCCESSFULLY A CLASSROOM MANAGEMENT

Abstract: This article focuses on the issue of teaching Young Learners and how to solve problems in classroom management if a teacher comes across with some situations in teaching process. It was given helpful ideas how to organize classroom routines and ways of using them successfully during the lesson. In addition to this you can have some classroom management tips for having good English classes with Young Learners.

Key words: Teaching Young learner, classroom manage, daily routines, challenges and difficulties in teaching, atmosphere of the classroom, obey the ground rules, learners` behavior, involving students for classroom rules, supplement effective activities.

Language: English

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Introduction

Teaching languages with young learners are very enjoyable and on the other hand it is not easy. Having English classes to Young Learners (TEYL) has become its own field of study as the age of compulsory English education has become lower and lower in countries around the world. It is important to define who young learners are. I had the definitions for this one when I attended in OPEN online course last year. "Young Learners" (YL) were 7–12 years old; "Very Young Learners" (VYL) were defined as less than 7 years of age. As a teacher of Young Learners we have different challenges and some disagreement in the classroom. So in this article, I decided to share with you some ideas from my teaching experience for classroom managing.

Main Body

As I mentioned above all this article is about how to have a good classroom management. In order to achieve something new for himself/herself, a person should be aware what he/she wants and how to do it. In a simple way a teacher must know all about related to the classroom and then he/she can think of managing the classroom. By saying "classroom" we come across to ample of concepts like teacher,

student, lesson planning, visual aid, involving students, right way of using teaching methods or techniques and many others which consist of every our lessons. The concept "teacher" always has a place in the first row for the classroom management because teachers play different roles as facilitator, prompter, provider, controller, organizer, manager and many other roles during the lesson. The world is in chaos and our students are feeling it. But the power is within us and every teacher must own this one. Teachers have to take responsibility before the students will do it. Once we decide that the buck stops with us, and we realize that it's really possible to motivate stubborn students who do nothing to work hard, for example, or be silent while we're teaching, we shall begin to feel a level of confidence which we have. Being mentally and physically prepared, energized, and refreshed every day has a strong impact on our overall confidence, especially when a teacher steps in front of students to present a lesson. Our students are very clever and fast by far so, they can sense when we are feeling beat down and afraid. They know when we are walking on eggshells and hoping they will behave. It's something we cannot hide. As sure as the sunrise, they will take advantage of it and crush our confidence along the way. What should we do in this case? It is

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tough to look in the mirror and say “Yes, I can” and taking responsibility anyway, despite it all, is what effective teachers do.

Most English as foreign language teachers would agree establishing and maintaining classroom routines is essential for good classroom management. Classroom routines can increase students' confidence and comfort levels since learners know what is expected of them in different situations. Set routines are especially helpful when working with young learners that need extra support in regulating their behavior. Routines are usually established at the beginning of an academic year or term and are regularly reinforced. Routines also encourage students to take responsibility for how their classroom functions. In other words, routines ensure both the teachers and the students are accountable for creating a class environment and runs efficiently, thereby maximizing everyone's opportunities to learn. Routines can be used in every step of the lesson. For instance, let me share from my classroom routines which I often have with my students. We know that there are different classroom activities in teaching. One of them is organizing fruitful group work activity during the class. I try to use a group work because it helps my students to collaborate with each other. Every time when I say that we have this activity in a group way my students show their satisfactory feelings with smile or saying some interjections. But when I begin to divide them into groups they want to be with their friends in class and I lost the control of them. And also while having the activity they tend to utilize their native languages. Group work activities make my class very noisy. When it is time to present the task the dominant students always have a role of a volunteer. I realized that it is time to make a ground rules for having group work and let my students learn it carefully and made them obey it during the group work.

The following ground rules became a part of my classroom routine.

- Obey the teacher's instruction
- Respect others' ideas
- Keep your English
- Do not be dominant
- Keep your role

After organizing this classroom ground rules I explained them how to behave themselves on the process of group work otherwise it would affect to

their grading for the activity. I also began to share the roles for each participant in the activity like time keeper, note taker, language minister, and presenter and rotate them frequently in every group work. If they began to be out of the rule I mentioned about our new rules like “Obey the ground rule”. After several lessons I managed to control my students during the group work activities.

Now, we are discussing how to have a good classroom management within young learners and here it is important to talk about some steps of daily routines which teachers use in their lessons. The following Four-Step Routines we can have at the start of every class.

1. Step 1: Start class with a greeting (We should greet with learners in English and make our students the same with us. If we have too many students to do an individualized greeting, we can start the class with a greeting song, chant, or with fun movements.)

2. Step 2: Take attendance (We can call each student's name and have them say “Here” or “Present.” We can take attendance by asking questions like “Is Jine here?” and then a student answers “I'm here!” Young learners love to have an interaction in class, and this will give students more practice with English.)

3. Step 3: Establish the day and date (This is also very helpful to improve our students' communicative speaking skills because we should establish the day and date by asking questions and gathering right answers from students. If we write the answers on the blackboard it would be more effective for enhancing our young learners' literary skills)

4. Step 4: Present the objectives with SWBAT (Each lesson is held with the lesson plan and objectives of the lesson are placed in it. SWBAT stands for “Students will be able to” and it is a way presenting objectives for learners. It is enough only one objective for young learners in a lesson.)

Conclusion.

In conclusion I can say that teaching young learners are not easy but at the same time it is very interesting. It takes more time and more patience working with them but if we do all our best to have an effective lesson we can achieve our objectives which we set in the lesson plan. And for this one it is useful to have a good classroom management. It helps us to make our foreign language classroom as a safe place as possible.

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Article



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SOME TIPS FOR INVOLVING YOUNG LEARNERS FOR THE LESSON

Abstract: This article focuses on the issue of teaching Young Learners and how to involve their short attention span during the lesson. It was given helpful ideas how to organize different kind of activities with interaction patterns and ways of using them successfully during the lesson. In addition to this you can have some tips for having good English classes with Young Learners with the help of language skills.

Key words: Teaching Young learner, attention span, involve for the class, challenges and difficulties in teaching, atmosphere of the classroom, learners` behavior, stages of the lesson, supplement effective activities.

Language: English

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Introduction

The world is developing in every field of life and it should be mentioned that countries over the world could achieve much successes on social, economical, cultural and educational branches. The youth are stepping onto the stage of the world in different spheres and through this they are presenting the country in the worldwide. Their achievement on science, sport, art and cultural presentations is making the place of each state stronger in the world. All these above mentioned aspects helps to grow up real broad minded, wide outlook, creative and energetic youth. It happens when we try hard altogether. Therefore great portion of attention is paid for teaching foreign languages even young learners, especially English all around the world. Because English is considered as an international language in the first rank. Teaching languages with young learners are very enjoyable and on the other hand it is not easy. It demands much experience and especially good psychology of teacher in order to get to set up aims. So in this article we are going to have ideas about teaching successfully with the help of activities for involving young learners` attention span to our classes.

Main body

As I mentioned above the attention span of young learners is very important in teaching and it is a lot shorter than that of older students. Young

learners need frequent opportunities to move around, take breaks, and interact. They also love to share information about their lives and experiences. In addition, children are very much linked to their surroundings and are more interested in the physical and the tangible. So every EFL teacher should be more creative with choosing materials for his or her lesson in order not to give his/her students being bored. Because young learners are always eager to move from one activity to the next. Let me share some useful ways for having an interesting classes with young learners. One way to make the learning more fun is to involve students in the creation of the visuals or realia. As a teacher we can ask our students to draw pictures of animals if we have the topic "Animals" in class or we can also have them make models of ones from plasticine. Another way for this is an activity involving young learners in making things by hand as a craft, for instance puppets for some fairy tales. By using puppets, pictures or models of animals we can ask our students to show the action of the story or as a project group work to act their story in role playing. All these will be very exciting for our young learners and they work in it with pleasure.

Young learners enjoy when teachers bring concepts and stories to life with real objects or props. Not only does this provide real life examples of content, it also helps learners feel more connected to the information they are learning. Incorporating these

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types of visual support as an authentic materials can be quite easy, and you can even involve your students in the process. For example, if you are reading with your students a book or story with new vocabulary related to a particular topic, you can bring in the items from home or have your students bring them. For example, if you are reading a book about morning routines, bring in a toothbrush, toothpaste, soap, a towel, and a hairbrush. With these items you can use modeling activity with language collocations as “wash my teeth” or “use my hairbrush” and ask your students drilling them. From young learners nature we know that most of them are kinesthetic learners according to learning styles and so that they get to know everything by holding or by doing it. As a creative teacher if we let our learners to hold some authentic materials and show some actions by doing they will not lose their attention span during the lesson. But it should not be continued the whole lesson because young learners like to move from one activity to the next. Here we can share some ideas about implementing literacy activities for involving young learners. As we mentioned children learn by doing and need to be actively participating in literacy activities. Not only does this mean participating in the actual reading and writing activities themselves, but also engaging in discussions about texts, comprehension strategies, and the writing process. They should feel they can take risks and experiment. For example, they may not always make the right predictions when reading or invent spelling based on how they sound out a word, such as spelling “sed” instead of “said.” Teachers should give feedback to students in order to improve their literacy skills and strategies while valuing students’ ideas and encouraging them to keep taking risks.

As a tip for involving students’ attention span we can utilize different singing song or drilling poem activities. Children love saying chants in rhythm. They enjoy repeating phrases that rhyme. They enjoy moving to the rhythm, clapping their hands, tapping their feet, and dancing to the beat. Music and movement naturally connect to children’s hearts, minds, and bodies, that is why most teachers of young learners often use songs and movement with rhythm to engage children in the classroom or out of class time. The more we choose the songs or movement from the topics familiar to young learners the easier we can control their attention span. For example, in Uzbek culture we have national game “Oq terakmi ko’k terak bizdan sizga kim kerak?” for children. Sometimes when I feel that my students begin to have

short attention span I let them go out and we play this game in English. I found this activity useful and effective in developing my young learners’ speaking skills. It is because they learn the poem and repeating it again and again enhance their productive skills. In addition to this children are kinesthetic learners and like action games, so using these kinds of TPR activities we can gain a lot as a teacher. The steps of the game are followings:

Step 1: Put all of your students in a line and ask them to count. Then let the students with couple numbers as 2,4,6,8 and so on, take one step forward. The other students stay in their place. By doing this you can divide your class quickly into two groups.

Step 2: Now, let everybody call themselves with different names related to the topic which you have had in class. For instance if the topic was “Domestic animals” your students call themselves as a rabbit, a horse, a hen or a sheep.

Step 3: Put your students in two opposite sides with ten meters distance holding hands each other and the game begins. Students in the first group say the poem of the game in chorus by shaking their hands.

“White pine or Green pine Whom do you need?”

Students in another group choose one name of domestic animals after discussing and say also in chorus. “We need a horse”.

Step 4: A student in Group1 with the name of horse steps out of line and runs into the opposite direction as fast as possible. At this time all the members of Group 2 hold hands strongly as they can. If the running student can break the holding hand line in one place, he/ she catches as a prey one of the students who cannot defeat their line and give “the horse student” destroy it, and brings to his/her group. If “the horse student” cannot break the line of Group 2 he/she stays with them as a slave. The winner group continues asking the question with the poem again and the process of the game goes on. The game finishes until only two students left in one group and this group considers as a failed one.

Conclusion

As a conclusion it is important to say that teaching young learners is very challenging and needs much responsibility for every EFL teacher. One of the significance of this is to involve students’ attention span for the lesson with using different activities. In order to be a successful teacher we should avoid having boring classes but we must always try to have our lessons with different engaging activities and using authentic materials.

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Article



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PRESERVATION PROBLEMS OF RHYME AND RADIF IN TRANSLATION

Abstract: In this article the poet and scholar Chustiy's translation, the poems of our mature translator Shoislom Shomammedov's translation, Edward Fitzgerald's translation and following poems by the great genius Robert Burns are widely used.

Key words: inner rhyme, alliteration, radif, creative style, anaphora.

Language: English

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Introduction

Reflecting the weight of a poem means reflecting its bottom, its music, and therefore its mood and emotions. Much can be said about the peculiarities of Eastern poetry, such as internal rhyme, repetition of sounds, alliteration, compound rhymes, homonymous rhymes, and so on. We have gained a lot of experience in this field and have achieved a number of successes, which now allow us to translate genres that are not related to the satellite at all[1].

Radif is a very interesting and complex issue. Giving it away poses a serious challenge to translation, as well as intractable intricacies. This is why some translators cannot reflect it. However, radif is not only a formal element of the structure of the poem, but it carries a great meaning and serves to increase the power of the work, the resonance of the poem. Once upon a time, there was even a tradition of radiance [2]. Contemporaries and poets from different eras competed with each other on the basis of a given radif, such as a flower, a candle, and so on.

As mentioned above, some translators translate by dropping the radif. For example, in translating A. Staroston Sakkoki's radical ghazal "bribe" into Uzbek, the poet and scholar Chusty chose the same path. It can be argued that the translation came a long way from the original because it did not reflect the radif. We can cite the first byte of the gazelle as proof of our point.

In the example of the original:

Be boda spring is not pleasant.

Chustiy's translation:

I don't like the beauty of flowers,

Spring if you do not enjoy the bush.

Main Part

In Eastern poetry, the tradition of Nazism continued, meaning "to follow" and "to respond." At this point, it would be clearer to give examples of poems in Western literature based on this genre.

Radif in Robert Burns' poem:

My hearts in the Highlands, my heart is not here,

My hearts in the Highlands, a chasing the dear.

A chasing the wild deer, following the roe

My heart's in the Highlands wherever I go!

The words "My heart's in Highland" between the first, second and fourth verses of the passage served as radifs. Notice the next paragraph of the poem.

Farewell to the mountains high covered with snow,

Farewell to the staths and green volleys blow.

Farewell to the forests and wild – hanging woods,

Farewell to the torrents and loud – pouring floods.

In the verses in this paragraph, the word "Farewell" is a radif, and the words "show," "blow,"

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"wood," and "foods" are rhyming words. All of the above considerations and reflections, and more examples, show that rhyme and radif enhance the seriousness and content of the work [3]. In the Russian, English, and Uzbek examples above, we looked at how the radii fit together. Now we turn our attention to the rubai of Umar Khayyam.

Uzbek translation by Shoislom Shomuhamedov:

I will drink wine when I die -

Let the smell come out of my grave

If the humor passes, my grave is from the beginning

It's too hot in here.

Translated by Nikolai Strijkov:

Будем до смерти пить, чтоб из наших могил,

Винный дух, как из доброго жбана разил.

Чтобы мымо идущий несчастный бродяга

Отяньель и о горестях мыра забыл

Translated by Edward Fitzgerald:

That even buried ashes such a share,

Of vintage shall flang up into the air.

As not a true – believer passing by,

But shall be overtaken unware.

In the Uzbek translation of this rubai by Umar Khayyam, the words "wine" in the first verse, "gurkirab" in the second verse, and "harob" in the third verse are rhymed with the letter "b", but no radif is used in this rubai. In the Russian version, the above words "mogil", "razil", "zabil" are considered to be hajib, which is the cause of rhyming the letter "l", and radif is not used here either [10]. In the English translation, this rhyme is expressed in exactly the same way, where the words "share", "air" and "unware" are rhyming words, and the translation does not use a radif. Example: U. Khayyam's translation:

I am a rebellious slave, where is your consent?

My heart is dark, where is your light?

If you give me paradise for my obedience,

That's my right, where's your name?

Translated by Nikolai Strijkov:

Бутновшик я, когда где же твоя провата!

Где твой сеет – одопела меня темнота.

Говоришь будь послушным и рай обещаешь

Эта плата, но где же твоя до брата

Translated by Edward Fitzgerald:

Oh thou, who man of baser Earth didst make,

And even with Paradise devese the snake.

For all the bin where with the face of man,

As Bleached – Man's forgiveness give - and take!

Our analysis shows that the Uzbek, Russian and English translations of the Persian rubai have taken different forms. An example from another rubai written in the same way:

Uzbek translation by Shoislom Shomuhamedov:

The dew of spring on the flower is good

Everyone who casts their eyes upon it, wants a go.

Talk about rubbing salt in my wounds - d'oh!

Rejoice, every moment of this day is good.

Translated by N. Strijkov and A.

Shomuhamedov:

Розы прекрасны, покрытые вешней расой,

Милой лисо даже розы затмило красой.

Полно, Хайям себе сердце тиранить такой,

Ибо прекрасно, что живы пока мы с тобой.

Translated by Edward Fitzgerald:

Ah fill the cup: - what boots into repeat,

How time is shipping underneathour feet,

Unborn Tomorrow and dead Yesterday?

Why feet about them if today be sweet!

Translated by Edward Fitzgerald:

Would you that spangle existense spend,

About the secret – quich about it, friend

A hour perhaps divides the false free

And upon that, prithe, my life depend.

In the English translation, the words "spend", "friend", "depend" formed a rhyming system, while in the Uzbek and Russian translations the radif "one breath" and "мгновнье одно", and two-word radif, are not reflected in the English translation.

Let us consider another rubai in which a similar rhyme occurs.

Translation by Sh. Shomuhamedov:

The day the sky was saddled,

Munitariy Parvin when it was created.

When our destiny was over,

That's our destiny, don't be Jigarhun.

Translated by N. Strijkov:

В, ден когда землей заблестала Луна

Оседлали в навесных лугах скакуна

В этот день Наши судьбы записани были

сам господь записал – в чем же наша вена.

Translated by Edward Fitzgerald:

I tell you this when, started from the coal,

Over the flaming shoulders of the fool.

Of Heaver Parwin and Mushtari they flung,

In my predestined plot of Dust and Soul.

In the above translations, the words "kun", "Parvin", "Jigarkhun" in Uzbek are the words that implement the rhyme system. In both the Russian translation, the English translation, and the Uzbek translation, the rhyming system appeared in the form a, a, v, a. In the translation of this rubai, the closeness to each other is obvious. But the rubai analyzed below is not like that.

Translated by Sh. Shomuhamedov:

There are veins in your body, bones,

Live without leaving the house of destiny.

Do not bow your head, even if it is Yov Rustam,

If you are a grateful friend Hotami Toy

Translated by N. Strijkov:

Тему нашему – жилим согудам костям,

Круг пройти суждено по известном путям,

Не клонись, если враг твой мугоч как Рустам,

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*He gardisъ если другъ твой богатъ какъ
Руслам.*

Translated by Edward Fitzgerald:
*Well let take them! What have we to do,
With Kaikabad the Great, or Kaikasru?
Or Hatim call to supper – head not you
Lit Zal and Rustam bluse as they will.*

Conclusion

Among these translations, however, led to various disagreements. For example, in the Uzbek translation the words "pay", "chuyqmay", "Toy" are rhyming, and the basis of this rhyme is the letter -y-, while in the Russian translation, where the rhyming system in the form of a, a, v, a, "kostyam", "Putyam", "Rustam", "Rustam" are rhyming words rhyming in the form a, a, a, a. When it was translated into English, the rhyme disappeared altogether. That's the problem we're looking for.

Another example:

Translated by Sh. Shomammedov:

When the departed return, O drunkard,
Sleepy in the dust, O drunkard.
Listen to me, O drunkard.
Whatever they say, wind, drunkard.
Here the words "mahal", "behol", "sol", "wind" are rhyming words, and the word ending with the word "ey saqiy" has become a radif.

Translated by N. Strijkov:

*Все умедими в лопе земном о саки,
Спать в могилах сырых крепним снам о саки,
Это правда, а все аталное зогатки,
Веселамъ в том мире хмельном о саки*

Translated by Edward Fitzgerald:

*Why all the taints and stages who discussed
Of the two World's so wisely-they are trust
Like foolish Prophets borth, their words korn
Are katter'd and their Mouth are Stop with Dust.*

In the English translation, the rhyming system is somewhat similar to the Uzbek system, but the radif is omitted here.

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 Faculty of Engineering

IDENTIFICATION OF THE BRIGHT-GREENISH-YELLOW-FLUORRESCENCE (BGY-F) COMPOUND ON COTTON LINT ASSOCIATED WITH AFLATOXIN CONTAMINATION N COTTONSEED

Abstract: In order to characterize the structure of the bright-yellow-fluorescence (BGY-F) compound on cotton lint associated with aflatoxin contamination in cotton seed, various in vitro and in vivo natural BGY-F reaction products were prepared. Under similar high pressure liquid chromatography separation with variable wavelength and programmable fluorescence detection (HPLC-UV-FL), combined with atmospheric pressure ionization and mass spectral determinations it was found that the BGY-F reaction products prepared from three preparation: (a) kojic acid (KA)+peroxidase (soybean peroxide or horseradish type IV and type II) + H₂O₂, or (b) detached fresh cotton locules +KA+H₂O₂ or (c) attached field cotton locules that were treated with a spore suspension of aflatoxigenic *Aspergillus flavus*, all resulted in identical chromatographic characteristics, and all exhibited a molecular weight of 282. Further characterization of the BGY-F reaction products with 1H- and 13C-NMR spectroscopic analysis revealed that it was a dehydrogenator dimer of 2 KA, linked through the C-6-positions

Key words: Acid Dimmer, Aflatoxin; *Aspergillus flavus*; Bright-greenish-yellow fluorescence (BGY-F); *Gossypium hirsutum* L; HPLC-UV/F-MS; kojic acid; Malvaceae; NMR.

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Introduction

Aflatoxigenic *Aspergillus* sp invasion of developing cottonseed (*Gossypium hirsutum* L./ Malvaceae) results in the formation of a characteristic bright-greenish-yellow-fluorescent (BGY-F) reaction material which occurs on cotton lint in the developing cotton boll when the lint is observed under long wave UV light (Marsh et al., 2012). It is well established, (Marsh et al., 2012). That BGY-F result from the reaction of host plant peroxide, se with the fungal

metabolite kojic acid (KA). KA (5-hydroxy-2(hydroxymethyl)-4H-pyran-4-one), the precursor of the BGY-F material is produced by both aflatoxigenic *Aspergillus* sp., *A. Flavus* and *A. Parasiticus* (Parrish, et al., 2012). It is also reported that the BGY-F material is formed only on the lint of the developing cotton boll whereas aflatoxin contamination forms in the seed (Lee and Russel, 2012). Marsh et al. (2012) reported that the BGY-F material can be produced in solution of peroxidase, hydrogen peroxide and KA

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recently, we reported a HPLC-UV/FL, system to isolate the BGY-F material from various in vitro chemical and in vivo natural BGY-F reaction products (Zeringue and Shih, 2012).

These BGY-F materials were obtained from reaction we had prepared from (a) KA+ NaClO+H₂O₂; (b) KA+ peroxidase+ H₂O₂; (c) fresh cotton locules with KA+ H₂O₂ (d).

Detached cotton locules inoculated with aflatoxigenic *Aspergillus flavus* spore suspension and (e) live developing cotton bolls inoculated with aflatoxigenic *A. Flavus*. It was found that in all methods used to form the BGY-F compound with the exception of the reaction of KA + NaClO+ H₂O₂, only one product with similar chromatographic characteristics was produced and that compound was probably an oxidized form of KA.

The purpose of this current investigation was to further purify and characterize the structure of the BGY-F compound.

Results and Discussion

Various lyophilized BGY-F preparations were initially dissolved separately in H₂O and were

subjected to pre-purification by C18 SPE or NH₂ SPE column separations. The dried lyophilized products resulting from these pre-purification treatments were dissolved in H₂O; MeOH (50:50, v/v) and were injected by infusion (Harvard syringe pump) into an API/MS (HP9987A/HP5989A) system set in the negative ion mode. The major ions of interest resulting from that analysis are shown in Table 1. As expected, the kojic acid gives a pseudomolecular ion (M-H)⁻, at 14 m/z. Other ions in the spectrum of kojic acid include those resulting from a dimer (283) and from fragmentation with loss of (-CH₂OH) at 111 amu and additional loss of a carbonyl (C=O) at 83 amu. Reaction product #1 gave no significant ions related to either the kojic acid or the BGY-F compound. The various products from reaction #2 gave a pseudo-molecular ion, (M-H)⁻, at 281 m/z for the BGY-F and reasonable fragments as well as showing traces of KA(141 m/z). The products from reactions #3 and #4 gave the pseudo molecular ion (M-H)⁻, at 281 m/z for the BGY-F. The KA does not appear in these spectra. The large peak at 59 m/z arises from the acetic acid.

Table 1. Summary of major ions and base peak abundances obtained by API/MS (infusion method)^a from kojic acid (KA) and various BGY-F reaction products

Reaction product number	Reaction conditions	Major ions, m/z (relative abundance, %)	Base peak abundance
0	KA, 100 ppm	141 (100.0), 283, 255, 111, 83	4800
1	KA+ NaOCl+H ₂ O ₂ (C ₁₈) ^b	141(2.8), 268, 93, 83 (100), 59	5250
2a	KA+HRP IV ^c +H ₂ O ₂ (C ₁₈), HOAc ^d , (NH ₂) ^e NH ₄ OAc	281 (100.0), 181 (55.8), 141 (23.3)	1720
2b	KA+HRP II ^c + H ₂ O ₂	281 (26.9), 223, 118 (14.9), 141(100.0), 83	13,40
2c	KA+SBPc+H ₂ O ₂	281 (IWO), 223, 181 (23.1), 141 (57.7)	5200
3	KA+ locules, laboratory (C ₁₈), HOAc, (NH ₂) NH ₄ OAc ^f	281 (89), 181 (25.0), 59 (100.0)	10,00
4	KA locules, field (C ₁₈), HOAc, (NH ₂), NH ₄ OAc	281 (40.8), 181 (14.4), 59 (100.00)	8700

^a Infused at a rate of 10 µl/min at 150°C, MS set in negative ion mode

^b Baker bond SPE Polar Plus C₁₈ (Octadecyl), 6 ml solid phase extraction column

^c Peroxidases from horseradish (HRP VI, HRP II) Peroxidases from soybean (SBP)

^d Lyophilized BGY-F product in acidified water (pH 3) with HOAH

^e Baker bond SPE Amino (NH₂) 6 ml solid phase extraction column

^f BGY-F compound eluted with 3 column volumes of 0.11 M NH₄OAc solution.

Successful HPLC separations of KA and BGY-F reaction products confirmed that the KA eluted between 11 and 17 min and that the BGY-F eluted between 18 and 22 min (Table 2). The eluant from the HPLC column was split to the API/MS. As a result, it was shown that from 11-17 min reaction products 1, 2a, 2b, 2c, 3 and 4 showed some presence of KA remaining. Reaction products 2a, 2b, 2c, 3 and 4 all

gave the pseudo molecular ion at 281 m/z for BGY-F between 18 and 22 min. Also present in these spectra at varying intensities was the ion of 141 amu, based on these MS results, it was concluded that the BGY-F compound has a molecular weight (MWT) of 282 amu, corresponding to two KA molecules minus two protons.

