ACTUAL PROBLEMS OF MODERN SCIENCE, EDUCATION AND TRAINING

KHOREZMSCIENCE.UZ

CONTENTS

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FAUNAL ANALYSIS OF EARTHWORMS (LUMBRICIDAE) OF THE NORTH-WESTERN REGION OF UZBEKISTAN

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Annotatsiya: O‘zbekiston hududi va uning shimoliy g‘arbiy mintaqasida yomg‘ir chuvalchanglarning taksonomik ro‘yxatini shakllantirish maqsadida shu kungacha mavjud ma’lumotlar va tadqiqotlarimizdan olingan natijalar asosida qiyosiy tahlil o‘tkazildi. Unda O‘zbekiston faunasi uchun *Perelia* avlodiga mansub 2 ta yangi tur (*Perelia persiana*, *Perelia turcmenica*) va *Lumbricus* avlodiga mansub 1 ta (*Lumbricus rubellus*) turlar ilk bor qayd etildi. Shuningdek tadqiqotlar natijalari shuni ko’rsatadiki, aniqlangan 22 ta turlar O’zbekiston shimoliy g’arbiy mintaqasi faunasi uchun ilk bor yangi tur sifatida qayd etildi.

Kalit so’zlar: *taksonomik, Lumbricidae, O’zbekiston, identifikasiya, eklektor*

Аннотация: С целью формирования таксономического списка дождевых червей на территории Узбекистана и его северо-западного региона был проведен сравнительный анализ на основании имеющихся данных и результатов наших исследований. Для фауны Узбекистана впервые отмечены 2 новых вида, относящихся к роду *Perelia* (*Perelia persiana*, *Perelia turcmenica*) и 1 вид, относящийся к роду *Lumbricus* (*Lumbricus rubellus*). Также результаты исследований показывают, что 22 выявленных вида впервые отмечены как новые для фауны северо-западного региона Узбекистана.

Ключевые слова: *таксономический, Lumbricidae, Узбекистан, идентификация, электор*

Annotation: In order to form a taxonomic list of earthworms in the territory of Uzbekistan and its north-western region, a comparative analysis was conducted based on the available data and the results of our research. For the fauna of Uzbekistan, 2 new species belonging to the genus *Perelia* (*Perelia persiana*, *Perelia turcmenica*) and 1 specie belonging to the genus *Lumbricus* (*Lumbricus rubellus*) were recorded for the first time. Also, the research results show that 22 identified species were recorded for the first time as new species for the fauna of the north-western region of Uzbekistan.

Key words: *taxonomic, Lumbricidae, Uzbekistan, identification, elector*

Introduction. The species *Allolobophora sturanyi* was described by Rosa (1895) from Croatia and later, together with some other Central European earthworm species (*Eophila dacica* Pop, 1938, *Allolobophora dugesi* var. *getica* Pop, 1947, *Allolobophora opisthocystis* Rosa, 1895) was regarded by Pop (1949) as subspecies or variety of the Franco-Iberian species, *Allolobophora dugesi* (Rosa, 1886). In the early seventies Bouché (1973) added a further species to this group of earthworms, *Allolobophora sturanyi dacidoides* [4, 7]. At present, one of the acute environmental problems is the degradation of fertile chernozem soils, accompanied by a decrease in humus reserves. Earthworms (Lumbricidae, Oligochaeta) are active soil formers that contribute to its accumulation and occupy a dominant position among soil-dwelling invertebrates. To increase the fertility of degraded black soils, it is necessary to take measures to strengthen the role of these invertebrates, which are directly involved in the decomposition and humification of plant litter, in the formation of the upper humus horizon of soils [15].

Very little knowledge of the Lumbric fauna of Central Asia was noted by I.I. Malevich in 1945, when only 10 species were known from here [10, 12]. Later, studies began in the mountainous regions of South Kazakhstan (Talas Alatau, Dzhungar Alatau, and Karatau) and Central Asia, and more than 30 species of earthworms were found. For many species, only local occurrence was noted. The fauna of earthworms in Uzbekistan is very diverse in composition and includes a number of endemic species confined mainly to mountainous and *agrocenosis* regions. However, the study of the earthworms (Lumbricidae) fauna of many regions of the Republic of Uzbekistan has not yet been carried out. There are also few works that take into account the earthworms (Lumbricidae) fauna as a component of the soil mesofauna of agrocenoses. In other areas of the Uzbek semi-desert, the earthworms (Lumbricidae) fauna has not been previously studied [6, 16].

Analysis of literary sources (Perel, 1979; Ibragimov, Dzhanaev, 1972; Kvavadze, 1975; 1985; Vsevolodova-Perel, 1997; 2003; Rapoport, Lantsov, Tembotova, Sablirova, 2004; Rapoport, 2005; Rahmatullaev, 2006) shows that special soil-zoological studies devoted to the study of the ecology of earthworms covered the eastern and central parts of Uzbekistan. Similar studies have not been carried out in northwestern Uzbekistan [1, 3, 5].

Materials and Methods. The species composition of earthworms in the north-western region of Uzbekistan was evaluated based on modern research. Earthworms are large soil invertebrates (mesofauna), and special methods have been developed for their collection. Quantitative collection of earthworms and soil sampling was done by digging, hand sorting and electoring according to the generally accepted method of Raw (1959) [14], (Fig. 1).

Figure 1. Methods of sampling different soil layers.

Many soil animals, including earthworms, can be identified by species composition only after they have been fixed. Therefore, collected earthworms were killed in 4% formalin and then transferred to 75% ethanol (alcohol) according to the methodology recommended by Raij et al. [11]. In order to fixation the earthworms, first they were cleaned from dirt particles and other impurities, and then they were washed with clean water in a special container (bath). Cleaned earthworms were placed in a Petri dish and killed in a 2% formalin solution. Earthworms become round under the influence of formalin. Therefore, each of the worms was collected in a tub and covered with formalin-moistened gauze. Formalin gauze does not allow worms to heat up in hot weather. After a little hardening (2-3 hours), the worms were sealed and labeled in 0.5 L glass bottles containing 5% formalin for preservation. The type, biomass and other characteristics of the collected earthworms were determined in the laboratory

Analysis and Results. In order to form a taxonomic list of earthworms in the territory of Uzbekistan and its north-western region, we conducted a comparative analysis based on the available data and the results of our own research. The according to the database of the World Taxonomic System of the Earthworm Family Lumbricidae in 2023 [18] and the data published by Omodeo (1959), Csuzdi and Pavlicek (2005b), Rakhmatullaev et al. (2010), Asirovic (2011), belonging to 8 genera of the Lumbricidae family Information on 25 species is presented for the fauna of Uzbekistan [1, 2, 8, 13]. Based on provided of the data in the sources and the analysis of our research, 3 additional new species for the fauna of Uzbekistan, namely *Perelia persiana* (Michaelsen, 1900), *Perelia turcmenica* belonging to the genus *Perelia* (Vsevolodova-Perel, 1997) (Malevic, 1941) and *Lumbricus rubellus* (Hoffmeister, 1843) belonging to the genus *Lumbricus* (Linnaeus, 1758) were recorded for the first time [7, 9, 17]. We present a comparative analysis of our research results based on the data of Omodeo (1959), Csuzdi and Pavlicek (2005b), Rakhmatullaev et al. (2010), Asirovic (2011) [1, 2, 8, 13], (Table 1).

Table 1.

Comparative analysis based on sources of the fauna earthworm (Lumbricidae) of Uzbekistan.

Explanation: BA- Information of Bekchanova and Abdullaev, **O**- Information of Omodeo (1959), **CP**- Information of Csuzdi and Pavlicek (2005b), **R**- Information of Rakhmatullaev et al. (2010), **A**- Information of Asirovic (2011)i.

№	Species	BA	O	CP	R	A
	***Perelia* (Vsevolodova-Perel, 1997)**					
1	*Perelia (S.) taschkentensis*	-	*	-	*	*
2	*Perelia (S.) kaznakovi*	-	-	*	*	*
3	*Perelia (S.) ferganae*	-	-	-	*	*
4	*Perelia (S.) arnoldiana*	-	-	-	*	-
5	*Perelia (S.) chlorocephala*	-	-	-	*	-
6	*Perelia (S.) microtheca*	-	-	-	*	-
7	*Perelia (S.) graciosa*	-	-	-	*	*
8	*Perelia (S.) umbropnilla*	-	-	-	*	-
9	*Perelia (S.) ophimopha*	-	-	-	*	-
10	*Perelia (S.) stenosoma*	-	-	*	*	-
11	*Perelia persiana*	*	-	-	-	-
12	*Perelia turcmenica*	*	-	-	-	-
	***Aporrectodea* (Orley, 1885)**					
13	*Aporrectodea c.caliginosa*	-	*	-	*	-
14	*Aporrectodea c.trapezoides*	-	-	-	*	-
15	*Aporrectodea rosea*	-	*	-	*	-
16	*Aporrectodea jassyensis*	-	-	-	*	-
	***Eisenia* (Michaelsen, 1900)**					
17	*Eisena fetida*	-	*	-	*	-
18	*Eisenia n.nordenskioldi*	-	-	-	*	-
19	*Eisena nordenskioldi acystis*	-	-	-	-	*
	***Octolasion* (Orley, 1885)**					
20	*Octolasion lacteum*	-	-	-	*	-
21	*Octolasion cyaneum*	-	*	-	-	-
	***Dendrobaena* (Eisen, 1873)**					
22	*Dendrobaena byblica*	-	*	-	*	-
23	*Dendrobaena octaedra*	-	-	-	-	*
24	*Dendrobaena veneta*	-	-	-	-	*
	***Dendrodrilus* (Omodeo, 1956)**					
25	*Dendrodrilus rubidus tenuis*	-	-	-	*	-
	***Bimastos* (Moore, 1893)**					
26	*Bimastos parvus*	-	*	-	-	-
	***Eiseniella* (Michaelsen, 1900)**					
27	*Eisenilla tetraedra*	-	*	-	*	-
	***Lumbricus* (Linnaeus, 1758)**					
28	*Lumbricus rubellus*	*	-	-	-	-
Total		**3**	**8**	**2**	**20**	**7**

Comparing the results obtained in our research with the data of Omodeo (1959, 1962), Csuzdi and Pavlicek (2005b), Rakhmatullaev et al. (2010), Asirovic (2011) [1, 2, 8, 13], 22 species were not recorded for the fauna of the north-western region of Uzbekistan, In the first time it was found that has not been studied. According to the results of our research, 3 species *Perelia turcmenica* (Malevich, 1941), *Perelia*

persiana (Michaelsen, 1900), *Lumbricus rubellus* (Hoffmeister, 1843) were recorded as new species for the fauna of Uzbekistan.

The identified 22 species of earthworms were recorded *Perelia (S.) arnoldiana* (Vsevolodova-Perel, 1997), *Perelia (S.) chlorocephala* (Vsevolodova-Perel, 1997), *Perelia (S.) microtheca* (Vsevolodova-Perel, 1997), *Perelia (S.) ophimopha* (Vsevolodova-Perel, 1997), *Perelia (S.) stenosoma* (Vsevolodova-Perel, 1997), *Perelia persiana* (Michaelsen, 1900), *Perelia turcmenica* (Malevic, 1941), *Aporrectodea caliginosa caliginosa* (Vsevolodova-Perel, 1997), *Aporrectodea caliginosa trapezoides* (Dugesi, 1828), *Aporrectodea rosea* (Vsevolodova-Perel, 1997), *Aporrectodea jassyensis* (Vsevolodova-Perel, 1997), *Eisena fetida* (Vsevolodova-Perel, 1997), *Eisenia nordenskioldi nordenskioldi* (Vsevolodova-Perel, 1997), *Eisena nordenskioldi acystis* (Asirovic 2011), *Octolasion lacteum* (Vsevolodova-Perel, 1997), *Octolasion cyaneum* (Savigny, 1826), *Dendrobaena byblica* (Rosa, 1893); Vsevolodova-(Perel, 1997), *Dendrobaena octaedra* (Savigny, 1826), *Dendrodrilus rubidus tenuis tenuis* (Rakhmatullaev et al. 2010), *Bimastos parvus* (*Eisen, 1874), Eisenilla tetraedra* (Savigny, 1826), *Lumbricus rubellus* (Hoffmeister, 1843) for the first time for the region in the north-western region of Uzbekistan (table 2).

Table 2

Comparative analysis of earthworms (Lumbricidae) of the north-western region of Uzbekistan

Explanation: *Species recorded for the first time for the fauna of Uzbekistan

****Species recorded for the first time in the north-western region of Uzbekistan.**

№	Genus and species	to be recorded
	***Perelia* (Vsevolodova-Perel, 1997)**	
1	*Perelia taschkentensis* (Vsevolodova-Perel, 1997)	-
2	*Perelia kaznakovi* (Vsevolodova-Perel, 1997)	-
3	*Perelia ferganae* (Vsevolodova-Perel, 1997)	-
4	*Perelia arnoldiana* (Vsevolodova-Perel, 1997)	**
5	*Perelia chlorocephala* (Vsevolodova-Perel, 1997)	**
6	*Perelia microtheca* (Vsevolodova-Perel, 1997)	**
7	*Perelia graciosa* (Vsevolodova-Perel, 1997)	**
8	*Perelia umbropnilla* (Vsevolodova-Perel, 1997)	-
9	*Perelia ophimopha* (Vsevolodova-Perel, 1997)	-
10	*Perelia stenosoma* (Vsevolodova-Perel, 1997)	**
11	*Perelia persiana* (Michaelsen, 1900)	*
12	*Perelia turcmenica* (Malevic, 1941)	*
	***Aporrectodea* (Orley, 1885)**	
13	*Aporrectodea c.caliginosa* (V.Perel, 1997)	**
14	*Aporrectodea c.trapezoides* (Dugesi, 1828)	**
15	*Aporrectodea rosea* (Vsevolodova-Perel, 1997)	**
16	*Aporrectodea jassyensis* (Vsevolodova-Perel, 1997)	**
	***Eisenia* (Michaelsen, 1900)**	
17	*Eisena fetida* (Vsevolodova-Perel, 1997)	**
18	*Eisenia n.nordenskioldi* (Vsevolodova-Perel, 1997)	**
19	*Eisena nordenskioldi acystis* (Asirovic 2011)	**

	***Octolasion* (Orley, 1885)**	
20	*Octolasion lacteum* (Vsevolodova-Perel, 1997)	**
21	*Octolasion cyaneum* (Savigny, 1826)	**
	***Dendrobaena (*Eisen, 1873)**	
22	*Dendrobaena byblica* (Rosa, 1893)	**
23	*Dendrobaena octaedra* (Savigny, 1826)	**
24	*Dendrobaena veneta* (Vsevolodova-Perel, 1997)	-
	***Dendrodrilus* (Omodeo, 1956)**	
25	*Dendrodrilus rubidus tenuis* Rakhmatullaev, 2010)	**
	***Bimastos* (Moore, 1893)**	
26	*Bimastos parvus (Eisen, 1874)*	**
	***Eiseniella* (Michaelsen, 1900)**	
27	*Eisenilla tetraedra* (Savigny, 1826)	**
	***Lumbricus* (Linnaeus, 1758)**	
28	*Lumbricus rubellus* (Hoffmeister, 1843)	*
Total:		

Conclusion: Based on the above tables, comparison and the analysis of faunistic studies carried out by expert scientists, a modern taxonomic list was formed for the north-western region of Uzbekistan (Table 3).

Table 3

Taxonomic composition of the fauna of Lumbricidae of the north-western region of Uzbekistan

Family	Genus	Specie
Lumbricidae	*Perelia*	*Perelia (S.) arnoldiana*
		Perelia (S.) chlorocephala
		Perelia (S.) microtheca
		Perelia (S.) ophimopha
		Perelia (S.) stenosoma
		Perelia persiana
		Perelia turcmenica
	Aporrectodea	*Aporrectodea caliginosa caliginosa*
		Aporrectodea caliginosa trapezoides
		Aporrectodea rosea
		Aporrectodea jassyensis
	Eisenia	*Eisena fetida*
		Eisenia nordenskioldi nordenskioldi
		Eisena nordenskioldi acystis
	Octolasion	*Octolasion lacteum*
		Octolasion cyaneum
	Dendrobaena	*Dendrobaena byblica*
		Dendrobaena octaedra
	Dendrodrilus	*Dendrodrilus rubidus tenuis tenuis*
	Bimastos	*Bimastos parvus*
	Eiseniella	*Eisenilla tetraedra*
	Lumbricus	*Lumbricus rubellus*
Total:	**9**	**22**

The identified species belong to 9 genera (*Perelia, Aporrectodea, Eisenia, Octolasion, Dendrobaena, Dendrodrilus, Bimastos, Eiseniella, Lumbricus*) of the Opisthopora order of Lumbricidae family. It was noted that each genus contains from one to 7 (*Perelia*) species. According to this indicator, *Perelia* genus is dominant with

7 species (31.8%), *Aporrectodea* genus is dominant with 4 species (18.24%), *Eisenia* is second with 3 species (13.6%), *Octolasion* (9.1%), *Dendrobaena* (9.1%) genera are 2 and It was noted that *Dendrodrilus* (4.54%), *Bimastos* (4.54%), *Eiseniella* (4.54%), *Lumbricus* (4.54%), genera from one species occupied the next places (Table 4).

Table 4

Quantitative ratio of the taxonomic composition of the Lumbricidae family in the north-western region of Uzbekistan

Family	Genus		Specie	
	in quantity	in percent	in quantity	in percent
Lumbricidae	1	11,1	7	31,8
	1	11,1	4	18,2
	1	11,1	3	13,6
	1	11,1	2	9,1
	1	11,1	2	9,1
	1	11,1	1	4,5
	1	11,1	1	4,5
	1	11,1	1	4,5
	1	11,1	1	4,5
Total	**9**	**100**	**22**	**100**

Or, the representatives of the Lumbricidae family can be seen in the section of the species belonging to the genera in Figure 2.

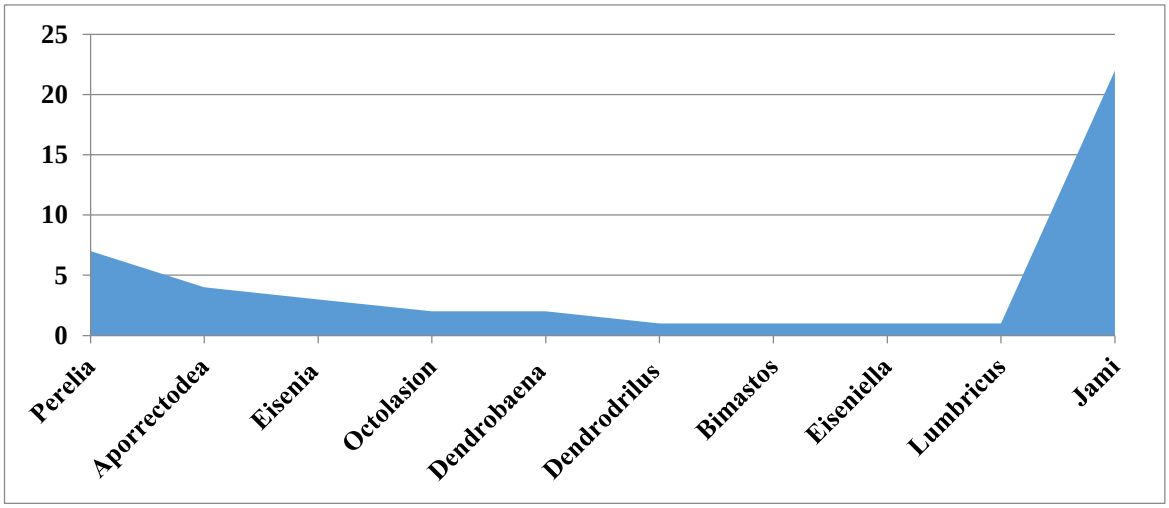

Figure 2. Quantitative ratio of Lumbricidae family species in the north-western region of Uzbekistan

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THE ROLE OF NATURAL-AMELIORATIVE REGIONS IN THE RATIONAL USE OF LAND AND WATER RESOURCES OF THE LEFT BANK OF THE CURRENT AMUDARYA DELTA

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Annotasiya. Ushbu maqolada Amudaryo hozirgi del'tasi chap qirg‘og‘ining Yer-suv resurslaridan oqilona foydalanishda tabiiy-meliorativ rayonlarning roli tahlil qilingan. Ishdagi asosiy natijalar rel'ef plastikasi usulidan foydalanib Amudaryo hozirgi del'tasi chap qirg‘og‘i 3 ta tabiiy-meliorativ rayonlarga ajratilgan.

Kalit so‘zlar: havzaviy usul, tabiiy-meliorativ sharoit, tabiiy-meliorativ rayon, kollektor havzasi, kichik del'ta, tuproqlarning sho‘rlanish darajasi, tabiiy meliorativ sharoitning murakkablik darajalari.

Аннотация. В данной статье анализируется роль природно-мелиоративных районов в рациональном использовании земельных и водных ресурсов левобережья современной дельты Амударьи. По основным результатам работы методом рельефной пластики были разделены на 3 природно-мелиоративных района левобережья современной дельты Амударьи.

Ключевые слова: бассейновый метод, природно-мелиоративные условия, природно-мелиоративная область, коллекторный бассейн, малая дельта, уровень засоления почв, степени сложности природно-мелиоративных условий.

Abstract. The left bank of the current Amudarya delta's water and land resources are used rationally by these regions, as is examined in this article. On the left bank of the current Amudarya delta, the primary outcomes of the work were split into three natural-ameliorating sections using the relief plastic method.

Key words: basin method, natural reclamation conditions, natural reclamation area, collector basin, small delta, soil salinity level, degree of complexity of natural reclamation conditions.

Introduction. It is necessary to develop new principles of natural reclamation zoning based on the application of a functionally holistic method of a systematic approach in natural geographic science. Today, the natural and reclamation zoning of the left bank of the modern Amudarya delta, based on the principles of functional integrity and achieved by the method of relief plastics, is of great importance.

Drainage basins are unique geosystems found in irrigated massifs, which, in turn, are formed by the structural integrity of small deltas, considered as elements. As is known, the natural and reclamation conditions in the catchment basins change from the height along the river, which plays the role of the border in the deltas, to the lowland, where the catchment has passed. The method of plasticity of the basin relief made it possible to identify several collector basins in the massifs, i.e., natural reclamation regions.

Literature review. N.A.Kogay [2], A.K.Urazbaev [7], D.B.Khursanov [8], K.S.Yarashev [10], O.Sh. Rozikulova [5], A. A. Rafikov [4], R. A. Ibragimova [1] and others. However, in these studies, the natural and reclamation conditions of the modern left bank of the Amudarya delta were not zoned.

Theoretical aspects of the basin method in the rational use of natural resources are reflected in the scientific works of L.M. Korytny. In his scientific works, he considers the basins of the Yenisei and Amur rivers as a geosystem. According to the scientist; "The natural resources located in the basin of each river are fundamentally different from the natural resources located in the basins of other rivers in their internal structure. Therefore, the rational use of natural resources, taking into account river basins, is the main task of modern geography. " The application of the basin method in natural geographical science has led to many successes. For example, K.S.Yarashev [10] considered the Surkhondarya basin as a single geosystem and paid attention to the internal structure of the basin with the rational use of its natural resources, i.e., he considered the river basin as a paragenetic landscape complex. We can cite such examples as the basins of the Zeravshan, Kashkadarya, Chirchik and other rivers of our republic. Sh. M. Sharipov [9] took the basins of the Chirchik and Akhangaran rivers in the Tashkent region as the basis of the geoecological approach to nature protection. According to the scientist, the basins of the Chirchik and Akhangaran rivers fundamentally differ from each other in terms of their natural resources, and the amount of resources varies depending on the area occupied by the basin.

In the scientific work of A.K. Urazbaev, the reservoir basins located on the left bank of the modern Amudarya delta were not specially studied. At the same time, the scientific work of A.K. Urazbaev does not cover the problem of basin use of land and water resources of collector basins in irrigated areas. The rational use of land and water resources of irrigated territories on the left bank of the modern Amudarya delta is considered for the first time on the basis of the natural reclamation regions identified on the basis of the basin relief plastic method.

Research methodology. In the course of natural-reclamation zoning of the lands of the northern coast of the modern Amudarya delta, plastic, cartographic, geographical comparisons, field studies, expeditionary, statistical, and typological methods were used.

Results and discussion. The use of the functional-holistic method of the system approach in natural geographic science, i.e., this approach is founded on the concept of the functional-integrity of an item, has served as the foundation for the new principles of natural reclamation zoning. That is why the first natural reclamation zoning based on the principles of functional integrity was carried out using the method of relief plastics of the current delta of the Amudarya.

In irrigated massifs, there are special geosystems called drainage basins that are created by the structural integrity of minor deltas, which are regarded as elements. As is well known, the catchment basins' natural and reclaimed characteristics vary from the height along the river, which serves as the border in the deltas, to the lowland, through which the catchment has gone. Numerous collector basins, or natural reclamation areas, were able to be found in the massifs thanks to the elasticity of the basin relief method. In regions where nature is being restored, changes in the natural elements have an impact on an object's internal structure. In tabular form, the recognized natural and reclaimed areas are described.

It was made possible to think of each watershed as an item with its own internal structure through the use of natural reclamation zoning based on the basin relief plastics method. Each natural reclamation region has a unique internal structure that sets it apart from other natural reclamation regions. For instance, the natural and reclamation circumstances in the Kungirotsky collector region are highly challenging due to the region's numerous tiny deltas. The natural and reclamation conditions in the Ustyurt collector natural and reclamation region, which is its opposite, do not have severe circumstances; rather, they are mostly complex and medium. This is because the region has a small number of minor deltas.

Thus, each collector basin can be seen as as a separate natural reclamation region when using the basin relief plastics approach in natural reclamation zoning. There are numerous ways to think of specific watersheds as natural healing zones in practice. The current basin technique, which makes efficient use of natural resources in natural and reclamation areas isolated in irrigated areas, is based on the rational utilization of river basins' natural resources.

Conclusions. In irrigated areas, watersheds are taken into account as a separate region, and in non-irrigated areas, the structural integrity of small deltas is taken into account as a separate region. This means that the natural reclamation conditions in all of these areas are interconnected with the internal structure of these areas.

1. The functional integrity of the collector-basin in irrigated areas and the structural integrity of minor deltas in non-irrigated areas and regions are related to the structure of the soil cover and the level of its salinity on the left bank of the modern Amudarya delta.

2. For the first time, natural and reclamation conditions were examined and assessed in connection to fundamental groups of complexity levels in landscapes while assessing natural and reclamation conditions. It would be ideal to expand this perfected system to all of Uzbekistan's irrigated areas.

3. The foundation of natural reclamation zoning is collector basins. The law of functioning is followed by all geographical and ecological processes in the area, which together make up the region's distinctive geosystem.

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UDC 574.3

QUANTITATIVE ASSESSMENT OF RELATIONSHIPS IN THE PREDATOR-VICTIM SYSTEM WITH ACCOUNT OF HABITAT IN THE LOWER AMUDARYA

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Annotasiya. Maqolada Amudaryoning quyi oqimidagi yashash muhitini hisobga olgan holda "yirtqich-o‘lja" tizimini ekologik baholash masalalari ko‘rib chiqiladi. Ikki o‘lchovli yaqinlashishda "yirtqich va o‘lja" tizimidagi tur ichidagi raqobat hisobga olinadi. Yirtqichlar va o‘ljalar sonining o‘zaro ta'siri baholanadi.

Kalit so‘zlar: yirtqich-o‘lja, yashash muhiti, tur ichidagi raqobat, biologik xilma-xillik, kemiruvchilar populyasiyasi, Amudaryoning quyi oqimi.

Аннотация. В статье рассматриваются вопросы экологической оценки системы «хищник-жертва» с учетом ареала обитания в низовьях Амударьи. Учитывается внутривидовая конкуренция в системе «хищник и жертва» в двумерном приближении. Оценено взаимовлияние численностей хищников и жертв.

Ключевые слова: хищник-жертва, ареал обитания, внутривидовая конкуренция, биоразнообразие, популяции грызунов, Низовья Амударьи.

Abstract. The article deals with the issues of ecological assessment of the "predator-prey" system, taking into account the habitat in the lower reaches of the Amu Darya. Intraspecific competition in the "predator and prey" system is taken into account in a two-dimensional approximation. The mutual influence of the numbers of predators and prey is estimated.

Key words: predator-prey, habitat, intraspecific competition, biodiversity, rodent populations, lower reaches of the Amudarya.

Introduction. At present, the increase in environmental problems is the result of a multifaceted human influence on the biotic and abiotic components of the biosphere [10]. One of the main factors in which it is possible to track the structural and functional transformations taking place in an ecosystem is the change in the dynamics of biological diversity. The reduction of biodiversity is one of the main reasons contributing to the growing environmental crisis, both locally and globally. Biotic resistance mechanisms determine the stability of natural ecosystems up to the biosphere [8, 11].

Control mechanisms, as an important element of the system's behavior in a crisis, were considered at the level of ecosystems, communities, populations, and individuals. The course of development of the process of structural and functional organization and the relationship in the system "plants-rodents-predators" depends on a number of factors, the main of which is the nature of the flow of integration processes in the dynamics of ecosystems. At each stage of the reorganization, the interconnections become denser, the integrity of the system and the number of levels of the management hierarchy increase, the flexibility of the components decreases; more and more fine “tuning” of the interaction of the elements of the system with each other is carried out [8, 10].

The population responses of a species can reflect the dynamics of the ecosystem as a whole; therefore, the population approach, when the biology of the species has been studied sufficiently, can be successfully used to study the state of natural ecosystems [19]. These criteria are met by a large group of populations of rodents of different species, which are a traditional model object of research on a wide range of problems in theoretical and applied ecology.

Material and methods of research. The studies were carried out during 2019-2022. For stationary observations, several points were selected, characterized by certain physical and geographical conditions and typical biotopes. At the stationary points of Ustyurt, work was carried out in winter and spring, in Kyzylkum - in spring, summer and autumn, in the lower reaches of the Amudarya delta in all seasons of the year.

The number of animals in different biotopes was systematically recorded by occurrence on special routes according to the method of A.N. Formozov (1932) and V.S. Smirnov (1964). Night visual accounting was carried out by cars (along a 100-km route) in the headlights, as well as by carcasses eaten and falling into traps (15,500 trap-days in total).

The number of small rodents was taken into account with their relatively complete capture in a certain area using Tishlyaev's live trap and the Gero crusher on a standard bait-bread moistened with vegetable oil. To account for larger rodents, we used the trap-platform method of live heading and route counting by colonies, which is widely used for rodents such as ground squirrels and gerbils.

To solve the tasks of quantifying exogenous and endogenous factors on the dynamics of the number of mammal populations, archival materials of the laboratory of terrestrial animals of the Karakalpak Scientific Research Institute of Natural Sciences of the KCO Academy of Sciences of the Republic of Uzbekistan were used. We used the archival data of the Karakalpak Republican Center for the Prevention of Quarantine and Especially Dangerous Infections of the Ministry of Health of the Republic of Uzbekistan on trapping rodents living in the Karakalpak part of the Kyzylkum.

In addition, we used statistical data on the procurement of fur-trading species of animals in the system of the Chief Hunting Department of the Ministry of Agriculture and Water Resources of the Republic of Karakalpakstan and the Karakalpak administration "Karakalpaktutynyu", as well as archival data of the State Committee for Ecology and Environmental Protection of the Republic of Karakalpakstan, information from hunters and the huntsman service.

Results and Discussion. Rodents, being an important component of natural ecosystems, are widely used as model objects in ecological studies, including those that address the problems of anthropogenic transformations of the environment [13, 14]. This is a large group of animals, which, due to its position in the trophic chains of ecosystems, directly perceives the pressure of certain negative environmental factors over large areas and, therefore, can be used to indicate the transformation of the environment.

The profound changes that have taken place in the delta plain of the lower reaches of the Amudarya have led to the fact that the areas occupied by plant communities that can exist in floodplain habitats only under the condition of annual flooding have decreased from 35% to 6%. The grandiose reed beds, which occupied more than 600 thousand hectares in the Amudarya delta, decreased by almost 10 times by 2004 [9].

The change in the watering of the delta has led to the fact that the areas of the tugai type of vegetation in the Amudarya valley, which occupied 300 thousand hectares in the 60s, currently do not exceed 25 thousand hectares [12].

The study of the influence of anthropogenic conditions on the rodent community in the lower reaches of the Amu Darya remains very insufficient. It can be assumed that the impact of negative anthropogenic factors on the demographic processes occurring in populations leads to significant changes in the demographic structure of the species [19, 22].

According to experts, in the tugai - in the diet of rodents there are usually sucker fruits, seeds of wild cereals and their green parts. In reed beds - shoots, seeds, rhizomes of such plant species as comb species (*Tamarix hispida, T.ramosissima), karabarak (Halostachys belangeriana), saxaul (Haloxylon aphyllum), quinoa species (Atriplex heterosperma, A.fomini, A.tatarica), saltwort (Salsola dendroides), sand locust (Ammodendron Conollyi), licorice (Glycyrrhiza glabra), bass (Bassia hissopifolia), cochia (Kochia scoparia), wormwood (Artemisia halophila), reed (Pragmites australis), etc*. [17, 18].

Many rodent populations have cyclic dynamics [7, 8, 13]. Population cycles are characterized by regularity, although they can have different amplitudes [7]. Termination of cyclic dynamics or violation of its regularity can be considered as an example of non-stationary dynamics. A long series of observations of rodent populations made it possible to detect massive acyclicity in rodent population processes [29, 24]. One of the supposed reasons for the violation of cycles is a change in climatic conditions [22] or deterioration in the food supply [26]. It was also found that the obtained time series of the abundance of fox skins handed over by hunters reflect the dynamics of their main food resource, rodents [25]. Figure 1 shows the population dynamics of rodents and predators, taking into account the influence of interspecies interaction. As can be seen, with the chosen values of the parameters, the fox population demonstrates stable development in the case when there is enough food, and the number of rodent population fluctuates with a twenty-year period. At the same time, the dependence of the fox population on the number of rodents leads to the fact that the dynamics of foxes adjusts to the dynamics of rodents.

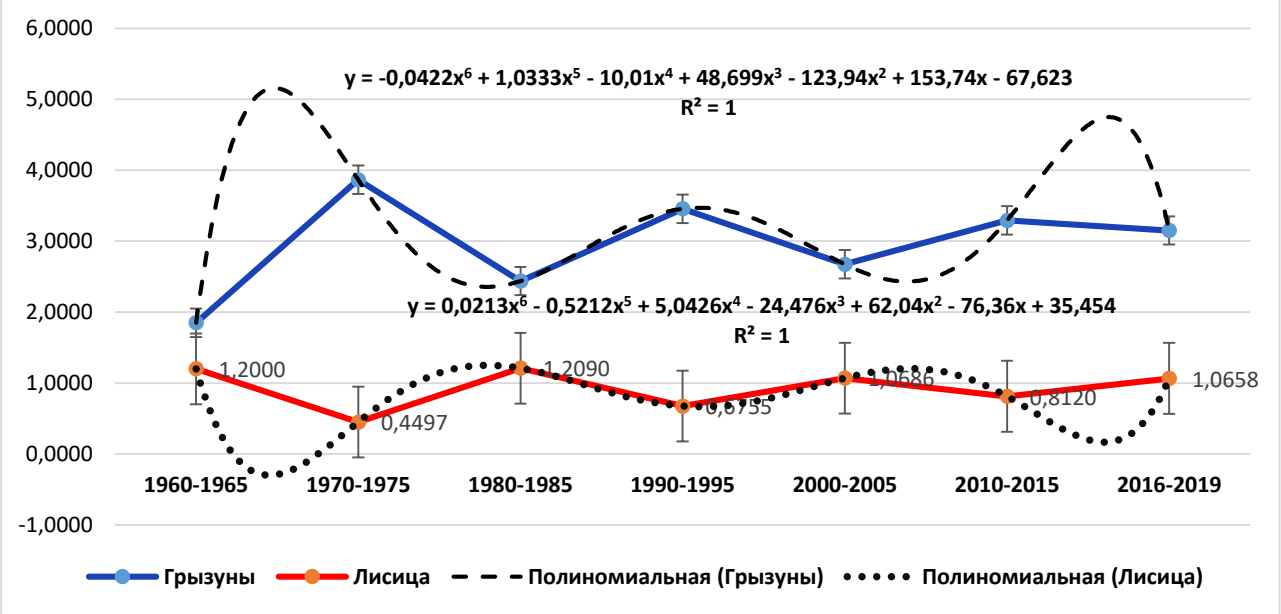

Fig.1. Dependence of the number of rodent and predator populations on time

The relationship that develops between plants and herbivores can also be seen as a predator-prey relationship.

Consider the relationship "plants and rodents", with the values of the parameters $a=0.2,\ \ b=0.2,\ \ c=0.7,\ \ d=0.3,\ \ r_1=0.005,\ \ r_2=0.003$ and the initial condition $x_0=3.3, y_0=1.85$ which is taken from the analysis of data from field studies of the "plant-rodents" community. The correlation analysis performed showed that the

relationship between the number of plants and rodents over the years is characterized by a very high positive correlation ($\rho = 0.963459$). As can be seen from Fig. 2, with the selected values of the parameters, the number of plant species decreased and, accordingly, the rodent population decreased, in the case when the abundance and diversity of plant species, high stability of the number of rodents and its further growth. It is also seen here that the dynamics of the number of rodents adjusts to the dynamics of the number of plants.

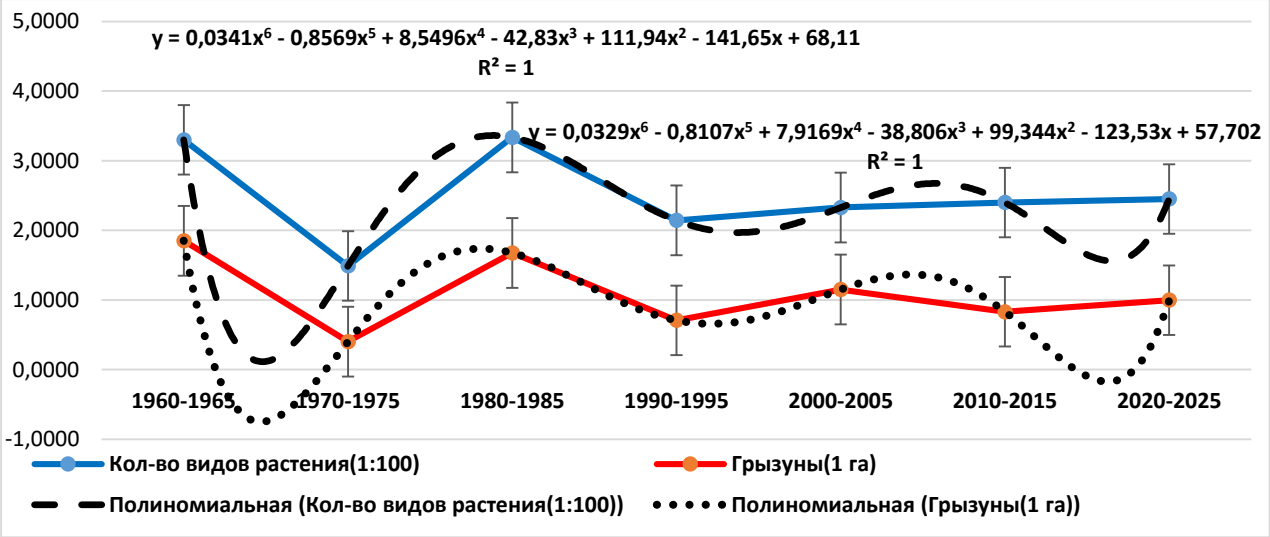

Fig.2. Time dependence of plant and rodent populations

A numerical study of the proposed model [1, 2, 3] was carried out. It is shown that periodic and quasi-periodic fluctuations can occur in the system, as well as a change in the dynamics regime as a result of changes in the current number of one of the communities.

Conclusions. Thus, scenarios of the transition from stationary dynamics to fluctuations in the abundance of predator and prey were analyzed for various values of intrapopulation parameters that determine the nature of the dynamics of each of the species that make up the community, and the parameter of their interaction [4, 5]. It has been established that along with the stable existence and development of the community, various complex fluctuations of interacting species are possible. On the other hand, the predator can also change the dynamics of the prey, but only in the case of a very “moderate” appetite, which, from a biological point of view, is only possible if the predator has an alternative type of food. It is shown that the dependence of the predator population on the number of prey leads to the fact that the dynamics of the predator adjusts to the dynamics of the prey. In turn, the impact of the predator of prey.

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CREATE INSTRUCTIONAL PRESENTATIONS FOR THE LEARNING PROCESS USING DEMONSTRATION SOFTWARE.

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Annotatsiya: ushbu maqolada ta’lim jarayonida namoyish etuvchi dasturlardan foydalanish holati va olimlarning tadqiqotlari tahlili keltirilgan. Namoyish etuvchi dasturlari yordamida o‘quv jarayoni uchun o‘rgatuvchi taqdimotlar yaratish jarayoni va undan foydalanish haqida batafsil yoritilgan.

Kalit so‘zlar: namoyish etuvchi dasturlar, Power Point, Google Slides, Prezi, Focusky

Аннотация: в данной статье проводится анализ состояния использования демонстрационных программ в образовательном процессе и исследованиях ученых. Подробно освещен процесс создания и использования обучающих презентаций в учебном процессе с помощью программ-презентаторов.

Ключевые слова: программы для презентаций, Power Point, Google Slides, Prezi, Focusky

Abstract: this article provides an analysis of the state of use of demonstration programs in the educational process and the research of scientists. Explains in detail the process of creating and using educational presentations for the educational process with the help of presenter programs.

Keywords: presentation programs, Power Point, Google Slides, Prezi, Focusky

Introduction. One of the urgent issues of today is choosing an optimal teaching system that can meet the modern requirements in the field of education, computerization of education, and in a broad sense, to inform it, to choose the necessary information for learning, to put it into an educational form. and conveying this information to listeners, mastering them, creating skills and abilities is a requirement of the time.

Currently, the introduction of ICT opportunities in the teaching of various subjects in the education system, among all other fields, is an urgent issue. ICT serves not only to form students' knowledge and skills, but also to develop their personal characteristics and increase their interest in knowledge. In recent years, in many psychological and advanced pedagogic fields, we have seen that the opinions about ICT development of students' knowledge and creative thinking are emphasized. The use of ICT opportunities will help to enrich the range of information provided in the educational process and help students learn it with interest. With the introduction of ICT in the educational process, a new approach to education, characteristic of the modern information environment, began to take shape [1].

Literature Review. Research on the issues of creating educational presentations for the educational process using pedagogical software tools, demonstration programs

in the educational system. .Researched by Burdovskaya, Jones, A. M., Craig, R. J., & Amernic, J. H., Kaplan, S., Szabo, A., & Hastings, N.

In the above-mentioned studies, insufficient attention was paid to the use of demonstration programs in the educational process and the process of creating educational presentations for the educational process, as well as the methods and tools of its use. Therefore, the current research is considered important in the training of today's modern personnel.

Research Methodology. New pedagogical and information technologies cannot be separated from each other, because the widespread introduction of new pedagogical technologies changes the educational paradigm, and only modern information technologies can ensure the effective use of new pedagogical technologies [3]. One of such modern and pedagogical information technologies is demonstration programs.

Demonstration programs are designed for visual presentation of educational material and for virtualization and visualization of studied laws, interrelationship of objects. Visualization is the creation of real images of these images in a visible state, and virtualization (from the Latin virtualis - probably) is a computer representation of the appearance of objects that take into account the possibility of occurring in certain conditions that do not exist. all edges of this object are taken into account.

Presentation refers to the transfer or presentation of new information to the audience, that is, presentation in the traditional sense is visual material for public speaking[2].

Microsoft PowerPoint is a presentation (presentation) graphic program. Such programs allow you to create slides containing text, images, diagrams, graphics, animation effects, sound clips, etc. A presentation created from a sequence of slides can be displayed on a computer screen, video monitors and large screens. There are different versions of Microsoft PowerPoint[7,8,9].

Google Slides is cloud-based, which means you'll need to be online to create your Google Account. After creating your account, Google offers you an offline access feature so you can work on your project offline. When you connect to the Internet again, all work will be synchronized to the live version.

Prezi.com is a modern tool and a new way to create a presentation and demonstrate its capabilities. The service not only has many useful functions, but also has a lot of knowledge that it is ready to transfer to its user.

Focusky makes it easy to create an innovative and professional presentation. From creating backgrounds, editing, adding paths, elements, and animation, Fokusky is a program that brings your presentation to life and perspective.

The advantages of focus are as follows:

• Large selection of templates and themes

• the ability to use various interactive elements such as video, audio, flash, the ability to embed videos from YouTube or Vimeo,

• support for a large number of languages,

• the ability to insert animated objects.

Create a presentation on Prezi.com. Sign up at Prezi.com and let's take a look at creating a themed e-resource.

1. Select the software version you want to use on Prezi.com, then fill out the listing form. When filling out the form, it is required to enter an e-mail address. You can use your email or Facebook, Linkedl account to register a free account. This will significantly reduce the registration time, and after logging into your account, you will see my main profile with its main functions.