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Table 2 Summary of total ion chromatographic retention time ranges (TICRT) and major ions obtained by API/MS determined in negative ion mode

Reaction product number	Reaction conditions	TICRT	Major ions, m/z (relative abundance, %)	Base peak abundance
0	KA, 5000 ppm	11-92-15.05 ^a	141 (100.0), 142	2000
1	KA+NaOCl+H ₂ O ₂	11.19-14.17	249 (100.0), 155,141 (40.0), 205	7000
2	KA+HRP Vib+ H ₂ O ₂	18.45-21.22	141 (100.0),281 (92.4), 140,157,283,255	330
2	KA+HRP IV+ H ₂ O ₂	12.33-16.52	141 (100.0), 142	2700
2	KA+ HRP VI+ H ₂ O ₂ , (C ₁₈) ^c	18.77-20.81	141 (100.0), 281 (10.3), 417, 255, 283	1560
2	KA+ HRP VI+ H ₂ O ₂ , (C ₁₈)	12.02-16.47	141 (100.0), 142	5250
2a	KA+ HRP VI+ H ₂ O ₂ , (C ₁₈), HOAc ^e , (NH ₂) ^d , NH ₄ , OAc ^f	18.83-20.03	141 (100.0), 233,283, 255,245,281, (26,1)	230
2a	KA+ HRP VI+ H ₂ O ₂ , (C ₁₈), HOAc ^e , (NH ₂) ^d , NH ₄ , OAc ^e	11.97-13.96	141 (100.0), 140	580
2b	KA+HRP II+H ₂ O ₂	18.92-21.85	141 (100.0), 281 (31.8), 140, 255,155,181 (6,4), 127	1570
2b	KA+HRP II+H ₂ O ₂	12.34-16.20	141 (100.0)248,245	6400
2c	KA+SBP +H ₂ O ₂	18.23-21.25	141 (100.0),281 (17.7),250,127,157,180	1240
2c	KA+SBP ^b +H ₂ O ₂	12.45-16.26	141 (100.0)	3250
3	KA+ locules, laboratory (C ₁₈)	18.19-21.43	281 (100.0),140, (15.8), 249,254,154,205	570
3	KA+locules , laboratory (C ₁₈)	12.70-16.52	141 (100.0), 249,255,155,204, 170, 401, 284	930
3	KA+locules , laboratory (C ₁₈), HOAc, (NH ₂), NH ₄ OAc	18.09-19.71	141 (100.0), 281,(85,2), 233,256	54
3	KA+locules , laboratory (C ₁₈), HOAc, (NH ₂), NH ₄ OAc	11.87-16.47	141 (100.0),249, 155,233,255,283	240
4	Locules, field (C ₁₈)	18.76-22.21	281 (100.0), 205,154,248,140 (8,6),191,255,379	405
4	Locules, field (C ₁₈)	12.60-14.37	248 (100.0), 141 (98,3),265, 155, 177, 363,205, 220, 283, 379	290
4	Locules, field (C ₁₈), HOAc, (NH ₂), NH ₄ OAc	17.25-22.70	281 (100.0), 233,141, (19.0), 348	315
4	Locules, field (C ₁₈), HOAc, (NH ₂), NH ₄ OAc	12.18-16.67	141 (100.0), 283, 227, 155, 233, 265, 249, 205	320

^a Mobile phase MeOH;1% TFAA:TEA (120:75:3), column flow rate, 150µl/min at 170°C

^b peroxidases from horseradish (HRP VI, HRP II), peroxidases from soybean (SBP)

^c Bakerbond SPE Polar Plus Cis (Octadecyl) 6ml solid phase extraction column

^d Bakerbond SPE Amino (NH₂) 6ml solid phase extraction column

^e lyophilized BGY-F product in acidified H₂O (pH3) with HOAc

^f BGY-F compound eluted with 3 column volumes of 0,1 M NH₄Oac solution

A larger mixture of reaction product #2 (KA+HRP-Type II+ H₂O₂) was prepared to supply a source of the BGY-F product for an NMR structural study (see experimental). MS results of this product gave the expected pseudo molecular ion (M-1)- at 281

amu as the base peak (the dimer) (100% rel. Ab) and from fragmentation with the loss of (-CH₂OH, C=O, CH₂CO) at 181 amu (46,5% rel. Ab) and loss of (KA-H)- at 141 amu (15.9% rel. Ab).

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Table 3 1H-a and 13 C-NMRb spectral data (ppm) for KA and KA-dimer.

Assignment	KA		KA-dimer	
	δ H	δ C	δ H	δ C
2		168.8	167.5	109.6
3	6.33	110.7	6.6	178.9
4		177.1		146.6
5		144.8		142.7
6	8.03	142.3	4.28	60.2
7	4.28	60.4	-C	
5-OH	9.07		-C	
7-OH	5.67			

a DMSO-d6

b D2O

c not detected due to the broadening resulting from the fast exchange with the water protons present in the sample

In D2O, not all exchangeable protons (hydroxyl protons) were seen in the 1H-NMR spectra of KA and the BGY-F derivatives (Table 3). The 13C-NMR spectral data of kojic acid and the BGY-F-derivative are summarized in Table 3. Of the several solvents tried—CHCl₃, acetone and DMSO, only DMSO was useful for detection of the hydroxyl group proton at C5 as well as the alcoholic proton of the hydroxymethyl group in the standard compound (Table 3)

The 1H- and 13C-NMR spectra of kojic acid and the unknown BGY-F compound were assigned through the use of two-dimensional NMR experiments (HSQC, HMBC) in DMSO-d₆. Results from HSQC spectra established partial carbon connectivities. Assignments of quaternary carbons and carbonyl were obtained from heteronuclear multiple bond correlation (HMBC) experiments.

The HMBC spectrum of KA was recorded with parameters optimized for nJCH 6.25 Hz and 1JCH 166 Hz. If nJCH > 6.25 Hz, one expects to find a cross peak in the HMBC spectrum. The lack of connectivities between 3H and C4 indicated that the 2JCH coupling constant is much smaller than 6 Hz. On the other hand, the presence of two cross peaks for 6H/C6 pair suggests that the 1JCH coupling constant is much greater than 166 Hz. As in furan, the measured one bond coupling constant of the carbon nearest oxygen is 1J_{6H-C6} = 198 Hz, whereas 1J for C3 is much smaller, 166 Hz. It is significant that the carbonyl resonance (C4) is highly shielded in KA (177 ppm) and not all similar to other ketones (Levy and Nelson, 2012), (Table 3).

Being more like that of an ester, C3 and C7 carbon connectivities were established in the HSQC spectrum of the BGY-F compound, there was no H/C cross peak present at 143 ppm. In the KA HSQC spectrum this chemical shift corresponds to the C6 resonance. This observation suggests that in the BGY-F compound no proton is attached to C6. No connectivities to the C4 carbon were present in the HMBC spectrum of the BGY-F compound and because this is the only carbonyl carbon in that

molecule, the most down-field resonance in the 13C spectrum (~180 ppm) can be assigned to C4.

In kojic acid position 3 and 6 have very unequal reactivities (Beelik, 2012). The phenolic hydroxyl groups are believed to activate to position ortho and para to it. In the case of kojic acid, of the three positions in question, only one ortho position at C6 is available for substitution. All the substitution reactions studied, with a single exception, have been restricted to C6 (Beelik, 2012).

The negative ion mass spectrum of the BGY-F compound gives an ion at m/z 281, which suggests the MS 282 for the parent compound. This MS corresponds to a dimer of two kojic acid molecules from which two protons have been subtracted (one per molecule). NMR results indicate the lack of protons at C-6 positions. Moreover, the NMR data strongly suggest a symmetric species present only one set of 1H or 13C resonances is seen in the spectra.

Based on the NMR and MS results, we propose the structure of the compound, a previously unknown kojic acid derivative. The compound has the chemical name 6, 6'-bis [5-hydroxy-2-(hydroxymethyl)-4H-pyran-4-one].

Experimental

General analytical procedures

A Hewlett-Packard (HP) model 1050 pump with a HP 1046 AX programmable fluorescence detector and a HP G1314A variable wavelength detector was used with a UV setting of 280 nm and fluorescence settings of 435 nm (excitation), 494 nm (emission), measured with a 450 nm cut-off filter. Oven temperature was set at 30°C. Analysis was carried out isocratically using MeOH:0.01% TFAA;TEA, (120:75:3) as a mobile phase on a Waters Spherisorb S5 NH₂ (2x150 mm) chromatographic column. A 100 µl internal loop injector was used to introduce the analytes onto the column and the sample was eluted with a 150 µl/min flow. A 1:15 post column splitter (high pressure micro splitter valve, 10-32, upchurch

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scientific) was used to introduce 10 μ l/min flow into Api electrospray interface and into the MS.

Fungal strain and culture conditions

An aflatoxigenic isolate of a wild-type strain of *A. Flavus* (SRRC 1000A) obtained from arizona cottonseed was cultured on potato dextrose agar (PDA) petri plates; spores were extracted from plates for spore suspension preparations utilized in infecting developing cotton bolls.

Cotton plants and conditions

Cotton plants (Acala SJ-2) were grown in experimental field plots at SRRC in new orleans, Louisiana, USA, in 1997. At 20-32 days post-anthesis, injections of spore suspensions were deposited on the lint of the developing cotton boll after a 10 mm extracted hole had been produced in the outer carpel surface of the cotton boll.

Preparation and isolation of the BGY-F reaction products (s)

Reaction product 1 (production of BGY-F from KA, NaClO, and H₂O₂) 0-1 ml of 31.1% H₂O₂, was added into a KA solution (25 mg in 20 ml H₂O) and 0.5ml NaClO was added dropwise over a 20 min period into the KA solution. After 3 h at room temperature, the reaction mixture was lyophilized and stored in the dark at 4°C.

Reaction product 2 (production of BGY-F from KA in the presence of peroxidase and H₂O) 1.0 mg peroxidase (SBP,HRP Type VI-A and II) and 500mg of KA were added to 100 ml 0.0003% H₂O₂ solution. The mixture was incubated at room temperature in the dark overnight. The solution was then lyophilized and stored in the dark at 4°C.

Reaction product 3 (production of BGY-F from fresh locules from cotton bolls that were treated with KA and H₂O₂). Twenty cotton locules were soaked overnight in 40 ml of a 0.1% KA solution (w/v) containing 400 μ l of 31% H₂O₂ the fluorescent water solution was collected by filtration with miracloth. The fluorescent materials on the lint in the locules were extracted three times with H₂O combined and then lyophilized. The brownish-yellow product was stored in the dark at 4°C.

Reaction product 4 (production of BGY-F from live developing cotton bolls that had been inoculated with *A. Flavus* (SRRC 1000A). Developing cotton bolls (20-32 days post anthesis) were each inoculated with 20 μ l of *A.flavus* spore suspension (3.0 x 10⁶ spores/ml). Two weeks after inoculation, the cotton bolls were harvested and examined under long wavelength ultraviolet light. The cotton lint containing, BGY-F material was extracted three times with H₂O. The fluorescence water solution was filtered with Miracloth, combined and then lyophilized. The dark brownish product was stored in the dark at 4°C.

NGY-F reaction products were dissolved in H₂ and were filtered through a 0.45 μ m PTFE filter. After a C18 SPE column was conditioned with one column volume of MeOH and two column volume of H₂O, the BGY-F product was dissolved in H₂O and passed through the conditioned C18 SPE column. The BGY-F material was eluted with six column volumes of H₂O. The C18 SPE column was examined for non-eluting BGY-F's by checking the column under a long wavelength UV light and the BGY-F H₂O eluent was combined and lyophilized. An NH₂ SPE column was conditioned with one column volume of MeOH and two column volumes of H₂O. Lyophilized BGY-F product obtained from the C18 SPE column separation was dissolved in acidified H₂O (pH 3, dilute HOAC 1x10 v/v) dropwise. This BGY-F acidified water solution was loaded onto the NH₂ SPE conditioned column and washed with H₂O. The BGY-F compound was eluted with three column volumes of 0.1 M NH₄OAc solution. The eluent was lyophilized and stored in the darkness at 4°C.

Further purification of reaction product 2 for NMR structure determination of the BGY-F compound

10 mg HRP (Type II) and 2 g KA was added to 1 l of a 0.00003% H₂O₂ solution and the mixture was incubated at room temperature in the dark overnight, then lyophilized. The dried reaction product was dissolved in a minimum amount of H₂O, filtered through a centricon plus membrane (10,000 MWCO); the filtered solution was acidified to pH 3 by adding diluted HOAC (1/10, v/v) dropwise. This acidified water solution was loaded onto a conditioned NH₂SPE column, than the column was washed with 6 column volumes of H₂O. BGY-F compound was eluted with 3 column volumes of 0.1 M NH₄H₂PO₄ solution. The resulting eluent was lyophilized and the residue was extracted with three 10.0 ml portions of MeOH. The combined MeOH solutions were filtered through a 0.45 μ m PTFE filtered and evaporated to dryness. Resultant dried brownish-yellow product was mixed with 300 ml Me₂CO and was centrifuged 4000 rpm for 15min. The Me₂CO supernant was decanted and the residue was extracted with three volumes of 10.0 ml 10% Me₂CO in MeOH. After centrifugation the decanted solution was combined and evaporated to dryness. The remaining brown residue was again extracted with 3 volumes of 10.0 ml 30% Me₂CO in EtOH. Me₂CO was evaporated and the product was lyophilized to dryness. The yellow product was again extracted with 3 volumes of EtOH and then lyophilized to dryness. Final yellow powder (resulted in 0.65% yield) was collected and stored at -10°C.

A Harvard Apparatus 22 syringe pump was used to deliver 10 μ l/min of sample into the MS. All the determinations were accomplished on a HP 59987A electrospray unit interfaced to a HP5989A MS-quadrupole MS set in the negative ion mode.

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NMR experiments were recorded on a GE Omega PSG 500 MHz spectrometer. The samples (1mg of unknown compound and 10 mg of kojic acid) were dissolved in 0.7 ml D₂O or DMSO-d₆ in 5 mm Wilmad 528-PP NMR tubes, with ¹H and ¹³C chemical shifts expressed in ppm downfield from tetramethylsilane.

2D ¹H-detected heteronuclear single quantum coherence (HSQC) experiments in DMSO-d₆ (Norwood, et al., 1999) were performed with MLEV-64 ¹³C decompiling during ¹H acquisition and heteronuclear multiple band correlation (HMBC) spectroscopy was performed according to Bax and co-workers (Summer et al., 1996). With delays A1 and A2 set to 3 and 80 ms, respectively.

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Article



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THE IMPORTANCE OF ROLE PLAYING ACTIVITIES FOR GROWING DISTANCE LEARNING PHENOMENON

Abstract: This paper explores the evolution of distance education beginning with correspondence and the use of parcel post, to radio, then to television, and finally to online education. Distance education is defined as a method of teaching where the student and teacher are physically separated. It can utilize a combination of technologies, including correspondence, audio, video, computer, and the Internet. Today's version of distance education is online education, which uses computers and the Internet as the delivery mechanism with at least 80% of the course content delivered online.

Key words: distance learning, the teaching of a foreign language, education system, The use of roleplaying in learning, examination, education institutions, information technology.

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Introduction

The belief is prevalent that the teaching of a foreign language is a comparatively simple subject. This follows the assumption that the process is solely that of providing language experience; for every lesson in which the language is spoken, read or written must inevitably contribute to the extension of the pupils' acquaintance with the language. If this were the true character of the process the only qualification for the role of instructor would be an adequate knowledge of the language.

Closer examination, however, proves that the efficient teaching of a foreign language, far from being a simple process, is probably the most difficult and complex of all subjects in the curriculum [1].

For all subjects the initial considerations are what to teach and who. In this case of all other subjects there is no appreciable difficulty about the first, as the syllabus is usually clear and indisputable. Even for method there are guiding principles which meet with more or less general acceptance. Foreign-language teaching, however, has not yet attained the stage of universal agreement even as to what is to be taught, still less as to how.

This may be taken as an indication of the complex character of the subject, wherein content and method are curiously involved. What appears to be a single subject is really a group of associated yet distinct branches of study; for language is a generic term covering all or any of the following features: speech, reading, composition, grammar, literature, commercial, technical and scientific activities [2].

Learning is often considered to be a normal part of working and personal life. Both learning for achieving a job as well as for achieving knowledge should not be neglected. Online environment is changing continuously and it represents a great opportunity for learning. It is very important to discover how to learn using all available communication channels and choosing the ones that best suit a person's style of filtering the information. There is a noticeable change in the education system of our country every day. It is also pleasant that the use of distance learning is widely used, along with a variety of forms of learning. Distance learning is a new approach to the education system in the country, and nowadays it pays great attention to this process and its foundations are being created.

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Computer classes have been established in all higher education institutions, most of which are based on Internet access. In the rapidly developing state of the information technology, distance learning is of great importance, because this type of education is characterized by a number of positive aspects of existing education. It is possible to involve a wide range of population in this type of education. Distance learning incorporates positive aspects of fulltime education.

Analysis of Subject Matters

According to these aspects, the distance learning is one of the most promising educational types. It is not necessary to concentrate some part of the population who want to study for education on the distance learning. There is no need to spend excessive costs by the listener or the reader. Distance learning explains two basic approaches in teaching - these are models of expansion and transformation. The enlargement model is almost identical to the current teaching methodology. The transformation model incorporates ICT tools for teachers and listeners. These modern methods and technologies of distance learning have brought new concepts and terminology into the theory of theoretical and practical education such as virtual classroom, educational telecommunication projects, coordinator, inverse communication, moderator, communication technology, computer communication, and teleconference [3].

This technology is based almost exclusively on digital communications, including multimedia programs and hyperthermia, which allows the reader to track how to control the information content. Many of the aspects of distance learning are reflected in curriculum planning and course development. Distance education focuses on meeting the demands of the audience and prioritizing the diversity of technologies.

At the present time, when the relationships with other countries are becoming tighter, language proficiency is making a great figure. Modern man must know at least one foreign language well, because mutual understanding between nations is of great importance for peaceful cooperation. Without knowing foreign languages this cooperation is almost impossible. At the present time it is developing different kinds of international relationships: international meetings, exhibitions, sports events, joint businesses. These are good conditions for learning foreign languages. In any cases knowing foreign languages enriches our life. They raise the possibilities of reading foreign literature, communications with the representatives of other countries, acquaintanceship with their culture, economics, science and techniques.

The participation in informational-communication activities promotes the forming of all

integrated aspects of communication competence: linguistic, socio-cultural, cognitive, lingua-cultural; and also contiguous communicative and cognitive learners' proficiency (searching and selecting of relevant information, its analysis, synthesis and classification). Modeling the real authentic environment with the Internet – recourse serves not only to successful language acquisition, but it also allows comprehending the deep unity law and cultural diversity.

Language training of future professionals should focus on the development of communicative competence as well as on the development of professionally oriented language competence. In this regard, one of the main goals of learning a foreign language in higher institutions is to teach practical knowledge of communicative use of a foreign language, both in everyday and in business communication

Today, distance learning is perfectly formed in the United States, and its emergence dates back to the late 1970s. At the beginning, educational institutions functioned individually in distance education. With the advent of satellite TV programs in the 1980s, several educational institutions collaborated on these training courses. The rapid development of global computer networks has had a major impact on all areas of human activity, including education. This is why distance learning is based on the use of modern information and communication technologies, including the Internet.

Distance learning contains the characteristics of fulltime education. Therefore, some elements of the type of correspondence education can be used to organize it. In the 80s of the last century, correspondence courses were organized to prepare applicants for entrance exams. Various tasks and assignments developed by the course staff on the subjects related to the applicants were sent by post. The tasks and tasks assigned to the applicant for a certain period of time for the assignments and tasks assigned to the course of the examinations should be checked by the teacher and brief comments should be reported to the entrant.

One of the most important issues in organizing distance learning is the selection of professors. To fulfill this type of education, teachers should be selected from among the most experienced and organizational professors - teachers. Because distance learning is different from other types of education and their effectiveness is largely dependent on the teacher's skill, organizational and organizational characteristics. Because a teacher involved in the distance learning must be a good pedagogue, wise counselor, and experienced manager at the same time. In the early stages of the distance learning, it is necessary to create distance learning points in the relevant regional or regional centers, based on the demographic characteristics of the population in the

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country. This structure should be designated responsible for organizing the distance learning. In subsequent stages, distance learning centers can be established in several higher education institutions specializing in one or more specializations [4].

Research Methodology

There are some advantages of distance learning:

There is some contradictory evidence about this. Some investigators say that traditional courses are better for interaction and some say the other way around. But studies have proven that it improves interaction with certain persons. Distance learning offers shy or more reticent students the opportunity to participate in chats more than they do in a traditional class. We can just stay in our house and make our homework for that day. Learning in our own surroundings, may make it easier for learners to do their work. They are no longer being distracted from their work by other learners. Some learners experience a lot of performance pressure. This will lessen once they are not surrounded by other learners.

The participant can learn or pursue his/her college while he/she is working. It offers complete flexibility of choosing time. The distance learning is not going to conflict with timing of a day job. The participants can work all day and study at night or vice-versa. Online courses save a great amount of money; fewer teachers, less books and no money to spend on a room to educate [5].

Participants can work at their own place. If the participant is faster than the other participants, he/she doesn't have to wait for them. The other way around, if the participant is slower, he/she can take his/her time. Courses can also be tailored at the level of learning.

Participants were all asked whether they considered themselves to be technologically savvy. Nine reported having what they considered average skills, and one reported being a complete novice: "I'm actually horrible with technology, which is one of the really, I think, funny parts of me teaching online." One participant repeatedly positioned himself as strongly technology-oriented:

"My family's nickname is they have an in-house IT, and actually I'm a little bit of an in-house IT here. When people have like basic problems, they'll say 'hey, can you look at this?' and I'll say 'ok, real quick, do this rather than having to bring bug busters in [9]".

One participant pointed out that the rapid growth of online learning caught some institutions off guard, and that in many instances, teachers are thrown online with little preparation. Then, when failure occurs, the modality is blamed: *"I will share a concern. As online learning continues to grow and grow at this really torrid pace, as a faculty member and administrative member and someone who cares deeply about the quality of online learning, I worry that the growth is kind of our own worst enemy. Some institutions are*

jumping on the online bandwagon and encouraging faculty to teach online and enabling that to happen with technology. So for example you get a learning management system and you get a course shell and they're told 'go, teach online.

Great. Do as much as you can'. But they're not given instruction on how to do it well. They're not provided the infrastructure on how to be effective online and we could end up with online classes that are also poor quality. And that's where quality will be blamed on the modality, not on the way that they built their course or instructional practices. 169 And it's really not a modality issue, it's a support issue. So I fear that we're going to kind of outrun our supply lines if you will, of quality support and we may end up having some sort of a backlash on online learning where people are going to say, 'wait a minute, this isn't so great' because we expanded too fast [9]".

However, with advantages there are some serious shortcomings of distance learning:

Following an education in a traditional class is something that happens in a social context. Interacting with other people is not something which stands central with an online course. In fact, you can't even talk to friends and other colleagues that you do in a normal college course. Some participants seriously miss the human aspect because of engaging with the technology and machines.

Some people absolutely need an educator to learn successfully. An educator can immediately help with the problems and can get to the core of the problem. In distance learning, if they have any doubt then they have to clear themselves without taking help from their teacher or friends.

Learning from a computer is not the most user-friendly method to use. It causes poor vision, strain injuries and back problems. Furthermore, you cannot test everything with online courses. Some things can be much better learned by practice.

If the participants have a lack of self-discipline, it is very unlikely that they will be motivated to complete their online course. There is no teacher available to say that the participants have to get started with their online course. Moreover, without competition they tend to learn less.

And the following Role Playing activities can be used in teaching foreign languages. They are:

Telephone Conversation - *Speaking on the phone is different to a face-to-face conversation because one relies solely on language to communicate. Get the students who are practicing to sit back to back in order for this to work properly. There is a whole range of ideas which one can use to act this out.*

Examples include:

phoning to make a complaint, speaking to a friend, inquiring about job

Going to the Shop - *a great one for younger learners as it will teach them the basics of interacting*

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with people. Children generally rely on their parents to buy things for them, therefore this will boost their overall general confidence in buying. It can be as simple or as complex as one wishes, depending on the situation.

Job Interview - work is usually a good topic to begin with when [teaching adults](#). Many are learning English in order to improve their career prospects. As a result, a job interview role play is an excellent way to get the class learning that all important material.

Analysis and results

Studies have shown that role-play can be used effectively to improve students not only language skills, but also interpersonal and communicative skills. So, implementation of role playing activities in language teaching is pivotal, as:

- It enables students to learn and practice the target language in meaningful context
- It improves students' different skills needed for the language acquisition process
- It motivates students to be interested and involved in learning
- It creates low-anxiety learning environments for students
- It offers students a variety of experiences and improves their 4 language skills
- It helps to improve students' cultural and nonverbal behavior.

So, role playing activities are usually more successful if they involve problem solving or if there

is a task to be carried out, rather than simply acting out a situation until it runs out of momentum. The effective use of different types of role-playing activities can enable the teacher to provide students with the opportunity to practice the target language in a variety of meaningful contexts. By practising the target language in different roles, students consolidate and review their knowledge of word order, phrasing, and punctuation that contributes to the meaning of a written sentence.

The use of roleplaying in learning and practising a conversation not only consolidates the students' knowledge of certain vocabulary and grammar used in similar situations but also brings home to the students some aspects of behaviors, such as the skills of starting a conversation and the development of good human relations [6].

Therefore, role-play clearly promotes effective interpersonal relations and social transactions among participants.

In conclusion, nowadays, distance learning turns out to be more and more practiced. Many traditional universities started to share their courses online for free. It represents an easy and comfortable method to achieve knowledge in almost every field, from law and accounting, to human sciences, such as psychology and sociology or history.

Distance learning is a great alternative to traditional universities, especially for people who can't afford the time and money to take real courses. Distance learning is a growing phenomenon around the world and people are interested to know more about it.

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Article



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RELIGIOUS BUILDINGS OF NORTHERN BACTRIA IN KUSHAN PERIOD

Abstract: This article presents the researcher's analysis of the types and characteristics of religious structures in the urban planning of the Kushan period of Bactria. Bactria is historically divided into two parts, which played an important role during the Kushan period: Northern and Southern. Northern Bactria covers the territory of Uzbekistan and Tajikistan. The religious structures of Northern Bactria in the Kushan period monuments identified so far in these areas have been analyzed on the example of various religious views. Religious structures related to religious beliefs, such as Buddhism or dynastic cult, have been studied separately. However, the religious structures which belong to Kushan period have been analyzed insufficient as a single study. Religious buildings are classified according to which part of the city they are located in and what religion the religious buildings belong to. At the same time, the role of religious buildings in urban planning was revealed.

Key words: Kushan, Northern Bactria, religious structure, urban planning, Buddhism, Zoroastrianism, dynastic cult.

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Introduction

From the earliest days of human history, when the building was mastered, the construction of religious buildings began to be observed. Over time, when cities began to be built, religious buildings (pyramids, ziggurats, mausoleums, etc.) were erected in an essential part of the city. Religious buildings are the most valuable source of information about a religious belief in a particular period. Its architectural solution and location in which part of the city provides such information which is about the importance of religious buildings in urban planning and the role of a particular religion in society.

From the preliminary times of the discovery of Kushan monuments in Northern Bactria, religious structures began to be identified. A.S. Strelkov, a member of the expedition of the Museum of Oriental Culture, who conducted research in Old Termez in 1926-1928, identified the Zurmala tower on the outskirts of the city as a Buddhist stupa [1, p. 16]. Later, based on the findings around this building and the fact that it was a square-shaped raw brick used in

its construction, it is noted that this structure belongs to the ancient period. G.A. Pugachenkova's research has confirmed that Zurmala is a Buddhist stupa, but the question remains whether the building was built alone or is part of a complex that has not been determined [1, p.16-18].