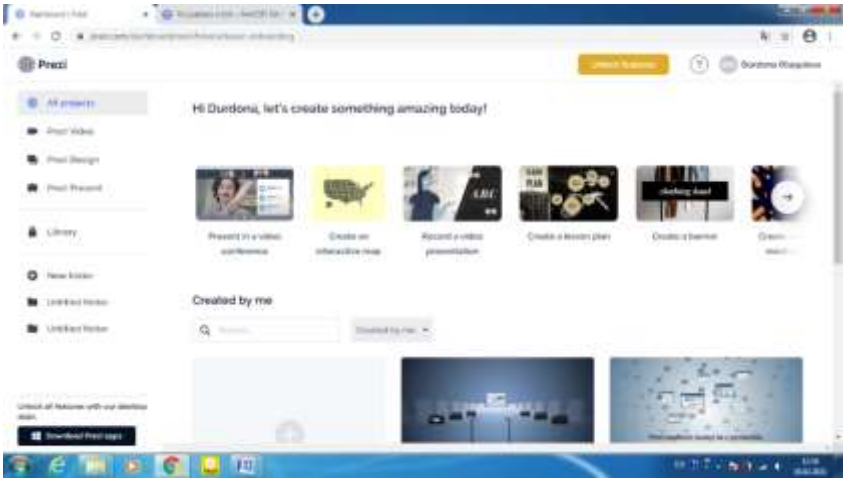

Figure 1. Practical working window of the Prezi program

2. Select "New Prezi" to create a new presentation. After that, a new window with several templates will appear. By choosing templates for the presentation, the basis of the presentation is built and it is filled with the necessary information. A presentation editor is used for this. Desktop items can be selected by clicking the mouse button. So, all the elements in the template, title, text, images can be edited and changed.

Figure 2. Prezi software presentation template selection dialog box

3. The main tools needed when working with the presentation are located at the top of the window and are divided into three menu groups:

Frames and Arrows menu to define different areas of the form and add new slide views to the presentation;

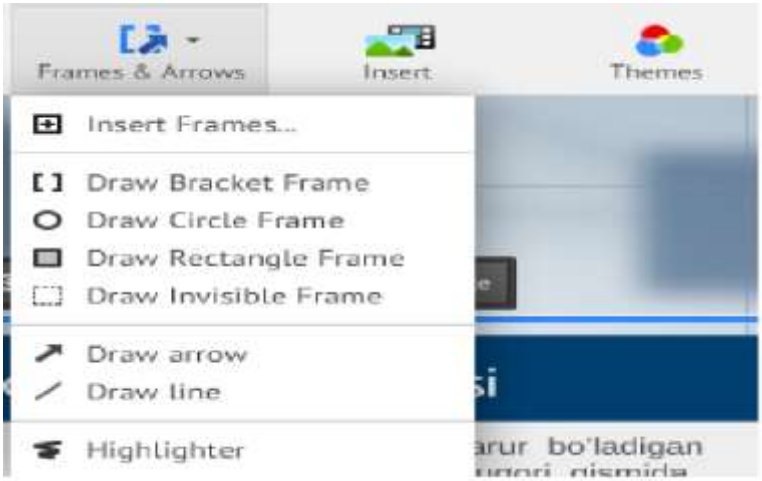

Figure 3. Prezi Frames and Arrows menu view

Insert menu Insert images, videos and other files to provide the information you need. You can use the KlipArt gallery. You can also add music to your presentation. The most interesting and informative features are the ability to download videos from YouTube and add PowerPoint presentation slides, as well as add audio, image, PDF file and video from the device's internal memory.

Figure 4. Prezi program Insert menu view

Themes menu presentation view can be customized. With this menu, you can choose a different topic at any time. Presentation can be done by equipping or changing the color of an item.

Figure 5. Prezi software Themes menu view

4. At the desired stage of work, you can see how the presentation will be displayed by selecting the Present button on the left side of the window. Although Prezi is a service, it is possible to save the project automatically, in this case, before exiting

the editor, you need to press the button below. Anchor points are selectively placed for the base of the presentation. These points are thought of as coordination points, each frame is created based on these points. In the Prezi program, the presentation is given in a guided way. The direction ensures that the presentation moves from one frame to another. Instead of moving in a linear sequence, the route moves in a different order. When the presentation is planned, the camera moves through the sketch. Prezi objects can be zoomed in, zoomed out, and rotated.

5. To save the document, you can first view the page in any way you like. Secondly, the presentation can be launched online. The document can also be saved in PDF format. Another saving method is to save the presentation in standalone view on the computer.

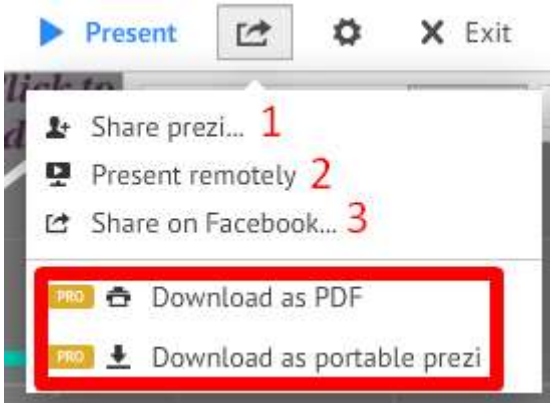

Figure 6. View of the save window in Prezi

Results and Discussion. Today, demonstration programs serve not only in the field of education, but also serve as a basis for business meetings, illustrative speeches and reports, and the presentation of promising or completed projects. Presentations can to some extent guide discussions at conferences or seminars.

Demonstration programs serve to improve the quality of the developing modern education. Preparation systems are presentations, in the process of creating them, the teacher organizes educational, methodological, demonstrative and illustrative materials. Presentations can be used as distance learning courses. Presentations are also useful for the development of educational projects and reports by schoolchildren and students.

Conclusion/Recommendations. According to the findings of the research, animation based on layouts and templates that can include any type of objects (drawings, photos, sounds, videos, tables, etc.) in the educational process with the help of display programs slides and presentations can be created. It is also possible to save in various formats, post presentations on the Internet, print slides and add additional materials for them.

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METHODOLOGY OF USING DIGITAL TECHNOLOGIES IN DEVELOPING PROFESSIONAL COMPETENCE OF FUTURE PRIMARY CLASS TEACHERS

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Annotatsiya: Ushbu maqolada bo‘lajak boshlang‘ich sinf o‘qituvchilari kasbiy kompetensiyasini rivojlantirishda raqamli texnologiyalardan foydalanish metodikasi haqida batafsil yoritilgan.

Kalit so‘zlar: kompetensiya, kasbiy malaka, kasbiy kompetensiya, kasbiy fanlar bloki, tayanch kompetensiya, axborot, kompetent, o‘quv fani, raqamli ta’lim texnologiyalari.

Аннотация: в данной статье подробно описана методика использования цифровых технологий в развитии профессиональной компетентности будущих учителей начальных классов.

Ключевые слова: компетентность, профессиональная квалификация, профессиональная компетентность, блок профессиональных дисциплин, базовая компетентность, информация, компетентность, образовательный предмет, цифровые образовательные технологии.

Annotation: this article describes in detail the methodology of using digital technologies in the development of professional competence of future primary school teachers.

Key words: competence, professional qualification, professional competence, block of professional subjects, basic competence, information, competent, educational subject, digital educational technologies.

Introduction. Digital technology plays an important role in the development of professional competence of future primary education teachers in higher educational institutions. The multi-subject nature of the primary school teacher's profession and the multi-functional nature of his work require a future teacher to acquire many skills in all subject areas of the primary school course, including digital requires the development of skills. Therefore, studying and modernizing the process of professional training of the future primary school teacher in the digital educational environment is an extremely important problem.

Professional competence is the acquisition of knowledge, skills and abilities necessary for professional activity by a specialist and their practical application at a high level [1].

Digital technology - technologies with their own software, created with the help of computer technology.

The need to build a digital educational process is related to the following factors:

• the new generation of students (digital generation) has special socio-psychological characteristics;

• the digital transformation of education plays an important role in the formation of the digital economy;

• a set of information systems specially designed to provide different tasks educational process.

Digitization of the educational process allows taking into account the rapid development of information technologies and tools.

The role of modern technologies is of great importance for the preparation of primary education teachers as up-to-date personnel.

Review literature. The main concepts in the aspect of digitization of education are digital literacy, digital educational environment, information and communication competence [7-9]. Russian scientists N.P.Petrov, G.A.Bondareva explain media literacy, attitude to innovation and communicative computer skills, digital literacy as a multifaceted concept [2]. When using the concept of a digital educational environment, scientists distinguish the value-semantic component, software-methodological, information-knowledge, communication and technological components, and also show the effective-corrective components that perform evaluation, diagnostic and corrective functions.

Development of professional competences of future elementary school teachers, preparation for teaching based on an integrative approach, scientific-research works, various directions and principles of interdisciplinarity, their use in mastering certain subjects in the educational process, scientific-practical aspects of the requirements for educational content based on interdisciplinary communication N.M.Abdullayeva, M.Ashirova, T.Dayanayeva, R.A.Mavlonova, A.Musurmonov, P.Musayev,

R.G'.Safarova, E.O.Turdikulov, A. Researched in the works of Ch. Choriyev, Sh. E. Kurbanov, Sh. Yusupova.

Research Methodology. It is appropriate to divide professional pedagogical competences into separate types: - special pedagogical competence; - to have enough information to carry out pedagogical activity at the necessary level. In addition, the pedagogue's ability to adequately assess his professional level and determine his development as a specialist depends on this type; - social pedagogical competence; - the level of social competence determines the pedagogue's ability to effectively build relationships with colleagues, plan joint actions. Effective communication skills, pedagogical culture and responsibility for work results; - all these are included in the concept of social pedagogical competence; - personal pedagogical competence; - this is the ability to rationally organize pedagogical work, time management, striving for personal growth are its main components. Workers with a high level of personal pedagogical competence are less prone to burnout and are able to work under time pressure.

TEACHER'S PROFESSIONAL COMPETENCE QUALITIES[4]:

- Formation of students' motivation;
- Ability to plan, evaluate, and establish feedback on the educational process;
- Knowledge of information and communication technologies;
- Work on oneself;
- To have knowledge of pedagogy and psychology;
- Perfect knowledge of one's subject;
- Bringing innovation to the educational environment;

The composition of professional competence can include competence in professional activities, competence in professional communication, the competence of a specialist in being able to demonstrate his profession.

In order to develop the professional competencies of primary school teachers based on digital technologies, the following recommendations should be followed:

1. Expanding the use of digital technologies in educational programs: The teacher should demonstrate the use of digital technologies in the lesson. This will help to increase their professional competence.

2. Organization of interactive lessons: The teacher should organize interactive lessons and help students put knowledge into practice. Also, through interactive lessons, students can ask questions, get answers, and talk about other students' knowledge.

3. Use of online platforms: Providing educational programs on online platforms makes students' access to information more convenient.

4. Development of training programs: Students are facilitated to improve their professional competence by developing training programs. Also, in this form, students can take a "practice" test.

5. Create tutorials and videos: A teacher can create tutorials and videos to teach students this knowledge and develop professional competencies.

7. Mastery: The student must master knowledge using digital technologies. Also, mastering can be seen as an independent organization of the educational process.

In our opinion, based on the possibilities of independent organization of educational processes in higher education institutions, we can define the following as the main directions of using digital technologies in education [3]:

• extensive use of today's modern information media in creating educational programs for effective organization of education;

• preparation of competitive, multidisciplinary Web sites based on education;

• development of methodological and didactic materials for students' independent use based on the goals of creative thinking, formation of information culture;

• increase students' ability to ensure its reality when using information;

• organizing and conducting computer experiments with virtual models;

• systematic organization of targeted information search.

Thus, there are many ways to develop the professional competencies of primary school teachers based on digital technologies. With the help of these methods, students put knowledge into practice and can further develop their professional competencies.

Results and Discussion. The use of digital technologies is very important in the development of professional competence of future primary school teachers, because they allow the development of professional skills and are convenient for students. On the basis of digital technologies, teachers of primary education become a modern staff when their professional competence is developed.

Conclusion/Recommendations. In conclusion, digitization changes the social paradigm of student learning, opens up opportunities for improvement and expansion. In the modern world, digital technology is not only a tool, but also an environment of existence that opens up new opportunities: learning at any convenient time, increasing confidence in continuous education. Digitization of education provides an opportunity for students to use mobile and Internet technologies, to expand their scope of knowledge.

The use of digital technology in primary education develops students' independent thinking and creative collaboration. These features make it easier for students to understand and think. It will be one of the main tools of education to support digital technologies.

Research on the development of professional competence of future primary education teachers based on digital technology allows to draw the following conclusions:

1. Facilitates the learning process: Digital technology facilitates the learning process for teachers and students. Some of these are easy to use websites, e-textbooks, video and audio materials.

2. Independent thinking: The use of digital technologies in primary education develops students' independent thinking skills. It is such a skill that enables students to find solutions to life's problems.

3. Having the best features: Digital technology will have the best features for all types of students. With this, students can gain experience and knowledge in the pages that they need to work on in the long term as a specialty.

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USING ENGLISH CORPUS TOOLS IN TEACHING ENGLISH.

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Annotatsiya. Ingliz tili korpusi orqali ingliz tilini o'qitish va o'rganishning zamonaviy va innovatsion usuli sifatida chet tillarni o'qitish sohasida jadal rivojlanmoqda. Korpus lingvistikasi ma'lumotlarga asoslangan yondashuv bo'lib, u o'quvchilarga tilning haqiqiy qo'llanilishini tahlil qilish orqali ularning til bilimlarini va malakalarini rivojlantirishga yordam beradi. Ushbu maqolada Ingliz tili korpusi va uning ingliz tilini horijiy til sifatida o'rgatishda qo'llanilishi haqida umumiy ma'lumot berilgan. Shuningdek, til o'rganishda korpus vositalarini kiritish muhimligini, ularning afzalliklari va muammolari haqida keng yoritib beriladi.

Kalit so'zlar: ingliz korpus vositalari, til o'rganish, korpus lingvistikasi, malakalarini rivojlantirish, kiritish, afzalliklari va muammolari.

Abstract: English Corpus Tools are gaining momentum in the field of English Language Teaching as a modern and innovative way of teaching and learning English language. Corpus Linguistics is a data-driven approach that helps learners to develop their language proficiency and proficiency through the analysis of authentic language usage. This article provides an overview of English Corpus Tools and its application in teaching English as a second language. It also highlights the importance of incorporating corpus tools in language learning, their advantages, and challenges.

Key words: English corpus tools, language learning, corpus linguistics, develop language proficiency, incorporating, advantages and challenges.

Introduction: English language teaching has undergone significant changes in the past few decades, with new technology and teaching methods being introduced to enhance the learning experience of students. One such method is the use of corpus tools in language teaching. Corpus tools refer to software and online resources that provide access to large collections of authentic language data that can be used for language analysis and learning. The use of corpus tools in language teaching has several benefits, such as enabling students to analyse and understand the use of language in context, enhancing their vocabulary and grammar knowledge, and improving their writing and speaking skills.

Teaching English as a second language (ESL) has become a growing field, and it has been challenging for ESL teachers to improve students' language proficiency effectively. English Corpus Tools provide a new perspective for teaching and learning English. Corpus tools are computer-based tools that help to analyse language usage data from a large number of texts. It enables learners to have access to authentic language usage and gain insights into the practical application of language. This article aims to provide an overview of English Corpus Tools and their application in teaching English.

Several studies have examined the use of corpus tools in English language teaching. According to Boulton, corpus tools can be used to teach vocabulary and grammar, as well as to develop students' writing and reading skills[1]. Additionally, Kennedy and Miceli (2010) suggest that corpus tools can be used to teach discourse analysis, which is useful for students who need to analyse written and spoken texts in various contexts[2].

Literature review: Corpus tools are software programs that enable researchers to analyse large collections of text, known as corpora. These tools can help researchers identify patterns, trends, and relationships within the data, and can provide insights into language use and structure. In education, corpus tools can be used to analyse student writing, evaluate the effectiveness of teaching materials, and inform curriculum development. Some common corpus tools used in education include concordances, text analysis software, and online corpus databases. According to McEnery and Wilson, "corpus-based research has revolutionized the study of language and has made possible many types of research that were previously impossible or impractical" [3; 1 p]. Similarly, Sinclair states that "corpus research has given us a new way of looking at language, not just as an abstract system of rules, but as a complex and dynamic resource

for communication"[4; 2p]. Concordancers are perhaps the most widely used corpus tool in education. This can be useful for identifying patterns of language use, such as frequently occurring words or collocations. Text analysis software is another commonly used corpus tool. This type of software can be used to perform various types of linguistic analysis, such as part-of-speech tagging, sentiment analysis, and keyword extraction. One popular text analysis tool used in education is the Natural Language Toolkit (NLTK), which is a Python library for working with human language data [5].

Finally, online corpus databases are increasingly being used in education. These databases provide access to large collections of text, often with sophisticated search and analysis tools. One example is the Corpus of Contemporary American English (COCA), which is a 560-million-word corpus of American English from 1990 to the present [6]. Overall, corpus tools are a valuable resource for researchers and educators alike, providing insights into language use and structure that would be difficult to obtain through other means.

The application of Corpus Linguistics has gained momentum in the field of English Language Teaching (ELT) in recent years. According to Huang and Li, Corpus Linguistics provides a data-driven approach to teaching English language. Corpus tools can help learners to analyse the structure and usage of language, which leads to a deeper understanding of the language. The authors provide an overview of corpus linguistics and its application in various areas, such as lexicography, syntax, and discourse analysis. They argue that corpus linguistics can provide teachers with valuable insights into the patterns and structures of the English language, and can help students develop their language proficiency by providing them with authentic language data. The researchers also discuss the challenges and limitations of using corpus linguistics in language teaching, such as the need for specialized software and technical expertise. They suggest that teachers can overcome these challenges by collaborating with corpus linguists and by using pre-existing corpora that are freely available online. Overall, Huang and Li advocate for the integration of corpus linguistics into English language teaching, arguing that it can help teachers and students develop a better understanding of the English language and improve language learning outcomes [7].

In a study conducted by Tan and Li, the use of corpus tools in teaching English helped students to improve their reading comprehension and writing skills. The study also highlighted the advantages of using corpus tools, such as exposure to authentic language, personalized learning, and effective feedback. They explore the potential of corpus linguistics tools in English language teaching at the college level. The authors argue that corpus tools, which allow for the analysis of large amounts of authentic language data, can enhance students' language learning by providing them with exposure to real-world language use and helping them develop a better understanding of the nuances of English grammar and vocabulary. The authors provide an overview of various corpus tools, such as concordancers and frequency analysis software, and discuss how they can be used in different areas of language learning, such as vocabulary acquisition and grammar instruction. They also describe their own experience using corpus tools in their college-level English classes, providing examples of how they have integrated these tools into their teaching and how their students have benefited from them. Overall, they suggest that corpus linguistics tools

can be a valuable resource for English language teachers at the college level, helping to improve students' language proficiency and providing them with a more authentic and meaningful learning experience[8].

Research Methodology: This study employed a qualitative research design, using literature review as the primary source of data. The literature review focused on the application of English Corpus Tools in teaching English as a second language.

Analysis and result: The analysis of the literature review revealed that the use of Corpus Tools in teaching English has several advantages. First, it exposes learners to authentic language usage, which leads to a deeper understanding of the language. Second, it enables personalized learning, as learners can analyse the language according to their needs. Third, it provides effective feedback, which helps learners to improve their language proficiency. However, there are also some challenges in using Corpus Tools, such as the need for technical skills and the availability of appropriate materials.

The effectiveness of corpus tools in improving language learning outcomes

Corpus tools have been widely used in language learning and teaching in recent years. The effectiveness of these tools in improving language learning outcomes has been studied by several researchers.

Firstly, corpus tools have been found to be effective in enhancing vocabulary learning in second language (L2) acquisition. Nation asserts that "vocabulary is the most important single element of second language proficiency and the best predictor of success in language learning" [9; 7p]. Corpus tools can help learners to identify collocations and common word combinations, which are essential for effective vocabulary learning. Learners who used corpus tools to learn vocabulary showed significant improvements in their vocabulary knowledge compared to those who did not use such tools. Moreover, corpus can be helpful when close reading activity is used for choosing short texts in terms of the complexity and frequency of words to help the learners understand the meaning of the text [10].

Secondly, corpus tools can also be effective in improving learners' writing skills. It is found that corpus-based writing instruction led to better quality written texts than traditional grammar-based instruction. It is suggested that corpus tools can help learners to develop a better understanding of the language's grammar and use[11].

Thirdly, corpus tools can be beneficial in enhancing learners' awareness of discourse features and conventions. Johns suggests that corpus tools can help learners to identify the language's patterns and conventions of use, including sentence structure, discourse markers, and rhetorical structures. These tools can also help learners to develop their understanding of register and genre[12].

Fourthly, corpus tools can be effective in improving learners' listening and speaking skills. McCarthy and Carter suggest that corpus tools can help learners to develop their listening skills by providing authentic audio and video materials for learners to practice[13]. In addition, corpus tools can help learners to identify and understand the natural patterns of spoken language, which can enhance their speaking skills. Finally, corpus tools can be useful in improving learners' intercultural competence. Flowerdew suggests that corpus tools can provide learners with exposure

to different cultures and perspectives, which can enhance their understanding of intercultural communication [14].

The integration of corpus tools into language teaching curriculum

Corpus tools, which are computer-based software that can process and analyse large collections of linguistic data, have become increasingly popular in language teaching and learning. Integrating these tools into language teaching curriculum can have significant benefits for both teachers and students. One way to integrate corpus tools into language teaching curriculum is to use them as a resource for language analysis and instruction. For example, teachers can use corpus tools to analyse and identify patterns in authentic language data, such as frequency of use of certain vocabulary, grammatical structures, and collocations. This can help teachers to design more effective language instruction that is grounded in real-world usage. As stated by Coffin et al., "corpora can be used to provide evidence-based analysis of language use which can be used to inform pedagogical practice" [15; 2p].

Another way to integrate corpus tools into language teaching curriculum is to use them as a means of authentic input and output for language learners. By using corpus tools, learners can access and analyse authentic language data and use it to develop their own language skills. For example, learners can use corpus tools to identify patterns of language use and create their own texts that reflect these patterns. This approach is supported by studies such as O'Keeffe and McCarthy, who argue that "corpora can provide learners with authentic input and output, as well as offering them opportunities to learn about the pragmatics of language use" [16; 180 p]. Corpus tools can also be used to develop learners' awareness of the cultural and sociolinguistic contexts in which language is used. For example, by analyzing corpora of different registers and genres, learners can gain insights into the social and cultural conventions of different discourse communities. This can help them to develop their intercultural competence and communicative skills.

In order to effectively integrate corpus tools into language teaching curriculum, it is important for teachers to receive appropriate training and support. Teachers need to be familiar with the tools and methods used in corpus linguistics, and how to apply them to language teaching and learning. Additionally, teachers need to be able to select appropriate corpora for their learners' needs and be able to guide learners in their use of corpus tools. As noted by Boulton et al., "teacher training is essential for the effective use of corpora in language teaching and learning" [17; 5p].

Recent studies have shown that corpus tools can be effective in improving language learning outcomes. For instance, O'Keefe and McCarthy found that the use of concordance tools improved students' understanding of word meanings and usage[16]. Similarly, Jin and Deane found that the use of corpus tools improved students' writing skills by helping them identify common errors and use more sophisticated vocabulary[18]. Computer devices are comfortable to use corpus tools as computers can be preferred by language learners to accomplish the tasks compared to mobile phones[19]. However, there are also challenges associated with the use of corpus tools in language teaching. For instance, some teachers may lack the necessary skills and training to use corpus tools effectively. Additionally, there may be technical

issues with accessing and using the tools. Despite these challenges, it is clear that corpus tools have the potential to enhance language teaching and learning.

In conclusion, the use of corpus tools in English language teaching is a promising approach to improving language learning outcomes. English Corpus Tools are becoming an essential component in teaching and learning English. The data-driven approach of Corpus Linguistics provides learners with access to authentic language usage, personalized learning, and effective feedback. The application of Corpus Tools in ESL classrooms helps learners to develop their language proficiency and achieve better results. Corpus tools can be used to teach vocabulary, grammar, collocations, and discourse analysis. While there are challenges associated with using corpus tools, the benefits outweigh the challenges. However, teachers need to have the technical skills to use Corpus Tools effectively, and the availability of appropriate materials is also essential. Therefore, we recommend that teachers incorporate corpus tools into their language teaching curriculum and receive adequate training to use them effectively.

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DEVELOPMENT OF STUDENTS' CREATIVE ABILITIES THROUGH TEACHING "LANDSCAPE PAINTING"

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Annotatsiya: Ushbu ilmiy maqola «Tasviriy san’at va muhandislik grafikasi» ta’lim yo‘nalishi talabalari va o‘qituvchilari uchun mo‘ljallangan bo‘lib, unda tasviriy san’at manzara janrida bo‘yoqda ishlashning maqsad va vazifalari, tasviriy san’atni o‘qitishning pedagogik mahorati kabi masalalar o‘z aksini topgan.

Kalit so‘zlar: Moybo‘yoq, rangtasvir, kartina, mastexin, lessirovka, alla prima, politra, blik, grunt, eskiz, akvarel, uslub, kompozitsiya, axromatik, Rang koloriti, janr, garmoniya, vitraj, baget, natyurmort, to‘yinganlik bo‘yoq, obraz, refleks, yorug‘lik, ritm, soyayorug‘, rassom, forma, yorug‘lik, chiziq, personaj, abstrakt, faktura, monumental, buyust, plastik.

Аннотация: Данная статья рассчитана для студентов и преподавателей по специальности «Изобразительное искусство и инженерная графика».

В статьи освещаются основные аспекты изобразительного искусства, такие как рисунок и живопись пейзажа. Даются научно-методические рекомендации организации уроков изобразительного искусства и приобретение навыков по рисунку, живописи и композиции пейзажа.

Ключевые слова: акварель, живопись, живопись, мастехин, меньше живописи, все прима, политра, хрупкость, грунт, эскиз, акварель, стиль, композиция, ароматика, цветовой цвет, жанр, гармония, багет, натюрморт, насыщенная краска, изображение, рефлекс, свет, ритм, тень, художник, форма, свет, линия, характер, абстракция, текстура, монументальность, бюст, пластика.

Abstract: This article is intended for students and teachers in the specialty "Visual Arts and Engineering Graphics".

The article highlights the main aspects of fine art, such as drawing and landscape painting. The scientific and methodological recommendations of the organization of

lessons in fine art and the acquisition of skills in drawing, painting and landscape composition are given.

Keywords: Watercolor, painting, painting, mastexin, less painting, all prima, polytra, fragility, soil, sketch, watercolor, style, composition, aromatics, color, genre, harmony, baguette, still life, saturated paint, image, reflex , light, rhythm, shadow, artist, form, light, line, character, abstraction, texture, monumentality, bust, plastic.

Introduction. Certainly, we are doing a great job of educating young people with a solid life position, occupying modern knowledge and professions that are independent-thinking [1].

Today, the development of Uzbek national spirituality cannot be imagined without samples of fine art. The model program on the subject of “Painting” is developed on the basis of qualification requirements, it is aimed at further deepening the reforms in the Republic of art education, training qualified specialists in the field of fine arts, developing their professional features, as well as demonstrating the skills of a talented, creative specialist and arousing interest in this field, in finding its direction, , training of qualified personnel one of our great goals, which stands today, is to give an understanding not only of the drawing of works of fine art or their expression with colors, but also about the harmony of colors in the works, as well as the interrelationship of warm and cold colors with each other. The specialist also develops the ability to create and feel different types of colors that are formed from a mixture of different colors in the process of working on any work. Painting is not only one of the types of fine arts, but also it is the basis for all types of fine arts and a guarantee of artistic mastery. It creates a wide range of opportunities and freedoms for the future specialist to express the ideas of fine arts. The science of painting is at the forefront of all specialties of fine arts, it aims to form a small specialist-personality who has a culture of artistic representation, faithful to the traditions of realism.

“With the high intellectual and spiritual potential of our young people to think independently, we will mobilize all the forces and capabilities of our state and society to develop and be happy as humanists who do not leave their peers in any field in the world” [2]. “The Action Strategy on the five priority areas of development of the Republic of Uzbekistan, adopted on the direct initiative and under the leadership of President Shavkat Mirziyoev, has launched a new stage of development. The practical results, signs and features of this process are clearly visible today in all spheres of our lives, and most importantly, in the consciousness, aspirations and actions of our people. In this sense, it is true to say that the Strategy of Action is an important program for a new era of development, which defines the scientific, theoretical, practical and constructive basis for the rapid development of Uzbekistan in the face of rapidly changing times” [3].

It consists of educating students artistically, enhancing their artistic tastes, creating works of art in the bosom of nature, developing the skills of seeing and understanding works of fine art. It also involves the formation of skills for students, future artists and educators to accurately depict, analyze the environment, perception, color perception, the creation of paintings. The art of realistic painting aims to develop the skill of expressing the being in realistic images. The use of pedagogical technologies in the

formation of methods of teaching students to create in landscape composition in open-air plenary lessons in painting, pencil drawing, educational practice.

Painting, teaching practice in open-air plenary sessions, teaching students using modern innovative technologies in the development of creative skills in landscape composition, the level of mastery of this subject will increase. For example:

- computer and pedagogical technologies are combined in the teaching process;
- development of software and pedagogical tools for outdoor drawing (plein air);
- using animation and multimedia (moving lines in the direction of drawing, applying sound effects);
- master classes are organized;
-sketch, color short-term images if the object itself is processed.

Discussion. It is important that students know the color relationships very well in painting. Thus, it is possible to learn the theoretical foundations of realistic painting and at the same time learn ways to work effectively as a result of practical exercises. The problem of how colors are formed and distributed in nature has long attracted the attention of scientists and artists. Prominant scientists Newton and Lomonosov Helmholtz studied the nature of colors on a scientific basis. MV Lomonosov was the first in science to discover basic colors. I. Newton conducted a series of experiments and proved that white light is multi-colored It has generated spectrum colors on the screen. To do this, Newton passed sunlight through a small slit in the black curtain and placed a triangular prism in its path, resulting in a wide set of light of different colors on the screen. Spectral colors appear on the screen and are arranged as follows: red, yellow, orange, green, blue, light blue, and purple.

In the XIX century, the German naturalist G.L. Helmholtz made an important innovation in the theory of color science. Years of experience have shown that chromatic colors should be categorized based on three main characteristics - color tone, color texture, and saturation.

If we add a pale gray to a color tune, its attractiveness decreases and becomes dim. This condition is manifested in the fact that the color is less saturated, that is, the paint in its composition is reduced. So, when you say that the color is saturated or not saturated, it is necessary to understand that its color ratio in relation to gray, tozali, if the color circle is divided into two equal parts, then in the first half there are red, granular, yellowish, yellow colors, in the second half there are blue, violet blue. The first half of the circle is warm and the second half is cold. The reason for this name is that red and yellow are reminiscent of fire, hot iron, reddish, air is blue and green is reminiscent of ice and water.

When two spectra are superimposed on the color, a complex color is formed by the addition of colors. Red color, when combined with blue and violet colors, forms a beautiful shade of pink, orange, and purple. When two spectra are superimposed on the color, a complex color is formed by the addition of colors. Red color, when combined with blue and violet colors, forms a beautiful shade of pink, orange, purple. The spectrum colors that give white color when added are called complementary or complementary colors. Because they complement each other until a white color is formed. Such colors include yellow, blue, red, bluish, green and Violet. There is a difference between the addition of spectral colors with the addition of dyes. Three

main-the electric color: red, green and white is formed when the blue is added. From the addition of basic red, yellow and blue dyes, a black color is formed. White is formed as a result of the addition of yellow and blue of the spectrum. But if we mix yellow and bluish paints, a green color is formed.

Hence, colors that form a white or near-gray color as a result of optical mixing of two colors are complementary. For example, dark red and green, blue and emerald, red, yellow, bluish, yellowish green and purple are complementary colors.

What is being drawn with the image must also be similar in their color ratios in order for there to be a complete resemblance between the situations. Working with watercolor paints occupies a significant place in the fine arts. One of the most delicate types of watercolor painting. From time immemorial, watercolor has fascinated many artists with its elegance and brightness of colors. Watercolor is a Latin word meaning "water-based paints." means. Watercolor contains cherry glue, glycerin and a little honey as a dye (a finely ground powder of plants or minerals) and as a binder. All of them are easily soluble in water, so they are diluted by adding water to the paint.

White is not used in watercolor. It will be replaced by white paper itself. THE PAPER should be white, thick enough, and the surface rough. If it’s too smooth, the surface colors won’t lie well enough. In the process of painting images of things and objects, one goes from general to private or vice versa from private to general, and finally the work ends with rounding. The development of the landscape genre in Russia dates back to the XVIII century. Moscow, St. Petersburg architectural monuments skillfully described by F.E. Alekseev. Landscape art has the power to have a positive effect on a person by reflecting the beauty of the outside world. Therefore, the artist expresses his aesthetic attitude towards nature, understanding the most delicate, typical states of the natural world, the harmony of colors.

In a landscape work, a person sings about his personality, intellect, inner feelings through images and creates an image of nature. As an example, “Golden Autumn” and “On Eternal Silence” by I. Levitan, “Forest Distances” by I. Shishkin, and “Thoughts on the Urals” by V. Meshkov can be cited. Works of the genre of landscape in the fine arts form in man the qualities of love for nature and beauty. Artists also refer to the landscape directly in historical and everyday works, write sketches and sketches. In this case, the landscape serves as an additional background in the picture.

Landscape painting is a necessary part of the painting program, which is important in the process of preparing artists and educators. Nature is endlessly attractive and beautiful. Sunlight and the environment create an infinite variety of colors.

It is well known that the state of the environment is important in the process of image processing. This is because the light source on the object being drawn is affected by other objects around it. They can be mutually compatible or incompatible with their color, hue. The artist must deeply understand, analyze, and then express such changes. Otherwise, the image will become lifeless and ineffective, and for the learner, the scenes will be very useful in describing such situations. Because it clearly shows the expressiveness of the harmony of shadows, rays, colors in the objects. They serve to show the shape, brightness, integrity of the image. Light ("blik") and colored light ("reflex") are reflected in all objects in the landscape. Because they do not absorb light, but reflect it back. It is sometimes more difficult to perceive reflections on surface

objects that refract light. But they must always be practiced so that the student can grasp and describe them. In order to achieve this, every student-young artist can read both theoretical and practical aspects of their knowledge in book guides and see paintings in museums and exhibition halls.

Working with images in the watermark is a very interesting occupation both for the artist and for the student who is now studying. But there are also serious difficulties with this training, which is also associated with the technology of watercolor painting. Because working with watermelons requires certain preparation. To them, it is possible to include the necessary measures, such as the choice of paints, the preparation of the surface (fabric) for work, covering it with a coating (grunt), the selection of whiskers, the selection of solvents. Learning to work out the oval of the watermark is desirable if it is mastered by drawing still life (natyurmort) and doing exercises.

Some aspects of the process of working with watercolor still life are similar to watercolor techniques. Because sketch is drawn by the pencil firstly. If the image is more perfect for working with watercolors, it is drawn in more detail, and for working with watercolors, the drawing is generalized and reflects the most important things. This is because the detail in the process of working with watercolors can be worked on with a brush.

To lighten a color in the oil-paint, white color is added to it as much as necessary. There is some that after adding white color the surface of the paint decreases to a certain extent. It is permissible to do this on a certain account in the process of performing training exercises. One such aspect of watercolor technique is the development of color schemes, drawings before starting the work process the main long-term task. Then it will be possible to apply it in the main work to study and consider the main features of the future painting as an experiment.

Special materials are used to process watercolor images. They consist of a fabric that has been drawn into the frame and coated (primed), the required types of watermarks, and painting-wood, different sizes of brushes, mastic and solvents.

It is safe to say that how the fabric is made is one of the factors that determine the quality of the image. Its coating (primer) can be prepared in two different ways. One is an oily coating and it is as follows. A mixture of 5% glue (gelatin, fish or carpentry glue) is added to an equal volume of mortar. It covers the surface of the fabric. Once applied, a coating paint layer is prepared. It is a mixture of the following composition, that is - special bleached painting oil with the addition of dry white paint powder. The ratio of oil to powder should be such that it is not liquid from the watercolor that is removed from the finished container. Then it can be easily smoothed with mastic on the surface of the fabric. After 1–2 weeks of drying, the rough soils are thoroughly leveled with sandpaper, and the oily coating mixed with turpentine is painted flat with a flat, large brush (flute). The fabric prepared in this way is dried for 2-3 months. The place where it is stored must be warm and dry.

The second type of coating, called "adhesive coating", is made as follows. 50-60 gr. gelatin is melted and added to it 15 gr. It is rubbed on the fabric 1-2 times. When the first coat is dry, the surface of the cloth is smoothed with sandpaper, then the second coat is applied. The glue mixture is then melted in equal proportions with chalk and white paint powder at a temperature of 40 ° C. If its composition seems to remain thick,

it is added from the same mixture. Such a coating is applied 2-3 times in layers. There has to be a certain amount of time for them to see the range. Coatings can also be made in a certain color. They come in handy in doing more creative work and in composition creation processes. Effective use of color is also required when performing watercolor painting exercises. Inadvertently using too many color variations when working on tasks does not give good results.

It is known that there are seven primary colors (dyes) in nature. They are red, orange, yellow, green, bluish, and blue, purple. The most important colors to be on the mixing board are red, yellow, and blue. Because they are not formed by other remaining primary colors. It is possible to extract a lot of colors from a mixture of these. It is no secret that even black can be found in them. It is enough to know which color to mix with each other and how much. For this, of course, there must be experience and learning.

It should also be noted that there are no absolute whites and absolute blacks in nature. They all come in some sort of color glow. For example, we can see that black tends to brown, blue, green. The tendency of white to have different subtle hues is also natural. The technique of working with oil-painting is very convenient for finding and depicting such colors and shades, as well as their darkness. With the breadth of these possibilities, it stands out from other types of paint.

It is also important to know what types and sizes of brushes to use when painting with watercolor techniques. There are many benefits to choosing them. It is known that the use of still life, flat and rough brushes when doing large works ensures the quality of work, efficiency. Diluents and solvents are added to watercolors. They can be oily, reduced in fat. Oil is a good tool for the paint to dry slowly, and the paint dries slowly when used with it. This makes it easier to process images that will be executed in the long run. Such solvents can sometimes also be mixed with lacquer, so that the paint layer of the work dries faster and the oil of the paint is prevented from being absorbed into the fabric. It should also be noted that in the technique of watercolor technique, the question of how to place the paint on the surface of a special coloring board (polytra) is also important. The colors can be divided into warm and cold colors, and at the same time can be placed separately depending on the darkness. White paint is usually in the middle or at the beginning of the color line. If it is placed the same every time, the artist will learn it and it will be convenient to find and use the desired paint immediately. There are many aspects of watercolor image processing that need to be explored. They all allow you to learn through a lot of practice. The experience is the result of regular practice, both theoretically and practically. Reading specialized literature is also a good tool.

The main film-forming component of watercolors is vegetable oils derived from the seeds of some plants.

Oils are divided into four groups depending on what film they form when they dry. The first group consists of flaxseed oils. They dry very quickly and are durable, insoluble in organic solvents. This group includes: flaxseed, hemp oil and other oils.

The second group consists of plants oils. The film-forming ability is lower than that of the first group, drying out over a longer period of time. The resulting film is partially

soluble in organic solvents, softens and melts when heated. This group includes sunflower, soy and other oils.

The third group consists of olive oils. These oils do not dry completely. Plant oils consist of glycerides of fatty acids (94-98%), small amounts of saturated and unsaturated fatty acids (1-2%), non-washable agents (0.5-1%) and protein (0.5%). . The main reason for the formation of a film of vegetable oils is the presence of unsaturated fatty acids in their composition. The degree of saturation of fats with fatty acids, the characterization of the ability to form a film is indicated by the unit of iodine in its composition. The more iodine unit in the oil, the faster it dries. One of the important properties of plant oils is its polymerization ability. The polymerized oil has quick-setting properties and forms a film with good physicochemical properties.

PAINTING "ALLA PRIMA"

The term "Alla prima" is derived from the Latin word "alla prima vizta", which means 'at a glance' and means to work with paste paint in a short time. In this case, the picture is ready in one session. To do this, the artist must have strong self-confidence and experience in working with paints. The dyes are mostly mixed in a palette, where bright and clean colors can be found. This is a very convenient method to work in an open-air environment. Paints are applied with stiff bristle brushes. Multi-woven canvas or cardboard can also be used as a canvas.

In the style of "Alla prima" it is possible to create a typical compact and embossed composition. It can be easily smoothed, polished and added to the edges or contours. To do this, you can use dry and soft brushes made of cow dung. The edges of the colors and contours can thus be made soft and slightly penetrating. This method is also referred to as "sfumato" (spreading contour).

TECHNIQUES OF WORKING WITH MASTEXIN

The technique of working with Mastexin is a variant of "alla prima" painting. First the main structure of the picture is painted with monochrome colors, and then the color is painted by the method of paste using elastic mastic. Unlike white reliefs, a light block is placed here on a slightly dried surface.

LESSIROVKA AND PAINTING LESSIROVKA TECHNIQUE

The process of working on Lessirovka technique is very tedious; it requires a lot of time and endurance. First of all, a clear imagination and the intellectual image of the image to be created will be very important. The picture is seen in a monochrome method. The painting, done in the technique of Lessirovka, looks to the base and depth, as if seeing the bottom of a transparent watery ash. When the first stage of the work is completed, the picture is covered with undercoating paints. The next layer of paint should be applied after the previous colors have dried at least halfway.

MULTI-LAYER PAINTING

One of the most common methods in painting is multi-layer painting. Often the picture cannot be finished in one session. The picture looks like a sketch and an unfinished work. The artist has a desire to rework it. The artist does not finish the work and leaves it "open". All of the above methods and combinations are used in multi-layer painting. More specifically, it would be wrong to say that I started the painting and then finished it. In the process of working with multi-layer painting techniques, many new methods can emerge. In this case, the application of this technique itself

becomes more important than the completion of the work. Working on a painting should always be “open” and not seem like an “unfinished” job. From this point of view, it is necessary to pay attention not to the practical aspects of the work done, but to its artistic criteria.

Conclusion. The coloring capabilities of the painting and the long-term preservation of the painting depend not only on the quality of the materials used, but also on the correct choice of painting technology. Defects in paintings can often be caused by the artist's lack of knowledge of painting techniques or poor quality primer. An artist’s professional mistakes happen for a variety of reasons. They may not understand the essence of the work and the desire to experiment, as well as depend on the personal characteristics of the artist (strong temperament). Undoubtedly, every artist makes mistakes for one reason or another.

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ANALYSIS OF THE STATE AND PROSPECTS OF THE USE OF INTELLIGENT SYSTEMS IN HIGHER EDUCATIONAL INSTITUTIONS

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Annotasiya: Ushbu maqolada ta'lim muassasalarini boshqarish faoliyatining barcha sohalarida intellektual axborot tizimlari qullashning zarur bo'lgan usullar muhokama va tahlil qilingan. Oliy ta`limni innovatsion rivojlantirish sharoitida kafedra faoliyatini boshqarishning intellektual tizimini yaratish va undan foydalanish texnologiyasini takomillashtirish bo'yicha metodlar kelririlgan.

Kalit so'zlar: intellektual axborot tizimlari, kafedra faoliyatni rivojlantirish, boshqaruv faoliyati..

Аннотация: В данном статье рассмотрены и проанализированы интеллектуальные информационные системы во всех сферах управленческой деятельности образовательных учреждений. А также рассмотрены методы совершенствования технологии создания и использования интеллектуальной системы управления деятельностью кафедры в условиях инновационного развития высшего образования.

Ключевые слова: интеллектуально-информационные системы, развитие деятельности кафедры, управленческая деятельность.

Abstract: This article discusses and analyzes intelligent information systems in all areas of management activities of educational institutions. And also considered methods for improving the technology of creating and using an intelligent system for managing the activities of the department in the conditions of innovative development of higher education.

Key words: intellectual information systems, development of the department, management activities.

Introduction. At present, great changes are taking place in our country, radical reforms cover all aspects of our society and economy. In particular, such significant changes are taking place in the system of higher education, and much attention is paid to innovative processes based on the best world practices.

According to the Decree of the President of the Republic of Uzbekistan "On approval of the strategy "Digital Uzbekistan-2030" and measures for its effective implementation" and "On the development strategy of the new Uzbekistan for 2022-2022" in the implementation of digital transformation in the national economy, industry and society as a whole, the main goal is the development of human capital as the main factor, the creation of conditions for the formation of citizens' innovative competencies of the individual as the subject of all innovative changes.

In the Message of the President of the Republic of Uzbekistan Sh.M. Mirziyoyev Oliy Majlis was told that "..Improving the quality of education is the only correct way for the development of New Uzbekistan".

These facts prove that today modern information and communication technologies are becoming the main source of pedagogical innovations. The influence of information and communication technologies on all spheres of society, including education, is so great, that they are becoming a tool used to provide technical assistance to pedagogical technologies and forms of the educational process, a tool to influence education. In this regard, the problem of developing technologies for creating and using intelligent control systems in the conditions of innovative development of higher education requires reflection, since a modern leader needs the ability to design control mechanisms, expand the information space, develop their intellectual and creative potential.