Materials and Method

Buddhism is the most widespread religious belief in the Kushan period, which was supported by the central government. According to available written sources, there were many Buddhist temples in these areas. Based on a recent scientific analysis, between 1926 and 1988, there were 28 Buddhist sites in Central Asia, 16 of them were located in Bactria-Tokharistan [1, p.148].

Religious buildings which belong to the Kushan period can be divided into two groups like that: buildings that are located outside the city and inside the city, depending on the location in the city. In addition, depending on which religious belief the religious buildings are intended for: Buddhist

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religious buildings, dynastic cults, and Zoroastrian religious buildings can be divided.

The presence of religious facilities, especially in large cities, demonstrates the city's role as a religious center. For example, among the cities of South Bactria, the religious building which was found from the Dilberjin monument represents the city as a religious center. In contrast, the lack of religious facilities in Jagattepa and Emshitepa is considered by researchers to be a coincidence [2, p.42]. The reason is that the unavailability of religious structures is due to the scale of archeological research. Basically, religious structures are rare in small towns and castles which have the Kushan period cultural layer.

Besides, it had been found that at the Takhti-Sangin monument, the whole city is centered around a religious building. Therefore, the location of religious buildings in the city did not depend on the established rule, but on local tradition and political situation of at that time. In addition, it should be noted that the worship of various Greek deities, which entered the region during the Hellenistic period, was also preserved during the Kushan period. Nonetheless, this is more reflected in architectural decoration, sculpture, and various terracotta sculptures.

M.S.Bolganova, a researcher of the architecture of Buddhist monuments in Central Asia, divided buildings that belong to Buddhist religion into types such as a stupa, temple, monastery, based on the architectural structures of India where the homeland of this religion [1, p.148]. Conversely, in recent years, the researcher T.G.Dorofeeva in her research on the history of religious buildings divided Buddhist religious buildings into the following types: stupa, stone temples, and shrines, and later earthly temples, monasteries, and monastery complexes (vihara)[3, p.88]. This classification can be noted as a typology based on the development of Buddhist structures. This is also important in determining the origin and sequence of construction of Buddhist buildings in the Kushan period.

Among the monuments of Buddhism which is belong to the Kushan period in Northern Bactria, such structures as Qoratepa, Fayoztepa, Zurmala, which were found in the city of Ancient Termez, play an important role. The Qoratepa Buddhist complex which was located in the northwestern part of the Old Termez city and which was the center of Buddhism in the 1st-4th centuries AD has a total area of 8 hectares and is built on three natural hills[4, p.25-31]. Studies have shown that the period of the appearance of the first Buddhist structure on the site of Fayoztepa was the end of the first century BC - the first half of the first century AD [5, p.29-31].

If we look at the religious beliefs of the Kushan period, during this period the population and the ruling class worshiped several religions. There was a "dynastic cult" in the country, which was believed by the ruling class, and this worship was originally

reflected in the iconography of the dynasty rulers in numismatic sources. These were later recorded in dynastic complexes identified as a result of archeological excavations. The first complex of this type was identified in Mata, India. Stone statues of Kushan rulers Vima Tokto, Kanishka, and others were found in this complex. This type of dynastic temple has also been identified at the Surkh-Kotal monument in northern Afghanistan. An important feature of the dynastic temple in Surkh-Kotal is that the statues of the ruler are made of clay [6, 548-563].

In addition, complexes reflecting the dynastic cult were also identified in Northern Bactria, and in the late 50s and early 60s of the last century, the Kholchayon monument was identified and interpreted as the first Kushan palace. The walls of the complex are decorated with clay sculptures, and the architectural structure which was identified at the time is part of a larger complex, and the part which was preserved also suggests that the complex was the basis for a dynastic temple. The walls of the complex are decorated with clay sculptures, and the architectural structure which was identified at the time is part of a larger complex, and the part which was preserved also suggests that the complex was the basis for a dynastic temple. Also, the Uzbek-French expedition found the remains of structures belonging to the dynastic cult in the excavations in the Chingiztepa area. However, due to the fact that the structure is not sufficiently preserved, it is difficult to think about its architecture [6, p.548-563].

Moreover, religious structures belonging to the Zoroastrian religion of the Kushan period dahmas, altar have been identified, dahmas are recorded mainly in the suburbs, and altars are found in various places and even in some settlements. It is noted that G.A. Pugachenkova encountered a dahma while conducting research at the Kholchayon monument. Furthermore, G.A. Pugachenkova, accompanied by architects V.A.Nielsen and A.V.Shukurov, received a topographic history of Dalvarzintepa in the 1960s and encountered the "naus". Studies have shown that the top of the naus was used as a dahma [7, p.242]. Academician of the Academy of Sciences of Uzbekistan E.V.Rtveladze noted that three types of burial structures are mentioned in the Videvdat section of the Avesta, the sacred book of Zoroastrians, were discovered and studied at the Kampirtepa monument: kata, dahma, and uzdana (naus) [8, p.99-102]. In addition, researchers note nausses which were found from the Yalangtoshtepa and Tepai-Shah monuments, and that corpses were stored in dahmas far from the city, and that the bones were collected after some time [9, p.82]. Researcher K. Toshaliyev, in his research on dahmas which religious structure of Zoroastrianism in Central Asia, based on the above data, noted that similar structures with dahmas have been identified in ancient monuments in northern Bactria, and the origins of these dahmas go back to the Bronze Age.

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Results and Discussion

Firstly, the cities of Northern Bactria which have the cultural layer of the Kushan period, religious buildings belonging to Buddhism, Zardushti, ancestral spirits have been identified so far. Secondly, the most common of these are Buddhist religious sites. Identified Buddhist religious buildings are located outside the city, in the center of city. It is obvious that during the Kushan period, Buddhism played an important role, so a place was built for the construction of religious buildings near the city and in the city center. Thirdly, for the ruling class, there was also a dynastic cult, and such religious structures were

mainly reflected in the central part of the city or in the palace.

Conclusion:

Based on the analysis of some monuments in Bactria, it can be concluded that in the cities of the Kushan period, religious buildings played a special role, and Buddhism was supported by the state in urban planning. In addition, the dynastic cult, which appeared in the Bronze Age, was also found in the magnificent buildings (palaces) in the cities of the Kushan period. However, the absence of religious structures in some monuments of Southern Bactria requires additional archaeological research.

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ON THE UNION OF THE PRODUCER AND THE CONSUMER FOR THE PRODUCTION OF PRODUCTS THAT ENJOY PRIORITY AND PREFERENCES AMONG BUYERS IN THE REGIONS OF THE SOUTHERN FEDERAL DISTRICT AND THE NORTH CAUCASUS FEDERAL DISTRICT

Abstract: in the article, the authors analyzed the state of the market in the regions of the Southern Federal District and the North Caucasus Federal District, confirmed the presence of a significant shortage of shoes, which justifies the expediency of forming enterprises and consumers in these regions. At the same time, we were able to form the entire product range that would satisfy the needs of consumers in these regions, with the justification that it will be in demand and competitive through the formation of innovative technological processes using a quality management system to ensure quality management, forming its advantages over other manufacturers and ensuring the realization of consumer preferences. In addition, by forming preferences among consumers in these regions, business leaders significantly improve the socio-economic situation in these regions.

Key words: enterprises, consumers, regions, assortment, assortment policy, competence, preference, production management, product quality, demand, competitiveness, stable financial position, stable TEP, demand, profit, innovation, quality, means.

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Introduction

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The domestic light industry is going through hard times, offering the consumer products of dubious quality that have entered our markets in counterfeit and other illegal ways, that is, they do not have guarantees for buyers to exercise their rights to protect themselves from unscrupulous manufacturers and suppliers. To revive the role and importance of a quality-oriented strategy, since only in this case, enterprise managers will subjectively and objectively be forced to improve their production using nanotechnologies and innovative processes so that competitive and sought-after materials and products fully meet the needs of domestic consumers. At the same time, the opinion of scientists is substantiated that the consumption of domestic materials and products is regulated by the market. In this case, market requirements should form and production, confirming this situation, pay attention to the role of the state and consumers in the formation of sustainable demand for domestic materials and products, namely: to maintain a range of goods, regulating it with federal, regional and municipal orders; encourage price stability; increase consumer ability and gradually improve their quality. The implementation of these tasks will create a basis for the consumer to realize the need to pay for the benefits of quality materials and products, and the manufacturer to realize that improving the quality of materials and products cannot be associated only with rising prices, but also through technical innovations aimed at the use of new technological and engineering solutions. Today, and even more so tomorrow,

One of the tasks in the system of increasing the competitiveness of the region is to identify the potential used by the innovation center of the Southern Federal District and the North Caucasus Federal District. The traditions of the shoe industry in the regions of the Southern Federal District, the North Caucasus Federal District and its development trends give a chance for success in the case of interaction between all participants in the process - suppliers, manufacturers, government officials, trading and service companies. The first step towards such interaction must be taken in the course of an exchange of views and clarification of mutual positions. Do the participants of the shoe market of the region clearly perceive the problems that who are in front of them? What is the vector of structural changes in the Russian leather and footwear market - towards the development or stagnation of the industry? What are the conditions and real opportunities for the development of competitive production in the region? What should be the support of the authorities at the federal and regional levels? Is it possible in modern conditions to rely on interaction and cooperation as a real factor of competitiveness? How to solve the problem of preparation and consolidation production staff?

For the shoe business, the topic of forming an innovation center is very relevant. The creation of an innovation center is one of the most effective tools for increasing the competitiveness of territories. The need to form innovation centers in the regions of the Southern Federal District and the North Caucasus Federal District on the basis of ASEZs for managing the competitiveness of enterprises, which consists in developing a new industrial policy to stimulate the organization and development of clusters based on the formation of network cooperation relations and public-private partnerships (cluster policy) and includes the study of clusters, cluster strategy and methods of ensuring it are a lifesaver for today. From the point of view of the management process, the cluster approach is considered as a set of stages and activities for the organization of clusters and their development, i.e. clustering.

The role of regional and local authorities in launching and coordinating innovation centers is very important, in this regard, it was possible to form an effective mechanism for representing the interests of business in relations with the authorities. An element is proposed that performs the function of "coordinator and communicator". For the development of this element, a substantive dialogue is needed, based on mutual trust and interest, first of all, between the subjects of the industry themselves - both the government and business are interested in this. It is necessary to develop joint proposals on the directions, forms and methods of state support for the development of innovation centers, namely:

implementation new construction, expansion and reconstruction of production facilities, housing, social and cultural facilities, public utilities and consumer services, administrative department, the Ministry of Emergency Situations, Environmental Protection and Ecological Safety at the regional level;

assistance in increasing the competitiveness of products of industrial enterprises and their promotion in the domestic and foreign markets;

organization and implementation of software production projects;

update the material and technical base of the cluster's production facilities, the introduction of new technologies;

preservation and development of the accumulated potential in the field of science and scientific services; improvement of science financing mechanisms; implementation of scientific results in the industrial and social sphere of the region;

achievement the quality of education that meets the state educational standard; implementation of a regional order for the provision of additional education services; achieving a dynamic balance between the labor market and the training of professional personnel; development of higher and secondary vocational education.

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A set of measures for anti-crisis management of the light industry has been proposed, including the following priority areas:

promotion competitiveness of light industry enterprises;

development industry information services;
continued modernization of fixed assets;

softening lack of working capital;

promotion effectiveness of public administration;

stitching non-payments.

An action plan has been formed to implement the anti-crisis program in the light industry, including:

legal and scientific and methodological support of anti-crisis activities;

development of anti-crisis infrastructure to support light industry enterprises;

expansion of business opportunities for light industry enterprises;

financial mechanisms for supporting and developing the anti-crisis activities of light industry enterprises;

development of interregional and international cooperation of light industry enterprises in the anti-crisis area.

To further improve the legal regulation of anti-crisis activities, it seems appropriate to form an action plan for the implementation of the anti-crisis program in the light industry, namely:

concretization and specification of the goals of sustainable development of light industry enterprises should be built within the framework of the development line of the industrial sector of the economy, which is based on structural transformations of the economy and the introduction of anti-crisis technologies for the development of production and export of consumer goods. As part of the development, three stages can be distinguished, the terms of which are presented rather conditionally and can be adjusted in the process of implementing the sustainable development of light industry enterprises:

2018–2020 - anti-crisis development, which provides for overcoming crisis phenomena and restoring crisis losses of light industry enterprises and finding resources for the subsequent modernization and transformation of light industry

2021–2025 – investment renewal of fixed assets of light industry enterprises, including a qualitative increase in their competitiveness.

2026–2030 - innovative development - the beginning of the mass development of new types of equipment and technologies, the transition to expansion into foreign markets of domestic light industry goods.

Main part

To solve this problem, a competitive assortment of men's, women's and children's shoes is proposed, taking into account factors affecting consumer demand: compliance with the main fashion trends, taking into account the economic, social and climatic

characteristics of the regions of the Southern Federal District and the North Caucasus Federal District. Within the framework of the developed strategy, the production of competitive products will be organized using modern mechanized innovative technical processes. In addition, shoes will be produced to meet the demand of the elite consumer, using a greater share of manual labor in order to give shoes a targeted focus and high demand.

To implement the developed range of men's, women's and children's shoes, innovative technological processes for its production using modern technological equipment based on advanced nanotechnologies are proposed, which form the basis for reducing the cost of shoes and, thereby, increasing its competitiveness in comparison with a similar range of shoes from the world's leading firms, with the possibility of a wide assortment of shoes, not only by type, but also by fastening methods, which will give it a demand and increased competitiveness. Layouts of technological equipment are proposed, which provide an opportunity to form a technological process for the production of both men's and children's shoes in volumes

At the same time, the financial well-being and sustainability of newly created enterprises in the regions of the Southern Federal District and the North Caucasus Federal District largely depend on the inflow of funds to ensure the coverage of their obligations. The absence of the minimum required cash reserve can provoke financial difficulties for enterprises. In turn, an excess of cash can be a sign that the company is suffering losses. The reason for these losses can be related both to inflation and the depreciation of money, and to the missed opportunity for their profitable placement and additional income. In any case, it is the constant analysis of cash flows that will allow the company to control its real financial condition and prevent bankruptcy.

Cash flows from financial activities are formed to a large extent in the development of a financing scheme and in the process of calculating the effectiveness of an investment project.

If the shoes produced are not fully sold, the company loses part of the profit, which is necessary for the further development of production. To reduce losses, the manufacturer must have daily information about the sale of products and make effective decisions, namely: either change the prices for the manufactured assortment of shoes in a timely manner, or, which is more efficient and justified, start producing a new assortment of shoes that is more in demand on the market.

Sales managers or marketers who oversee the sale of a particular range of footwear must calculate daily cash flow from their operations. As a result of tracking the receipt of funds, we will have information about their net inflow from our operating activities. A decrease in sales will result in a decrease in cash flow

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and will require a reduction in the selling price of the product in order to increase sales. If such an event does not lead to an increase in cash flow, then it is necessary to make a timely decision on the advisability of further production of this range of shoes.

For this calculation, it is important to differentiate the data involved in the calculation. To calculate the cost of a particular manufactured model, the initial data are fixed and variable costs, which depend on the production equipment, the composition of the main and auxiliary materials, the number of employees, etc.

The main input data used in the monitoring process are the selling price of a unit of production and sales volume.

Thus, the calculation can be performed on a daily basis or in a selected time range, while setting only the sales volume and unit price for a certain period, we will receive an increment in cash flow for this period.

Calculations are carried out on the basis of assessing the degree of implementation and dynamics of production and sales of products, determining the influence of factors on the change in the value of these indicators, identifying on-farm reserves and developing measures to reduce them, which should be aimed at accelerating product turnover and reducing losses, which will achieve significant economic effect.

Of great importance in the management of output is the assessment of the actual output and sales within the limits of production capacity, that is, within the boundaries of the "minimum - maximum" volume of production. Comparison with the minimum, break-even volume allows you to determine the degree or zone of "safety" of the organization and, with a negative value of "safety", remove certain types of products from production, change production conditions and thereby reduce costs or stop the production of these products.

Comparison of the achieved output with the maximum volume determined by the production potential of the organization allows you to assess the possibility of increasing profits with an increase in production volumes if demand or the share of shoe sales in the market increases.

For a shoe company seeking a strong market position, setting the selling price of shoes is key to the success of the chosen strategy. The price is a tool to stimulate demand and at the same time is the main factor in the long-term profitability of its activities.

In this regard, it is necessary to analyze their break-even.

Various ratios of sales volumes and prices for manufactured products are considered. Price reduction occurs when a company uses a discount system to increase sales. This event leads to an increase in sales proceeds and additional profit. However, the area of income is not unlimited - when

a certain volume of production is reached, its further expansion becomes economically unprofitable.

The effectiveness of all these activities in creating a cluster is possible only with the active interaction of the branches of government and necessarily with support at the federal level - the Southern Federal District and the North Caucasus Federal District can fully or partially relieve shoemakers from infrastructure costs when creating new industries within the framework of the ASEZs. And only the federation can solve the issues of tax preferences; closing the borders for gray and black imports is again the competence of Moscow, given that the industry is in a severe depression, that changes for the better require a very powerful set of tools, power decisions and joint actions of all interested parties.

Perhaps now, when the Don shoemakers see how quickly their ranks are thinning under the pressure of competition, the readiness for joint action will be higher. Otherwise, Rostov will soon cease to be the shoe capital of southern Russia. Finally, the institutional-organizational scenario assumes an answer to the question, how should ASEZs be organized, how should they be formed and grown? For us, TOPs involve the co-organization of at least four large technology groups that form the technological basis of TOPs:

breakthrough scientific laboratories - pilot production, where the foundations of new technologies are created;

development centers, on the basis of which models and samples of technologies will be created for their testing in pilot production;

industrial and technological groups capable of equipping production for the manufacture of pilot batches;

marketing groups capable of promoting a new type of product to the market and generating sustainable demand.

The managerial superstructure that provides the interconnection of these four large technology groups with each other can be:

Investor Council who decides on the priority financing of a particular project;

expert council reviewing various projects as they are prepared for implementation;

creative center preparing materials for decision-making by the expert council and the council of investors.

Achieving the goal in the development of ASEZs is possible only through a comprehensive technological modernization of the real sector of the regional economy. With regard to the Southern Federal District and the North Caucasus Federal District, it is possible only if the interests of all participating economic entities are taken into account. These are areas such as:

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increasing the share of the innovation sector and introducing technological innovations at enterprises forming clusters;

development of entrepreneurial activity in the field of large, medium and small businesses and mutual cooperation in order to introduce innovations, which leads to the expansion of existing and the creation of new clusters;

strengthening links and interdependence between industrial enterprises and research and educational centers and schools;

improvement of the territorial distribution of industrial enterprises.

In conclusion, considering the process of formation and implementation of cluster policy in the region, we point out that this is a complex task, the development and implementation of which should be of a scientific nature. Its success depends on many factors and conditions, and the central place here belongs to the scientific principles of management and the desire for the dynamic development of the region, the interest of all branches of government, both municipal and regional, and federal branches of government.

However, the weakest point of enterprises is the low level of information support of precisely the technological preparation of production. This is explained by CCI automated systems are specialized and depend on the nature of production, the type of products manufactured, and the serial production. In addition, the ASTPP application software is heterogeneous in purpose, it is formed from a set of products, each of which provides the development of a separate type of technological processes.

Therefore, there is a need to create information support in the form of a universal database in order to reduce labor intensity and increase the efficiency of work at the stage of technological preparation of production through their use.

For the technological process of assembling shoes of the adhesive method of fastening, the authors created information support, the purpose of which is the formation of a model passport and an automated selection of the technological process.

To create information support, the authors solved the following tasks:

the criteria that determine the structure of the technological process of assembling shoes with an adhesive fastening method based on the methods of a priori ranking and rank correlation are identified;

a classifier and a block diagram for coding a shoe model for automated design of a technological process have been developed;

a matrix of coincidences of technological operations was compiled depending on the design, materials and methods of processing the blanks of the upper, insole and sole units, heels and intermediate parts for an objective justification of the procedure for

drawing up the scheme of the technological process and the algorithm for its selection;

a structural-logical model for assembling footwear with an adhesive fastening method based on the principles of a systematic approach has been developed, which ensures the development of optimal technological solutions;

information support has been developed for the automated design of the technological process of assembling shoes in the form of a set of databases that contain information about various options for performing the same technological operations, depending on the equipment and capacity of the enterprise;

the algorithm of the program operation is constructed, in accordance with which exact prescriptions are formed that determine the computational process leading from the variable initial data to the initial result;

software has been developed that makes it possible to form the technological process of assembling shoes using the adhesive method of fastening with the simultaneous determination of labor intensity and the number of workers for the production of a given number of models.

The developed software complies with the main indicators of the quality of information systems, such as:

flexibility - the ability to adapt and further develop, the ability to adapt the information system to new conditions, new needs of the enterprise;

reliability - functioning without distortion of information, loss of data due to "technical reasons" by creating backup copies of stored information, performing logging operations, maintaining the quality of communication channels and physical media, using modern software and hardware;

efficiency - the ability to solve the tasks assigned to it in the shortest possible time, is ensured by the optimization of data and methods for their processing, the use of original developments, ideas, design methods and is confirmed by its ability to minimally depend on equipment resources: processor time, space occupied in internal and external memory, bandwidth used in communication devices;

security is a property of the system, by virtue of which unauthorized persons do not have access to the information resources of the organization, is provided by setting the launch parameters in such a way that the user, having launched the application, sees only the main button form and such a menu and toolbar in which he cannot use the buttons for the application developer.

The software, in accordance with the algorithm, processes the selected conditions and prints out a ready-made version of the technical process for this shoe model with the calculation of labor intensity and the number of workers, as well as a model passport. When using the developed information support, the task of the technologist in the formation of the technological process

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is reduced to the choice of design features of the model and the main restrictions, which include production capacity, availability of equipment, production areas; analysis of results; adjustment of the selected conditions (if necessary) and selection of the optimal variant of the technological process.

With regard to the effectiveness of the implementation of information support, any enterprise can be evaluated from various angles, namely: economic, financial, organizational, temporary, environmental, social.

The result of calculations for any separately applied method for evaluating the effectiveness of the proposed solution is able to reflect only part of their positive aspects. Meanwhile, the numerical values of the various criteria that can be used can vary significantly, and sometimes be in conflict. In such a situation, it is justified to use a synergistic (comprehensive) assessment of the effectiveness of decisions that involve determining the benefits not by one criterion, but by a combination of criteria.

The effectiveness of the introduction of the presented information support can be assessed from two sides: social and economic.

The social effect of the introduction of information support for automated design of the technological process is as follows:

1. As a result of the introduction into the educational process - an increase in the level of training of specialists through the use of innovative technologies in education.

2. As a result of the introduction into production - a change in the nature and improvement of working conditions, resource equipment of labor activity, an increase in professionalism, an increase in the average duration of a technologist free from "paper work".

The assessment of the economic efficiency of the introduction of information technologies often occurs either at the level of intuition, or is not performed at all. On the one hand, this is due to the reluctance of solution providers to spend significant effort on conducting detailed preliminary analysis, on the other hand, there is probably a significant amount of consumer distrust in the results of such studies. However, both of these problems stem from the same source, namely the lack of clear and reliable methods for assessing the economic efficiency of IT projects.

The full economic efficiency of using software for computer-aided design of the CCI consists of savings in the field of technological preparation of production, which is a consequence of increasing the productivity of technologists due to the automated selection of the list of technological operations with the calculation of labor intensity and the number of workers.

In the field of production, savings are obtained due to the choice of the optimal technological process due to the typification and unification of technological solutions. In addition, the preparation time for production

is significantly reduced, and this factor is difficult to overestimate in our time, when competitiveness can only be achieved with a frequently changing range of products, and for this it is necessary to achieve good technical and economic performance of the enterprise.

These and other benefits of automated process selection, although many of them difficult to determine by direct economic calculations, contribute to a significant improvement in the performance of shoe factories.

The results obtained allow us to speak about the achievement of a synergistic effect both in terms of technology (due to a significant reduction in the time for technological preparation of production, selection of the optimal technological process, reduction of changeovers of the technological process when changing the assortment, selection of the correct sequence of launching samples), and in terms of efficiency production as a whole, due to the simultaneous achievement of social and economic effect.

Today, a light industry enterprise, striving not only to survive, but also to develop, requires the ability not only to competently exploit the available technologies, but, first of all, to actively position itself in the market, delivering high-quality products that meet the requirements, requests and expectations of consumers in a short time. at the lowest price. In other words, at the present time, the one who will quickly launch products on the market that most fully meets the requirements of consumers will survive, while ensuring the minimum cost of its production.

What should an enterprise do to make the listed indicators become its competitive advantages?

1. Understand not only current but also future customer preferences and be able to develop products that meet these preferences.

2. To ensure the adjustment of technological processes of production, guaranteeing their minimum cost by identifying and eliminating all types of costs that do not bring product value.

3. Bring products to market faster than competitors.

The implementation of these tasks will depend on how smoothly and efficiently all departments will work at the enterprise.

How can this smooth and efficient operation be ensured?

From our point of view, by defining a set of processes or activities that ensure the production of products with quality characteristics that satisfy the requirements, requests and expectations of consumers;

establishing a clear and understandable interaction between the processes;

definition of quality objectives at the level of the enterprise and departments, providing an understanding of the results that must be achieved by departments, and which ensure the achievement of the overall goals of the enterprise;

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planning resources needed to achieve goals;
determination of procedures that ensure the performance of work in departments in the most efficient way;

measuring results and comparing them with the set goals;

analysis and decision making on what needs to be improved within each department.

Thus, a set of processes is presented, due to the functioning of which an enterprise management system is formed, orienting it to the production of products that meet the requirements, demands and expectations of consumers in terms of their characteristics and adjusting all types of activities related to ensuring production to an efficiency indicator, namely:

a system for identifying cost sources is being built, and developing adequate measures to reduce them,

reliable data are formed that demonstrate the effectiveness of the use of invested investments, which can help attract new investors;

the cost of production decreases, which makes it possible to reduce the price, expand the market and increase production volumes;

there is a reduction in costs, usually associated with a reduction in the amount of marriage and other types of waste, which has a positive effect on such performance indicators of the enterprise as the impact on the environment, the state of industrial safety;

the image of a socially oriented enterprise is formed;

a clear setting of goals and objectives for each employee is carried out, which determine the result that should be obtained in the performance of work;

determining the resources needed to perform the work and providing resources;

providing the knowledge and skills necessary to understand how the work should be done in order to ensure its maximum efficiency;

measuring the results of work at the level of employees, departments and the organization as a whole and comparing the results with goals;

analysis of the results and adequate response to them through a system of corrective and preventive actions.

As practice shows, the ability to implement these processes at the level of top management creates the conditions necessary for the formation of a competitive enterprise, that is, a manager can take all this into service today in order to ensure this very economic stability for his enterprises.

In addition, it is important that there are not too many product names. For the majority of Russian enterprises, the main reserve for optimizing the assortment is still based on a significant reduction in the assortment range. Too large assortment has a bad effect on economic indicators - there are many positions that, in terms of sales, cannot even break

even. As a result, the overall profitability falls sharply. Only the exclusion of unprofitable and low-profit items from the assortment can give the company an increase in overall profitability by 30-50%.

In addition, a large assortment disperses the strength of the enterprise, makes it difficult to correctly offer goods to customers (even sales department employees are not always able to explain the difference between one or another position or name), and disperses the attention of end consumers.