Literature review. The theoretical analysis carried out showed that in developed countries, automated personnel management systems such as ERP, CRM, BPA, BPM, ERP, CRM, EDMS, BI - Business Intelligence, PM-Project Management, Air - platform, SAP SuccessFactors, are largely implemented. StaffCounter, Kickidler, SIMS.net Capita Education, IBS, "University Management-Galaxy" - ERP, GS-Vedomosti System, ACS "Sprut", (AIS) Axioma, "BOSS-Kadrovik", "AiT:XII Personnel Management", Kundalik.com., ProSuit, LMS, Unisys, HEMIS, etc.

Research Methodology. Innovative development of higher education is an important process. They are the result of various initiatives and innovations that are promising for the evolution of education and have a positive impact on the development of all forms and methods of education. The basis of innovations is the modernization and informatization of education. Modernization of education is an innovative process of transformation of the entire education system with the aim of maximum satisfaction of the educational needs of the subjects of education. In addition, education should achieve the expected effectiveness regardless of the target group of education and the location of educational resources and services, and also be carried out using the latest information and communication technologies. As a result of modernization, a new quality of education should be achieved. It is determined, first of all, by its compliance with the present and future requirements of modern life in our country.

The most important areas of informatization of education are the formation of a virtual information environment at the level of educational institutions; system integration of information technologies in education to support learning processes, scientific research and organizational management; creation and development of a single educational information space; continuous provision of new scientific and technical and scientific and methodological information and others.

Based on theoretical analysis, effective management is impossible without strong information support. In a rapidly developing world, information technology is indispensable in education, eradicating traditional methods of activity and streamlining the process of providing educational services.

Analysis and results. There are three most important factors that affect the development of information systems in an organization: the development of organizational management methods; general functionality and performance of computer systems; development of an approach to the technical and software implementation of the elements of an information system [1,2,3].

Figure 1 is presented as the following scheme, where Kapulin proposed IIS [4,5].

In our opinion, information systems are understood as information technologies as a technological application of computers and other technical means of processing and transmitting information. Like any technology, information technology includes in its composition certain complexes of material means (information carriers, technical means for its measurement, transmission, processing, etc.), ways of their interaction, as well as certain methods of information organization with information processing.

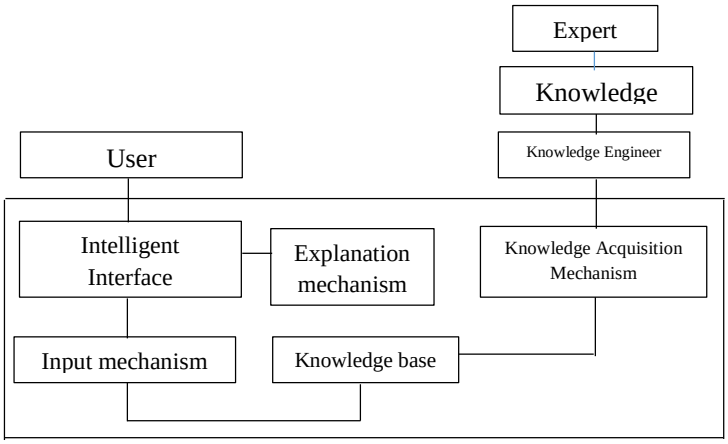
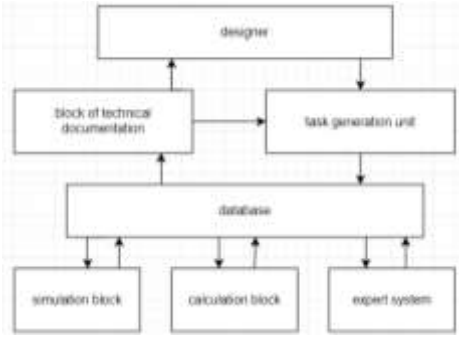


Fig.1. IIS scheme according to D.V. Kapulin

At present, there are a number of problems that cannot be solved by traditional methods of the theory of automatic control. This is typical for large and complex objects and systems, the algorithms of which cannot be formalized or work in uncertain situations. As a rule, such objects and systems are managed by people (human operator), experts in decision-making in this area. This type of control systems is called knowledge-based control systems or intelligent control systems.

The database, the simulation block, the calculation block and the expert system perform functions similar to those of the corresponding blocks of the automated system. Instead of a communication unit with measuring equipment in computer-aided design systems, there is a task generation unit. The designer enters the technical specifications for the design into the block, it indicates the goals that must be achieved during the design, and all the restrictions that cannot be violated. The block for preparing technical documentation facilitates the creation of technical documentation or the subsequent manufacture of an electronic product (Fig. 2).

According to A. V. Ostroukh, an intelligent system is an automated system with a knowledge component. Intelligent systems are understood as a set of tools (logical, mathematical, linguistic, software and interactive) designed to process information and help people in various activities.



Rice. 2. Typical CAD scheme

After the decision is made, an object control algorithm is developed [6,7] (Fig. 3).

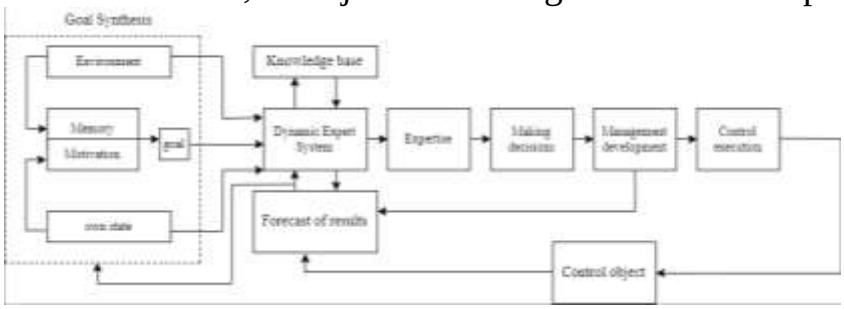


Fig.3. IP according to A. V. Ostroukh

The creation of efficient high-speed and high-performance processors, the development of network technologies, the reception and processing of huge amounts of information, effective solutions for management and other activities using information and databases, provided an objective basis for the design of intelligent systems. Based on knowledge, behavior, algorithms and current information about one's own state and the state of the environment in the field of research and application of intelligent systems, it is possible to solve problems of various levels of complexity. The system as a whole is formulated through such concepts as communication, relationships, integration, integrity, constituent parts. The community of interconnected, interdependent and mutually influencing parts, which constitutes an integral object. Considered one of the types of social system, the pedagogical system consists of a community of structurally and functionally related components that serve the upbringing and education of people and the tasks of organizing and managing pedagogical systems.

The structure of an intellectual system consists of such elements as knowledge goals, expert systems, interactions, management objects (subjects) and the presence of direct and feedback.

Conclusion/Recommendations. Thus, in accordance with the foregoing, it is generally accepted that the main attribute of an intellectual system is not just knowledge, but the knowledge necessary to solve a particular problem. Intelligent systems not only offer solutions, but can also implement solutions themselves and modify the developed models. The rapid development of computer technology has led to intensive development in the direction of intelligent systems, including data mining based on mathematical methods. Modern management IS is a process that clearly defines the rules for working with information in the system, which have the

characteristics of the integrity of the elements of an intelligent system, planning, information evaluation, stability, adaptability, convenient interfaces and the ability to make decisions.

Based on this, the system of a higher educational institution has structural units (departments), each of which performs the functions assigned to it. Management of the educational process is the most important stage and includes administration functions.

The analysis showed that in educational institutions the weak functioning and development of intelligent information systems prevail, so the task arises of designing and implementing a software product of an intelligent information system for information support of management processes.

One of the determining conditions for the effectiveness and development of the department's activities is high-quality management based on modern information technologies, improvement of information and management support provided by intelligent systems. Therefore, the processes of modeling, designing, creating and evaluating intelligent systems are important so that system deficiencies and opportunities for improvement can be identified.

The implementation of these processes in the activities of the department will allow solving the following tasks: automation of management processes; support for the electronic form of document management, the availability of all regulatory documents; accessibility and openness of the results of the educational process; monitoring the quality of education (analysis and reporting on the results); storage of personal data in electronic form; the availability of a sufficient volume of digital educational resources; ensuring communication of all participants in the educational process.

Therefore, it is necessary: to conduct a detailed analysis of the state of the information and educational environment of the subjects of the educational process in the following positions: determination of the equipment of educational institutions with computer equipment and telecommunications (access to the local, corporate and global Internet network); availability of informatization programs for educational institutions; availability and level of use of information educational resources and innovative technologies by an educational institution; identification of the features of the pedagogical activity of the educational institution; the level of training of specialists of educational institutions in the field of application of information technologies; development of architecture, structure, models and software complex of an intelligent information system of an educational institution, development of a mechanism for the development of an intelligent information system.

In many educational institutions, the tasks of achieving a certain level of hardware and software have been partially solved, but the main task of the head of a higher educational institution - to ensure the effectiveness of these tools for managing the educational process remains relevant.

Thus, it is expedient to use modern intellectual systems in the department of a higher educational institution, which will significantly speed up work in making optimal decisions, allow workflow to be carried out, and also serve the most important management processes. As a result, the quality of management is improved, which ensures the implementation of the goals.

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MODERN TECHNOLOGIES FOR TEACHING RECEPTIVE SKILLS

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Annotatsiya: Ushbu maqolada til o'rganishda retseptiv ko'nikmalarni o'rgatish uchun zamonaviy texnologiyalardan foydalanish muhokama qilinadi. Maqolada mavzuga kirish bo'lib, zamonaviy texnologiyalar ta'limda qanday inqilob qilgani va til o'rganishda retseptiv qobiliyatlar qanchalik muhim ekanligi ta'kidlangan. Keyin maqolada retseptiv ko'nikmalarni o'rgatish uchun zamonaviy texnologiyalardan foydalanish bo'yicha so'nggi tadqiqotlarni o'z ichiga olgan adabiyotlar sharhi taqdim etiladi. Maqolada o‘quvchilarning tinglash va o‘qish ko‘nikmalarini oshirishda onlayn va mobil texnologiyalar, o‘yinlashtirish va virtual reallikning afzalliklari muhokama qilinadi.

Kalit so'zlar: zamonaviy texnologiyalar, retseptiv ko'nikmalar, tillarni o'rganish, onlayn ta'lim platformalari, mobil texnologiyalar, o'yinlar, virtual reallik, interaktiv yangiliklar, Internet-saytlar.

Аннотация: В данной статье рассматривается использование современных технологий для обучения рецептивным навыкам в изучении языка. Статья представляет собой введение в тему, подчеркивая, как современные технологии произвели революцию в образовании и как рецептивные навыки имеют решающее значение для изучения языка. Затем в статье представлен обзор литературы, охватывающий последние исследования по использованию современных технологий для обучения рецептивным навыкам. В статье обсуждаются преимущества онлайновых и мобильных технологий, геймификации и виртуальной реальности в повышении навыков аудирования и чтения учащихся.

Ключевые слова: современные технологии, рецептивные навыки, изучение языка, платформы онлайн-обучения, мобильные технологии, геймификация, виртуальная реальность, интерактивные доски, новостные статьи, подкасты, геймифицированные приложения.

Abstract: This article discusses the use of modern technologies for teaching receptive skills in language learning. The article provides an introduction to the topic, highlighting how modern technologies have revolutionized education and how receptive skills are crucial for language learning. The article then presents a literature review, covering the latest research on the use of modern technologies for teaching receptive skills. The article discusses the benefits of online and mobile technologies, gamification, and virtual reality in enhancing students' listening and reading skills.

Key words: modern technologies, receptive skills, language learning, online learning platforms, mobile technologies, gamification, virtual reality, interactive whiteboards, news articles, podcasts, gamified apps.

Introduction. In recent years, the use of modern technologies in education has become increasingly popular. From online learning platforms to interactive whiteboards, technology has revolutionized the way we teach and learn. One area that has benefited greatly from these advancements is the development of receptive skills, including listening and reading. In this article, we will explore some of the latest tools and techniques that can be used to help students improve their understanding of foreign languages and enhance their receptive skills. From traditional methods to cutting-edge technologies, we'll cover everything you need to know about modern technologies for teaching receptive skills.

Literature Review. Receptive skills, such as listening and reading, are crucial components of language learning. They enable learners to understand and communicate effectively in a foreign language. In recent years, modern technologies have been increasingly used in teaching receptive skills. This literature review examines some of the latest research on the use of modern technologies for teaching receptive skills.

Online and Mobile Technologies:

Online and mobile technologies have become popular tools for teaching receptive skills. According to a study by Liu and Liu (2018), mobile devices can be used to create an immersive learning environment that enhances students' listening and reading skills. Additionally, online resources such as podcasts, videos, and news articles can be used to provide students with authentic language input that is relevant to their interests and needs.

Gamification:

Gamification is the use of game elements in non-game contexts, such as education. According to a study by Chen and Li (2018), gamification can be an effective way to motivate students to engage with language learning materials and improve their receptive skills. Gamification can also provide students with immediate feedback, which can help them identify areas for improvement and adjust their learning strategies accordingly.

Virtual Reality:

Virtual reality (VR) is a technology that simulates a realistic environment that can be interacted with through a computer or mobile device. According to a study by Lee and Lee (2019), VR can be used to create immersive learning experiences that enhance students' receptive skills. For example, VR can be used to simulate real-life situations, such as ordering food in a restaurant or asking for directions, that require students to use their listening and reading skills.

Modern technologies have revolutionized the way we teach and learn receptive skills. Online and mobile technologies, gamification, and virtual reality are just a few examples of the latest tools and techniques that can be used to enhance students' understanding of foreign languages. As technology continues to evolve, it is likely that new and innovative ways of teaching receptive skills will continue to emerge.

Methods and materials:

1. Interactive Whiteboards:

Interactive whiteboards are a popular tool for teaching receptive skills in the classroom. They can be used to display multimedia materials such as videos, images,

and audio recordings. Interactive whiteboards also allow teachers to create interactive activities that engage students in the learning process.

2. Online Learning Platforms:

Online learning platforms such as Duolingo, Rosetta Stone, and Babbel are popular tools for teaching receptive skills. These platforms provide students with a variety of interactive activities that are designed to improve their listening and reading skills. They also provide immediate feedback, which can help students identify areas for improvement.

3. Podcasts:

Podcasts are a great tool for improving students' listening skills. They provide students with authentic language input that is relevant to their interests and needs. Some popular language learning podcasts include Coffee Break Spanish, Learn French by Podcast, and ChinesePod.

4. News Articles:

News articles are a great tool for improving students' reading skills. They provide students with authentic language input that is relevant to current events. Some popular news websites for language learners include BBC Learning English, The New York Times Learning Network, and Deutsche Welle.

5. Gamified Apps:

Gamified apps such as Kahoot! and Quizlet are popular tools for teaching receptive skills. These apps provide students with interactive activities that are designed to be engaging and fun. They also provide immediate feedback, which can help students identify areas for improvement.

Modern technologies have revolutionized the way we teach and learn receptive skills. Interactive whiteboards, online learning platforms, podcasts, news articles, and gamified apps are just a few examples of the effective methods and materials that can be used to improve students' listening and reading skills. As technology continues to evolve, it is likely that new and innovative methods and materials for teaching receptive skills will continue to emerge.

Discussion And Conclusion. The use of modern technologies for teaching receptive skills has many benefits. Online and mobile technologies, gamification, and virtual reality can provide students with an immersive and engaging learning experience. Interactive whiteboards, podcasts, news articles, and gamified apps can provide students with authentic language input that is relevant to their interests and needs. These tools and techniques can also provide immediate feedback, which can help students identify areas for improvement and adjust their learning strategies accordingly.

However, there are also some potential drawbacks to the use of modern technologies for teaching receptive skills. For example, some students may become too reliant on technology and may struggle to develop their receptive skills in the absence of technology. Additionally, some students may become distracted by the many distractions that technology can provide, such as social media and online games.

In conclusion, modern technologies have revolutionized the way we teach and learn receptive skills. Interactive whiteboards, online learning platforms, podcasts, news articles, and gamified apps are just a few examples of the effective methods and

materials that can be used to improve students' listening and reading skills. While there are potential drawbacks to the use of modern technologies, the benefits of using these tools and techniques are clear. As technology continues to evolve, it is likely that new and innovative ways of teaching receptive skills will continue to emerge.

Results: The use of modern technologies for teaching receptive skills has been shown to have many benefits. Studies have shown that online and mobile technologies can be used to create an immersive learning environment that enhances students' listening and reading skills (Liu & Liu, 2018). Additionally, gamification has been shown to be an effective way to motivate students to engage with language learning materials and improve their receptive skills (Chen & Li, 2018). Virtual reality has also been shown to be an effective tool for creating immersive learning experiences that enhance students' receptive skills (Lee & Lee, 2019).

Furthermore, the use of podcasts and news articles has been shown to be an effective way to provide students with authentic language input that is relevant to their interests and needs (BBC Learning English, n.d.; The New York Times Learning Network, n.d.). Finally, the use of interactive whiteboards and gamified apps has been shown to be an effective way to engage students in the learning process and provide immediate feedback (Kahoot!, n.d.; Quizlet, n.d.).

Overall, the use of modern technologies for teaching receptive skills has been shown to be an effective way to enhance students' understanding of foreign languages and improve their receptive skills.

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CREATION INSTRUCTIONAL DESIGN OF THE LESSON AS AN ELEMENT OF THE INNOVATIVE EDUCATION

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Annotasiya. Ushbu maqola maktab fanlarini o'qitishda o'quv dizaynidan foydalanishga bag'ishlangan. Ushbu maqolada Ta'lim dizayni tushunchalari, uning o'ziga xos xususiyatlari, afzalliklari va turli yondashuvlari tasvirlangan. O'qituvchi va talaba imkoniyatlarini hisobga olgan holda darsning o'quv dizaynini ishlab chiqish bo'yicha ko'rsatmalar va uslubiy tavsiyalar berilgan. Bu erda o'qituvchilarni tayyorlash tizimining yangi tendentsiyalari - "Muallif maktabi" va uni o'quv va o'quv materiallarini ishlab chiqish uchun o'quv dizayni elementlari asosida amalga oshirish haqida bir necha so'z beriladi.

Kalit so'zlar: Amalga oshirish, O'qitish, dizayn, O'quv dizayni

Аннотация. Данная статья посвящена использованию Педагогического Дизайна в преподавании школьных предметов. В этой статье изображены концепции Педагогического дизайна, его особенности, преимущества и различные подходы. Даны указания и методические советы по разработке Учебного проекта урока с учетом возможностей как учителя, так и ученика. Несколько слов о новом направлении в системе подготовки учителей – «Школа наставников» и ее реализации на основе элементов Учебного дизайна для разработки учебно-методических материалов.

Ключевые слова: Реализация, Учебный, дизайн, Учебный дизайн.

Abstract. This article dedicated to use Instructional Design in teaching school subjects. In this article depicted the concepts of Instructional Design, its specific features, advantages and different approaches. There is given instructions and methodological advices on developing Instructional Design of the lesson taking into consideration the opportunities both teacher and student. Here is given a few words about new trends in Teacher Training System – ―Mentor School‖ and implementing it basing on the elements of Instructional Design for developing teaching and learning materials.

Keywords: Implementing, Instructional, design, Instructional design

Introduction. Defining as a process of designing learning materials the concept of Instructional Design – is the systematic logical development of instructional specifications using learning and instructional theory to ensure the quality of instruction. It is the entire process of analysis of learning needs and goals and the development of a delivery system to meet those needs. And also the development process of instructional materials and activities accepted as a design of the lesson basing on the evaluation of all instructions of teacher and learner activities. The phrase

―Instructional Design‖ came from English origin and it means as following: the word Instruction means educational, instructional and learning and the word design means 1) idea, plan; 2) aim, goal; 3) project, draft, graphic, construction.

According to the view of A.Yu.Uvarov the Instructional Design is the concept defined systematic development process of drafting, developing, evaluation and using learning materials for the purpose of providing the effectiveness of Education. During the process of Instructional Design knowledge base Model based on the specific course syllabus is formulated. At the same time, as a result of Instructional Design systematic order of main, minor and additional goals have been effected which should be set up in each steps of education. Instructional design - is a systematic process of usage modern teaching methods and tools for the purpose of achieving expected pedagogic results through educational activities stimulating knowledge and skills of learners taking into consideration the aims of target group and subject basing on clear instructions.

Instructional design can be defined as a technology of learning materials developed with the help of the tools new information technology which provided quality and effectiveness of Education.

The people who developed learning courses and course materials basing on Instructional Design are called Instructional Designers.

Instructional Designers as a mentor teacher should draw specific attention to the following:

- Analyses of target group (to analyze general needs of course participants or learners group).
- Analyses of expecting results.
- Analyses of learning materials and its arrangements by order.
- To choose learning types and teaching tools.
- To define the methods which are used during the teaching process.
- To elaborate the methods of evaluation.
- To elaborate the methods of designing learning materials.
- To make methodological support for learners on digest of learning materials.
- To edit developed learning materials.
- To evaluate the effectiveness learning during the process education.

Given systematic order identified typical activities of the teacher during the process of developing learning materials. While elaborating Instructional design of the lesson, first should take into consideration the general characteristics of potential students, their needs and prior knowledge and skills. And also during the process of elaborating Instructional design of the lesson and preparing learningdidactic materials which are used at the lesson special attention is drawn to widely use of multimedia tools and information communication technology. Lately, despite publishing lots of manuals, guidelines, scientific articles on using multimedia technologies at the lesson in the scientific-pedagogic literatures, they are not widely used in the process of education.

The reason for this is not only the lack of electronic textbooks and manuals but the luck of skills of teachers on using information communication technologies. Basing

on the demands of market economy unification of curriculum and subject syllabi, National Education Standards and creating methodologic provision, developing scientific practical basics of systematic and integrated subject syllabi of uninterrupted education, to achieve widely use of didactic methods which are inspired students and pupils to be active and think critically, implementing modern pedagogic technologies and advanced experience into the process of education, to organize effective independent learning and the problem on formulating social-active person in the Educational organizations should be solved positively.

Creation of electronic learning tools on all school subjects are widened the opportunities on using information-communication technologies in teaching these subjects, enlarge the effectiveness of achievements of students on the relevant subjects. In turns it demands from teachers to renew their knowledge and skills appropriately according to the demands of time. For effective using of Information-communication technology teacher should gain the knowledge and skill on developing Instructional design of the lesson. It is known that the multimedia technologies considered methodological, theoretical and practical bases of formulating information culture both teacher and student. Analyses proofed that with the help of one computer and a multimedia projector can design the process of learning in the maximum level.

The most typical way of this is to prepare presentation of the lesson with the help of the program Power Point and through this can provide the effectiveness of the lesson. This is an Instructional design, which should help designing learning materials, developing Lesson Plans, using and evaluating, effective organization of the learning process for the purpose of systematizing and making in order the knowledge and skills given to the students. The preparation process of demonstrative materials using the program Power Point they can be depicted in slides. The slides include themselves any chosen texts, pictures, moving maps, voice, chronologic tables, graphic images. The depiction opportunities of objects in different colours and views draw students‘ attention.