Here it would be appropriate to recall the psychology of human perception of information. The reality is that the average person is able to perceive no more than 5-7 (rarely up to 9) semantic constructive decisions at a time. Thus, a person, making a choice, first chooses these same 5-7 options based on the same number of criteria. If the seller offers more selection criteria, the buyer begins to experience discomfort and independently weeds out criteria that are insignificant, from his point of view. The same thing happens when choosing the actual product. Now imagine what happens if a person has a hundred practically indistinguishable (for him) goods in front of him, and he needs to buy one. People in such a situation behave as follows: they either refuse to buy at all, because they are not able to compare such a number of options, or prefer what they have already taken (or what seems familiar). There is another category of people (about 7%), lovers of new products, who, on the contrary, will choose something that they have already tested.

Thus, from the point of view of the buyer (to ensure a calm choice from perceptible options), the assortment should consist of no more than 5-7 groups of 5-7 items, i.e. the entire assortment, from the point of view of perception, should optimally consist of 25-50 items. If there are objectively more names, then the only way out is an additional classification.

It is generally accepted that the buyer needs a wide range. This widest range is often referred to even as a competitive advantage. But in reality, it turns out that for a manufacturer, a wide range of products is hundreds of product items, and for a consumer, 7 items are already more than enough. Thus, the consumer does not need a wide assortment at all, but the variety necessary for him. This is possible if the components of the strategy for the development of light industry until 2025 are implemented, namely: the task of transferring the economic development of Russia from the inertial energy scenario to an alternative innovative socially oriented type of development will be solved, while forming an effective industrial policy, for which it is necessary:

- develop and legislate the foundations of an effective state industrial policy as a system of agreed goals, priorities and actions of state bodies, business and science to improve the efficiency of industry, ensure high competitiveness of products, goods and services and steady production growth. When forming it, provide for outstripping growth in all sectors of

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high-tech products with an increase in its share in the total volume of industrial production by at least 50% by 2025, equality of subjects of industrial policy, guarantees of property rights;

ensure the implementation of special measures to support priority high-tech industries in order to create conditions for the effective development of the entire industry of Russia;

to ensure an increase in the volume of investments, the creation of economic and legal prerequisites for the introduction and use of high technologies and new materials, primarily developed in Russia, for this it is necessary:

– to legislate the foundations of the national innovation system in the Russian Federation; establish a multiplying factor for R&D expenses included in the cost price; reduce VAT to 12%; exempt from taxation the profits of enterprises invested in production; to create institutes for long-term crediting of the modernization and technical re-equipment of industry at a low interest rate; to improve the VAT administration system, to change the procedure and terms for paying taxes in order to replenish their working capital by industrial enterprises; implement a transition to a differentiated tax rate on the extraction of minerals, depending on natural conditions, the degree of depletion of deposits, etc.;

– to develop and implement measures to combat price monopolism, to stabilize tariffs for the services of natural monopolies, to prepare and adopt a federal law “On Price and Tariff Policy”; to promote the creation and promotion of domestic national, regional and corporate brands of domestic products for the development of a competitive environment in order to create competitive products, for which purpose to introduce a quality system, to promote the implementation of programs aimed at identifying, independent assessment of the quality and promotion of domestic products, to intensify work on standardization, including the costs of scientific research in this area to develop new and adjust existing national standards;

– take into account that mechanical engineering is a system-forming complex, for which it is necessary to ensure its modernization and restoration of the technological basis of the national machine-building complex - machine tool building in a short time. For these purposes, to use both domestic developments and the purchase of foreign equipment and technologies, using the international division of labor, to use the leasing mechanism more widely. In addition to general measures to support industry, it is necessary to additionally prepare and adopt a state strategy for the development of industry for the period up to 2025, including the implementation of special targeted programs aimed at financing promising scientific developments;

– modify the amount and procedure for collecting customs fees to stimulate the import of the

latest technological equipment while simultaneously promoting the revival of the domestic production of such equipment, in particular, cancel customs duties and VAT on the import of new imported technological equipment not produced in the country;

– to develop and adopt a set of special measures to provide the mechanical engineering and machine tool industry with scientific and engineering personnel, highly qualified workers, especially in the field of scientific research and applied development, to form a system of employment of young specialists; develop and adopt amendments to the Tax Code (Chapter 25), establishing accelerated depreciation regimes and preferences (premiums) that allow depreciation of the active part of fixed assets in excess of their book value;

– take measures to stimulate the system of state and commercial leasing of technological equipment for the purpose of technical re-equipment of the engineering industries; to consider the possibility of preliminary 100% payment from the federal budget for the cost of supplies to enterprises of unique imported equipment, including on a leasing basis, necessary for the technical re-equipment of mechanical engineering and machine tool building;

– to put into practice a systematic all-Russian census of metalworking equipment, which will make it possible to have objective data on the state of the machine-tool fleet of machine-building enterprises;

– to develop and implement a set of measures to address the problem of a shortage of qualified personnel in industry, to improve the quality of training in higher educational institutions, to provide young professionals with housing on preferential terms, to put into practice the training of specialists on a state order, to ensure on the basis of public-private partnership vocational schools with modern technology and dormitories, to allow enterprises to attribute the funds spent on training personnel to production costs in full, to adopt special legislative and regulatory documents aimed at ensuring the industrial development of Siberia and the Far East;

– develop and legislate a set of measures to ensure the interest of economic entities in active participation in projects to improve resource and energy efficiency, including elements of monetary policy, foreign exchange and investment regulation, subsidy mechanisms, special tax and depreciation regimes;

– to implement a set of measures aimed at the mass development of small and medium-sized enterprises in the industrial production, innovation and service sectors, primarily in terms of providing small and medium-sized enterprises with access to production facilities, purchasing equipment, including on leasing basis, development of microfinance and credit cooperation;

– take measures to create equal competitive conditions for the Russian processing industry with

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importers, accelerate the development and adoption of the federal law "On Trade" and related regulations to organize the effective functioning of the Russian wholesale and retail trade;

- to develop a strategy for regional industrial development of the constituent entities of the Russian Federation, including the territorial distribution of productive forces in the long term, to link the development of regional infrastructure with the location of industrial facilities;

- to clearly define the system for implementing the fundamental goals of the state industrial policy that ensure the solution of systemic problems of the real sector of the economy, to correlate the need for investment, sources of investment and realistically achievable socio-economic results.

The Strategy for the Development of Light Industry for the period up to 2025 and the action plan for its implementation take into account the national interests of Russia (improving the level and quality of life of the population, the health of the nation, the strategic and economic security of the state), proposals from the constituent entities of the Russian Federation, public organizations and associations on the necessary measures support of the industry in priority areas of its development.

The Strategy was based on the transition of light industry to an innovative development model. Particular attention is paid to the issues of protecting the domestic market from shadow trade, technical re-equipment and modernization of production, import substitution and export.

Today, the light industry of the Russian Federation is the most important diversified and innovatively attractive sector of the economy.

The contribution of light industry to the industrial production of Russia today is about 1% (in 1991, this indicator was equal to 11.9% and corresponded to the level of developed countries, such as the USA, Germany and Italy, which throughout all these years have maintained this indicator at the level of 8-12%), in the volume of exports - 1.3%.

Currently, 14 thousand large, medium and small enterprises located in 72 regions of the country operate in the light industry. About 70% of enterprises are city-forming. The average number of industrial and production personnel employed in the industry is 462.8 thousand people, 75% of which are women. The scientific support of the industry is carried out by 15 educational, research and design institutes, many of whose developments correspond to and even exceed the world level.

The main territories for the location of enterprises that determine the industrial and economic policy of the industry are the Central (55 enterprises), Volga (30) and Southern (17) federal districts, which have the largest share in the total volume of production and are the most socially significant.

The results of the industry for 2020 showed that it is able to increase production volumes in sub-sectors directly oriented to the market during the crisis. It should be noted that in the context of the crisis, the range of goods supplied to Russia is sharply narrowed. This gives the domestic light industry strategic opportunities to occupy the vacant niches and strengthen its position in the market.

In 2021, the turnover of retail trade in light industry products amounted to 2.0 trillion. rub., its share in the retail trade turnover of the country is 14.5%, and in the retail trade turnover of non-food products 26.3%. In terms of consumption, light industry products are second only to food products, far ahead of the markets for consumer electronics, cars and other goods. Taking into account macroeconomic indicators and development trends, the market for light industry goods by 2025 may amount to more than 3.3 trillion rubles. rub.

The existing preferences and problems being solved to some extent at the federal and regional levels are still insufficient to eliminate the influence of negative factors on the development of the industry and turn it into a competitive and self-developing sector of the economy, and for domestic producers to strengthen their positions in the domestic market and compete on an equal footing in world market not only with manufacturers in China, Turkey, India and a number of other developing countries, but also with the EU countries and the USA.

The situation in the industry was further exacerbated by the global financial crisis. In a crisis, even those enterprises that have achieved positive results in innovative development in recent years, paying significant attention to the modernization of production, are already forced and will be forced in the coming years to reduce production volumes and abandon long-term investments. This is due to the difficulties that have arisen associated with attracting bank loans (the share of borrowed funds in working capital in recent years has reached 40%), on the one hand, an increase in the volume of official imports, counterfeit and contraband products, a drop in demand and a slowdown in the sale of many types of consumer and industrial goods. -technical purpose, reduction of workers and specialists - on the other hand.

The absence of drastic measures to address the identified problems will significantly affect the economy of the industry, its technological lag in the foreseeable future may become an irreversible process, which will lead to the degradation of high-tech industries, to increased commodity dependence on foreign countries, the losses of the state will grow geometrically, which will increase the strategic and national Russian danger.

The current situation can be changed only by developing and implementing anti-crisis measures and measures aimed at boosting the light industry economy, giving it new impetus in innovative,

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social and regional development, in increasing competitiveness and production efficiency at a new technical and technological level. Today, the industry provides with its products only a quarter of the effective demand of the population, and the mobilization needs of the country - only 17–36%, which contradicts the law on state security, according to which the share of domestic products in the volume of strategic products should be at least 51%. Therefore, today the light industry faces new challenges and tasks, the solution of which requires new approaches not only for the short term, but also for the long term.

This led to the goal of the Strategy - to create conditions for the accelerated innovative development of the light industry in Russia, to ensure effective compliance of production volumes, quality and product range with the aggregate demand of consumers, to increase the national significance of the industry and its image in the world community.

The goals and objectives of the Strategy are in line with the ongoing state policy in the field of innovative and socio-economic development of Russia in the medium and long term. The strategy is designed to become: one of the main tools in solving the problems of the industry and interconnecting the task of its economic growth with meeting the needs of citizens of the country, law enforcement agencies and related industries in high-quality and affordable consumer goods, in technical and strategic products.

The implementation of the Strategy will enable Russia's light industry to become an industrially developed industry that will provide jobs for many thousands of people, improve the well-being of workers, and strengthen the strategic and economic security of the country.

The main result of the Strategy is the transition of light industry to a qualitatively new model of innovative, economic and social development, the basis of which is a new technological and scientific base, new methods of production management, the relationship of science, production and business. This is to ensure effective compliance of production volumes, quality and product range with the aggregate demand of the Russian and world markets.

It is equally important to understand the role and significance of quality activity, that is, to what extent leaders have penetrated into the essence of things, learned to manage things, change their properties (range), form, forcing them to serve a person without significant damage to nature, for the benefit and in the name of a person.

Both political leaders and the government have recently begun to talk about the need for a competent industrial policy. However, if we carefully consider the normative, methodological documents on the structural restructuring of industry, then the thought

arises whether we are stepping on the same rake here that has been stepped on all the years of reforms.

A world-famous quality specialist E. Deming, who at one time was a scientific consultant to the Japanese government and led Japan out of the economic crisis, in his book "Out of the Crisis" says: "... managing paper money, not a long-term production strategy - the path to the abyss.

Regarding whether the state should pursue an industrial policy, one can cite the statement of the outstanding economist of the past, Adam Smith, who 200 years ago laid the foundations for the scientific analysis of the market economy. About the role of the state, he said: "... only it can, in the interests of the nation, limit the greed of monopolists, the adventurism of bankers and the egoism of merchants."

What are the results of economic activity today, what are the achievements in this area? The growth of gold and foreign exchange reserves, the decline in inflation, the budget surplus and other financial and economic achievements. And what, is this the end result of public administration? And not the quantity and quality of goods and services sold in the domestic and foreign markets and the inability of the population to purchase these goods and services? And, ultimately, on the quality of life of the population of the country?

Therefore, it is quite natural today that the task is set for all levels of the executive and legislative authorities - to improve the quality of life of Russian citizens.

Let us carry out an enlarged factorial analysis of the problem of "quality of life". The quality of life of citizens depends on the quality of goods and services consumed in the full range - from birth to ritual services, as well as on the solvency of citizens, which allows them to purchase quality goods and services. These two factors (quality and solvency) depend on the state of the country's economy, which in turn depends on the efficiency of enterprises in various sectors of the economy, including light industry. The effectiveness of the work of enterprises depends on the state of management, on the level of application of modern methods of marketing solutions.

The problems of improving the quality, competitiveness of materials and products at the present stage of development of the Russian economy are becoming increasingly important. As the experience of advanced countries, which at one time emerged from such crises (the United States in the 30s, Japan, Germany - in the post-war period, later - South Korea and some other countries) shows, in all cases, the basis for industrial policy and the rise economy was put a strategy to improve the quality, competitiveness of products that would be able to win both domestic and foreign markets. All other components of the reform - economic, financial and credit, administrative - were subordinated to this main goal.

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Positive changes in the quality of goods require qualitative changes in engineering, technology, organization and management of production. Production must improve, which does not mean becoming more costly.

The authors absolutely rightly drew attention to one phenomenon that usually slips away in the bustle of the problem - the historicity of the economy. The way we perceive it now, the economy has not always been and will not remain so forever. Economic life changes over time, which makes us tune in to its changing existence. The modern economy is built on a market foundation and the laws of the market dictate its own rules. In the foreground are profit, competition, efficiency, unity of command. How long will this continue? Analysts say the symptoms of a new economic order are already on the rise. The next turn of the economic spiral will also spin around the market core, but the significance of the market will not remain total. The priority of market competition, aggressively pushing the "social sector" to the sidelines, is not compatible with the prospect of economic development, which is confirmed by the steady striving of the social democrats in the West to turn the economy into a front for social security and a fair distribution of profits.

And quite understandably, the importance of these features for providing consumers with demanded products is emphasized; in confirmation of this, an enlarged factorial analysis of the "quality of life" problem was carried out. The quality of life of citizens depends on the quality of goods and services consumed in the full range - from birth to ritual services, as well as on the solvency of citizens, which allows them to purchase quality goods and services. These two factors (quality and solvency) depend on the state of the country's economy, which in turn depends on the efficiency of enterprises in various sectors of the economy, including light industry. The effectiveness of the work of enterprises depends on the state of management, on the level of application of modern management methods.

Today, international quality management standards have the most significant impact. The use of modern methods in them allows us to solve not only the problem of improving quality, but also the problem of efficiency and productivity. That is, today the concept of "quality management" is moving into the concept of "quality management".

Thus, solving the problem of increasing the efficiency and competitiveness of the economy, and ultimately the quality of life, is impossible without the implementation of a well-thought-out and competent industrial policy, in which innovation and quality should become a priority.

The results of studies conducted under the UN Development Program made it possible to measure the share of the "human factor" in national and global wealth: 65% of the wealth of the world community is

the contribution of human potential, and only a third of the world's wealth comes from natural resources and the production structure. A quality-oriented strategy undoubtedly contributes to the growth of the very role of the subjective factor in the development of production, and to a more complete and comprehensive satisfaction of human needs themselves. The desire to "live according to reasonable needs", as well as the need to "work according to the possibilities", together with the communist ideal, no one dared to openly and officially cancel, realizing the absurdity of denying the essential forces of man. In the "hot" state, the problem of quality is sustainably supported by both the internal forces of active consciousness and external life factors. The highest function of consciousness is cognitive, therefore, the opinion is quite justified that by knowing nature, we discover its qualities, state of quality, quality levels, embodying new knowledge in production. Postclassical economic thought has shifted quality towards consumption, trying to give production a "human face" - a person alienates himself in the production process, but this measure is forced and, in a systemic sense, is temporary, conditional. Labor is a kind of "terrible cauldrons" that Vanya the Fool had to overcome in order to turn into Ivan Tsarevich. we discover its qualities, state of quality, quality levels, embodying new knowledge in production. Postclassical economic thought has shifted quality towards consumption, trying to give production a "human face" - a person alienates himself in the production process, but this measure is forced and, in a systemic sense, is temporary, conditional. Labor is a kind of "terrible cauldrons" that Vanya the Fool had to overcome in order to turn into Ivan Tsarevich.

And here it is absolutely true that the main thing in production is the result, not the process. Consumption regulates the market. Therefore, the demands of the market must dominate production. The task of the society is to contribute worldwide to the development of demand in the market: to maintain the range of goods, stimulate price stability, increase purchasing power, improve the quality of goods. E. Deming, calling the "network of deadly diseases" of modern production, puts in the first place "production planning that is not focused on such goods and services for which the market is in demand." Try to answer him. Production in the transition from industrial to post-industrial society of mass

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consumption is conceived as a function of the market, filling these properties of quality with criteria, namely:

- ideology of quality - the prospect of development of production;
- quality management is an integrated approach to solving the problem of quality;
- fashion and technical regulation - components of the quality of manufactured shoes;
- quality systems "ORDERING/5 S" and "THREE" NOT "- not only the basis of stability and production safety, but also a guarantee of quality;
- quality in the market is a paradigm of formation of production that satisfies the needs of the market;
- advertising is always at the service of quality;
- an excursion into the past as a guarantee of quality in the future;
- a model for assessing product quality - these are production priorities;
- forecasting the cost of quality when developing a new range of footwear is the key to its demand and its competitiveness; - methodology for business visual evaluation of the product - a means of assessing the effectiveness of quality;
- improving the quality and competitiveness of domestic special shoes;
- on indicators for assessing the quality of footwear - as a tool for the formation of demanded products;
- quality and market: a marriage of convenience and this is indisputable;
- the stability of the work of enterprises is the guarantor of the quality of the shoes they produce - all these aspects together provide a quality revolution that guarantees the manufacturer stable success in the market with unstable demand.

In conclusion, I would like to emphasize once again that all this will become a reality if one condition is met, namely, light industry products will be produced of high quality and taking into account the interests of this very consumer.

Main part

The prospect of the evolution of "reasonable man" is considered. Evolution differs from revolution as a leap, discontinuity in movement, in the time of implementation - it is long and includes various states of movement in the presence of stability of the vector of change. The vector of evolution is laid down in its initial moment. For homo sapiens, "reasonableness" was defined as a vector, that is, already in the extremely lower essence of this movement, the ascent to reasonableness, and then to reasonableness itself, was laid. It is logically and historically correct to recognize the social form of its movement as a system-forming factor in the evolution of a person into a "reasonable person". It is in sociality that one must look for the causes of all evolutionary changes in man, both positive and negative.

After the Age of Enlightenment and some time conditioned by the triumph of rationality, when philosophy focused on reason as a source of creative power, elevating rationality to the absolute of the world order, the time of recession came - in economics it is called "correction". Correction in the interpretation of the significance of rationality for human evolution and its social way of realizing it turned out to be a very serious test for understanding the essence of rationality. The inconsistency in understanding the very subject of research is associated with the collisions of the social movement: disunity in the structure of society, the struggle for leadership in politics, economics, and the social hierarchy. The history of social life throughout its entire length rather concealed the rationality of the original social subject, and in recent centuries society seemed to have fallen into turbulence. Can't calm down at all.

After analyzing the situation, the authors attempted to substantiate the following conclusions:

- The evolution of homo sapiens is mainly hampered by increased social egoism, which manifests itself in political, economic and national forms, and activates the individual status of egoism, that is, along with economic, political and socio-historical forces, there are forces that deform morality - a qualitative indicator of personality.
- The real ability to bring the social factor in line with the vector of evolution lies in the improvement of education, which is most effective in an integrated form with an emphasis on raising the civic responsibility of the individual. The "competency model" has an exclusively applied value in the context of a personal one.
- In the course of the evolution of Homo sapiens, the vector shifts from the general direction towards the improvement of the mind to historically - concrete - to form a "reasonable person".

It requires a fundamental restructuring of the methodological basis of research used, a rethinking of the philosophical heritage, especially the conceptually most important idea of Hegel to distinguish between two dialectically connected statuses of the existing: to be a reality and to be a reality.

Unlike politics, science continues to prove its high efficiency at the global level of activity. Politicians entered the third millennium with two most important conclusions of scientific knowledge.

Firstly, scientists have proved that there is no systemic ecological crisis yet, but the parameters characterizing what is happening in world politics are such that the development of the natural factor of human life with increasing acceleration is approaching a loss of stability and transition to turbulence. If in politics, where the role of subjective factors is significant, it is allowed to discuss the possibility of "controlled chaos", then the crisis of the natural order of the organization of the natural

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environment will naturally turn into a total crisis, putting humanity on the brink of existence. It is unequivocally necessary, at least, to remove the prohibitive burden on the natural conditions of life and, for a start, to slow down the acceleration of crisis phenomena in nature, which is still real. In the report of the International Commission on Environment and Development (ICED), Under the leadership of the authoritative expert Gro Harlem Brundthland, which is the basis of the concept of sustainable development, it is emphasized that irrational economic policies and an uncritical attitude towards new technologies have led to trends that neither the planet nor its people can withstand for long. The problem is complicated by the fact that total competition does not allow one to count on a transition to sustainability without significant mutual concessions. Members of the Club of Rome A. King and B. Schneider consider the achievement of sustainable development in the current conditions a utopia. "A sustainable society, they argue, never emerges within a world economy that relies solely on the action of market forces, which are far from omnipotent, despite their importance for the implementation of the innovation process." underlying the concept of sustainable development, it is emphasized that irrational economic policies and an uncritical attitude towards new technologies have led to the emergence of trends that neither the planet nor its people can withstand for long. The problem is complicated by the fact that total competition does not allow one to count on a transition to sustainability without significant mutual concessions. Members of the Club of Rome A. King and B. Schneider consider the achievement of sustainable development in the current conditions a utopia. "A sustainable society, they argue, never emerges within a world economy that relies solely on the action of market forces, which are far from omnipotent, despite their importance for the implementation of the innovation process." underlying the concept of sustainable development, it is emphasized that irrational economic policies and an uncritical attitude towards new technologies have led to the emergence of trends that neither the planet nor its people can withstand for long. The problem is complicated by the fact that total competition does not allow one to count on a transition to sustainability without significant mutual concessions. Members of the Club of Rome A. King and B. Schneider consider the achievement of sustainable development in the current conditions a utopia. "A sustainable society, they argue, never emerges within a world economy that relies solely on the action of market forces, which are far from omnipotent, despite their importance for the implementation of the innovation process." that irrational economic policies and an uncritical attitude towards new technologies have led to trends that neither the planet nor its people can sustain for long. The problem is complicated by the fact that total competition does not allow one to count on a transition

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Secondly, politicians need to mobilize and remember their professional responsibility for the fate of homo sapiens, to shift economic policy from the path of absolutization of competition for profit to the path of compromise and cooperation, which allows realizing the conclusion of science about the need to achieve sustainable social development in the face of growing dynamic disequilibrium.

The noosphere, which Leroy and Vernadsky wrote about, is formed in the interaction of natural and socio-economic processes, its configuration is not set a priori by the human mind. "Reason" and "reasonableness" are not identical. "Intelligence" may be similar to "Absolute Intelligence", but not the total intelligence of homo sapiens. Even the creation of the "Divine Reason" was not flawless, let's recall the text of the classic work of the famous scientist and

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orthodox Christian I. Goethe. Faust questioned the creator's instrument of creation, replacing "In the beginning was the word" with "In the beginning was the deed". The content of the fragment of the book also testifies to the position of the author himself, his logic of thoughts, it is built on the priority of the "case", which comes into conflict with rationality.

I. Goethe, thanks to a special attitude to activity, anticipated the problems of our modern times. A contemporary of I. Kant, G. Hegel, F. Schelling, a foreign member of the St. Petersburg A. N. logically built thinking, he was aware that the word, despite its highest function of being a form of manifestation of conceptual thinking, itself becomes the activity of the mind, confirming the system-forming place of the matter in relationships man with nature. It is within the framework of the subject of action that a person must prove the reasonableness of the vector of his evolution. The author of the article about Goethe in the Soviet (!) Encyclopedic Dictionary had reason to conclude: "Goethe embodied the search for the meaning of life in action."

The history of mankind, throughout its entire length, was based on practical activity, on the one hand, and found its final expression in the practical form of creativity of the spirit, on the other. Freedom of creativity outside the sufficiency of practical equipment is the lot of a single subjective reality, it is finite in itself and is doomed to be a fantasy. The strength of the spirit is determined not so much by the spirit itself, but by the strength of the potential for practical objectification of the creative process. Freedom of creativity is the condition of its power, which, in turn, is conditioned by practical activity. ON THE. Berdyaev, in search of the true direction of social progress, believed that humanity is still mastering the "lowlands" of its being, so strength remains its main tool. Rationality is expressed in logic, paving the route to the true direction of movement, to that, which Confucius and Lao Tzu sacredly called "The Way". In this logic, the meaning of the Christian understanding of the measure of activity is also revealed: "Strength is in truth!"

Ideas N.A. Berdyaev deserve attention, but they should be taken critically. K. Jaspers did not agree with Berdyaev's opinion, believing that humanity managed to rise spiritually high in the "Axial Age" of Antiquity, realizing the unity of the transnational movement. Practical life is also an argument against Berdyaev's assertion. In the 20th century, despite all its contradictions, the understanding of the importance of the social-democratic content of political programs, the relevance of transnational relations for solving the most important problems of social development, and responsibility for a common history with nature has increased.

Supporting the essence of the conclusion of the authors of the monograph "The Concept of the Quality of Life": "The time has come for a "vertical ascent

along the steps of the spirit", let us clarify that it is more about the need to accelerate this ascent, because it was in the historical past that it was prepared and began, and in the newest time began to slip.

Two hundred years ago, G. Hegel instructed: "A thoughtful examination of the world already distinguishes between that which, in the vast realm of external and internal existence, is only a transient and insignificant, only a phenomenon, and that which in itself truly deserves the name of reality. Since philosophy differs only in form from other types of awareness of this content, it is necessary that it be consistent with reality and experience. One can even consider this coherence at least as an external touchstone of the truth of philosophical doctrine, while the highest ultimate goal of science is the reconciliation of the self-conscious mind with the existing mind, with reality, generated by the knowledge of this coherence. In the preface to the Philosophy of Right, Hegel formulated the essence of his reflections in two well-known propositions:

In Western Europe today, thinkers whose reflection bears little resemblance to a philosophical desire to separate the reasonable and real from the accidental and short-term in development, to reveal the methodological significance of the Hegelian desire to understand the connection between the historical and the logical in development, are in vogue today. The democratic credo: "The freedom of everyone is a necessary prerequisite for universal freedom" - was absolutized on the basis of individual rights, subordinating private requirements to the right to ensure the progress of the social movement towards progressive changes.

The special status of the individual in history is indisputable. The history of civilization in Europe began with the rights of the individual to freedom of feelings, thoughts and actions, the individual is the initial subject of social life and the ultimate goal of social progress. However, the special status of the individual is determined by the social context. Robinsons are able to survive on their own, but they are powerless to make history. Demands to ensure the rights of the individual are reasonable and valid only within the framework of strengthening a democratically built social system within a democratically organized social order and the legally protected status of the state as a product of the free will of the majority.

The main events of history have always been determined by the ratio of the total private awareness and really reasonable in the dynamics of social progress. To which it should be added that as social advancement along the path of development, the presence in the movement of two large-scale factors increased: first of all, the importance of integration processes and, secondly, the ambiguous inclusion of natural conditions that lost their ability to normal

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reproduction under the irrational impact of economic policy

Formally - logically, from the recognition of social progress as the content of the history of mankind, two conclusions follow: about the positive dynamics of the progress of the rationality of thinking in its mass expression, once, and the displacement of errors from the political provision of social renewal, two. So it would probably be if history were the realization of the ascent of the rationality laid down in it by G. Hegel. The real history, however, does not stand on its head - the carriers of reason, but on what made a person go from Homo habilis and Homo erectus to Homo sapiens - the activity of reproducing intelligence socialized in the development of the human race. Hence the contradictions between the historical movement and its comprehension at the level of rationality, which can be confirmed by the contradictions between philosophical assessments and political construction,

The key to understanding the noted inconsistency in understanding the social movement can be the distinction made by I. Kant in the reasonableness of "pure" and "practical" forms of activity. "Pure" reason, according to I. Kant, is the ability to unconditional thinking. With a "pure" mind, thinking is born and, thanks to a "pure" mind, all people think on an equal footing, similarly, a basis is created for the possibility of a consistent, identical perception of the world. However, with such thinking, the content tends to an infinitesimal value, so G. Hegel called "pure reason" "empty reason".

The principle of activity of the "pure" mind is consistency, which is convenient from the point of view of the technology of thinking, but unproductive for achieving mutual understanding of humanity divided by a common history, since it implies a high filling of thinking with differing knowledge, combined with opinions. On "pure" reason, due to its extreme abstractness, it is difficult to build a common platform for cooperation, but it is thanks to "pure" reason that such a prospect really exists. I. Kant found a mental basis for achieving mutual understanding: "The first step, he explained, taken by us beyond the limits of the sensually perceived world, forces us to begin our new knowledge from the study of an absolutely necessary essence and from its concepts to derive concepts of all things, since they are purely intelligible". Mutual understanding is possible as mutual knowledge. "Any human knowledge, I. Kant clarified, begins with contemplation, passes from them to concepts and ends with ideas."

The "road map" is also characteristic of productive cognition. The movement of knowledge in a general direction and along a common path inevitably contributes to rapprochement in understanding the order of movement. "Practical" mind I. Kant represented as a "thinking" will. It is called upon to indicate what "should be done" in the

context of the contradictory existence of right and duty. It is expedient to see in the universality of formally organized thinking an abstract prerequisite for the possibility of achieving consistency in understanding what is happening in the world and the consequences of the development of existing being. Despite the fact that "pure" reason is essentially removed from the content of the world movement, because it is consistent, and it is torn apart by contradictions, it would be unprofessional to underestimate the practical value of the reality of the universal orderliness of human speculation.

Attempts to question the universality of the organization of thinking of homo sapiens were provoked by anti-human and anti-scientific ideologies. They are officially condemned by the world community. All numbers in the natural series consist of units. In the limit, the unit is comparable to an infinitesimal value, which can be neglected, however, Pythagoras raised the unit and bracketed the natural series. For him, the unit was more than just a number, it was the system-forming factor of the series. Without one, there were no other numbers. "O" (zero) in an abstract sense with respect to the subject content loses its meaning altogether, however, even in such a crisis status, it retains its existence. Why? Because "O" is potentially significant. "O", put in a certain row, already acquires an objective expression - it determines the real possibility that what characterizes this series. According to "O" we cannot be given a quantitative equivalent of the phenomenon, but its quality, albeit purely nominal, is already defined in "O". Abstraction, for which objectivity tends to "O" can be compared with the calculus of infinitesimal quantities. Two or three centuries ago, infinitesimal quantities were of no interest to practical thinking. Nowadays, much is concentrated on them in science and practice. So it is with Kant's idea of "pure" reason, the time for the significance of the fact of "pure" thinking is coming. Anticipating such a time, F. Engels noted: "The unity of the world does not consist in its being, although its being is its prerequisite for its unity, for the world must first exist before it can be united." We see something similar in I. Kant's idea of "pure" reason. but its quality, albeit purely nominal, is already defined in "O". Abstraction, for which objectivity tends to "O" can be compared with the calculus of infinitesimal quantities. Two or three centuries ago, infinitesimal quantities were of no interest to practical thinking. Nowadays, much is concentrated on them in science and practice. So it is with Kant's idea of "pure" reason, the time for the significance of the fact of "pure" thinking is coming. Anticipating such a time, F. Engels noted: "The unity of the world does not consist in its being, although its being is its prerequisite for its unity, for the world must first exist before it can be united." We see something similar in I. Kant's idea of "pure" reason. but its quality, albeit purely nominal, is already

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In G. Hegel's criticism of "pure" and "practical" reason, there is certainly a "rational grain". I. Kant contrasted form and content, could not reveal the dialectics of their connection, simplified contradictions to antinomies, divided the latter into different realities, at the same time I. Kant brilliantly pointed out the natural-historical basis for resolving the inconsistency of specific configurations of thinking. He did this in an abstract form, hardly conscious of the historical perspective, but it was he, from the height of philosophical generalization, who discovered something without which it would not even be advisable to discuss the solution of global problems in the modern world community divided by the national format.

When humanity becomes rational, the individual rationality of homo sapiens will acquire a social form of the reality of rationality, the vector of contradictions will change, not competition, but participation will become dominant, the great German

thinker I. Kant will be remembered as a discoverer, and G. Hegel as a pilot of movement in the contradictions of real history.

The dialectical materialism of K. Marx and F. Engels stood on the "shoulders" of these thought giants. The underestimation and, to some extent, the oblivion of the contribution of German classical philosophy to the analysis of the social movement is the result of a change in historical eras. I. Kant and G. Hegel created when the need of the bourgeoisie for radical social changes was urgent, it took the place of the locomotive of progress and needed those who saw the path of history and spiritually paved the movement of capitalism. It is not important how to understand the struggle of socially formed forces in society, the main thing is to realize that the change of the social subject in politics is the beginning of the end of what he did, being a historically creative force. Plato accepted democracy only because he saw no alternative to it even in an ideal state.

The solution of the dialectical contradiction between the particular and the general in social progress remains the most difficult problem for ideology, politics and morality. It is here that various kinds of speculation dominate, hence the nature of spiritual evolution in the last two centuries. Reasonableness is simplified to situational reasoning, the role of the subconscious is actualized, mysticism, theosophy, utilitarian thinking flourish, thinking is replaced by the ability to look for ready-made solutions, the generating potential of reasonableness is replaced by consumer interest. Even the quality of life is determined on the basis of the ability to satisfy needs. Few people remember that it is precisely in the needs that the interdependence of a living organism and the environment of its existence is laid.

Biological evolution was a natural mechanism for weakening and partially overcoming the subordination of a living being to natural conditions. F. Engels's commentary on Hegel's understanding of the origin and development of thinking is interesting: "When Hegel, F. Engels noted, passes from life to knowledge through fertilization (reproduction), then there is already in embryo the doctrine of development, the doctrine that once given organic life, it must develop through the development of generations to the breed of thinking beings. In the biological history of species, the prerequisites for subsequent subjectivity at high levels of development were formed. "It goes without saying, F. Engels explained, that we do not think of denying in animals the ability for planned, deliberate actions. On the contrary, a planned course of action always exists in the embryo, wherever protoplasm, living protein exists. But all the planned actions of all animals failed to impress nature with the stamp of their will. Only a human could do this. In short, the animal only uses external nature and produces changes in it simply by virtue of its presence; man, by the changes he

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introduces, makes it serve his purposes, dominates it. On the margins of the manuscript, F. Engels specified: "It ennobles." The systems thinking of F. Engels was not content with the one-sidedness of man's "domination" over nature. The beginnings of the ideas of Leroy and Vernadsky must be sought already in the 1870s. Biological history contains part of the answer to the question: why, then, did the "intention" embedded in the trend of movement not come true in full measure? It was not possible to realize it in most of the history of man,

In order for an evolutionary transition to take place, allowing one to obtain a subjective form of the reality of a living being, it was necessary to form a more effective mechanism of cognition as the ability to discover stable, necessary and general relationships in life conditions and be a tool for controlling changes in relations with the environment. What was needed was the rationality of thinking, allowing the subject to responsibly think of himself in the "subject-object" system.

The transition to Homo sapiens is not the last in the evolution of man. Homo sapiens has become, simplifying, a semi-finished product of that form of subjectivity, which is called upon to replace "practical criticism" of natural circumstances with "practical co-creation" with the natural environment, to make it from an object of activity an "object-subject". At a new stage of evolution, a "prudent person" should be formed. The rise of critical thinking and a critical attitude to the very ability to think coincided with a crisis in society - its critical state. Such a coincidence is not accidental. The critical characters of modernism and postmodernism differ substantially. Postmodernism critically rethinks the mechanism and conditions of critical thinking, tries to adapt the critical potential to the changed circumstances of life.

Criticism of criticism looks clearly less convincing. D. Hume, B. Pascal, I. Kant, G. Hegel, K. Marx and F. Engels, if they did not manage to understand all aspects of the system of conceptual thinking, then they formulated the problems and found methodological approaches to the description of the phenomena under study. They determined the critically important moments of the organization of the abstract component of thinking.

Returning to the idea of a "pure" mind and its critical analysis, let us illustrate the practical value of this achievement by paralleling the actualization in the second half of the 20th century and the first decades of the current concept of "quality" of life. There is no more methodological and practical significance in the concept of "quality" of life than in Kant's proposal to single out "pure" reason. For which part of humanity is the concept of "quality of life" methodologically and vitally relevant? Even the "golden" billion, for the most part, sees such a life in the movies, on TV and behind a high fence with guards. The vast majority of the Earth's population still survives. It is

commendable that the richest began to realize their involvement in the contradictions of development, to create charitable foundations, but no charity will change the critical state of the situation.

It is necessary to change the ideological and methodological approaches to understanding life on Earth, that is, to start with the most abstract and simple - understanding the commonality of human nature and the lack of an alternative to cooperation. Only in the general system, armed with a single way of organizing thinking, people are able not to deviate from the path of development.

The strength of social subjectivity, starting with the individual, is in the ability to think, and this should be developed first of all. The diversity of languages hides the universality of the organization of thinking; differences in culture and ways of managing indicate that peoples move along a common historical path in their own way, depending on the specific circumstances of the action. In view of the phenomena of history, behind their national identity, it is not always easy to discern the logic of the generality of the movement.

It is also necessary to understand that historical logic is formed as dialectical, it fundamentally does not coincide with the matrix of formal thinking. We have already noted that the logic of the motion process not loaded with specific content reflects the final states in change and is based on the principle of consistency, it has more simplicity and clarity, which is natural for any initial state of motion. Historical logic, on the contrary, is called upon to regulate not the relatively final states of movement, but movement itself. Dialectical logic fixes the order of self-movement, built on the unity of the opposite, it is the logic of the inconsistency of movement, inherent in its primary state - the dialectic of the individual, particular and universal.

What exists in the movement of history turns into a truly historical, "irrational" - into "reasonable", using Hegelian terminology, naturally, and dialectical logic reveals the contradictions of the laws of historical development. The dialectical logic of social progress emphasizes its natural development, which serves as a basis for asserting that the desired phenomenon is fundamentally knowable.

Historical knowledge is complicated not so much by the contradictions of the real process as by the state of the initial ideologized positions of researchers. In physics there are concepts of "observer", "reference system", "reference point". Something similar formally exists in historical knowledge, only here it is subjective conceptually - it continues ideological reflection in politics.

Politics actively intervenes in historical analysis; objective dialectics is replaced by sophistry and eclecticism. No wonder history is often rewritten. Ideological and political obstacles to knowledge hinder the achievement of intersubjectivity in

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understanding the past. The distortion of the past entails the formation of a subjective historical experience, on the basis of which a tendentious understanding of the present and development prospects is built.

Ideological delusions are very dangerous, they gradually develop into self-deception, disorientate political activity, and lead to social crises, which was emphasized by V.V. Putin at the St. Petersburg International Economic Forum 2021, answering questions from the heads of the world's largest news agencies about the reasons for the collapse of the superpowers.

There are few grounds for hoping for a constructive ideological compromise, but in ideology, in addition to its core, which determines the fundamental interest of the social subject in the historical movement, there is also a periphery that contains views on infrastructural problems. It is here that it is realistic to count on the fact that the ideological cover of the basic interest provides for a certain backlash - the admission of totally significant agreements in solving problems that are urgent for humanity, mainly in the social sector of transformations.

It is immediately important to determine the prospect of such changes within the framework of the forms of opportunity. The modern world will not support overtly negative scenarios, so ideologies build plans for the future, using the ambiguity of the concept of "possibility", which opposes the concept of "impossibility". Ideological manipulators speculate on the differences between "formal" and "real" possibilities. Possibility in ideological programs is presented outside of its specific status, which contradicts the requirement of specific historical presentation.

Aspirations to put on the main path of social progress the achievement of "quality" of life, politics, "quality" ecology look tempting. However, how feasible is all this in a regulated perspective? It is not right to place an abstract possibility in a series of practical actions. It should be "in the mind", serve as an abstract vector of politics, and politics should solve those problems that have matured as a "real" opportunity. In the "real" possibility, the conditions of the "abstract" ripen. Having embodied in reality, having become the reality of being, the "real" possibility at the same time makes the "abstract" possibility "real", opens up the prospect for it to become reality, to acquire "reasonableness".

The idea of "quality" of life now and in the near future is practically irrelevant as a global political problem. Moreover, the desire for the "quality" of life will deepen the social contradictions within the total humanity. First, it is necessary to ensure a relatively qualitative right of people to life within the limits of the elementary requirements of civilized development. A task that requires the accumulation of

considerable forces. In addition, the very concept of "quality" of life is defined in an overly abstract way. "It is possible to conceptually define the problems of the quality of life, rightly write the authors of the monograph "The Concept of the Quality of Life", if we proceed from the unity of mankind, regulate relations with the biosphere, increase the role of science, the priority value of wisdom and spirituality...".

The unity of humanity is still purely formal, due to the commonality of the planet; the attitude to the biosphere, more precisely, to the biosphere, since human activity is partly included in it, remains at the level of the "force-reaction" system, and not symbiosis; investments in science still depend on its ability to be a direct productive force, which clearly does not correspond to the actual status of science, its rationality. Wisdom and spirituality are the products of a person's education and the rationality of his participation in social life. As the classical paradigm of the development of education is replaced by a "competence-based" model, the improvement of thinking, feeling and the need for the activity of the individual, really runs the risk of remaining an advantage of the previous generations who managed to get education before modernization.

Objectively-critical specialists, in search of overcoming the "one-dimensionality" of personal formation under the influence of modernization caused by the Industrial Revolution and its consequences, back in the middle of the last century spoke in favor of changing the nature of industrial production, drawing public attention to the need to make science and education dependent on the needs of mass production, and make the development of production dependent on the activities of scientists and teachers.

"In the modernization of society, we read in Britannic(e), the significance of the individual becomes more and more important, gradually supplanting such units of society as the family, the community or the professional group...". The rise of the role of individuality, along with the strengthening of specialization in production and the weakening of the functioning of such traditional factors of socialization as the family, professional ties, dooms the individual to an independent search for self-expression.

Robinson Crusoe was alone in the absence of people, and modernization created the conditions for the individual to be a Robinson among people. The one-dimensionality of labor, due to the nature of the source of life of the individual - production, enhanced by the specifics of education, which is organized in the service of production, exacerbated by the loss of family values and the decrease in the influence of the professional community, literally kicks the individual out of the system of stable social ties. She can only

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rely on her own potential and luck in casual relationships.

Interpersonal distance increases. In chemical reactions, electrons located in distant orbits "fly away", something similar happens in public life. The weaker the significance of social interaction, the more homogeneous and one-dimensional the personality is formed. Knowledge and skills replace thinking. In such a situation, extraordinary abilities and willpower are needed, which cannot be a mass gift. Economic crises are built on by sociocultural stagnation. The crisis in the system of social relations is already fixed by researchers in the titles of monographs. Culture is deprived of the traditional spiritual basis. The entertainment industry is not so harmless, especially when it is induced to undermine spiritual cultural foundations. The scheme is well developed: entertainment is accessible with its simplicity and the natural need for unloading after hard work, but one thing, when entertainment takes its rightful place in the structure of a person's life, and another when entertainment displaces the creative potential of a person. Modern "Oblomovs" do not always lie on sofas, but the end awaits them just as sad because of the inevitability of personality deformation. Times change, the patterns of social change are stable over time.

The British sociologist W. Beck called modern society a "risk society", paying special attention to changes in the system of social and individual values. The individual loses the socio-cultural guidelines of life, becomes "not rooted". Similar changes were predicted by K. Jaspers, A. Toynbee, N. Berdyaev, Zh.P. Sartre. W. Beck's compatriot E. Bauman is convinced that the individual in modern society is nominally social. In fact, he feels among people, as if he has fallen into "an uninhabited world" or into an inhabited and extremely difficult world. The prerequisites for the transition from the real world to the virtual one are being created. The essence of the problem facing humanity, A. Peccei believes, "is precisely in the fact that people do not have time to adapt their culture in accordance with the changes that they themselves make to this world, and the source of this crisis lies inside,

Western researchers prefer to describe the tendencies of a social movement, leaving out of the analysis the underlying forces that lead to the changes that are manifested. The identification of the causative factors of crisis phenomena requires an answer to a very painful question: what is the way out of the described situations? Unlike sociologists and culturologists who think in general terms, real politicians do not abandon attempts, if not to overcome negative changes in society, then at least to slow them down by improving cultural factors, primarily education. The Bologna Protocols were formally signed only by our politicians, who in the

1990s did not feel their political responsibility and did not feel a sense of duty associated with conscience.

Europe has suffered the practical and spiritual experience enshrined in them. This experience and its outcome were not ideal, but they turned out to be a way out in a difficult historical situation. In the modern world, there are two seemingly incompatible trends. On the one hand, centripetal processes are intensifying in national relations, integration is taking place, accompanied by synergistic effects, for example, thanks to the standardization of education, trust is strengthened, the social space for free movement is expanding, without which the comprehensive development of the individual is impossible. On the other hand, as studies show, the "atomization" of the personality continues, "the transition of the personality to peripheral social orbits", which leads to the instability of its position, the weakening of social ties - "not rootedness".

In fact, everything is connected, trends exist as the realization of opportunities, they are, in principle, controlled and managed politically. One of the effective tools is education policy. There are unique finds in the European experience of education integration.

The history of this process has shown that integration should be directed by professionals, not bureaucrats; education can by no means be an economically determined activity; the development of education should combine the transnational with the national; the formation of professional competencies must be subordinated to the formation of the personality of a citizen. The modern industrial society has exhausted the resources of its historical rationality; already in the middle of the 20th century it aroused the critical mood of prominent political figures and scientists. Evidence of the depth of the crisis was the desire to qualitatively change the industrial system. In the foreseeable future, society is unlikely to be able to develop without improving the industrial mode of production, but it is capable of significantly restructuring the production industry, and most importantly, reshuffling the relationship of sociocultural practice with industrial production. Realizing that history would not yet emerge from the evolution of industrial production, the authoritative economist and diplomat J. Galbraith published his work *New Industrial Society* (1967) back in the late 1960s. Fifty years later many of the ideas of the American researcher have become even more relevant, especially his desire to justify the historical need to update the concept of capitalism by convergence with the achievements of socialist management. Contrary to the desire of domestic liberals to bury socialism as an alternative production system to a market economy, the history of the need to objectify the rational into reality makes it necessary to critically reconsider the very socialist experience of the industrial development of society and its criticism

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by ideologically biased critics. Concerned about the limitations in the preparation of the individual for social realities in the system of publicly organized education in the United States, J. Galbraith wrote: "The most important - in the long term - is clearly education, especially higher... higher education is now widely adapted to the needs of the industrial system." The teaching staff of universities and colleges should have a decisive influence on the nature of the education that young people receive and the content of scientific research. The needs of the industrial system should be of secondary importance in comparison with the tasks of general spiritual and intellectual development, - the author of the concept of the New Industrial Society argued "in the order of the critical analysis. ". And, so that no one had any doubts about what exactly was being discussed, J. Galbraith clarified: "He (the teacher) must realize this and exercise his power not in the interests of the industrial system, but in the interests of the comprehensive development of the human personality." The "cog" of the human personality was made not by socialism, but by the industrial system, common to both socialism and capitalism. The problems of improving education are universal for social development in the conditions of the industrial nature of production. The difference exists mainly in the attitude towards such problems on the part of the state. In the USSR, striving to build a socialist system of industrialization, the political regulator of the development of education was the state, expressing the program ideas of the CPSU. In the US, there is no formal regulator, but there are all-powerful industrial groups and vigorous lobbying of their interests by parties in the struggle for political leadership in the system of power. The quality of education in the USSR was subordinated to the formation of personality in the process of vocational training, which was often accompanied by costs in a special aspect. In connection with this, the state introduced the status of "young specialist" - a kind of "transitional" period for graduates in mastering the profession in real production. In the United States, graduates are "finished" by the companies themselves, depending on their own needs and capabilities, with an emphasis not on civil status, but on competence.

For clarity, we note a fact that is not very comfortable for the domestic interpretation of competencies - Americans distinguish between competencies and sociocultural characteristics of an individual. They understand that it will not be possible to decompose the content of the concept of "personality" into competencies without a solid and especially significant remainder, of course, if you do not speculate and juggle this concept. In what range of competencies should courage, courage, selflessness, fidelity to duty, honor, patriotism, love, friendship, mercy be placed?

J. Galbraith was not alone in criticizing the dangers of the one-sidedness of professional training in universities. Complementing the flaws in the adaptation of education to the specifics of industrialization created by standardization, E. Fromm, the leader of the Frankfurt School of sociologists, repeatedly noted the substitution of understanding of cognition as a process of creativity in the production of knowledge by mastering ready-made technologies for consuming existing knowledge. "If it is true, we read from Fromm that an intelligent person is, first of all, one who is able to be surprised, then this statement is a sad commentary on the mind of modern man. With all the virtues of our high literacy and universal education, we have lost this gift - the ability to wonder. It is believed that everything is already known - if not to ourselves, then to some specialist who is supposed to know what we do not know. We are thinking, that it is most important to find the right answer (among ready-made ones - ...), and asking the right question is not so important. Orientation towards learning, the ability to consume the accumulated bank of knowledge makes the initial state of the individual's activity dependent not on his abilities, but on circumstances external to him. The "industrialization" of education leads to the oppression of individuality, suppresses the need for its self-expression in cognitive activity. From the standpoint of humanism, E. Fromm put forward a project to create, in particular in the United States, a harmonious, "healthy society" based on psychoanalytic "social and individual" "therapy". K. Jaspere also falls into resonance with the thoughts of J. Galbraith and E. Fromm, explaining "The value of each individual person will only then be inviolable, when specific people are no longer considered as interchangeable material for the formation of a universal measure. The social and professional type we are approaching we accept only as our role in the world. The individuality of a person is initially created by the activity of her mind, which corresponds to both the biological and social understanding of a person, therefore, the emphasis of education at all levels and in all forms should be unchanged - made on the development of thinking. Heraclitus already realized that "knowledge does not teach the mind much", so you need to learn to activate thinking as a technology for the production of knowledge. Aristotle was convinced that "to teach, you need to think, not thoughts." Confucius taught: "Learning without reflection is useless...". "The study of wisdom, according to Y. Kamensky, elevates and makes us strong and generous." The founder of didactics explained: "The mind illuminates the way for the will, and the will commands the actions." The wise expression of D. Descartes is well known: "I think, therefore I am". Little has changed in the interpretation of the essence of education for two and a half thousand years, let us refer to our compatriot P.

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Sorokin: "... The essence, he wrote, of the social process is thought, the world of concepts, it is also the main initial factor of social evolution. All the main types of social life (world outlook, art, practice) are conditioned by knowledge (science) or, which also represent a modification of this factor. All social relations are ultimately conditioned by thought. This, in particular, is confirmed by De Roberti's "law of delay". Modernization of domestic education is a product of policy, focused on a one-sided reflection of the experience of Western Europe and North America. It is not our intention to explore the reasons why an interesting experience has been ideologically filtered. Systematic assessments of the Europeans and Americans themselves, very instructive monitoring of educational policy since 1953, as well as the thoughts of prominent specialists and simply experienced teachers, for example, Bel Kaufman, were selectively excluded from it. B. Kaufman's book "Up the stairs leading down" was very popular in the Soviet Union, but after 1989 it was not republished ... Perhaps because of the frankness of the judgments of a person who sincerely experienced an education crisis in the United States. Inviting the reader to name three reasons for what is happening, she added to them the fourth, which "is not customary to talk about - the moral climate in which we live. Is learning highly valued in America? The bookworm and the crammer make everyone laugh, and what could be more absurd than an absent-minded eccentric professor? At the forefront we put material well-being, money; the very word "success" refers not to the achievements of the mind and spirit, but to financial prosperity. But the main thing is to give the Americans concrete results and as soon as possible. And the acquisition of knowledge is not a product, but a process that continues while we are alive ... We, the author sums up his reflections, neglect the need to learn and cognize ... ". Since the 1960s, the United States has been looking for ways to solve the problems in education that arose in connection with the obvious passion of politicians for the social and practical function of the school. The absolutization of utilitarianism inevitably led to the one-dimensionality of personal development - "technological slavery". Americans, sensing a dead end movement, made a kind of maneuver. They divided the movement towards higher education into two parallel paths, relatively speaking, with a normal gauge and a narrow gauge. Colleges differ from universities mainly in that they do not include educational and scientific experience in the program. University students are obliged to participate in the scientific work of the organization.

The idea is conceptually interesting, it can also be adapted to domestic education at universities, clearly prescribing the content of bachelor's training and determining the advantages of the professional status of a specialist. In the history of Russia, a similar

practice took place. In St. Petersburg, from the middle of the 19th century, the Institute of the Corps of Railway Engineers with a full cycle of professional engineering training and the Technological Institute with a shortened program of scientific knowledge worked in parallel. Graduates of these universities, of course, had different status both in the profession and in society.

At the same time, the desire to turn universities into research organizations by reducing the general professional training of specialists looks doubtfully expedient. Firstly, in this way, the status of graduate school is being replaced, and secondly, a real danger is created to nullify the education of professional culture and a responsible attitude to national identity.