During the process of presentation teacher provides completeness of any information through giving additional notes. Another convenience of using slide version of the lesson is that it is printable. Before starting the lesson, if the teacher distribute printed version of the slides as handouts, during the lesson children are able to write their own ideas and comments in the special place allocated in the paper. It is very easy way to remember the information which is not given in the textbook and connect it with the next lesson. As a result of systematic preparation of slides and using them at the lesson teacher can compose his own electronic resource library.

Teachers should avoid writing long sentences in the slides which are used at the History lesson. This can be weakened the influence of slides. It‘s expedient to use pictures, graphics, maps and tables concerning to the learning topic for organizing independent work and preparing creative tasks of the students. At the History lesson it is possible to use data, information, encyclopedias, virtual museums, the maps on geographic and historic themes, pictures, drawings, animations, texts, dynamic and statistic depictions of information, images with voice (recorded voice, music and etc.)

For working with the tools of information technologies History teachers should have the following practice: They can - make action plan and technological map; -

prepare materials regarding to the lectures and practical work; - make methodological instructions assessment questions; - analyze the results of progress; - edit contents of the lectures; - Imagine animating actions concerning to the topic in a dynamic vision. Through above mentioned students are able to gain the following skills: - to transfer the information to the text form or vice-verse; - to formulate questions and feedback on discussing topic; - to plan their own learning style. To use electronic version of the didactic materials open the way to enlarging the opportunities of the learning process, making this process more effective and vary and raising the students interest in learning.

While using modern computer technologies the teacher have chance to formulate, create and develop set of didactic materials appropriately to the abilities of the class, according to the preparation level of students. They can include tests, control works, cards and questionnaires in the set of developed materials. Such kind of activities is demanded from teacher new approaches to their professional career. Introducing modern technologies is not limited teachers activities basing on educational tools in the process of teaching, but it causes to change their roles and objectives and also make professional career perfect. Teachers practice on using computer technologies, using the opportunities of computer for explaining new learning materials, methodological preparation for the lesson, searching and systematizing new information, preparing didactic materials, formulate their skills on organizing learning process basing on computer technologies and helps accomplishing effective and qualified Instructional design of the lesson through this. Effectiveness of the implemented activities in Uzbekistan At present time in Uzbekistan specific state policy have been carried out on equipping Educational establishments with modern computer and information communication technologies.

For the purpose of ongoing and systematic renewing and on systematically reequipping with modern computer techniques, laboratory equipments, furniture‘s and school tools and saving them in great demand and also effective using this opportunity completely new system – special fund has been established under the Ministry of Finance. During this period developed the preparation system of specialists, in 50 directions of Bachelor Degrees and in 74 specializations of Muster Degrees to be made unification and new classificatory of specialization on Higher and Secondary Special Education have been introduced in the area of Higher Education Under the State program ―A Year of Harmonized Developing Generation‖ in 2010 560 Leading Cluster Schools equipped with 13 500 computers cost almost 6 million US dollar. More than 750 village schools equipped with modern laboratory and multimedia tools. 1500 village school teachers provided with 3400 personal computers cost 13 million US dollar. At the moment almost all, especially more that 12 000 Educational establishments, scientific and cultural organizations connected with Educational portal which is included more than 25 thousand learning materials and resources.

This is very important for giving opportunities on widely implementing methods of Distance Learning and providing young learners and youth with other information-communication services. Together this activities regarding to introduce modern information communication technology, numeric and wide formatted telecommunication, the Internet not only to school, lyceum, collage and higher

educational establishments but to each family are being intensified these days. Especially widely strengthening and developing modern communication and information technologies have been served one of the scales of development of our society and country for showing its prosperity. In 2015 in the Public Education system of the Republic of Uzbekistan ―The strategy of introducing information-communication technology to the school education‖ was worked out and according to this strategy set of computers which have been equipped not only used at the Computer lessons but they should effectively used teaching other subjects and also appointed the directions on creating multimedia learning tools and resources. Basing on this for the secondary schools according to the requirements of the State Education Programs the activities on developing highly qualified and effective multimedia materials and electronic teaching literature and manuals are being implemented.

Under the system of the Ministry of Public Education Coordination Council on introducing information-communication technologies has been established and under the Ministry ―Center for ICT Content Development in Education‖ has been founded. The main goal of this center is to implement information-communication technology into the process of education, create content of multimedia programs, develop, localization and publication and introducing developed electronic educational resources to the process of Education. Up today electronic version of 119 school subjects have been created and posted to the Internet based Education portal by the staff of the Center. During the period of 2009 – 2010 complete connection of local set ―Ziyo NET‖ all schools have an opportunity the only online Education information connections for teachers effective information exchange opportunities have been created.

The process of publication and introduction advanced experience of advanced teachers; possibilities of modern information technologies have been fastened. As a result appropriate conditions for the students on gaining perfect and effective knowledge according to the requirements of State Education Standards have been provided. Introduction of Instructional Design to the system “School of Mentoring” ―School of Mentoring‖ is one of the national traditional Systems on getting education and it is a specific form of Education which has been successfully passed through the test of years. These days the form of Mentoring developed with the help of new approaches and is being introduced to the Teacher Training System. In our country changing and renewing education programs taking into consideration to the modern achievements of science and technology, economy and culture, modernization of Education, its reconstruction according to the content have been implementing.

Nowadays rapid development of the society, outstanding innovations in science demands teachers to enrich and enlarge their knowledge and skills regularly. Basing on this by the Ministry of Public Education regular based system of ―School of Mentoring‖ has been established. According to this for the purpose of developing and strengthening of the Teacher Training System, completely reform and renew this system on requirements of the time at the Educational establishments the policy of ―Organizing ongoing teacher training as the method of ―School Mentoring‖ has been identified basing on Charter. According to this Charter experienced and advanced teachers who created their own school on conducting lessons and supporting young

teachers through sharing experience and have high professional skills have been chosen through contest based and formed the list of Mentor teachers. The method of ―Mentoring‖ has differed from other type with its specific features like individual approach, and also flexibility, practicality in the process of learning. The main advantage of this form of Retraining is the chance of teachers for choosing appropriate Mentor teacher according to their needs. The identification and appointment of the content and teaching methodology of the program on the method of ―Mentoring‖ is made of by the Mentor teacher. This gives a chance organizing Retraining for young teachers basing on the results of Monitoring According to the above given requirements about 4000 Mentor teachers (Instructional Designer) have been chosen and created the list of Mentor teachers and also developed programs regarding to the activities on working with young Mentee teachers As to this programs for working in the ―Mentoring System‖ Mentor teachers should take into consideration the following activities: - To conduct analyses on Mentees activities; - Characteristics of Mentees: capabilities, interests for learning, knowing the topic beforehand, identify the general outlook; - Psycho-social characteristics of the Mentee: interest, disposing to learning, identifying the attitude to the subject; - Biologic characteristics of Mentee teachers: should clarify the age, specific characters of elaborating (visual, audile, and sensor), general health, cultural and linguistic opportunities.

Taking into consideration above mentioned characteristics help Mentors to choose teaching materials for Mentee. It is known that the Mentees come to the Mentor according to the different reasons. Even the Mentees say that their main goal is to gain new knowledge or get acquainted with new colleagues; they have their own goals and needs. For example, using different methods for working with students have got a new job, develop their skills. If they are not able to get appropriate answers for their needs, mostly such kind of Mentees will stop coming at the Mentors despite not expressing their satisfaction less. For this reason it‘s very important to clarify if there is any needs for recommended method or not. Besides Mentor should identify previous and post knowledge of Mentees, that is what they know before the course and what they must learn after the course and what kind of knowledge they need.

For working with Mentees it is very important:

- to conduct analyses on personality of Mentee;
- to put clear goals and objectives on working with Mentees;
- to choose right pedagogic strategy for working with Mentee;
- to choose learning materials for Mentee, to make and develop the program;
- to evaluate the needs of Mentee;
- to make a right choice of working steps with Mentee;
- to develop the pedagogic process basing on the needs of Mentee.

Usually it is right to develop clear methodological approach for each Mentee. As to evaluating the needs on working with Mentees help to understand the level of knowledge and skills, what kind of methods Mentees use during the process of their work, what the mentee want to know and how they want to get knowledge and what Mentor should do for this.

Conclusion: In conclusion we can say that putting the method of ―Mentoring‖ into practice help the teachers who work in the system of Public Education to

strengthen the features of competence and serve improving the quality of education. The method of ―Mentoring‖ is a new approach which served to increase the effectiveness of teaching and learning in future. It is known that the last years there have been exemplary reforms which made a good store on raising moral ability of our youth and nation for building up to date equal world huge implemented activities according to its capacity and content in the field of Education. Of course, there is a specific role of the ―Mentoring school‖ on putting into practice of these reforms.

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FOREIGN EXPERIENCE OF PROMOTING THE ACTIVITY OF ATTRACTING FOREIGN INVESTMENTS TO SMALL BUSINESS ENTITIES

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Annotatsiya: Xorijiy investisiyalar mamlakatga sarmoya kiritish va xorijiy kapitalning samarali faoliyat yuritishi uchun qulay shart-sharoitlar yaratishning harakatlantiruvchi kuchi hisoblanadi. Xorijiy kapitalni jalb qilish iqtisodiyotning monopollashuviga yo‘l qo‘ymaydi, samarali ishlab chiqarish tuzilmasini shakllantirishga, bozor munosabatlarini amalga oshirishga va xo‘jalik yurituvchi sub'ektlar o‘rtasida raqobatdosh ustunliklarni rivojlantirishga yordam beradi.

Kalit so‘zlar: xorijiy investisiyalar, ijtimoiy investisiyalar, kichik biznes va tadbirkorlik, xalqaro valyuta fondi, to‘g‘ridan-to‘g‘ri investisiyalar, portfel investisiyalar, xorijiy investor, xorijiy kreditlar.

Аннотация: Иностранные инвестиции являются движущей силой инвестирования в страну и создания благоприятных условий для эффективной работы иностранного капитала. Привлечение иностранного капитала предотвращает монополизацию экономики, способствует формированию эффективной структуры производства, реализации рыночных отношений и развитию конкурентных преимуществ хозяйствующих субъектов.

Ключевые слова: иностранные инвестиции, социальные инвестиции, малый бизнес и предпринимательство, международный валютный фонд, прямые инвестиции, портфельные инвестиции, иностранный инвестор, иностранные кредиты.

Abstract: Foreign investments are the motive power of creating favourable conditions for investment in the country and the effective operation of foreign capital. Attracting foreign capital prevents the monopolization of the economy, helps to form an effective production structure, implement market relations and develop competitive advantages among economic entities.

Key words: foreign investment, social investment, small business and entrepreneurship, international monetary fund, direct investment, portfolio investment, foreign investor, foreign loans.

Introduction. At the current stage, there are certain conditions that cease the development of investing activeness of local enterprises, which foreign experts point as followed: the instability of the political situation in the country; high level of tax pressure; high level of bureaucracy and corruption in the state governing system and lack of reforms in this regard; insufficient development of financial markets; complexity of registration, licensing and customs procedures; low level of knowledge of specialists in the field of investment management; lack of effective foreign

investment insurance system; underdevelopment of domestic investment infrastructure and others.

Analysis and results. The results of the analysis of the flow of foreign direct investments to the Khorezm region by the investor countries confirm the weakness of their confidence.

In the UK, it is widely used to promote investment in research and development areas (hereinafter referred to as R&D) by reducing the taxable profits of enterprises by the value of these investments. In the United States and Canada, 20% tax privileges used in investment growth, providing that additional investment in research and development for which the credit is applied does not exceed 50% of the amount of expenditure for a given period. According to French regulation, companies can reduce the amount of income tax by 50% of the difference between the amount of investment in research and development in the reporting year and the average amount of investment for the previous two years..

This privilege allows enterprises to cover part of the investment costs from the income. The analysis shows that the experience of using tax privileges to stimulate investments in the last 5 years of the Republic of Uzbekistan turned out to be positive. In the early years, this was due to the abuse of these privileges (tax evasion, the creation of enterprises with very little investment in order to receive state-guaranteed tax benefits), which led to the emergence of pseudo investors.

At the present stage, the Tax Code of the Republic of Uzbekistan provides for tax benefits that should contribute to the development of priority sectors of the economy and stimulate their investment activity. However, the lack of an effective mechanism for monitoring and reporting on the targeted use of these benefits has turned an internal financial consolidation tool into a mechanism for diverting funds from the state budget. In addition, the level of the tax load, which is quite significant in our country, has a significant impact on the financial capabilities of business entities in financing investment needs.

Unfortunately, the modern tax system of the Republic of Uzbekistan, despite some positive changes, continues to perform a mainly fiscal function. In global practice, privileges are used to the enterprises that invest with the main capital, and the level of tax load increases for enterprises that do not invest. This measure is widely used for real estate tax in Germany, where fully depreciated fixed assets are taxed at their original cost rather than their residual value. [2]

As for the investment tax credit, the Republic of Uzbekistan has been trying to provide a mechanism for its implementation in the domestic legislation for a long time. Investments that provide competitive advantages to local companies and goods, implement innovative infrastructure projects, attract foreign investment, develop enterprises and goods of the Khorezm region, create new enterprises, create jobs, introduce advanced energy-saving technologies, invest in the development of transport infrastructure is worth to get tax privileges.

However, the mechanism for granting investment tax privileges is still not defined in domestic legislation. The use of depreciation deductions to stimulate investment is explained by the fact that in world practice depreciation deductions are the main source of financing investments, while in the Republic of Uzbekistan profit

is predominant. In world practice, to stimulate investment activity, they artificially reduce the validity of fixed assets or make depreciation charges in increased volumes for several years, and then use accelerated depreciation due to their reduction.

In modern conditions, depreciation charges at domestic enterprises are increasingly used for current consumer needs, which reduces their investment nature. In global practice, the success of the development of the investment process is also related to the state support and protection of investments, which provides a favourable investment environment for countries, determines the investment attractiveness of countries, regions and companies. Among the developed countries, the leader with the most attractive investment regime is Great Britain.

The country's investment legislation does not establish any special restrictions on the ownership of real estate located in the UK by foreign individuals and legal entities; Foreign investors are free to choose the location of their capital in the country. Investors are also attracted by the size of the market, political and economic stability, and the development of infrastructure. The USA is an example of a country with a accurate system of investor rights protection [3]. The legislation of the country provides the possibility of compensation for damages caused by other people to those who possess intellectual property. The amount of the loss should not be less than the profit expected from the sale of the license to the exploitation of the property right.

As for the experience of supporting the attraction of foreign capital, it is worth considering China, whose state investment policy is focused on the need to open new channels of financing. In this regard, the Chinese government will gradually equalize the approach to foreign and domestic manufacturers producing products for export; active involvement of capital of transnational corporations; optimization of the structure of foreign investments; stimulation of attraction of investments to the central and western regions, agriculture, hydromelioration, transport, power engineering, mining, environmental protection; carries out activities to improve the investment climate [4]. [4].

The experience of the Republic of Kazakhstan on attracting direct investment has a great of importance for the Republic of Uzbekistan. An effective method of state regulation of investment activity in the Republic of Kazakhstan is to ensure compliance with the current regulation of investment activity, create a favourable investment climate for foreign investors in the country, "encourage" marketing, "direct funds to create a positive investment image of the state, provide financial support for investments" support system can be provided both in the form of subsidizing investors and the systematic use of organizational and economic measures, such as assistance to local governments in organizing and improving regional infrastructure [1].

When addressing the issue of increasing their investment activity and potential, it should be taken into account that developed countries should increase their investment attractiveness when attracting investment flows, create special regimes for foreign investment, tax incentives, subsidies, preferential loans, state guarantees, measures to stimulate the development of promising industries (Fig. .1.3.1).

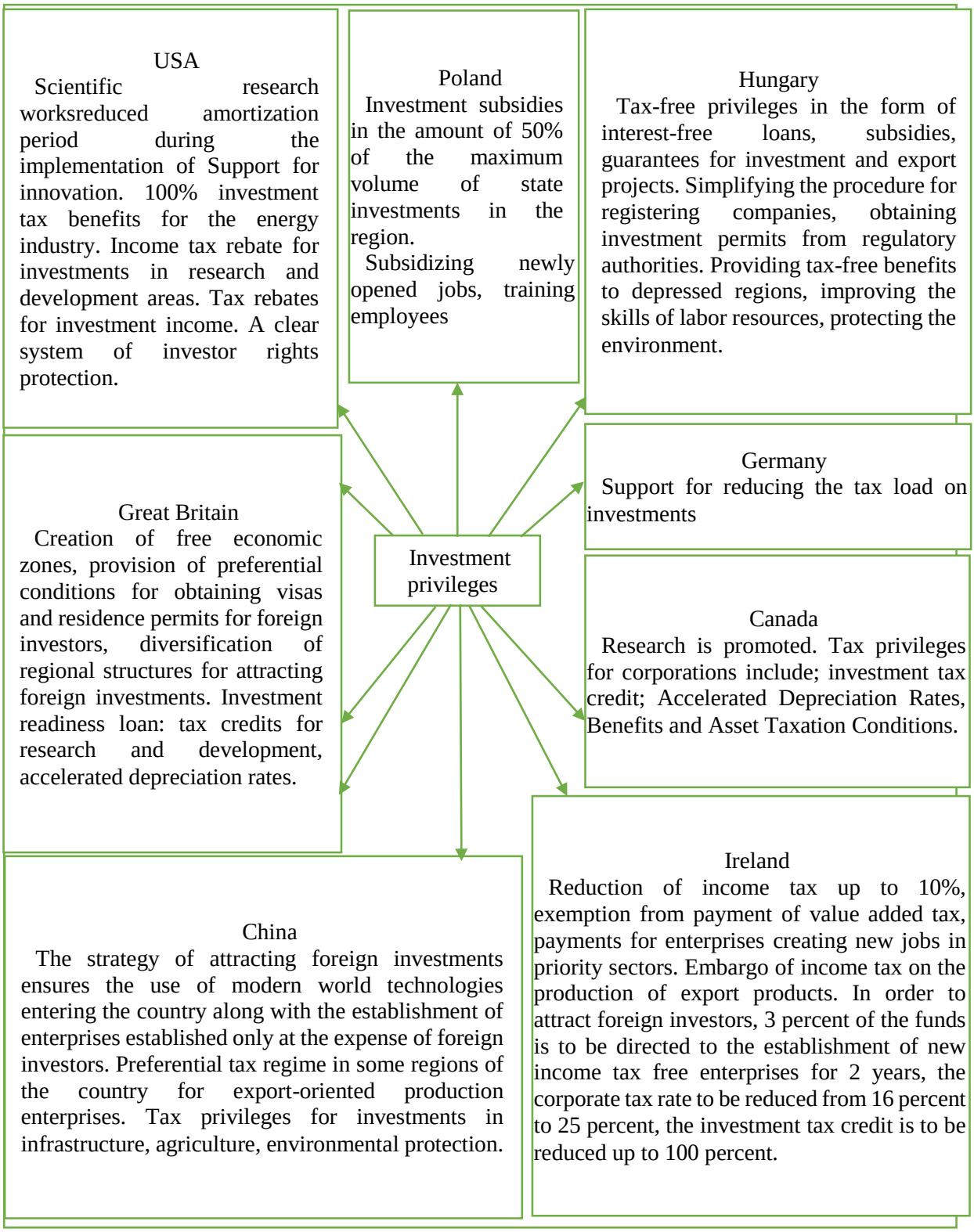

Figure 1.3.1. Measures to promote investment activity in some developed countries

The Hungarian economy is open to foreign investment - foreign investors are allowed to operate in almost all its sectors. Hungary has joined the EU'S anti-discrimination measures, so there are no special privileges for foreign investors. Tax privileges are given for investment in science. All expenses in the field of scientific and research activities are excluded from the tax list. Investors can be granted interest-free loans based on the results of consideration of investment projects that support the

development of the country's export potential, depressed regions, foreign trade industrial zones, individual subsidies in the form of non-tax benefits for regions with high unemployment and environmental protection [6].

Innovation plays an important role in stimulating the investment activity of enterprises. Exactly they will provide social and economic stability in future, which is considered to be main goal of investment. World experience shows that the development of innovative activity depends on the condition of fundamental and applied science and the commercial demand for innovation. The main means of state support for the development of innovations is the volume of science funding.

In this regard, the European Union recommends to its members to increase the level of investments in science to 2.5% of the gross domestic product. In the system of financial support for investments in Poland, investments should ensure the introduction of new technologies that allow the production of modern and competitive goods and meet modern environmental requirements. In Germany, direct financial support of projects from the federal budget is implemented within the framework of targeted programs of the Federal Ministry of Education, Science, Research and Technology. In Germany, support for innovative activities is mainly aimed at small and medium-sized enterprises operating in the market of consumer goods and services. Small innovative enterprises implement innovations faster and, with less investment in production, respond more flexibly to the changing needs of the population [7].

Conclusions and suggestions. Summarizing the experience of foreign countries, it is possible to single out the following prospective directions of regulation of investment activities, which are of practical importance for our country and which ensure the stimulation of investment activity at the current stage of the development of the local economy:

1. Formulation of a single long-term strategy aimed at ensuring sustainable socio-economic development of the country.

2. Creating a favourable investment environment for attracting foreign investments, helping to increase the share of foreign investments in the production of export goods.

3. Infrastructure development, reconstruction and creation of new environmentally friendly productions using innovative projects.

4. Attracting investments in the leading sectors of the industry for the expansion of the competitive environment, privatization and development of entrepreneurship.

5. Investing and state support of industries that need to renew the fixed capital and have significant innovative potential, with the help of which it is possible to increase the volume of production.

6. Creating equal conditions for all investors to protect property and investors' rights.

7. Promotion of investment activities by providing tax and non-tax benefits, depreciation policy, preferential investment loans.

8. Improving the state innovation policy, which should be aimed at creating a legal basis that ensures the transition to an innovative development path; financial support for innovative programs and projects aimed at solving the most important

socio-economic problems, forming an innovative infrastructure and training personnel for the innovative sector.

9. Implementation of programs to support foreign investments of residents, promotion of international investments.

10. Improvement of regional schemes of investment activity promotion.

The practice of developed countries has proven the need for state support to activate the investment activities of enterprises. In many countries, the most common means of stimulating investment processes are tax privileges, tax investment credits, accelerated depreciation, subsidies, loans, support for depressed regions and priority sectors, training of labour resources, funding for science and innovative development. Stimulating investment activity requires a systematic approach to optimizing the regulation of the state's investment policy, because the support of certain areas significantly reduces the effectiveness of these processes.