Having mastered the required knowledge, research skills and a foreign language at the expense of the domestic taxpayer, many graduates of such universities, even before completing their studies, are actively looking for a profitable investment of their capital outside the fatherland. Liberal ideologists are satisfied with this outcome of the process, and regulators are obliged to think: how correct is it to work for "colleagues-competitors" who are looking for any reason to limit our capabilities with yet another sanctions. In the leading firms of the West, in senior positions, according to S.P. Kapitsa, today more than 30 percent of specialists are from the Russian Federation, while Russian production, according to G. Gref's speech at the St. Petersburg International Economic Forum 2021, is experiencing a growing shortage of specialists. Reflecting objective trends in public life, the growing potential of a person's personal participation in them with his unique rationality, German classical idealism, in the form characteristic of idealism, elevated rationality up to its absolutization beyond the limits of human rationality. But, in addition to the system developed by G. Hegel, there was also the universal and most perfect of those who had a dialectical way of thinking, which he identified, thanks to which his worldview system also worked for some time. The dialectical approach made it possible to interpret the author's intentions in a different way, to understand them quite rationally, and to use them in practical politics. First of all, we have in mind the idea of distinguishing between the "real" and the "actual" in social life, of being aware of the natural-historical perspective of their mutual transition. Policy is built on a combination of experience.

In A.P. Chekhov's story "Intruder", a fisherman, caught unscrewing the nut that fastens the rail to the sleepers, explains to the investigator that he could not do without it. The hook should be located close to the bottom, fish trifle floats on top, which no one needs. The big fish you want to catch is at depth. The integration taking place in the world is a regularity and reasonableness of its development. One must learn to integrate into it, filtering the existing reality in such a

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way as to have something from it that has the potential to turn into reality, to move from the real to the rational.

The historical spiral continues to spin around the axis of human intelligence. Only in our time it becomes more relevant to think not about the essence of rationality, but about the prospect of its evolution into prudence. The future belongs to the "prudent man". Prudence is able to resolve the contradictions of reality: to find a balance of national and universal interests; guarantees the harmony of social needs and the preservation of the natural order; needs and rational organization of production; personal and social. It elevates culture as the primary essential force; defines scientific knowledge as a systemic socially oriented activity; values education as a basic source of humanism and democracy. The formula for prudence is simple: everyone should do what they do best, but always remember that the best awaits him only if the requirements of a single historical movement for all are fulfilled. Reason is given to man to do good. "Reality is rational," G. Hegel is right, but rationality itself is valid only as a creative good.

The criteria for human prudence are contained in the evolution of homo sapiens. It is advisable to consider the birth of the ability of consciousness to self-realization of its activity as the highest achievement of the evolution of rationality. Prudence will come when self-consciousness itself acquires a steadily rational form of activity aimed at a consistently rational systemic solution to the above-mentioned contradictions of social progress. In the religious aspect, the prudence of a person will reveal in full the spectrum of his likeness to the creator. The "prudent man" will become a truly creative social subject. The control function of conscience will be completed by the responsibility of the individual not only for himself, but also for everything that happens - "I am responsible for everything"! Awareness of personal responsibility will ensure the balance of the individual with the general. Personality as usual Experienced acquisitions of the integration of European higher education would be very useful for implementation in our country. It turned out the opposite. Our modernization was designed like a European one with a deadly amendment to funding on a residual basis. The Europeans elevated the improvement of education to the most important direction of social policy, in Russia they sent them to go with the flow of the financial flow, supplying them not with an engine, and not even with a sail, but with an oar and a pole, so that they feel responsible for themselves. In Europe, the management of mass education is the prerogative of professionals, with us - officials, for whom its reality exists in their own distant past, therefore they manage education according to formal reports developed according to the patterns of bureaucracy.

The version that the history of man does not end with the formation of homo sapiens, on the contrary, the development of "reasonable man" is a kind of necessary introduction to his evolution into "reasonable man", the emergence of a new round in the spiral of human progress, which will be characterized by neither adaptation nor egoistic transformation of the environment, and the universality of cooperation based on the systematically built activity of a "prudent person" requires clarification of a number of concepts. These concepts have been nominally known for a long time, but during the development time there was no agreed definition of their content. Our goal is not to give a new interpretation, we believe that it is sufficient, in the situation that has formed in cognition, to set our priorities.

Separately, we note that since we are talking about the problem of species evolution, it is advisable to analyze it at two levels of knowledge: at the level of ideas of mass thinking - "common sense" and within the limits of professional conceptual expression in scientific and philosophical knowledge. R. Descartes called "common sense" "reason from nature", believing that it contains "the ability to correctly judge and distinguish true from false" in conditions of methodically limited thinking. "Common sense," according to the French scientist and philosopher, people are best endowed with than anything else, because everyone believes in himself so much common sense that even people who are the most demanding in other areas are usually content with the common sense that they possess. Nevertheless, knowledge within the boundaries of "common sense" did not suit Descartes himself, and, as is known, he as a predecessor of I. Kant and G. Hegel, R. Descartes tried to define the most general concepts in the theory of knowledge, starting with "thinking". "By the word thinking (cognitatio), he wrote, I mean everything that happens in us in such a way that we perceive it directly by ourselves; and therefore not only to understand, to will, to imagine, but also to feel means here the same thing as to think. R. Descartes divided the mental activity into two bases: perception by the mind and determination by the will. Reason and reason identified. He explained the delusions by the fact that the actions of the will are more extensive and more significant than the mind: "... Although God did not give us a comprehending mind, we should not consider him the culprit of our delusions, the philosopher explained, the created mind is finite, and the finite mind, by its very essence, cannot comprehend everything".

Thinking appeared at the very beginning of human evolution. Man inherited thinking, thanks to purely natural history, completing and transforming it in his own special development. Consciousness has become a product of the evolution of already proper human thinking, split into rational and rational

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activity. Reason implements thinking within its consistency. The mind operates within the framework of conflicting thoughts. The mind has a dialectical nature. Apparently, the quality of human thinking was formed in the direction of reflecting the dialectics of nature in it. In the light of the idea that we are developing, only dialectical thinking, focused on resolving conflicting knowledge, can be a platform for ascent to the “prudent person”.

The logic of human evolution is built in such a way that a person at any stage of his history is forced to change the natural conditions of life, to come into conflict with nature. Another thing is that the contradictions at each stage are specific. Once it was about survival, a person had to prove his right to exist by any means. The survival formula is simple: "either or". Nature severely tested a person for strength - the stability of existence, and a person, being in extreme conditions, took from nature, regardless of the consequences that he was not always aware of. Rational thinking provided for most of human history, but as the number of species grew and its practical power grew, contradictions aggravated, ecological constants were violated. Social progress was loaded with negative products of its own development, the ascent was accompanied by breakdowns. The inconsistency in the changes in reality weakened the position of rationality in the historical movement. History has tested the very rationality of man. Reconstruction of thinking was required, it became necessary to think, reflecting not the final states of phenomena, but their movement. In movement, thinking discovered self-movement as a change by the force of the contradictory relations that form everything that exists. The time has come to put rationality on the main path of thinking, capable of managing inconsistency in knowledge. In movement, thinking discovered self-movement as a change by the force of the contradictory relations that form everything that exists. The time has come to put rationality on the main path of thinking, capable of managing inconsistency in knowledge. In movement, thinking discovered self-movement as a change by the force of the contradictory relations that form everything that exists. The time has come to put rationality on the main path of thinking, capable of managing inconsistency in knowledge.

The rationality of thinking in the era of R. Descartes, B. Spinoza, F. Bacon and G. Leibniz undoubtedly already existed, but it did not yet have the status of relevance, it did not acquire the meaning of reality. Reason operated in the absence of sufficient objective conditioning. Nevertheless, R. Descartes brilliantly guessed the vector of the direction of human progress towards the dominant development of thinking. Through education, his phrase entered the history of philosophy and mass consciousness: “I think, therefore I exist.” It seems to us that the public and partly professional reactions to the above

statement of the philosopher are not commensurate with the author's intention. The phrase was “cut out” from the context, and R. Descartes twice on two pages revealed his interpretation of these words. Paragraph 7 of the Principles of Philosophy, he unambiguously titled: that it is impossible to doubt without existing, and that this is the first certain knowledge that can be acquired. The author’s reasoning on the formulated thesis is completed by the following phrase: “It is so absurd to assume that what thinks does not exist while it thinks that, despite the most extreme assumptions, we cannot but believe that there is the first and surest of all conclusions. presented to those who methodically arrange their thoughts. In paragraph 10, R. Descartes corrected the meaning of what was said in paragraph seven: “Having said that the proposition: I think, therefore I exist, is the first and most reliable, I did not deny the need to know before that what thinking, certainty, existence, without denying that in order to think, one must exist. The author’s reasoning on the formulated thesis is completed by the following phrase: “It is so absurd to assume that what thinks does not exist while it thinks that, despite the most extreme assumptions, we cannot but believe that there is the first and surest of all conclusions. presented to those who methodically arrange their thoughts. In paragraph 10, R. Descartes corrected the meaning of what was said in paragraph seven: “Having said that the proposition: I think, therefore I exist, is the first and most reliable, I did not deny the need to know before that what thinking, certainty, existence, without denying that in order to think, one must exist. The author’s reasoning on the formulated thesis is completed by the following phrase: “It is so absurd to assume that what thinks does not exist while it thinks that, despite the most extreme assumptions, we cannot but believe that there is the first and surest of all conclusions. presented to those who methodically arrange their thoughts. In paragraph 10, R. Descartes corrected the meaning of what was said in paragraph seven: “Having said that the proposition: I think, therefore I exist, is the first and most reliable, I did not deny the need to know before that what thinking, certainty, existence, without denying that in order to think, one must exist. despite the most extreme assumptions, we cannot but believe that there is the first and surest of all conclusions, which appears to the one who arranges his thoughts methodically. In paragraph 10, R. Descartes corrected the meaning of what was said in paragraph seven: “Having said that the proposition: I think, therefore I exist, is the first and most reliable, I did not deny the need to know before that what thinking, certainty, existence, without denying that in order to think, one must exist. despite the most extreme assumptions, we cannot but believe that there is the first and surest of all conclusions, which appears to the one who arranges his thoughts methodically. In paragraph 10, R. Descartes corrected the meaning of what was said in

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paragraph seven: "Having said that the proposition: I think, therefore I exist, is the first and most reliable, I did not deny the need to know before that what thinking, certainty, existence, without denying that in order to think, one must exist.

Contrary to the widespread interpretation of the content of the thesis, R. Descartes did not give his idea a worldview format, remaining within the declared dualism. The philosopher did not seek in it a solution to the problem of the nature of the substance of being. He just tried to understand the nature of man as a "thinking thing", to find out the relationship between "soul" and "body". The concept of "existence" had a local content for him, both "soul" and "body" were included in its scope, it held them together in the same way. For R. Descartes, it was important to find the basis for the "most reliable" recognition of existence, and not all, but exclusively human reality. And he found this argument in thinking: "The concept of our soul or thought precedes that which we have of the body, and this concept is more reliable, since we still doubt whether there are bodies in the world.

We, discussing in detail the experience of the reflections of the French scientist and philosopher, want to emphasize the very fact of recognizing the priority value of thinking as evidence that the scientific and philosophical awareness of the significance of human rationality has come into contact with the religious exaltation of human rationality, created "after the model and likeness" of the divine mind. . Homo sapiens evolved, actively developing their mental abilities. The use of the concept of "soul" was characteristic of the beginning of the New Age, it synthesized all levels of thinking and more clearly included mental activity, primarily will. R. Descartes, as if prophetically predicted the systemic significance for the future of man of virtue, however, in his understanding, virtue did not rise to the heights of conceptual thinking.

R. Descartes approached the idea of prudence of a "reasonable person" from the side of spiritual responsibility for feelings, thoughts and deeds, but in his mind not only prudence, even reason itself remained an abstract concept, because "thinking", an exhaustive manifestation of the soul, was not structured, except for the traditional differentiation into sensory actions and mental forms. The consciousness of R. Descartes largely inherited medieval terms, modernizing the content of those ideas that were "packed" in them. The process of rethinking traditional views on human intelligence was still beginning. History did not easily reveal the growing role of the creative potential of thinking in the life of man and society. The problem of the structural organization of thinking acquired urgency. New concepts emerged the new time has necessitated a new approach to thinking. The former interpretation of the freedom of human wisdom, localized within the framework of religious prescriptions, to be an

instrument for moving along the path indicated by the true creator of all that exists, seriously hampered the development of mental activity, but could only slow down the progress of rationality. The low rate of social movement during the Middle Ages testified to its conditionality on the part of ideological regulation, but at the same time, the energy of rationality continued to accumulate. The real power of the mind could be transformed within itself, added, multiplied, striving for a critical mass of action. And, most importantly, the power of human intelligence was able to begin to actively operate with changes in the theory of knowledge.

Philosophy had to make the transition from that type of understanding of thinking, to which G. Hegel's expression "barbarism of thinking" can be applied with a certain stretch. But, in order to fulfill its historical mission, philosophy itself had to change, become "critical" and "speculative." "Philosophy, G. Hegel pointed out, should make thinking itself an object of thought." And he further clarifies what has been said in relation to philosophy as a science: "The only goal and business of science is to achieve the concept of its concept and, thus, come to its starting point and to its satisfaction." G. Hegel had in mind a specific technology of philosophical knowledge, when the desired concept is determined by developing descriptive concepts. Assessing the merit of I. Kant, who critically studied the tools of thinking, their real possibilities, G. Hegel approached thinking as creativity. The "pure" and "practical" reason, "common sense" was replaced by the dialectical triad of rationality of G. Hegel. In thinking, he singled out three levels of activity: "sensuality", "reason" and "mind". Thinking was identified with activity, which showed its cognitive and social power. "Insofar as thinking, as an active one," the philosopher explained, "is taken in relation to objects - as a reflection on something - insofar as the universal, as a product of its activity, has the meaning of the essence of the matter, essential, internal, true." Hegel uses the concept of "spirit", but he contrasts "spirit" with "thinking". "Spirit" is a spontaneously organized natural state of consciousness of a person who is directly included in the world of things, including human society. The spirit "as a sentient and contemplative has the sensible as its object, as an imaginative one - images, as a will - goals." "The highest inner essence of the spirit, according to G. Hegel, is thinking." The thinking of the "spirit" manifests itself in the forms of rational and rational activity. "Consciousness, the thinker clarified, forms ideas about objects for itself before concepts about them, and only by passing through ideas and turning its activity on them does the thinking spirit rise to thinking knowledge and comprehension through concepts." Reason precedes reason and acts together with it. The lot of rational activity has been and will remain reflection on objects, their relations. Reason is able to analyze the opposite results arising in

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cognition, it is not given to resolve the contradictions that characterize the unity of opposites, therefore the understanding shares the existence of opposites. Reasoning activity is dialectical limited, it can bring together and oppose opposites, but cannot synthesize them: there are thesis and antithesis, but there is no synthesis, which indicates the incompleteness of the technological cycle in cognition. Knowledge is inhibited from within. These were the antinomies of I. Kant, which did not allow him to overcome the barrier of cognition. Modern quantum mechanics relies on the principle of complementarity, unable to resolve the relationship of opposites. which indicates the incompleteness of the technological cycle in cognition. Knowledge is inhibited from within. These were the antinomies of I. Kant, which did not allow him to overcome the barrier of cognition. Modern quantum mechanics relies on the principle of complementarity, unable to resolve the relationship of opposites. which indicates the incompleteness of the technological cycle in cognition. Knowledge is inhibited from within. These were the antinomies of I. Kant, which did not allow him to overcome the barrier of cognition. Modern quantum mechanics relies on the principle of complementarity, unable to resolve the relationship of opposites.

The pinnacle of dialectical thinking in the philosophy of G. Hegel is "reasonable dialectics". Reason rises above reason, but it also presupposes the preparatory work of the latter. G. Hegel's thinking works in the interaction of its modes of manifestation. The dialectic of reason completes the work begun by reason. The entire dialectical way of thinking - the "road map" - consists of the establishments: identities - differences - differences - opposites - contradictions (grounds). "Contradiction is what actually drives the world and it is ridiculous to say that contradiction cannot be thought," G. Hegel summed up his reflections. G. Hegel developed the basic scheme of dialectical thinking, but the main thing is that the dialectical approach to cognition helped him raise the understanding of reason as a real creative force.

After the philosophical recognition of the creative power of the mind, the question of the vector of this power became relevant. As a matter of fact - the vector of development of the "reasonable person". To apply something, you need to have it. Having completed the ascent from efficiency and upright walking, to rationality, man found himself at the beginning of his new history. Philosophy and science, having analyzed the structure of human thinking, having determined its potential, were able to build the architecture of the manifestation of rationality, to discover the natural nature of thinking in the forms of rational and rational activity. Together with reason and will came the possibility of human freedom with all its individual and social dangers.

The possession of rationality and free will predetermined the need to learn how to use the new

forces born in evolution. It was necessary to become a tamer of the mind, to master the art of giving it the direction that the will, objectified in practice, must and can realize as an instrument for resolving contradictions that are no longer mental, but real. The evolution of rationality of a particular state of a person turns into the evolution of rationality for the benefit of everyone and everything, - into the development of human reasonableness, rationality acquires the scale of universality.

Prudence is the pinnacle of the evolution of human intelligence in its modern interpretation. Without this historically built configuration, rationality will remain within the boundaries of its abstract certainty, for the logical necessity to be rational is similar to Kant's "pure reason". The rest, different from the prospect of rationality becoming prudence, scenarios for the promotion of rationality: the isolation of rationality on itself and not having certainty - deprive evolution of historicism.

The need for knowledge of the future is natural for a person, it continues the ability that originated in biological movement - the possibility of anticipatory reflection, described by P. Anokhin. When time pushes its boundaries in front of a living being, then this perspective must be used in the interests of development. The famous American writer and philosopher R. Emerson wrote: "In the face of the universe, let us rejoice that we have reached not a dead end, but a boundless ocean. Our life appears not so much as the present, but as a prospect, open to us not so much as petty deeds for which it is spent, but as a promise of that abundantly flowing vitality. And he added: "For the most part, it is perceived only as a promise, this vitality will still manifest itself; we know that we must not sell ourselves too cheaply, for we belong to something very great. So forward and again - forward! In daylight hours, we know for sure that a completely new picture of life and a new understanding of our duties to it are already possible for us.

R. Emerson is right in presenting the future in which descendants will find themselves as a "completely new picture" of life. Prudence is not a simple natural continuation of human rationality, it, despite all its similarity with modern rationality, opposes it. Rationality allows quantitative difference, and this, in turn, comparability of different states and competitive relations. Prudence is distinguished by its qualitative certainty. It cannot be less or more. It is not surprising, therefore, that the history of Homo sapiens is filled with conflicts along the entire perimeter of social relations. And in relations with nature, rationality often served as an instrument to justify destructive practices. The abstractness of rationality - it determined the way the development of human actions, leaving the object to which these actions were directed. The priority position in the rationality of the subject deformed the systemic construction of a

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person with the world of relations. Ultimately, the costs were reflected in the rationality. The abstract nature of the position of rationality was also manifested in its definition. G. Hegel, having singled out inconsistency as a quality of thinking at the level of reason, solved the problem within the boundaries of the science of logic, in the most general form, which can be qualified as an introduction to the theory of reason. The Hegelian triadic scheme of tracing the progression of thinking is able to provide effective assistance to those who have met in cognition with opposites in the unity of their existence. However, everything listed here formalizes the technology of intelligent activity, dissects the stages of the movement of thoughts, serves as a "road map" of thinking, which you need to be able to read, calculate and, - the most difficult.

If we proceed from the fact that the movement of objects and the ways of their relations are reflected in the structure and history of thinking, then the contradictions of reason reproduce the relations of opposites in objects. But thinking is non-material, and therefore the contradictions of thinking are specific, not mirror images. The contradictions of objects were formed in the process of their movement, and the contradictions of the mind went through a comparable path. The formation of rationality was due to the contradictions of being, but thinking could not simply repeat this real experience. Thinking, in order to rise to rationality, has passed a difficult path. At each stage of the path, it formed the possibility of inconsistency in cognition, starting with the prelogical and limited logic of states identical to itself (rest), through antinomies to dialectics.

Prior to the studies of L. Levy - Brühl, presented in his works "Cognitive Functions in Lower Societies" (1910), "Primitive Thinking" (1930) and other works, anthropology was dominated by the British concept of the identity of the mental mechanism of "primitive" people and modern ones. English anthropologists did not take into account the historicity of the evolution of the thinking of homo sapiens. L. Levy - Brühl put forward a very important thesis about the existence of a type of logical thinking known to us before the history, having previously called thinking "pralogical" and emphasizing that it is not anti-logical, it is also not illogical. Calling it pralogical, I only want to say that it does not seek above all, like our thinking, to avoid contradiction. It is subject to the law of participation. Oriented in this way it has no inclination to fall into contradictions without any reason (that would make it completely absurd for us), but it does not even think about avoiding contradictions. Most often it treats them with indifference.

The mind, having determined a new stage of human evolution, turned out to be not so perfect as to complete the evolution. The mind of homo sapiens did not raise the resolution of contradictions to the level of realization of the universality of development

interests. The concreteness of the particular in the conflict of opposites blocked the development of rationality itself, it submitted to a particular orientation. The evolution of the rationality of homo sapiens has reached a dead end of private or "egoistic rationality".

In an abstract form, humanity has realized the historical limitation of the progress of the rationality of homo sapiens, even calculated the time of the "red line" of the movement of its private rationality in interaction with the natural condition of life - 2030. It remains to make one transition - to turn the perspective into the actuality of existing being, to give the rationality of knowledge the power of universal will, which turns out to be in an unresolvable contradiction with the rationality of homo sapiens. Humanity at the stage of homo sapiens has come to a historical crossroads.

There are two development options. First: on the historical basis created over many millennia by homo sapiens, to make the transition from the rationality of man to the reasonableness of mankind and thus continue history with a new content of human activity. The second is to go along the paved path, improving rationality in its traditional expression, when rationality is based on the abstractness of actions, and rationality itself is tied to private interests. In other words, the intelligence of a species is represented by the sum of the intelligences of the individuals that make up the species, which already in the primary state makes obvious the reality of the contradiction that hinders progress.

In rationality, historically and epistemologically, there is what is necessary for the development of the species - the technology of cognition of the contradictions of reality, but in the existing state of rationality there is no general specific direction vector of rationality. By elevating competition into an absolute instrument of progress, the ideology expressing a conditional commonality of reasonable interests further exacerbated the fluctuation in particular forms of rationality. In addition, today one should be afraid not even so much of the uncertainty of the total manifestation of private rationality, but of the aspirations of certain authoritative forces whose actions are aimed at maintaining real contradictions, by and large, of artificial origin.

Dynamic disequilibrium is good for the stability of the mechanical movement of bodies, but not for human relations. To what extent is the favorable prospect of the social development of rationality determined? In order to have a basis for answering this question satisfactorily, it is necessary to investigate the social forces that are capable of directing individual rational actions and controlling their dynamics. The social factor in the development of individual awareness of reality was studied in detail by French sociologists: Durkheim, Galbwachs, Blondel, and others. They, as a rule, considered

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society within the limits of social consciousness. They were interested in the spiritual social superstructure: opinions, knowledge, behavior and other manifestations of spiritual activity. The spiritual part of social life was defined by them as "collective representations". The conditionality of the formation of "collective ideas" was mainly outside the brackets of such studies, which can be considered an appropriate limitation in the interests of studying the specific problem of the formation and development of the individual's consciousness. It is reality sui generis that acts directly on the consciousness of the individual.

"Society is a reality sui generis," E. Durkheim argued, it has its own properties that cannot be found at all or in the same form in the rest of the world. Therefore, the representations that express it have a completely different content, purely individual representations ... ". E. Durkheim formulated the conclusion from the analysis of the study of the problem as follows: "Collective representations are the product of an extensive, almost immense cooperation that develops not only in space, but also in time ... Therefore, they seemed to concentrate a very peculiar mental life, infinitely richer and more complex than the mental life of an individual. Hence it is clear why the mind has the ability to go beyond empirical knowledge.

In this context, the "empirical" is identical to the "individual", "private" E. Durkheim extended the understanding of "collective representations" to the area of conceptual thinking: "If concepts were only general ideas," the sociologist argued, they would not particularly enrich knowledge, because the general, as we have already pointed out, does not contain anything that would not be in the particular. If these are primarily collective ideas, then they add to what we have learned from our personal experience, all the wisdom and knowledge that the social group has accumulated and preserved over the centuries. To understand a thing means at the same time to capture or define its essential elements and attribute them to a known set of things, for each civilization has an organized system of concepts that characterizes it.

"Collective consciousness, according to Durkheim, is the highest form of mental life, it is the consciousness of consciousnesses. Being outside and above local and individual contingencies, it sees things only from their permanent and essential side, which it fixes in the transmitted concepts. Looking down, it sees further to the side. At each given moment, it embraces the entire existing and known reality, and therefore it alone can give the mind a framework suitable for accommodating the entire totality of beings and allowing us to make this totality the object of our thinking.

Some of E. Durkheim's statements are disputable, but the logic of his research is important to us. It allows us to trace the movement of the author's

thought in a very significant direction, presented in the Hegelian synthesis of the individual and the general. E. Durkheim proves that the concept, in its purely abstract form, serves as a transitional state of knowledge into concrete-abstract, or concrete-theoretical knowledge, from which there is a way to turn it into a conviction and thereby determine the actions of the will. The understanding of rationality in the philosophy of the Enlightenment and, to some extent, in its continuation in the following centuries was overly abstract. The concept of "collective representation" creates the prospect of enriching the content of rationality with a specific meaning and allows us to expect with optimism in the future the rationality of a "prudent person" developed into universality.

One of these "working" concepts is "wisdom" and its detailed study, for example, in the concept of "philosophy". IN AND. Dahl reported: "Wise, based on goodness and truth, eminently reasonable and well-intentioned." Philosophy V. I. Dahl calls "love of wisdom." "The mind of V.I. Dahl defines it more clearly and understandably: "a spiritual power that can remember (comprehend, cognize), judge," think, apply, compare "and conclude" decide, draw a conclusion ", the ability to correctly, consistently link thoughts, from causes, consequences of it and to the goal, the end, especially when applied to the case. Reason, meaning, intellectus, verstand, mind, ratio, vernunft. The spirit of V. I. Dal traditionally divided into mind and will. "Intelligence" put in a common row with "understanding", "reason". G. Hegel's idea to divide reason and reason by the type of logical thinking, having formally opposed the logical order of reasoning and the dialectical one, V. I. Dal did not reflect, although he was probably familiar with his main works. He probably tried to explain the terms as adequately as possible in the interests of the living Great Russian language. In the Encyclopedic Dictionary of F. A. Brockhaus and I. A. Efron, popular before the revolution of 1917, the word "wisdom" is absent, "mind" is presented as a set of mental actions that distinguish a person, "reason" is included in the volume of rationality. The modern interpretation of wisdom and "reason" in Russian dictionaries is unintelligible. "Wisdom" is deep knowledge, understanding of which "Prudence" is deliberation in actions and deeds, prudence, prudence. "Reason, mind, reason, ability to think." although he was probably familiar with his main works. He probably tried to explain the terms as adequately as possible in the interests of the living Great Russian language. In the Encyclopedic Dictionary of F. A. Brockhaus and I. A. Efron, popular before the revolution of 1917, the word "wisdom" is absent, "mind" is presented as a set of mental actions that distinguish a person, "reason" is included in the volume of rationality. The modern interpretation of wisdom and "reason" in Russian dictionaries is unintelligible. "Wisdom" is deep

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Summarizing the ideas about the prospects of a "reasonable person" expressed in different countries, on different continents, at different times, in different directions, specialists cannot fail to notice one thing in common in their thoughts. Each of them, in their own way, is concerned about the inconsistency of the evolution of intelligence. A more concrete assessment would be possible if there were a more definite professional and public understanding of rationality itself and the auxiliary concepts that describe its quality. Unfortunately, as the well-known Russian proverb says: "the shoemaker himself without boots, and the pieman without pies."