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ACCOUNTING OF EXPENSES IN STATE UNIVERSITIES

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Annotatsiya: Maqolada davlat oliy ta’lim muassasalarida davlat byudjeti siyosatining amalga oshirilishi, byudjet tashkilotlari va byudjetdan tashqari jamg‘armalar byudjeti hisob-kitoblarining mazmuni va mohiyati o‘rganiladi.

Kalit so'zlar: byudjetdan tashqari jamg'armalarning daromadlari, pul ish haqi majburiyatlari, mablag'lar va haqiqiy xarajatlarning hisobi, byudjet va byudjetdan tashqari jamg'armalar, yagona hisoblar rejasi

Аннотация: в статье рассматривается реализация государственной бюджетной политики в государственных высших учебных заведениях, содержание и сущность исчисления бюджета бюджетных организаций и внебюджетных фондов.

Ключевые слова: доходы внебюджетных фондов, денежные обязательства по оплате труда, учет денежных средств и фактических расходов, бюджет и внебюджетные фонды, единый план счетов.

Abstract: the article examines the implementation of the state budget policy in state higher educational institutions, the content and essence of the calculation of the budget of budgetary organizations and extra-budgetary funds.

Keywords: income of extra-budgetary funds, monetary wage obligations, accounting of funds and actual expenses, budget and extra-budgetary funds, unified chart of accounts

Introduction. The implementation of the state budget policy, constant monitoring of budget expenditures and revenues, timely budget control, organization of the activities of budget organizations within the framework of the law are among the urgent issues of our time in our country. In budgetary organizations, accounting work is organized at the expense of budgetary and extra-budgetary funds. Budgetary organizations organize accounting of budgetary and extra-budgetary funds on the basis of the Law of the Republic of Uzbekistan "On Accounting", Instruction No. 2169 "On accounting of budgetary organizations" and other regulatory documents.

The organization of budgetary organizations and extra-budgetary funds for the implementation of estimates of income and expenses serves to ensure that the expenditure of funds within the framework of the estimate complies with the current legislation, and also provides information for monitoring the flow of funds.

Analysis and results. One of the unique features of budget organizations is that they keep cash registers and actual expenses. The payment of expenses by budgetary organizations from personal accounts for extra-budgetary funds in the treasury is reflected in the accounting in the form of monetary expenses. For example, when paying financial obligations on wages, that is, when transferring the relevant taxes and deductions, when transferring wages to employees' credit cards or when issuing them from the cash register, they are reflected in the relevant books and reports in the form

of monetary expenses. Expenditures incurred by budgetary organizations in the cost estimates but not paid are recorded as actual expenditures. For example, within the framework of the estimate, the accrued, but not paid, payment for work, or work rendered, services, goods received, but not paid expenses are reflected in the form of actual expenses in the relevant books and reports. The book of form 294 is maintained separately to account for cash and actual expenses, and is also reflected in reporting forms. Organization of accounting and formation of reports based on budget classification – estimates of income and expenses compiled by budget organizations are reflected in the economic classification of expenditures of the 1st, 3rd, 3rd and 4th groups based on the "Instructions for the application of the budget classification of the Republic of Uzbekistan" and information on the economic classification of budget expenditures is also formed in the forms of accounting statements on performance. The receipt of extra-budgetary funds to the account number is carried out and accounted for by type and payment of expenses based on economic classification.

A unified chart of accounts is maintained with an economic classification of types of income and expenses (additional analytical accounts) to fully reflect the data when calculating income by type, maintaining income and expenses by items, conducting mutual settlements between income and expenses. cost estimates.

We will pay special attention to cash and real expenses when maintaining expense accounts in state educational organizations. Accounting of monetary expenditures of budgetary organizations is carried out on the following sub-accounts of the "Plan of accounts of accounting in budgetary organizations":

– 503000(232) - sub-account "Financing from the budget";

– 104410(110) – sub-account "Funds received from settlements for special types of payments";

– 104420(111) – sub-account "Income from paid-contract form of education in educational institutions";

– 104430(112) - sub-account "Funds of the Budget Organization Development Fund";

– 104440(113) - sub-account "Other extra-budgetary funds".

Information on cash expenditures of budgetary organizations made at the expense of budgetary funds is determined by the credit turnover of the subaccount 503000(232) - "Financing from the budget". This turnover amount is understood as monetary expenses on payments made through its demand account in a bank for a budget organization not carried out by the Treasury, and on payments made through its personal accounts opened for budget funds in the treasury body for the budget. an organization that was implemented by the Treasury.

Budgetary and extra-budgetary funds of state educational organizations work according to the newly adopted 6-digit accounting system in accordance with the budget accounting standard of the Republic of Uzbekistan (SBS No. 2) "Unified Chart of Accounts". The estimated accounting of the budgets of the budgetary system of the Republic of Uzbekistan and other extra-budgetary funds and the financial and economic activities of budgetary organizations of treasury bodies, bodies distributing state special funds, are fully organized through this standard.

Table 1

Accounting reflection of operations of the budget and extra-budgetary funds related to monetary expenditures in state educational organizations

Name of the debit account (sub-account)	Dt	Ct	Name of the credit account (sub-account)
The amount of funds provided by a higher-level organization to lower-level organizations			
"Financing from the budget"	503000	104000	"Funds of budgetary organizations in other accounts"
Funds provided by a higher-level organization to lower-level organizations			
"Funds of budgetary organizations in other accounts"	104000	503000	"Financing from the budget"
The funds allocated from the budget are the development fund of budgetary organizations.			
	102401	503000	"Financing from the budget"
Calculation of funds according to the paid-contract form of training			
"Other accounts receivable of budgetary organizations to students"	153 600	520200	"Income accrued on fee-and-contract funds for training in higher and secondary specialized, vocational and technical educational institutions"
Receipt of funds for a paid-contract form of training			
"Income from the paid-contract form of education in educational institutions"	102409	153600	"Other accounts receivable of budgetary organizations to students"
Income from paid-contract form of education			
"Income from the paid-contract form of education in educational institutions"	104 420	153 600	"Other accounts receivable of budgetary organizations to students"
Funds received under the lease agreement			
"Fund for the Development of Budgetary Organizations"	102 401	151 900	"Accounts receivable of budget organizations for other types of accounts"
Amounts from other receipts not prohibited by law			
"Other extra-budgetary funds"	104440	151900	"Accounts receivable of budget organizations for other types of accounts"

Formulated by the author.

Information on expenditures of funds made at the expense of other income funds of a budget organization is determined by the credit turnover of the subaccount 104440(113) "Other extra-budgetary funds". This turnover amount refers to the monetary expenses of a budget organization for payments made through personal accounts opened for other extra-budgetary funds in the treasury body. 104440(113) - the amount of loan turnover under the sub-account "Other extra-budgetary funds" is reduced by the amount of reimbursement of monetary expenses for payments made through personal accounts opened for other extra-budgetary funds in the treasury body of a certain budget organization.

Accounting of actual expenditures of budget organizations is carried out on the following sub-accounts of the "Plan of accounts of accounting in budget organizations":

– 710 000(231) – sub-account "Actual expenditures on budgetary funds";

– 720 000(241) - sub-account "Actual expenses incurred at the expense of funds for settlements on special types of payments";

– 730 000(251) - sub-account "Actual expenses incurred on receipts from the paid-contractual form of education in educational institutions";

– 740,000(261) - sub-account "Actual expenses incurred from the development fund of a budget organization";

– 750,000(271) - subaccount "Actual expenses on other income".

Information on the actual expenditures of budgetary organizations made at the expense of budgetary funds is determined by the debit turnover of the subaccount 710 000(231) - "Actual expenditures on budgetary funds". This turnover amount refers to the expenses of a budgetary organization incurred (calculated) at the expense of budgetary funds.

Information about the actual expenses for the formation of a budget organization made at the expense of receipts from the payment and contractual form is determined by the debit turnover of the subaccount 730 000 (251) - "Actual expenses made at the expense of receipts from the payment and contractual form". -contract form of education in educational institutions." This turnover amount represents the expenses of the budget organization realized (calculated) at the expense of the proceeds received from the paid-contract form of training.

Table 2

Accounting reflection of transactions with budgetary and extra-budgetary funds at actual costs in state educational organizations

Name of the debit account (sub-account)	**Dt**	**Ct**	**Name of the credit account (sub-account)**
Actual expenditures on budgetary funds			
"Actual expenditures calculated from budget funds"	710 000	301100	Obligations of the settlement center by means of internal settlement centers
The actual costs incurred at the expense of funds received from the paid-contract form of education in educational institutions			
"Actual expenses incurred due to the proceeds from the paid-contract form of education in educational institutions"	730 000	301100	Obligations of the settlement center by means of internal settlement centers
Actual expenses incurred at the expense of the development fund of budgetary organizations			
"Actual expenses incurred at the expense of the development fund of budgetary organizations"	741 000	301100	Obligations of the settlement center by means of internal settlement centers
Actual expenses incurred in connection with the payment of taxes and other mandatory payments in accordance with the legislation			
"Actual expenses on other income"	750 000		

Actual expenses based on the results of accounting for special types written off at the end of the year			
"The final financial result of calculations for special types of payments	982 000	720 000	"Actual expenses incurred at the expense of funds for settlements on special types of payments"
Financial results are reflected in the payment and contractual means of training			
"Financial results for the current year on payment and contractual funds for training in educational institutions"	983 000	730 000	"Actual expenses incurred due to the proceeds from the paid-contract form of education in educational institutions"
Financial result on payment and contractual funds for the current year at the end of the reporting year			
"Financial results for the current year on payment and contractual funds for training in educational institutions"	983 000	520 200 730 000	"Income accrued on fee-and-contract funds for training in higher and secondary specialized, vocational and technical educational institutions" "Actual expenses incurred at the expense of income from the paid-contractual form of education in educational institutions"
When debiting from the account the part corresponding to the amount of tax benefits and other mandatory payments			
"Tax benefits and other mandatory payments to budgetary and extra-budgetary funds"	986 000	730 000 740 000	"Actual expenses incurred at the expense of income from the paid-contractual form of education in educational institutions" "Actual expenses incurred at the expense of the development fund of budgetary organizations"

It is important to comply with the established standards when accounting for monetary and real expenses of state educational organizations. It is possible to identify changes in the activities of organizations related to these costs, inconsistencies and problems in practice by analyzing the monetary and actual expenditures of budgetary and extra-budgetary funds. Consideration of the processes of analyzing monetary and actual costs as a single object of research, and not in general education organizations, will lead to a comprehensive analysis and an appropriate conclusion on them. The Namangan Institute of Civil Engineering under the Ministry of Higher Education, Science and Innovation analyzed periodic changes in the organization's financing plan in terms of real and monetary costs based on the report on the execution of budget expenditure estimates (Table 2).

The expenses of this educational institution from 2018 to 2022 were studied and analyzed by budget funds, cash and actual expenses according to estimated expenses.

Conclusion. The main purpose of conducting a broader analysis of expenditures by budget classifications in this table is to form more complete conclusions about the composition of expenditures. If you look at the indicators, there has been an increase in almost all types of expenses over the years. Only the scholarship account according to the classification 4821400 was equal in monetary and actual expenses in almost all years. This indicates that the amounts of accrued and paid scholarships are equal.

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BENEFITS AND IMPORTANCE OF FOSTERING SOCIAL AND EMOTIONAL LEARNING IN ENGLISH CLASSROOMS.

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Abstract: The article demonstrates the benefits of implementing social and emotional skills in English classrooms by using different types of activities and discusses the importance of SEL during classes.

Key words: SEL, English classroom, implement, student success

Аннотация: Maqolada turli xil o'yinlardan foydalangan holda ingliz tili sinflarida ijtimoiy va hissiy ko'nikmalarni amalga oshirishning afzalliklari ko'rsatilgan va darslar davomida SELning ahamiyati muhokama qilinadi.

Калит сўзлар: SEL, Ingliz tili sinfi, amalga oshirmoq, talabalar muvaffaqiyat.

Аннотация: В статье демонстрируются преимущества реализации социальных и эмоциональных навыков на уроках английского языка с использованием различных видов игр и обсуждаются важность социального и эмоционального обучения.

Ключевые слова: социальное и эмоциональное обучение, классы английского языка, реализация, успехи учащихся.

Introduction. Social and emotional learning (SEL) has become a modern and recently developed term in the last few years. The phrase social and emotional learning (SEL) has only lately come into use and is now considered to be modern. It emphasizes how individuals obtain and use knowledge, attitudes, and abilities related to understanding and managing emotions. Nowadays, it is impossible to debate pedagogy, methodology, academic accomplishment, or the culture and atmosphere of schools without taking the significance of social and emotional learning (SEL). Every student can benefit from SEL by having a secure, encouraging, and interesting learning environment. By incorporating the SEL into the English classroom, teachers may assist students in setting and achieving positive goals as well as understanding how empathy for others will enable them to create and uphold meaningful connections and support them in making decisions. Five interrelated abilities that are essential to SEL have been identified by the Collaboration for Academic, Social, and Emotional Learning (CASEL) based on significant research: self-awareness, self-management, social awareness, relational skills, and responsible decision-making. To be effective, SEL skill development and interventions need to take place in a setting that supports students' development and gives them opportunities to put new skills into practice. Such settings should be secure, compassionate, encouraging, participatory, and well-

managed. Moreover, using SEL skills in English classrooms is becoming more significant and well-known as children who feel comfortable with their teachers and peers are more willing to comprehend challenging material and persist at difficult learning tasks.

Literature review. According to recent research results, SEL significantly improved students' motivation for learning, and changed their attitudes toward school, while decreasing rates of violence, aggression, disciplinary referrals, and substance use. People are unable to think effectively when strong negative emotions are in control because some emotions, particularly sadness, and frustration, can limit learning while others, such sense of well-being or feeling respected and appreciated, can actually encourage learning. As social and emotional skills are among the most influential, some researchers further suggested that emotions help one to prioritize, decide, anticipate, and plan. So, it is becoming more important to use social and emotional skills not only in English language classes but also particularly significant to start integrating SEL in all school subjects since it aids to have a positive effect on student learning outcomes.

Research methodology. When teaching English to students in ESL or EFL sessions, teachers and instructors apply a wide range of strategies and techniques. By using a social and emotional learning method, students can become more motivated and enthusiastic language learners. In recent studies, educators attempted to discover ways that social and emotional learning techniques could help children learn more effectively and positively. With social and emotional learning strategies, several classroom activities were used to improve students' proficiency in learning foreign languages. While using SEL in my extra classes, as an experiment I have created different SEL activities in order to implement SEL strategies in my classroom. For example:

Activity for Listening and Understanding/Pronunciation:

Students were asked to listen to the following songs at the beginning of class hour for 3 minutes and after listening to these songs they were asked how they felt themselves and which words they remembered from the lyrics of the songs they listened to.

Activity for speaking:

What am I grateful for? / What am I excited about? Before this classroom activity, an orange-colored cartoon and a red-colored cartoon were put on the whiteboard of my classroom. Students were given 5 minutes to think about what they were grateful for and what they were excited about. Half of the students in the class wrote what they were grateful for and the other half of the class wrote what they were excited for. They wrote their answers on pink-colored and yellow-colored small papers in 5 minutes. After 5 minutes, they were invited to the whiteboard of the classroom with their partners in their classes and asked each other questions to find out why they were grateful and why they were excited. After replying to their partners' questions the ones who wrote the answers of being grateful pasted their papers on the orange-colored cartoon and the other answers were pasted on the red-colored cartoon.

Objectives of these SEL activities are:

- ✓ To give students the chance to practice English as much as possible
- ✓ To increase social and emotional learning in-class hours

- ✓ To help students to be more positive while learning new topics during their class hours
- ✓ To make students more talkative and active during the class hours
- ✓ To help students to be happy or happier learners while studying their lessons

Analysis and Results. During studying the SEL methodology we have researched that Social Emotional Learning in the classroom has a positive impact on a wide range of outcomes, including academic performance, healthy relationships, mental wellness, and more. If the instructors pay attention to social and emotional learning while teaching new topics to their students, students can learn English effectively with enthusiasm and motivation. Implementing SEL into English language lessons is definitely one of the highly reliable methods since the strategies used in SEL are helpful for both teachers and students to gain desirable goals not only in their academic field but also in life. Sometimes educators think of SEL skills as completely separated from academics, but that's actually not true. A number of social-emotional skills actually encourage and allow students to perform better academically. Just a few of those skills include goal setting, planning, staying organized, managing time, problem-solving, cooperating, working in groups, and much more. Research has shown that after-school programs focused on social and emotional development can significantly enhance student self-perceptions, school connectedness, positive social behaviors, school grades, and achievement test scores while reducing problem behaviors. From my personal experience, after integrating SEL activities into my classes, I have analyzed the changes in students' academic performance, healthy relationships, and mental wellness.

Conclusion. In conclusion, there are many advantages to social-emotional learning and integrating it into what educators already do. Our students can reach their full potential when we provide our schools' social and emotional well-being with great importance. This is accomplished by establishing bonds inside our school communities as we face the always-evolving challenges of the outside world. Implementing SEL strategies into English language classrooms is one of the beneficial achievements of educators as SEL programs aim to support students mentally and help them to achieve success, recognize their own strengths and weaknesses**,** control impulses, set goals**,** motivate their selves, organize their thoughts and tasks, have confidence, be empathetic and kind**,** respect others**.** Because of the above-mentioned benefits of integrating social-emotional learning into the classroom, it is significant for educators to put into practice SEL skills and strategies during their lessons.

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THE RELEVANCE OF THE TASK OF DETERMINING THE CONFIDENTIAL COMPOSITION OF THE DATA OF THE CARGO CUSTOMS DECLARATION

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Annotasiya. Maqolada konfidensial maqomga ega bo‘lgan bojxona ma’lumotlarini himoya qilish muammosi tadqiq etilgan. Bojxona yuk deklaratsiyasi ma’lumotlarining konfidensial va ochiq qismini ajratish zarurati ilmiy asoslab berilgan. Xalqaro normativ-huquqiy hujjatlarning normalari Kioto Konvensiyasi misolida, shuningdek ko‘rib chiqilayotgan muammo bo‘yicha Rossiya Federatsiyasi va Amerika Qo‘shma shatatlari qonunchiligining asoslari tahlil qilingan. O‘zbekiston Respublikasining tadbirkorlik munosabatlarida tijorat sirlarini muhofaza qilish yo‘nalishida qayd etilgan huquqbuzarliklar dinamikasi keltirilgan. Bojxona yuk deklaratsiyasi ma’lumotlari tarkibining konfidensial va ochiq tarkibiy qismlarini modellashtirishning asosiy muammoli masalalari shakllantirilgan. Bojxona ma’lumotlari bazasiga kiberhujumlarni kamaytirishga yordam beruvchi metodologiya taklif etilgan.

Kalit so'zlar: konfidensial ma'lumotlar, bojxona yuk deklaratsiyasi, xalqaro xuquqiy hujjatlar, ma'lumotlar bazasi modellari, kiberxujumlar.

Аннотация. В статье исследуется проблема защиты конфиденциальной таможенной информации. Обоснована необходимость разделения конфиденциальной и открытой части сведения грузовой таможенной декларации. Анализированы нормы международных нормативно-правовых актов, на примере Киотской конвенции, а также основ законодательства Российской Федерации и США по рассматриваемой проблеме. Приведена динамика зарегистрированных правонарушений в сфере защиты коммерческой тайны в деловых отношениях Республики Узбекистан. Сформулированы основные проблемные вопросы моделирования открытой и конфиденциальной составляющих содержания грузовой таможенной декларации. Предложена

методика содействие к сокращению кибератак базе данных таможенной информации.

Ключевые слова: конфиденциальная информация, грузовая таможенная декларация, международные правовые документы, модель базы данных, кибератаки.

Abstract. The article explores the problem of protecting confidential customs information. The necessity of separating the confidential and open parts of the information of the cargo customs declaration is substantiated. The norms of international normative legal acts, by the example of the Kyoto Convention, as well as the basis of the legislation of the Russian Federation and the USA on the problem in question are analyzed. The dynamics of registered offenses in the field of protection of trade secrets in business relations of the Republic of Uzbekistan is given. The main problematic issues of modeling the open and confidential components of the content of the cargo customs declaration are formulated. The methodology of assistance to the reduction of cyberattacks to the customs information database is proposed.

Keywords: confidential information, cargo customs declaration, international legal documents, database model, cyber attacks.

Introduction. Analysis of cyber attacks on customs information resources shows that data from cargo customs declaration (CCD) are the most requested information resources of customs authorities. Its information is of great interest not only to the bodies responsible for the state budget revenues, but also to commercial enterprises and entrepreneurs. Because every participant in foreign economic activity (FEA) wants to build his business on the basis of a deep analysis of foreign trade, including his competitors. At the same time, none of the participants in FEA does not want its trade secrets to become known to others. That is, the principle of "conflict of interest" applies.

Such a “conflict of interest” is considered the main danger in the way of protecting CCD data not only in Uzbekistan, but also in other countries too.

But in the context of the Republic of Uzbekistan, an even more problematic issue is that the confidentiality status of CCD data is interpreted ambiguously. On the one hand, according to the order of the State Customs Committee of 2018, the CCD database is included in the list of information constituting confidential information. On the other hand, there are a number of legal acts that oblige customs authorities to transmit the data of the customs cargo declaration to other relevant ministries and departments.

In this regard, in order to ensure the protection of confidential information resources of customs authorities, especially CCD data, the issue of conducting research on the status of their confidentiality is relevant.

International experience in the protection of customs information

An analysis of international normative documents and the practice of developed countries shows that the information of the CCD is not classified as a “state secret” or “secret information”, but has the status of “confidential information”. In particular, Chapter 6 of the General Annex of the Kyoto Convention, to which 126 countries have joined under the leadership of the **World Customs Organization:** Description of the audit process of customs control (Part 7.2.1.5.) is set out as follows:

"*The first step in the audit process is to assess and evaluate the strength and weaknesses within the commercial system of the auditee. Depending upon the size and location of the company to be audited, Customs may choose to perform an on-site survey or request corporate data of the auditee via a background questionnaire.*

Such a survey may include gathering data regarding : corporate organization and structure, commodity information, methods of payment, value of commodities, costs associated with commodities, detailed product-cost information/submissions for analysis, related-party transactions, and record-keeping systems. This information may be commercially sensitive and should therefore, as with other information passed to Customs, be treated as confidential [1].

In the above quote, we are talking about the customs audit process. It is known that the customs audit inherently provides for control after the release of goods for free circulation by the customs authorities. Such control is carried out only if the customs authorities have questions about the results of a desk or remote inspection. The above quote from the Annex to the Kyoto Convention clearly states that: " *commodity information, methods of payment, value of commodities, costs associated with commodities, detailed product-cost information/submissions for analysis, related-party transactions* " should be treated as confidential information.