In the context of our topic, such a situation in cognition serves as confirmation of the basic thesis that "reasonableness", being the direction of human evolution, taking shape in the history of the predecessors of homo sapiens, could not become the pinnacle of human history. The reason for this is the excessive abstractness of rationality. We have already noted that the "reasonableness" of homo sapiens is very close in its epistemological status to the "pure mind" of I. Kant. It is no coincidence that in a number of scientifically popular publications, when interpreting "reasonableness", a comparison is used

with the Kantian interpretation of reason. A finite or, more precisely, a localized understanding of the quality of an evolutionary stage can be closed on itself - its own development, but in this way it limits itself and its history. Inevitably, the "dissolution" of objectivity in its abstractions, which happened with the rationality of "omo sapiens".

The advancement of evolution presupposes the acquisition of concreteness by development, created by the inclusion of subject complementarity in it. It is necessary to inform the evolution vector of something that will concentrate the movement. Much can be concretized rationality, as evidenced by the variety of ideas expressed by people concerned about the fate of man.

Judging by the growing misunderstanding; inconsistencies in views on social progress, social and individual values, driving forces of development, ways of resolving conflicts; the sustainability of nihilism; absolutization of the consumer attitude to life, competition in everything and forever, it is not difficult to come to a pessimistic conclusion in assessing the prospects for the rationality of modern man.

Historical examples, as well as individual natural facts, cannot be arguments in proof. This is the general theoretical rule. A theory can only be "beaten" by another theory that is more effective in explaining the change in facts, that is, from facts that contradict the existing theory, one should first build an alternative theory in order to then oppose its advantages to the current theory. This is the general order, which always has a special case. Having grouped the social practice of the end of the second millennium of a new era and adding to it the practical life of the beginning of the new millennium, we will without exaggeration get a sad result of the evolution of rationality.

Having dealt with colonialism, racism, fascism, "reasonable man" created the means of general destruction and tested their effect on his own kind at a time when circumstances did not require this at all. Such a scale of intimidation was not known to our ancestors by rationality and their ancestors were weakly intelligent. The absolutization of competition leads to the suppression of rationality. Competition, just like selfishness, manifests itself in two forms: in the form of a struggle for survival and in the form of competition - civilized interaction in the struggle for leadership. For some reason, supporters of the first form of competition count only profits, pretending that there are no costs from such competition, or write them off as inevitable costs of production development. In the press, we have not found even approximate data on the extravagance of irrational competition.

The covid pandemic has exposed the unreasonableness of politics: a low level of political culture, selfishness in politics. But behind everything that science calls political activity, there is the

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rationality of homo sapiens. The modern reasonableness of homo sapiens is good alone with itself, in an individual format of existence while providing everything necessary, without force majeure. At the same time, there is no reason to underestimate the formation of human intelligence as a significant achievement of human evolution and the basis for its continuation.

Our version connects the new history of rationality with the orientation of the mind towards goods in their broadest sense. "Benefits" we define as the fundamental conditions of human existence and development. Some of the benefits are of natural origin, but most of the benefits are created and maintained by human activity itself.

Having a mind is meaningfully abstract, so it is not enough to be intelligent in life. Only having learned to use the power of reason, a person, in the interests of all mankind, will be worthy of it and will have the right to be called truly reasonable. To use the mind in the final destination means to increase the benefits. It is to the blessings that man owes his birth and his whole life. This is something that he should always accept with gratitude. To be grateful is the other side of a person's rationality, which makes rationality concrete. Those who understand the rationality of a person as a tool to create good things and treat them with dignity are not mistaken.

The very enumeration of the basic range of human benefits speaks in favor of such a statement: Nature, Society, Motherland, Family, People who lived and live the same. The great humanist Exe Pyuri was asked: what would you do if you were on an unfamiliar planet? Without hesitation, he replied: "I shouted - "People, where are you!" When everyone realizes that what is valuable is not what has a price tag indicating the amount, but what is vital, the mind will be realized as a characteristic of a person, it will fulfill its historical mission - to make a person not formally, but really reasonable.

The basic range of benefits is completed with tools for its creation and enrichment: responsibility for maintaining the natural environment, its ability to reproduce itself and us normally; participation in the development of social relations; service to the Fatherland, fidelity to duty; love for the family, relatives and friendliness in relations with oneself - like. Social institutions are at the service of ensuring human well-being: environmental protection; health and healthy lifestyle; education; security; improving the production of material goods; life protection in social reproduction; science, art, physical culture, sports and tourism, transport support for the organization of physical and social space and everything that helps to live more effectively in time,

All of these benefits are known to almost everyone and for a long time. The problem is to make them out of existing alienated phenomena as actual values of the human mind, to give them the meaning

of reasonable necessity. The initial condition for solving the problem is not a secret - the quality and availability of well-creating tools are necessary. However, only at the level of the current state of rationality can one naively expect that the quality and availability of welfare tools will automatically transform them into the desired benefits in the minds of mass homo sapiens.

Formally, everyone knows that vaccination protects against infection, guarantees health, in extreme cases, not the most difficult course of the disease. Evidence of the good and access to the good are present, there is no awareness of the good. Instead of real reasonable actions, we have endless discussions about the inappropriateness of the technologies recommended by science and healthcare to protect the quality of life.

Perhaps only education has been endowed by the mind of a person with the status - the significance of a universal scale, and then not so much in the primary meaning - to realize rationality in the interests of self-development of the individual - but in order to ensure the social and professional advancement of people.

The rationality of a person is projected in two directions: into his own movement and outside his reality, and the second is dependent on the first. Logic shows that education is an activity, first of all, in the interests of personal self-development, it enriches the mental, sensual and practical expression of individuality, creates the prerequisites for interest in the individual in her environment, opens up the prospect of social ascent. Nevertheless, the mass awareness of the obvious logic of self-affirmation of the individual through education clearly does not meet the standards of reasonableness. Education by the mind of the majority of modern representatives of homo sapiens is perceived not as a need for spiritual development, but as a necessary measure for solving utilitarian problems. The global university dropout statistics show that, less than 2/3 of freshmen make it to graduation. Japan stands apart, where the cult of an educated person is high.

To blame one personal unreason in relation to education would be unfair. Three social subjects are involved in education: the personality of the pupil (student), teaching staff and state institutions. To the extent that teachers and administrators with regulators will act as subjects of the process, and not nominees - organizers and mediators of the implementation of the will of those who really govern and determine the goals of education, education can be viewed through the prism of its personal and social value.

The history of education as a socially significant institution is closely connected with the history of philosophical thought. So it was in the West and in the East. The concepts of "teacher", "thinker", "philosopher" initially coincided both in status and in personal terms. Pythagoras, Socrates, Plato, Aristotle, Buddha, Lao Tzu, Confucius, Mei Tzu went down in

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history twice: as philosophers of the first wave and as the founders of pedagogical art. What is usually called pedagogical science is in fact a technology of education, over which the philosophy of education rises, dominating strategically. In pedagogy, two components are distinguished: a philosophical attitude and the art of translating it into the mass consciousness with the help of the mastery of a systematically built learning process.

The policy in the field of education is designed to determine and control the balance of the ideological, ideological, educational and practical components, so that two forces interact in the educational process - the power of thinking and the power of knowledge. It is necessary to minimize the risks of absolutization of the abstractness of thoughts and the utility of knowledge.

The well-known Russian historian and teacher V. O. Klyuchevsky wrote about pedagogy: she is "not a nanny, but a morning alarm clock: the word was given to her not to rock someone else's child to sleep her thought, but in order to wake someone else's." A teacher, they used to say in Russia, is not the one who teaches, but the one from whom one learns. It is education that has the potential of universal activation of mental activity, opens up the power of rationality to the individual.

Of all the generally significant social institutions, education bears the greatest historical burden in promoting social and personal development. This is the main tool for the socialization of the human individual into a personal individuality; sustainability of the reproduction of social progress, and in the national context - the development of the identity of the nation and the prevention of nationalistic egoism.

Improving education is a strategic task, because its solution presupposes the achievement in education of the harmony of national and universal interests. Based on the traditions of the national mentality, it is responsible for the formation of universal humanistic and democratic values. In this connection, in the European documents regulating the development of university education, it is clearly stated that the educational business is outside the totality of economic enterprises. J. Galbraith also wrote about this, protesting against industrial pressure on educational activities. And a century earlier than J. Galbraith, R. Emerson spoke about the socio-economic problems of education in his lectures, explaining their origin by industrial activity: "The whole current organization of the economy makes me think deeply: because it has created a false relationship between people in the sense that I already feel free from the need to show good breeding and nobility in relations with a person whose services I pay for with money. Human relations in such an economy are not determined by rationality. They depend on what is alienated by the capacity for rational activity from rationality itself. Meanwhile, R. Emerson

summed up: "Society does not gain anything as soon as a person tries to update the order of things without updating himself." which is alienated by the capacity for rational activity from rationality itself. Meanwhile, R. Emerson summed up: "Society does not gain anything as soon as a person tries to update the order of things without updating himself." which is alienated by the capacity for rational activity from rationality itself. Meanwhile, R. Emerson summed up: "Society does not gain anything as soon as a person tries to update the order of things without updating himself."

Education is directly aimed at shaping the social status of a person. Indirectly, through the socialization of the individual, it contributes to social development. The social platform for the effectiveness of educational activities is subjective rationality, which is realized through all subjects of public life. In the orientation towards rationality, it is a guarantee of educated activity for the preservation of social progress, and it is also the reason for the uneven implementation of this function. Only a systematically holistically built education from enlightenment to the limits of professional training is able to ensure the social advancement of a graduate along the main historical path - the development of civilization, bring the consciousness of students into resonance with rationality, activate their thinking in the direction of creation, reveal the historical significance of unity in the worldview of national, transnational and universal values. Otherwise, social progress will lose the power of rationality with the vector of universal welfare. Reasonableness will lose its essence - to be an instrument of the historical creation of goods. The logic of the development of rationality is valid only in combination with the vector of comprehensive improvement of reality, the subject of which is an educated person, and the main goal of an educated person is the growth of human well-being.

Hence the high demands in the organization of public education on its first side - spiritual development in the educational activity of the student's personality. The history of higher engineering education in Russia began with the St. Petersburg Institute of the Corps of Railway Engineers, the first rectors of which were a Frenchman of Spanish origin A. Betancourt and a citizen of France and Russia, an authoritative scientist in the field of hydraulic engineering and mechanics P. Bazin. Addressing the graduates of 1832, P. Bazin instructed: "Most of all, we strive to inspire that in the field of service, so rightly called the field of honor, knowledge is only a tool; that the possession of it does not relieve from the performance of any obligation, that even the most extensive information becomes vain without the behavior of not reproachful and, what is necessary, first, to be an honest person, IN. Klyuchevsky clarified: "In education, two things are distinguished: one is the development and alignment

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of individual characteristics, personal properties and inclinations of a person, the other is the development of a general type, the inoculation of those social rules, concepts and interests that make up the culture of the time and that make diverse personalities capable of to a friendly hostel.

The Covid 2019 pandemic has actualized the problems of implementing successful education. Interest in the history of education was activated. Goethe correctly noted: "Everything clever was invented before us. Our task is to reflect on this again." The history of education, which has a serious influence on the subsequent course of its development, began in the "Axial Age" - VI - IV centuries BC. The school came to the aid of family or home education.

The school organization of the educational process, like the home organization, began as a search for the optimal form. The search took shape in two directions. In the first one, the student's freedom of participation in the organization of the educational process dominated. Students migrated from one teacher to another, which was considered normal behavior. "Class", as a phenomenon, existed only phantomly. The second was based on the stationary relationship of the teacher with the student. Along with the teacher, the figure of the "teacher" arose - the one who accompanied the student to school and back, and was also a tutor. The concept of "pedagogy" ("pedagogy") is closer in content to the first status of a teacher. In its content, most of all that corresponds to the technical and technological components of the educational process.

The teacher had to prepare the students for the movement along the Path of life, to help them climb this Path and to place pointing semantic landmarks. Confucius, for example, explained to his students: "Strive for the truth, hold on to virtue, rely on humanity, and amuse yourself with the liberal arts."

From the historical experience of the organization of education, several fundamental conclusions of universal significance can be drawn:

First, education is most effective in the form of school organization. It, unlike home, contributes to the development of the communication potential of the emerging personality. Criticizing the principle of Betsky to exclude the family factor from education in order to more effectively implement socially and politically significant goals, V.O. Klyuchevsky wrote: "The family will never give up their educational work, they will not want to turn into a simple handicraft workshop that produces pedagogical and recruiting raw materials for the school and the barracks." It is necessary to develop education by improving the school form of its organization. It is diverse, which confirms its high functional and evolutionary potential.

Second: the system-forming factor of the school form of education is the activity of the teacher. It is

necessary to create conditions for his creativity on the basis of mutual understanding and joint work with students. The function of the administration is not to command teachers, but to build optimal conditions for organizing their professional work. The state, which is responsible for the development and security of the country, determines the core of the mission of education and the way in which educational institutions are organized: schools, auxiliary institutions. Criticizing the "pedagogical sins, logical errors and psychological oversights" of Betsky's school education reform program, Klyuchevsky explained that he was ready to forgive him everything for the consistency of "demanding that educators treat children "with meekness, courtesy and love", they always kept a cheerful look with them and maintained in them "a cheerful spirit and a cheerful disposition." Where this is not there, there can now be no pedagogy, no school."

Third: education is a source of personal knowledge necessary for the freedom of its creative activity in society, but the main task of education is to learn to reproduce and replenish existing scientific and cultural knowledge, that is, to teach to think within the framework of humanistic and democratic traditions. In the middle of the 19th century, R. Emerson bitterly stated: "The spirit of irreconcilable criticism is revealed in aspirations to reform the education system. The current system is accused of not caring about naturalness or truth. They complain that it does not involve learning practically necessary things. We comprehend the same words; ten or fifteen years they keep us locked up, while college and university follow the school, and finally they are released, having provided information that no one needs - we memorize a lot of words, but we can't do anything. The Romans considered useless everything that cannot be learned without sitting down at a desk. The English have an old rule: "Spend all summer in the fields, all winter in your office." By the way, Charles Darwin did just that before he discovered the laws of evolution. A hundred years later, B. Kaufman confirmed the danger of extremes in relation to knowledge. Finding a balance between the abstract and the utilitarian in knowledge relaying is not easy. There is only one way out: it is necessary to teach to think, then the student will be able to independently make the necessary-sufficient selection of knowledge. The power of knowledge is made when they go back to the forms of conceptual thinking of the mind through contradictions in the movement of the student's consciousness. all winter in my office. By the way, Charles Darwin did just that before he discovered the laws of evolution. A hundred years later, B. Kaufman confirmed the danger of extremes in relation to knowledge. Finding a balance between the abstract and the utilitarian in knowledge relaying is not easy. There is only one way out: it is necessary to teach to think, then the student will be able to

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Fourth: the basis of the organization of education should be cultural support for the development of the individual in school education. The history of the cultural formation of personality in school is based on mastering the development of national and universal cultures and ends with the formation of a culture of professional activity.

Fifth: the presence of originality in the organization of school education in the West and East,

South and North is essential in form, but not essential in its essence. As social progress progressed, formal differences were partially preserved, and the significance of their influence on content was minimized. The integration of educational activities has become a leading trend. It is a trend, since the universalization of education should not be detrimental to national interests.

Sixth: competencies that characterize the quality of school preparation of students determine the particular manifestations of the personality, that is, they are an application, development, projections of the unitary quality of the personality. Personal competencies are conditionally real, they are simply the names of individual abilities of the individual, "noumena" in the interpretation of medieval "realists". The interpretation of competence in the spirit of the "nominalists", attempts to decompose the quality of the personality in them without a trace, are doomed to an inevitable fiasco. In the competence of the individual, in fact, they renamed what used to be the "professionally important qualities" of an employee.

Seventh: a symbol of the movement of Russia before the steam locomotive was a trio of horses, specially harnessed. N.V. called her "Bird Troika". Gogol. The education movement is also carried out by a trio: culture, science, practice. The dynamics of their combination is quite stable. Culture is a guarantee of the quality of the individual; science is a tool for the effectiveness of professional activity of an individual's activity; practice is the most important guiding goal of the educational process. Education teaches a person to think, science organizes thinking, practice straightens it. This conclusion is supported by the history of the growth of universities in Europe in the Middle Ages.

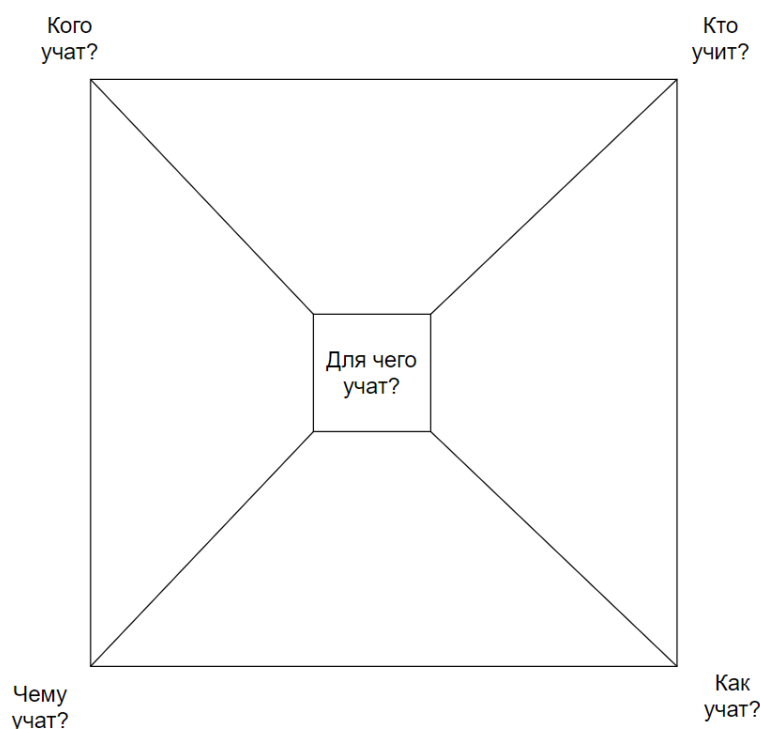
Table 1.

Centuries	XIII	XIV	XV	XVI
Number of universities	19	44	80	180

The technical organization of educational activity can be graphically represented as a square with active diagonals.

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Picture 1.

The technology of educational activity is developed by pedagogy, a theory that combines philosophical understanding with the art of organizing the implementation of basic installations into a practical mass result.

The mission of education is determined by professional scientific creativity and the political interests of the state. It is aimed at solving humanitarian, cultural and socio-economic problems of strengthening the democratic institutions of society. Moreover, professional analysis should dominate over bureaucratic innovations. Bureaucratic initiatives are dangerous for the improvement of education along its entire perimeter.

The quality of education is measured by its effectiveness, efficiency - by the quality of an individual's education, the quality of an individual's education - by the activity of its participation in improving professional activities and developing social relations. The criteria for the quality of an individual's education are philanthropy, patriotism, democracy, social and business (professional) activity, the need to continue education.

The economics of education is designed to financially ensure the quality of the organization of educational activities as a fundamental system-forming factor for the future of a single country and humanity as a whole.

Just as a railway train acquires an official status and begins to function only after it is put on the main track, so a person becomes a person when he ascends

the path of vocational education. Technical school, college, university put graduates on the Path of life. A (classic) railway track has two rails, and a graduate relies on two components of his movement - his personal and professional acquisitions. A rational interpretation of what has been described reveals the concept of "socialization" - the embedding of the individual in the process of social movement. The school is a universal institution of socialization, and in order for both sides - the individual and the society - to benefit from socialization, school education must be spiritual and practical. Any sustainable deviation from the spiritual and practical course of school education is fraught with serious costs both for the individual and for society. The virtuality of practice and spirituality formalizes them, they lose their real power in the matter of cultural and professional formation of the personality.

We have summarized a number of rules for the effective organization of educational activities. They are quite simple and, as R. Descartes argued, do not need, therefore, comments.

These rules are as follows:

1. "Knowledge does not teach the mind much" (Heraclitus)
2. "One should not teach by thoughts, but by thinking" (Aristotle)
3. Teaching "eye to eye", "eye to screen" is a surrogate option when education is simplified to learning. Spirituality is a monopoly of subjective relations.

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4. Everyone learns, both the one who teaches and the one who is taught. Teaching is a reliable way to learn.

5. The only way to learn is to learn by yourself with the help of everything else.

6. A person is born, a personality is born in education, it is also deformed by education.

7. School is the path to life. Education has a beginning, but no end other than the natural.

8. The school is the temple of education, but each temple is located on the street, it also participates in education.

9. The teacher is a way of life, the student is their reflection.

10. An optimally organized education is the highest of the arts.

11. Do not skimp on improving education.

12. Knowledge without understanding is like a "dry storm" - there is little benefit, but there can be many troubles.

Education is the most important institution for sustainable reproduction and development of homo sapiens. With the help of education, social experience is preserved and improved, generations are working on mistakes in overcoming natural and artificial contradictions. The epistemological basis of education is the developing thinking of the individual - the ability of the student's mind to perceive and process knowledge. The main value of education is a reasonable capacity, its potential, the main problem is to create optimal organizational conditions for the manifestation of reasonable principles in all subjects of educational activity.

The structure of education and the systematic nature of relations in education are determined by the organization of thinking and should reflect the needs of social progress. The system-forming factor in the functioning of education is the relationship between education and training, which clearly demonstrates their purpose. Education is called upon to ensure the preservation of the values acquired by previous development of the private, national, universal and professional scales. Knowledge is to orient the personality and the social subjects of its life activity - family, social group, national formation and communities in the labyrinths of contradictions of the natural-historical movement.

In the technical aspect, the improvement of education is built into two related tasks: first, to optimize the ratio of education and training, taking into account the dominant position of education in order to preserve species identity; secondly, to update knowledge in order to increase the sustainability of the development of the species. The second task is realized in social generations. The very concept of "social generation" owes its relevance to the organization of the reproduction of the species through education. Education is a condition for the optimal adaptation of a species to the environment of

existence, and training is a "navigation mechanism" for inclusion in the universal system of relations between society and nature. Rationality is a specific human platform of education, the organization of which should be aimed at developing one's mental and moral base.

In the development of all living things, the factor of complementarity operates, which gives the development the efficiency and stability of the state of movement. The essence of this factor connects the ability to act and the attitude towards it. The ability to think, including rationally, does not in itself create a definite direction of activity. A steam locomotive is an instrument of movement, and it was created that way, but in exceptional cases it can also be used as a steam generator, warm people, animals, maintain production conditions, which was done in the 1990s by responsible leaders, understanding rationality not as an advantage in thinking but as a way to do good. The rationality of homo sapiens is its ability to create a culture, without which social progress loses its human value.

According to the religious worldview, the rationality of a person is the embodiment of his likeness to the Creator. But even the Creator, possessing absolute possibilities, failed to give human rationality the universal power to create only good, to unite human rationality and the universality of good deeds. A "wise man" did not become a "wise man" at the same time. Therefore, there are two versions. The first is that intelligence acts on its own; charity also exists separately. They are able to intersect privately. Second, there are two types of intelligence, reflecting the levels of human social progress. The rationality of homo sapiens is a platform for the continuation of its evolution, during which individual manifestations of the unity of rationality and good aspirations are transformed into a new type of human reality - prudence. The "reasonable man" is being replaced by a "reasonable man" capable of solving those problems of development that were clearly beyond the power of his predecessor. "Prudence" becomes a necessary feature of the species. Formalization of the content of the concept, as a rule, is associated with giving some convention to the content itself. But such a logical procedure contributes to the advancement of knowledge, so the technique is quite common. We will also use it to better understand the content of the concept of "prudence". Let us first recall that "prudence" finds its expression in the development of rationality, associated with giving some convention to the content itself. But such a logical procedure contributes to the advancement of knowledge, so the technique is quite common. We will also use it to better understand the content of the concept of "prudence". Let us first recall that "prudence" finds its expression in the development of rationality, associated with giving some convention to the content itself. But such a logical procedure contributes to the

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advancement of knowledge, so the technique is quite common. We will also use it to better understand the content of the concept of "prudence". Let us first recall that "prudence" finds its expression in the development of rationality.

The formula of "prudence" is triune, it includes the interaction of three links of a single action by nature: "knowledge of the truth", "truthfulness as a personal responsibility for knowing the truth in words and deeds", "sequence of activities to objectify true knowledge". The secret of "prudence" is simple, its implementation is difficult. "Prudence" is valid only on the scale of socially significant actions. This is a kind of analogue of "herd immunity". The difficulty in achieving such a result is due to contradictions in the relationship of two dialectical opposites - "single" and "general".

In society, this complexity is exacerbated by the unevenness of social progress and the associated disproportionate distribution of its products. That is why modern society needs the abstract intelligence of homo sapiens. In a single reality, the harmony of personal interest and social is achievable in any configuration of social relations. On a general scale, such coherence can be obtained only by changing the socio-economic basis that determines public consciousness. A natural basis for prudence has been formed. Changes are required in the mouths of social life - a transition from bourgeois-democratic egoism to social-democratic collectivism and participatory in the management of socially significant actions.

As a rule, thinking is analyzed as a tool for cognition, we tried to consider thinking as a tool for the development of consciousness, and, as a result, of the person himself.

Conclusion

The consciousness of modern man is defined as intelligent activity, and this corresponds to an abstract understanding of rationality. Our current rationality is largely potential, which is convincingly evidenced by the attitude of thinking towards opposites. We either do not appreciate them, or consider them in the traditions of Kite's understanding as antinomies, that is, recognizing opposites, we do not rise to the realization of their dialectical unity. The dominant position in modern intelligence is still occupied by reason, whose activity is limited to the separation of opposites, giving them the status of their own reality and analyzing the finiteness of their state. An explosion as an outstanding tool for analyzing objects of reality and managing within the finiteness of their existence by the behavior of homo sapiens. Reason is

very conservative in solving the problem of turning an object into a subject of interaction, which makes reason a highly specialized way of cognition. It is more convenient for reason to show its abilities "here and now", to separate objects and subjects forever, to emphasize the finiteness of their reality. Perspective thinking, recognizing dialectical transitions, the unity of subjects and objects in development, aggravates the analytical ability of the mind. The modern reasonableness of thinking, therefore, is conditional and can only be recognized as an evolutionary stage with the need to precede the actual reasonableness of a "prudent person". Intelligence must open up and become the dominant state of consciousness. The history of rationality moves in the direction of its dialectical essence. Dialectical ability is embedded in the mind. It is necessary to improve the dialectics of thinking - to achieve in dialectical thinking the unity of the form of thoughts, their actual content and expression in the will, which ensures the process of objectification of true knowledge, combining the understanding of the present reality in the context of systemic changes. In single terms, this unity has already been achieved. What is relevant now is not theoretical evidence, but the need to transform individual manifestations of the reality of rationality into universal achievements. A modern rational person will have to transition to thinking that subordinates the solution of development problems in a historical perspective. Then what seems utopian to us today will appear realistically possible, because the understanding of development will change. Thinking within the limits of the ultimate reality of objects will be replaced by an awareness of the change in the final states of things as a regularity of the dialectic of development. Thinking at the level of prudence creates real grounds for the identity of thinking and being. Apparently, the most effective social tool for the next evolution of a person from homo sapiens to a prudent person should be education, the effectiveness of which is directly dependent on the quality of politics and the will of politicians.

The use of the developed and proposed methodological provisions for increasing the competitiveness of the region on the basis of the territory of advanced social and economic development based on the mining towns of the Rostov region (ASED) will make it possible to make a decision on attracting and rationally allocating investment funds aimed at implementing the necessary measures to improve the efficiency of the subjects of priority ASEZs and increase their competitiveness.

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Article



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FOREIGN EXPERIENCE OF WOMEN'S ENTREPRENEURSHIP MANAGEMENT MECHANISM

Abstract: The development of innovative small business is of great importance at the stage of development of market relations, the formation of the digital economy in the system of economic relations. In particular, as a result of reforms in the development of women's entrepreneurship in the world from the beginning of the XXI century to the present, the macroeconomic policies of most countries have developed and implemented targeted state programs aimed at expanding the innovative activities of economic entities, especially women entrepreneurs. As a result, women's entrepreneurship began to be considered as a factor of sustainable development of the modern economy.

Key words: women's entrepreneurship, training programs, credit program 7 (a), Mastercard Index of Women Entrepreneurs.

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ЗАРУБЕЖНЫЙ ОПЫТ МЕХАНИЗМА УПРАВЛЕНИЯ ЖЕНСКИМ ПРЕДПРИНИМАТЕЛЬСТВОМ

Аннотация: Развитие инновационного малого бизнеса имеет большое значение на этапе развития рыночных отношений, становления цифровой экономики в системе экономических отношений. В частности, в результате реформ в развитии женского предпринимательства в мире с начала XXI века до настоящего времени макроэкономической политикой большинства стран были разработаны и реализованы адресные государственные программы, направленные на расширение инновационной деятельности хозяйствующих субъектов, особенно женщины-предприниматели. В результате женское предпринимательство стало рассматриваться как фактор устойчивого развития современной экономики.

Ключевые слова: женское предпринимательство, обучающие программы, кредитная программа 7 (a), Индекс женщин-предпринимателей Mastercard.

Введение

Стоит отметить, что женщины-предприниматели имеют особые стимулы и льготы в создании и развитии своего бизнеса. Учитывая сложившуюся ситуацию, необходимо опираться на факторы гендерного равенства в поддержке женского предпринимательства в стране.

Сегодня почти половину занятых в мире составляют женщины, и женщины производят 37% от общего ВВП. По мнению экспертов

Международной организации труда, в мировой экономике женское предпринимательство стало важным фактором развития малого бизнеса и частного предпринимательства, и необходимость обеспечения устойчивости бизнес-сектора в долгосрочной перспективе высока. По прогнозам, к 2025 году можно будет увеличить мировой ВВП на 26% за счет обеспечения равного участия мужчин и женщин в бизнесе [1].

В 2017 году международные эксперты провели исследование Индекса женщин-

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предпринимателей Mastercard для изучения и ранжирования деятельности женщин-предпринимателей в мире. Согласно результатам данного исследования, в большинстве случаев женщины-предприниматели сталкиваются с проблемой нехватки финансовых ресурсов для ведения бизнеса. В частности, в 2017 году более 163 миллионов женщин предпринимателей хотели открыть собственное дело, но позже 1/3 из них столкнулись с проблемой нехватки капитала, что негативно сказалось на деятельности женщин-предпринимателей. В то же время 40% женщин-предпринимателей не имели знаний и навыков, чтобы начать и вести собственное дело [2].

Первые этапы развития женского предпринимательства получили развитие в странах Восточной Азии, где они обычно занимались домашним хозяйством, семейным трудом, а также текстилем, пряжей, шитьем. Однако резкое отличие религиозных традиций, духовных и культурных взглядов этих стран от западных стран привело к их относительно низкому участию на рынке труда. В последние годы члены рабочей группы, созданной Организацией Объединенных Наций и Международной организацией труда (МОТ) в этих странах, работают над построением гендерной экономики, обеспечением прав женщин, поощрением их занятости и расширением их участия в экономических отношениях [3].

Сегодня в мире экономика США лидирует в развитии женского предпринимательства в условиях рыночной экономики. В этой ситуации важно изучить опыт США в развитии женского предпринимательства. В 1988 году в стране была разработана правовая база для предоставления женщинам права на ведение бизнеса. Кроме того, при Конгрессе США была создана Секция малых женщин предпринимателей, которая поддерживает развитие женского предпринимательства. На протяжении всей своей деятельности эта секция разрабатывала различные государственные программы, направленные на поддержку женщин-предпринимателей. В частности, были открыты центры обучения женскому предпринимательству, центры женского бизнеса, включая создание центров по оказанию различных консультационных услуг женщинам предпринимателям. В результате реформ доля женского предпринимательства в малом бизнесе в стране увеличилась с 7% в 1990-х годах до более 60% в 2000-х годах. При этом в 1994–1999 годах приоритетное внимание уделялось развитию женского предпринимательства в сельской местности страны. В результате доля женщин-предпринимателей в структуре фермерских

хозяйств за анализируемый период увеличилась с 13% до 30% [4].

Кредитная программа 7 (а) в США [5] служит для финансовой поддержки субъектов малого бизнеса и 36% от общего объема финансовых ресурсов, выделяемых по этой программе, составляют ссуды женщинам предпринимателям. Данная кредитная программа отличается высокой степенью гибкости. В стране около 7000 коммерческих банков занимаются предоставлением данного вида кредитных услуг. В этом случае сумма кредита зависит от цели кредита, максимальная сумма составляет 5 млн. долларов США и может быть выпущен под 6- 13% на срок 5-25 лет [6].

Условия использования кредитной программы 7 (а) следующие [6]:

- иметь не менее двух лет опыта ведения бизнеса или не менее двух последних лет управления на существующем предприятии;

- годовой доход предприятия должен быть не менее 50 000 долларов США.

Экономика США уделяет большое внимание поддержке женщин предпринимателей. В частности, на государственных веб-сайтах ежегодно публикуются адресные программы, направленные на поддержку более 800 женщин-предпринимателей.

Бизнес-проекты, представленные и отобранные женщинами-предпринимателями для целевых программ, объявленных через правительственные порталы финансируются со стороны «Управление малого бизнеса (SBA)» [7].

Для финансирования бизнес-планов женщин-предпринимателей, выигравших программы, объявленные государством, установлены следующие требования: [8]

- должны полностью соответствовать стандартам SBA для организации и управления малым бизнесом;

- компания должна находиться в США;

- количество сотрудников не должно превышать 500, и не менее 51,0% (или 255) из них

- женщины, являющиеся гражданами США;

- генеральным директором предприятия должна быть женщина.

Отличительной особенностью программ, направленных на поддержку женщин-предпринимателей в экономике США, является то, что в стране также делается упор на формирование знаний и навыков в области организации и управления женским предпринимательством, их системное развитие. В частности, в таких организациях, как «Женские бизнес-центры (Women's Business Centers)», «Национальная ассоциация женщин-предпринимателей (National Association of Women Business Owners)» оказывают консультационные услуги женщинам-предпринимателям по

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созданию собственных бизнес-планов, организации и управления предприятием, ведению бизнеса. Кроме того, в стране существуют центры финансовой и юридической консультации для женщин-предпринимателей [9].

В экономике США женщины-предприниматели кроме себя беспокоятся о других женщинах-предпринимателях. В частности, в стране создано множество некоммерческих организаций женщин-предпринимателей, где женщины предприниматели обмениваются опытом по дальнейшему развитию управления предприятиями, производства товаров и услуг, разрабатывают небольшие гранты для расширения деятельности предприятия. В частности, в таких организациях, как «Coffee and Coded», «Girl Geek Dinners», «Women 2.0» и «Financial Women's Association» женщины-предприниматели делятся опытом управления предприятиями, ведения бизнеса и расширения деловых партнерских отношений. А также, эти организации занимаются консультированием женщин, недавно переехавшим в США и которые хотят начать свой бизнес [9].

В США женщины-предприниматели уделяют особое внимание развитию инновационного бизнеса в организации и управлении предприятием. В стране также действуют консультационные центры по развитию инновационного бизнеса, количество которых составляет 389, и работают 11 400 высококвалифицированных пенсионеров, работавших в сфере инновационного бизнеса [10].

В экономике США большое внимание женщин-предпринимателей уделяется на развитие малых инновационных предприятий. Причина этого в том, что малый инновационный бизнес может достичь желаемого результата в короткие сроки при невысоких затратах на внедрение нововведений. В то же время он организационно ориентирован на научные исследования и разработки, что увеличивает интенсивность научных исследований. Благодаря низкому уровню охвата снижает уровень риска, быстро адаптируется к резким изменениям социально-экономических процессов, а скорость внедрения новых технологий, направлений научных исследований в их практику высока.

Анализ зарубежного опыта развития малого бизнеса и частного предпринимательства показывает, что в большинстве стран женское и молодежное предпринимательство играет ведущую роль в поддержке предпринимательства на основе государственных целевых программ. Открытие бизнеса по такой программе часто называют семейным бизнесом. Хорошо известно, что женщины-предприниматели используют свои возможности для развития семейного бизнеса. В

странах Западной Европы семейный бизнес - это отрасль, занимающая значительную долю в структуре национального производства. В Италии, например, более 90 процентов семейных предприятий находятся в ведении женщин-предпринимателей, и четверть всех самостоятельно занятых лиц работают в этой сфере [11].

В Венгрии и Польше развитие женского предпринимательства в малом бизнесе с начала 1990-х годов отражается как семейный бизнес, и сегодня в этой сфере занято 60-70% трудоспособного населения. Анализ показывает, что развитие женского предпринимательства оказало существенное положительное влияние на обеспечение устойчивости показателей социально-экономического развития стран. Доля женский трудоспособного возраста, ведущих собственный бизнес, составляет 45% в Румынии, 27% в Польше, 16% в Словении и 11% в Болгарии. Программы, направленные на развитие женского предпринимательства, также доступны в таких странах, как Франция, Германия, Австрия, Скандинавия [11].

Анализ мировой практики организации женского предпринимательства, государственной поддержки этой деятельности показывает, что сформировались разные подходы к поддержке женщин-предпринимателей в зависимости от уровня экономического развития стран. В частности, в таких странах, как США и Канада, в экономическом подходе преобладает государственная поддержка женщин-предпринимателей. В то же время содействие женскому предпринимательству в развитии малого бизнеса рассматривается как движущая сила экономического роста за счет эффективного использования неиспользуемых человеческих ресурсов в экономике. Учитывая интеграционный характер экономик стран-членов ЕС, развитие женского предпринимательства в этом регионе направлено на снижение безработицы в странах и создание новых рабочих мест. В этой группе стран существует социально-экономический подход к развитию женского предпринимательства. В Африке и Южной Америке, где бедность высока и существует проблема повышения уровня жизни цель состоит в повышении уровня жизни и сокращении бедности за счет укрепления базы доходов населения за счет развития женского предпринимательства. Это свидетельствует о приоритетности социального подхода в развитии женского предпринимательства. Учитывая небольшие различия в духовных и культурных ценностях в группе стран Центральной Азии, особое внимание уделяется обеспечению равных прав для мужчин и женщин в этой группе стран. В частности, целью является обеспечение экономической независимости женщин за счет

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развития женского предпринимательства. В этой группе стран подход гендерного равенства играет ведущую роль в развитии женского предпринимательства.

По результатам нашего исследования были выявлены следующие характеристики женщин-предпринимателей в процессе организации и управления предприятием:

- принятие решений в организации предприятия с учетом мнения окружающих;
- наличие высокого уровня требований к сотрудникам, а также наличие гуманного духа в управлении;

- наличие уникального подхода к организации производственной и сервисной деятельности, в частности, в сфере менеджмента и маркетинга, наличие более эффективного стиля управления, чем у мужчин предпринимателей;

- при установлении внешних связей предприятия ориентируйтесь, прежде всего, на взаимное уважение и общие цели, а не на экономические интересы;

- высокое стремление обеспечить сплоченность коллектива;

- наличие опасений за жизнь подчиненных, партнеров по бизнесу и т. д.

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Article



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STRESS-STRAIN STATE OF FIBER REINFORCED CONCRETE BEAMS

Abstract: The article presents the results of laboratory research on the stress-strain state of fiber reinforced concrete beams dispersed with reinforced concrete and basalt fibers.

Key words: reinforced concrete, beam, stress, strain, basalt fiber, flexure, strength, dispersed reinforcement.

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Introduction

Basalt fiber is a complex of continuous basalt fibers of a certain length. Basalt fiber is derived from a variety of rocks, such as basalt, basanites, amphibolites, gabrodiabases, or mixtures thereof, which are chemically similar. The production of basalt fibers is based on the production of basalt solution (mixture) in smelting furnaces and its free flow through special devices. Melting point is 1450°C. The advantages of basalt fiber for disperse reinforcement are that it has high strength as well as does not stretch under the influence of stresses, is resistant to chemical, corrosion and thermal effects of the external environment, changes in temperature and voltage direction, as well as cost not too expensive[1-6].

Many scientists have studied the mechanical properties of fibrous reinforced concrete based on basalt fibers. However, the results are scattered and can be explained by differences in the amount,

quantity, and technology of fibers used. Kudyakov K.L. [3] states that the addition of basalt fibers to concrete increases the maximum values of deformation during compression and elongation, and at the same time increases the plasticity of the material collapse[7-17].

Research and analysis of scientific studies show that flexible fiber-reinforced concrete structures based on basalt fibers have not been sufficiently studied. Therefore, it is advisable to conduct experimental studies on the stress-strain state of flexible fiber reinforced concrete beams with basalt fibers.

RESEARCH METHODOLOGY

Reinforced concrete beams for dispersed reinforcement have a density of 2650 kg / cm³, fiber diameter 17 μm, fiber length 10; 30 mm basalt fibers were used. An overview of the fibers used in the study is shown in Figure 1.

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Figure 1. Basalt fibers

Six series of beams were prepared and laboratory tests were performed to study the stress-strain state of fiber reinforced concrete beams. The first series of reinforced concrete beams are made of concrete without basalt fibers. The rest of the series of fibro-

reinforced concrete beams are made of basalt fibers of different sizes and lengths.

The cross-section dimensions of reinforced concrete and fiber-reinforced concrete beams, as well as the diameters and lengths of the reinforcement used, are shown in Figure 2.

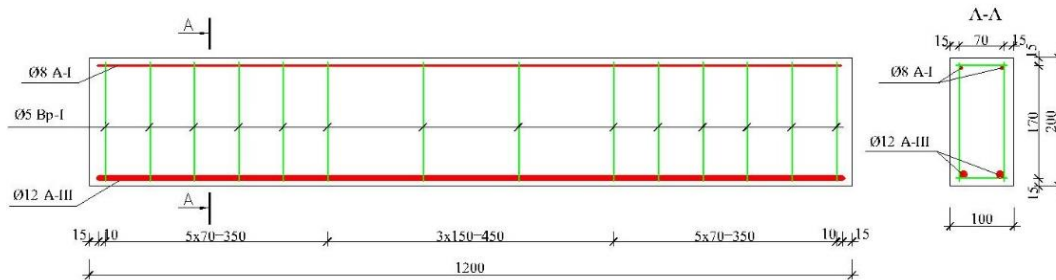


Figure 2. An overview of sample beam reinforcement.

Dispersed reinforced concrete beams with reinforced concrete and basalt fibers were formed using a hydraulic press of OKS-1671M brand,

modernized by the authors, with a load capacity of 400 kN. The layout of the samples on the test device is shown in Figure 3.

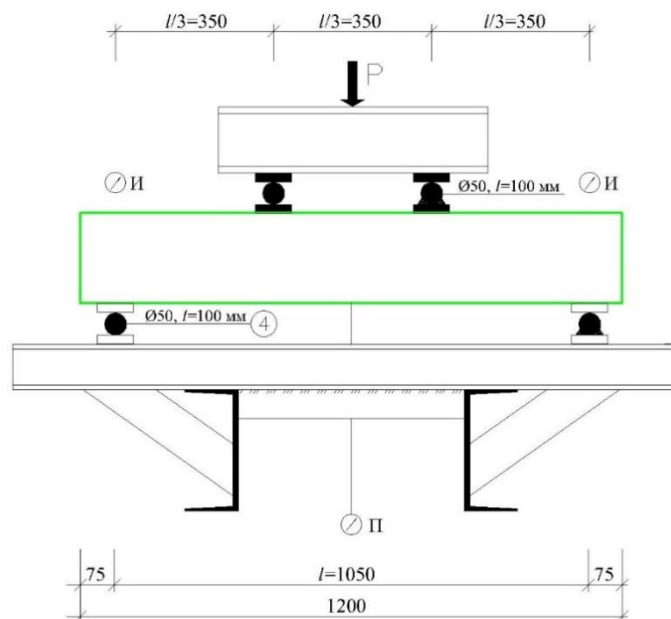


Figure 3. View of the sample on the test device.

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In order to measure the deformation of the beams, specially prepared metal pins were attached to the compressible and elongated parts of the beams. Holes were made in the metal studs. One of the bars has a clock-type indicator and the other has a messura.

To determine the stress-strain state of the concrete, the cross-sections of the side beams were measured using a portable messura (Figure 4) using clockwise indicators with an accuracy of 0.01 mm at a base of 300 mm.



Figure 4. view of the messura.

ANALYSIS AND RESULTS

Longitudinal elongation and compressive deformations of concrete do not have large values at the initial loads, and their variation increases almost in a straight line. Elongation deformations of concrete reached $\varepsilon_{fb} = (32-45) \cdot 10^{-5}$ compressive deformations of concrete $\varepsilon_{fbt} = (17-23) \cdot 10^{-5}$ when the force reached 30 kN on reinforced concrete beams of series I. Elongation deformations of concrete $\varepsilon_{fb} = (12-20) \cdot 10^{-5}$ compression deformations of concrete reached $\varepsilon_{fbt} = (8-12) \cdot 10^{-5}$ values when the force reaches 30 kN in sample II reinforced concrete beams.

Elongation deformations of concrete reached $\varepsilon_{fb} = (150-160) \cdot 10^{-5}$ compressive deformations of concrete $\varepsilon_{fbt} = (47-50) \cdot 10^{-5}$ when the amount of load reached $F_{ult}(0,8-0,9)$. Elongation deformations of concrete in series II reinforced concrete beams $\varepsilon_{fb} = (130-145) \cdot 10^{-5}$ compressive deformations of concrete up to $\varepsilon_{fbt} = (28-45) \cdot 10^{-5}$.

Sample III series Elongation deformations of concrete when the amount of destructive force in fiber-reinforced concrete beams reaches $F_{ult}(0,2-0,3)$ $\varepsilon_{fb} = (13-28) \cdot 10^{-5}$ compressive deformations of concrete $\varepsilon_{fbt} = (8-14) \cdot 10^{-5}$ achieved values. Elongation deformations of concrete in series IV reinforced concrete beams $\varepsilon_{fb} = (14-20) \cdot 10^{-5}$ Compressive deformations of concrete $\varepsilon_{fbt} = (10-17) \cdot 10^{-5}$ (Figures 5-8).

Elongation deformations of concrete in series III samples reached $\varepsilon_{fb} = (130-140) \cdot 10^{-5}$ compressive deformations of concrete $\varepsilon_{fbt} = (28-32) \cdot 10^{-5}$ as the loading stages approached the destructive force. Elongation deformations of concrete $\varepsilon_{fb} = (115-132) \cdot 10^{-5}$ compression deformations of concrete up to $\varepsilon_{fbt} = (31-35) \cdot 10^{-5}$ were found in the IV series sample fibro-reinforced concrete beams.

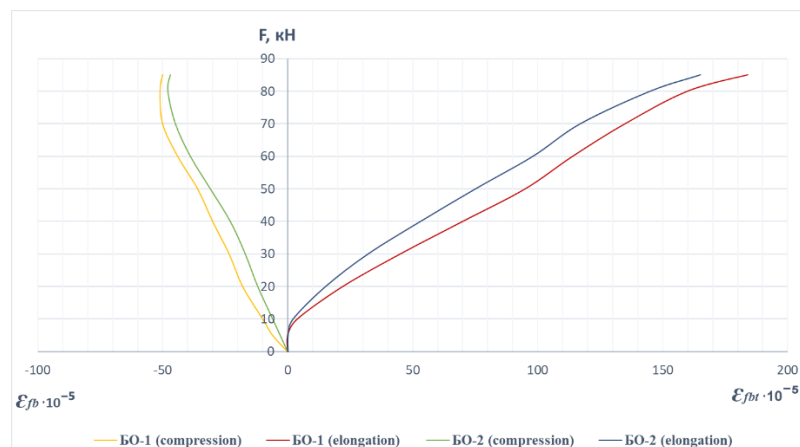


Figure 5. Average relative compressive and elongation deformations of concrete in series I ordinary reinforced concrete beams

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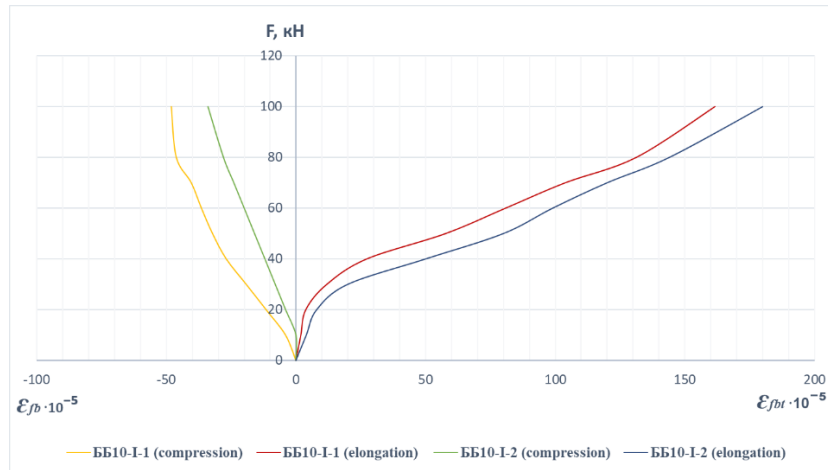


Figure 6. Average relative compressive and elongation deformations of concrete in series II fiber reinforced concrete beams

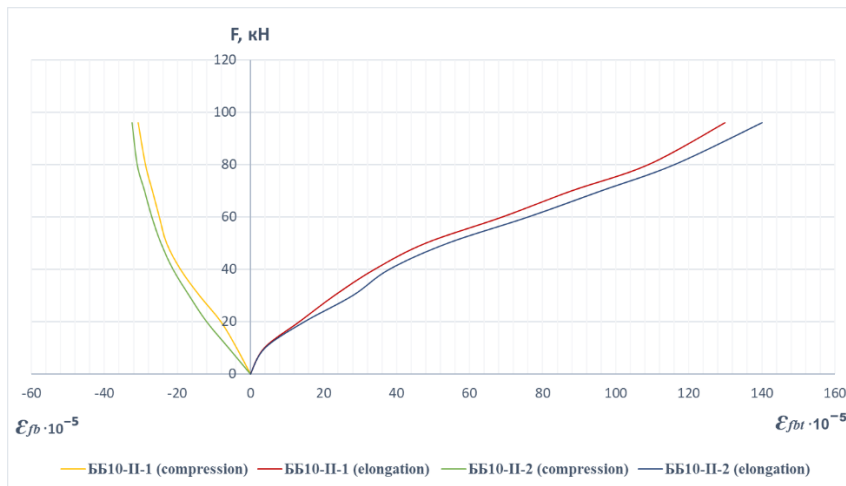


Figure 7. Average relative compressive and elongation deformations of concrete in series II fiber reinforced concrete beams

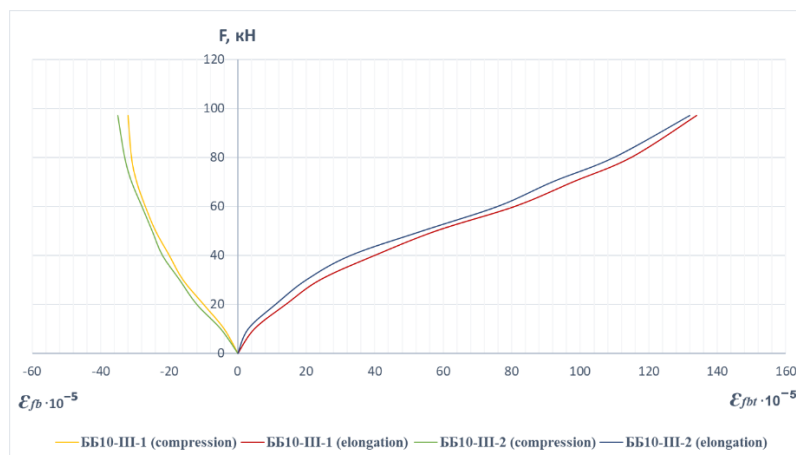


Figure 8. Average relative compressive and elongation deformations of concrete in series II fiber reinforced concrete beams

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CONCLUSION

Experimental studies of sample beams have provided new data on the nature of the stress-strain state of fiber reinforced concrete beams and the strength of normal sections. Basic fiber-reinforced concrete beams have shown high strength, high load-bearing capacity, high tensile strength, and stiffness compared to ordinary reinforced concrete beams.

The addition of basalt fibers to concrete in the range of 0.1-0.3% allows more efficient use of regular reinforcement. It also has the effect of increasing the load-bearing capacity of fiber reinforced concrete beams, which are subject to bending and increasing it by an average of 10-19% compared to control samples.

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Contents

	p.
19. Bozorov, A. T., Karimov, M., & Jalilov, A. T. Use of new effective local antioxidants for rubber mixtures and study of chemical, physical-mechanical properties.	101-106
20. Tog'ayev, E., Beknazarov, Kh., & Davronova, F. Synthesis of thermal stabilizers based on phthalamic acid salts.	107-112
21. Popov, D. V. Description and classification of the Russian-speaking population of Uzbekistan.	113-119
22. Nematova, R. Kh., & Fakhriddinov, O. O. The role of information and communication technologies in the educational process.	120-123
23. Abdullaeva, N. A. How to organize successfully a classroom management.	124-126
24. Shoxidova, M. Q. Some tips for involving young learners for the lesson.	127-129
25. Kholikov, Z. O. Preservation problems of rhyme and radif in translation.	130-132
26. Hamzah, F., & Hamzah, N. Identification Of The Bright-Greenish- Yellow-Fluorescence (Bgy-F) Compound On Cotton Lint Associated With Aflatoxin Contamination N Cottonseed.	133-138
27. Saidova, S. E. The importance of role playing activities for growing distance learning phenomenon.	139-142
28. Jakhonov, T. Religious buildings of Northern Bactria in Kushan period.	143-145
29. Shcherbakov, D. S., Tikhonov, A. A., Prokhorov, V. T., & Volkova, G. Y. On the union of the producer and the consumer for the production of products that enjoy priority and preferences among buyers in the regions of the Southern Federal District and the North Caucasus Federal District.	146-182
30. Khusanova, Z. R. Foreign experience of women's entrepreneurship management mechanism.	183-186
31. Razzakov, S. J., & Martazayev, A. Sh. Stress-strain state of fiber reinforced concrete beams.	187-191

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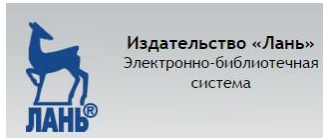


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