On the other hand, the Compilers' Guide for International Merchandise Trade Statistics (IMTS 2010-RS) (UN, New York, 2015) emphasizes that, in general, customs declarations *are not subject to the same level of confidentiality* protection as in in relation to other sources of statistical data. Customs declarations are intended for use in setting tariff rates, fees and taxes, and in enforcing various agencies' requirements for the admission of goods into the country or in enforcing the country's laws and regulations governing exports. However, information provided to the agency responsible for compiling international merchandise trade statistics is in many cases treated as confidential by that agency [2].

In the case of international merchandise trade statistics, information confidentiality covers aspects such as the *confidentiality of personal information* (for example, the ability to identify a trader on the basis of name and address information contained in individual records or by a publicly available identification number) and the *confidentiality of commercial information*.

In the Russian Federation, the composition of "confidential information" is determined by the Decree of the President and includes 7 types of information. In the appendix to this decree, the following information is defined as "confidential information [3]:

"*1. Information about the facts, events and circumstances of the private life of a citizen, allowing to identify his personality (personal data), with the exception of information to be disseminated in the media in cases established by federal laws.*

2. Information constituting the secrecy of investigations and court proceedings, information about persons in respect of whom, in accordance with the federal laws of 20 April 1995 № 45-FZ "On state protection of judges, law enforcement officials and supervisory authorities" and dated August 20, 2004 No. 119-FZ "On State Protection of Victims, Witnesses and Other Participants in Criminal Proceedings", other normative legal acts of the Russian Federation has decided to apply state protection

measures, as well as information about state protection measures for these persons, if the legislation of the Russian Federation does not classify such information as information constituting a state secret.

3. Official information, access to which is restricted by public authorities in accordance with the Civil Code of the Russian Federation and federal laws (official secret).

4. Information related to professional activities, access to which is restricted in accordance with the Constitution of the Russian Federation and federal laws (medical, notary, lawyer secrecy, secrecy of correspondence, telephone conversations, postal items, telegraph or other communications, and so on).

5. Information related to commercial activities, access to which is restricted in accordance with the Civil Code of the Russian Federation and federal laws (commercial secret).

6. Information about the essence of the invention, utility model or industrial design before the official publication of information about them.

7. Information contained in the personal files of convicted persons, as well as information on the enforcement of judicial acts, acts of other bodies and officials, except for information that is publicly available in accordance with Federal Law No. 229-FZ of October 2, 2007 "On Enforcement Proceedings" .

Based on the above quote, we can conclude that in the Russian Federation the information of the customs declaration is not classified as classified information, but has the status of confidential information constituting a "commercial secret" and "personal data".

The confidentiality status of "trade secrets" is defined by the federal law of the Russian Federation "On Trade Secrets" as follows: “trade secret is a regime of confidentiality of information that allows its owner, under existing or possible circumstances, to increase income, avoid unjustified expenses, maintain a position in the market for goods, works, services, or obtain other commercial benefits” [4].

In addition, in order to clarify the composition of confidential data of customs declarations, approved "The order of customs statistics of foreign trade of the Russian Federation on the subjects of the Russian Federation" by order of the Federal Customs Service N 1447 of September 11, 2017 . Appendix No. 1 of this Procedure approved the Structure of the output table for submitting information on foreign trade operations taken into account by the customs statistics of foreign trade of the Russian Federation, consisting of 23 columns of the customs declaration [5].

According to an analysis of open source data, there are currently more than 400 different laws and regulations relating to the **U.S. Customs Service**, which the Customs Service monitors and investigates when violations occur [6].

In particular, the task of ensuring the confidentiality of customs information is carried out on the basis of the rules defined by the "Privacy Act", which was adopted in 1974 and is constantly being improved [7].

The law clearly defines the following order: "No agency shall disclose any records contained in the system of records by any means of communication to any person or other agency except upon written request or with the prior written consent, to the person to whom the record relates".

As used herein, the term "agency" means any executive branch, military department, government corporation, state-controlled corporation, or other executive agency (including the executive office of the president), or any independent regulatory agency.

The law also gives individuals the ability to access and amend or correct records that affect them. In addition, because people are given the right to view information documented on their behalf, they can also find out if records have been "disclosed" and have the right to make corrections.

The "Privacy Act" requires that every agency of the U.S. government has administrative and physical safeguards to prevent unauthorized disclosure of personal data of citizens.

U.S. Customs and Border Protection, stating that it operates under the Privacy Act as an agency of the Department of Homeland Security, formally reports the following on its website:

" *As an agency within Department of Homeland Security (DHS), the first statutorily-required privacy office in any federal agency, responsible for evaluating Department programs, systems, and initiatives for potential privacy impacts, and providing mitigation strategies to reduce the privacy impact, privacy protections are inexorably linked to U.S. Customs and Border Protection's (CBP) mission and core values* " [8].

The Department of Homeland Security has a Department of Privacy, which consists of three departments: the Department of Privacy, the Department of Enforcement of the Freedom of Information Act, and the Department of Business Operations. This Department monitors and investigates allegations of privacy violations and submits annual reports to the U.S. Congress. Specifically, for fiscal year 2021, the director of the Privacy Department focused on identifying and encouraging the use of privacy-enhancing technologies. In particular, she reported on the use of decentralized identifiers as a replacement for social security numbers in the systems of the US Department of Homeland Security [9].

Processing a large volume of documents checked by customs inspectors and obtaining other information of interest in the process of checking became possible only after the complete computerization of customs activities. Computer equipment is used by US Customs officers to obtain virtually *any information, including about passengers, including questions about whether there are any outstanding warrants in relation to them (whether there is a debt), whether they have previously been held liable for violations of customs or other legislation, as well as how they entered or left the country in the past* [6].

Under the U.S. Trade Secrets Act (1979) and the Economic Espionage Act (1996), a trade secret is defined as information (including formulas, models, programs, mechanisms, methods, technology) or technology that has independent economic value (actual or potential) and is not available to others who would benefit economically from its use or disclosure in the relationship what measures have been taken to protect its secrecy in the United States [10].

In this case, the main focus of the American law enforcement system is directed to criminal liability for the illegal use of information constituting a trade secret. In

particular, violation of the rights of a trade secret owner is punishable by law *by imprisonment for up to ten years* and a fine of *up to half a million dollars*.

One of the important features of a trade secret under US law is that its owner must take reasonable steps to keep the information confidential. The law does not require absolute confidentiality - the scope of necessary measures is determined on a case-by-case basis. These legal documents define three mandatory criteria for a trade secret:

- the commercial value of the information;
- its closure is determined by the owner of the information;
- Taking effective measures to protect information.

These criteria served as the main criteria for subsequent international agreements in the field of trade secret protection.

According to researchers, the establishment of a legal regime of trade secrets in business relations of the **Republic of Uzbekistan** remains an urgent need of today. Analysis of scientific research on the protection of trade secrets in the Republic of Uzbekistan shows that from 2010 to 2020, the number of registered offenses in this area increased 15 times [10]. In particular, in 2018, the arbitration courts of the republic received 39 applications for the protection of rights to trade secrets, in 2019 the figure was 63, and only in the first 9 months of 2020 75 applications were registered.

In order to study the reliability of these figures, it is noted that the author of the work [10] conducted a sociological study among entrepreneurs on the following issue: "What would you do if commercial espionage was committed against you?". The study revealed the following: 54% of those surveyed turn to law enforcement agencies for help, and 46% do it "by themselves" or use the services of security companies.

Conclusion. Based on the foregoing, in order to prevent attempts to illegally obtain information resources of the customs authorities, especially CCD data, it is first necessary to conduct an in-depth scientific study of the confidentiality status of these data. The following questions are relevant in the field of research:

- in-depth study of the results of scientific research on ensuring the confidentiality of customs information and the practical experience of developed countries, including the Russian Federation, the United States, the European Union, Japan, China;

- установление статуса конфиденциальной и открытой части сведения грузовой таможенной декларации. In solving this problem, the fundamental role should be played by the principle of determining the confidentiality of commercial secrets and measures to protect it by the owner of the information. In this case, it is advisable to divide the cargo customs declarations stored in the database of the customs authorities into the following two categories:

а) the first category includes cargo customs declarations submitted to the customs authorities by state bodies and economic entities with a state share in the authorized capital of more than 51 percent. The confidentiality status of such declarations and measures to protect them shall be determined by the authorized state body;

б) the second category includes cargo customs declarations submitted to the customs authorities by commercial organizations and other entrepreneurs participating

in foreign economic activity. The definition of confidentiality of such declarations, together with the Association of Customs Brokers of Uzbekistan, is determined by conducting a sociological study involving a wide range of entrepreneurs;

- development of a model of a confidential and open part of the cargo customs declaration database and an algorithm for its management in customs information systems;

- Development of an algorithm and implementation of software modules to ensure automatic posting of open data of customs cargo declarations on the website of the Customs Service.

As a final conclusion, it should be noted that most of those who are trying to illegally obtain GTD data are interested in its open part. If the open information of the GTD is freely available on the Internet, attacks on its closed part will be significantly brightened up.

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PHYSICAL QUANTITY MEASURED BY A VIBRATION VISCOMETER

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Annotatsiya. Ushbu maqolaning maqsadi viskometriyani o'lchashning yangi usulini qo'llaydigan viskozimetrni joriy qilishdir. Bundan tashqari, maqolada tebranish viskozimetrida qo'llaniladigan yangi birlik tizimi tavsiya etiladi. Misollar yordamida maqolada Yaponiya kalibrlash xizmati tizimi qovushqoqlikni standartlashtirish va qovushqoqlikni o'lchash uchun so'nggi talablar tushuntiriladi.

Kalit so‘zlar: tebranish viskozimetri, statik qovushqoqlik, qovushqoqlik, zichlik.

Аннотация. Цель этой статьи — представить вискозиметр, в котором используется новый метод измерения вискозиметрии. Кроме того, в статье будет рекомендована новая система единиц, которая используется в вибрационном вискозиметре. На примерах в статье объясняется стандартизация вязкости Японской системы калибровки и последние требования к измерениям вязкости.

Ключевые слова: вибрационный вискозиметр, статическая вязкость, вязкость, плотность.

Abstract. The objective of this article is to introduce a viscometer that utilizes a new viscometry measuring method. In addition, the article will recommend a new unit system, which is utilized in the vibration viscometer. Using examples, the article explains the Japan Calibration Service System viscosity standardization and recent requirements for viscosity measurements.

Keywords: Vibration Viscometer, Static Viscosity, Viscosity, Density.

Introduction. The following is an introduction to the vibration viscometer, a new method for measuring viscosity. In addition to providing a description of the physical quantity thatis measured using the vibration viscometer, a new unit system for viscosity will be proposed. Furthermore, there is an explanation regarding the Japan Calibration Service System (JCSS) standardization of viscosity and viscosity measurements using actual examples. There is also a discussion of recent requirements for measuring viscosity [1].

History and Development of Viscosity Measurement

The history of viscosity measurements is extensive and is believed to date back to when people began measuring the viscosities of engine oils with the advent of the automobile industry in the United States. In the U.S., it had become necessary to control theviscosities of engine oils as a method of maintaining the performance of engines. Even today, viscosities of engine oils are standardized for both high and low temperatures, such as 5W-30. It is believed that if the viscosity of oil reaches below 2.6 cp (the viscosity of purified water at 20 ˚C is approximately 1 cp = 1 mPa·s: 1 milliPascal second) theengine will burn out. This has recently become an important issue when developing energy-saving engine oils for the purpose of improving fuel efficiency. Furthermore, the demand for viscosity measurements aimed at maintaining quality in the field of

cutting-edge technologies has been increasing. This is due in part to the expansion of new markets for viscosity-related applications, which now include resisting inks for liquid crystals, abrasives for semi-conductors, glass coating materials, powder particle size distribution, polymeric emulsion and cloud point measurement of surface-active agents. Moreover, recently there have been discussions of performing viscosity measurements of human blood. Studies have shown that high blood viscosity increases the possibility ofsudden death due to diseases affecting the circulatory system [2]. The viscosity of human blood, although dependent on the measurement method, is generally believed to fall somewhere between approximately 3 and 10 mPa·s.

Actual examples of the measurements of the viscosity and temperature of engine oil and cloud point measurements of nonionic surface-active agents have been presented in Figures 1 and 2 for reference.

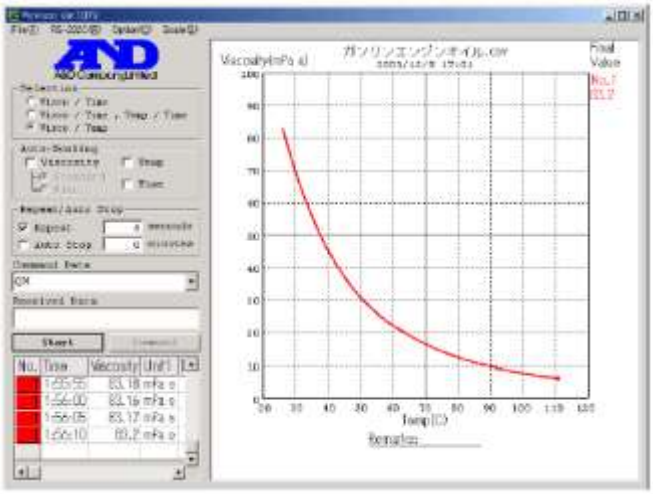

Figure 1. Viscosity changes of gasoline engine oil

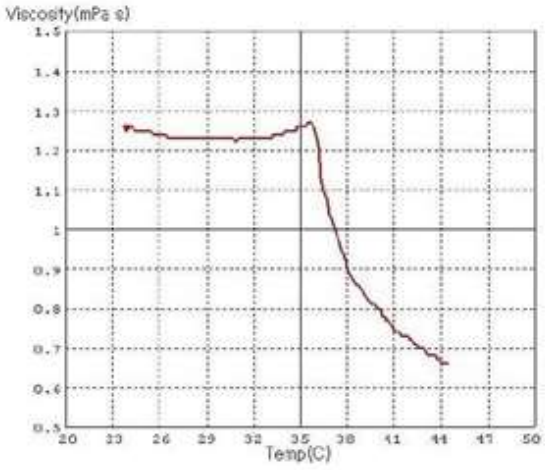

Figure 2. Cloud point measurement

Definition of Viscosity and the JCSS Standardization

Viscosity is defined using the relative motion between two boards that have been placed opposite to each other in a sample liquid. Viscosity is the proportional constant when the interactive force (shear stress) per unit area generated in the planar direction between the opposing two boards, and the velocity gradient (shear rate), calculated by dividing the relative displacement speed by the distance between the two boards, are proportional. Based on this definition, there is a proportional relationship between theshear stress and the shear rate. The fluid is called a Newtonian fluid in the event that the shear stress and the shear rate are proportional, and viscosity is indicated as a constant stable value. On the other hand, if the proportional relationship with the shear stress deteriorates due to changes in the shear rate or if the proportional relationship is lost due to temporal changes (a fixed viscosity value cannot be determined for the liquid due to the measurement conditions), all such fluids are collectively callednon-Newtonian fluids. While as demonstrated above, it is easy to define viscosity, thestructures of the devices to conduct actual measurements are not as simple and there are many structural problems [3]. For example, it is important to stabilize the measuring environments, such as keeping the measuring temperature constant, for methods like the cup type, which measures the time taken by the sample liquid to flow from the opening of a given sample cup, the falling-sphere type, which measures the viscosity bythe time needed for a rigid body to fall within

the sample liquid, and the capillary type, which measures the time taken by the sample liquid to flow inside a capillary. For the rotation type, it is necessary to regulate the rotation of a rotor at a constant speed and steadily measure the torque required for the rotation. On the other hand, for the vibration type, which calculates the viscosity from the power to drive an oscillator placed in a sample liquid, technology to steadily vibrate the oscillator at the natural frequency is essential. Among viscosity measurements based on the measurement principles above, the underlying theory of the measurement principle that has becomethe modeling formula (modeling equation) and the "uncertainties" inherent in themeasurements have been demonstrated with the capillary, rotation, and vibration types. As a result, along with the standard liquids of viscosity, these types of viscometers were accredited as the JCSS standard devices and have been uploaded to the official websiteof the National Institute of Technology and Evaluation (NITE) as of April 2006 [4].

Physical Quantity Measured by Each Measurement Method

Next is a brief explanation of the measurement principles for viscosity standardized bythe JCSS:

— Capillary type: A liquid filling a given vessel is made to flow to a lower position by gravity and the viscous behavior of the liquid is measured based on the flow time. The time taken by the liquid for the movement is measured and converted to a viscosityvalue using the flow time of internationally standardized water as a reference. Whenusing this measurement principle, the physical quantity to be measured (i.e., time) is proportional to the viscosity but inversely proportional to density. Therefore, thisphysical quantity can be expressed as "viscosity/density," and is called "kineticviscosity."

— Rotation type: A rotor is placed in a liquid and is constantly rotated. During rotation, the torque necessary for the rotation is proportional to the viscosity. The "viscosity" isthe physical quantity that is measured.

— Vibration type: An oscillator placed in a liquid is vibrated at a constant displacement magnitude. By detecting the power necessary for the vibration, the viscous behavior ofthe liquid is measured. The physical quantity to be measured is expressed as "viscosity× density" [5].

Advantages and Measurement Principles of the Vibration Viscometers

There are two kinds of vibration viscometers, the rotational vibration type, and thetuning-fork vibration type – both types rely on the same measurement principle. Thepresent section is devoted to a detailed explanation of the tuning fork vibration method. A viscometer using the tuning-fork method has a pair of opposing oscillators of the same natural frequency. Each of these oscillators is individually synchronized and driven by electromagnetic power. As the two oscillators move in opposite phases, no outward reactive force is generated: this is true with a tuning fork. Driving at a naturalfrequency with very small damping is also possible. During the viscosity measurement, the amplitude that is generated is constantly measured and controlled in order to maintain a fixed amplitude. In addition, the electromagnetic power required to drivethe oscillators is also measured. Viscosity is determined based on variations in driving power in accordance with viscosity multiplied by the density of the liquid in which the oscillators are immersed. The energy applied to the sample liquid is small because thevibration method causes only a minute displacement in the sample liquid. Moreover, as the thermal capacity of the

oscillator is small, interference to the sample substance due to the measurement can be minimized. Since there is no flowing or churning of thesample liquid, little change is caused mechanically to the physical properties of the sample even after the measurement starts, making a speedy and stable measurement possible. The viscosity of a liquid is temperature dependent and varies by as much as –2~ –10%/˚C. Hence, small interference by the measuring system can provide benefits such as decreasing the possibility of temperature variation that can cause changes to the physical properties of the sample. In addition, by utilizing a tuning-fork vibration, the viscometer has a high measurement sensitivity and is capable of performing continuous measurements, ranging from as low as 0.3 mPa·s (1/3 the viscosity ofpurified water) to 10,000 mPa·s. This enables the measurement of the cure processes of materials such as adhesives, gelatin, and egg albumen. For example, the cure processes of albumen proteins with different constituents can be monitored at different temperatures. The physical quantity measured by the vibration viscometer is, from the theoretical formula, "viscosity × density" in principle [6].

Next, is an explanation of the measurement model for the tuning-fork vibration viscometers. As illustrated in the model of the free vibration system shown in Figure 3, inertia terms based on the mass of the measuring system, viscous terms based on the viscosity of the liquid, and spring terms based on the spring constant of the measuring system can be examined. When the measuring system is driven by electromagnetic power at the natural frequency determined by the mass and spring constant of the measuring system, the inertial force and the restorative force of the spring will balance each other, and the energy consumed by the measuring system will only be the viscous term of the liquid. This information is presented in Formula (1)expressed as a motion equation, where F: Excitation force, m: Mass, c: Viscosity coefficient, K: Spring constant, x: Amplitude, ω_n: Natural frequency of the vibration system

$$F = m\frac{d^2x}{dt^2} + c\frac{dx}{dt} + Kx$$

When Expression (1) is integrated,

$$x = \frac{F}{c\omega_n}$$

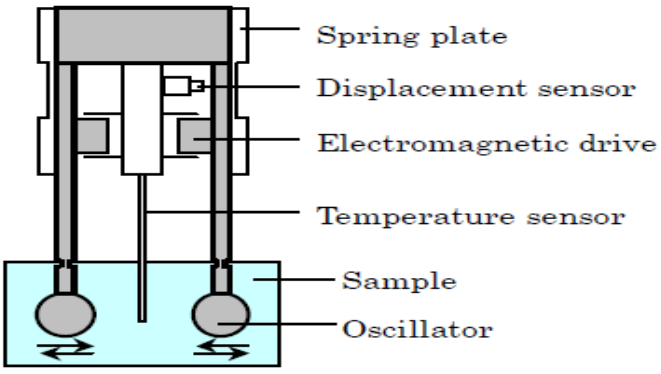

Figure 3. Mechanism of the detection system

If the amplitude (displacement magnitude) x and the natural frequency ω_n are constantvalues, there should be a proportional relationship between the excitation force F andthe viscosity coefficient c. By applying this principle, the tuning-fork vibration

viscometer resonates the two oscillators at the natural frequency with electromagnetic power and thus realizes highly sensitive viscosity measurements [7].

Examination of the Unit System for Viscosity

The measurement principles of the capillary and the rotation viscometers are comparatively simple and have a long history of being used for measurements. Hence, the "kinetic viscosity" and the "viscosity" have long been acknowledged as unit systems suitable for these types of viscometers. Theoretically, the measurement principle for the vibration viscometer was established in Japan approximately half a century ago.

Figure 4. Vibration viscometer

It was featured in publications in Japan as early as 1958 and was expected to become a new method to conduct viscosity measurements. However, because the technology to drive oscillators at the natural frequency was difficult, the vibration method did not see its way onto the market for many years [8].

Today, despite the fact that the production technology has become feasible and the product has already been introduced to the market, the "viscosity × density" unit system has not yet been officially adopted. Therefore, I would like to propose the adoption of "static viscosity" as the physical quantity for the vibration type, similar to "kinetic viscosity" for the capillary type and "viscosity" for the rotation type. The reasons for my proposal are as follows:

- The "kinetic viscosity" (viscosity/density) of the capillary type can be obtained by measuring the time taken by a liquid in a vessel of a given volume to go through a flow channel of a given diameter. Consequently, the physical quantity to be obtained is in direct proportion to the viscosity while inversely proportional to the density, which generates pressure on the fluid. Meanwhile, this measurement method is accompanied by a barycenter shift of the liquid as the liquid being measured actually flows through the inside of the tube. The kinetic viscosity is an indication of this state of the liquid and can be considered to be accurate.
- In the rotation viscometer, although the liquid is in rotational movement, there is no shifting of the liquid's barycenter. Particularly, in the plate-type rotation viscometer, the "shear rate is constant" due to its measurement principle and only the viscosity value can be obtained, expressed in terms of rotational torque.

- Unlike the two methods above, in the vibration viscometer, the oscillators are in reciprocating motion within a liquid. The liquid around the oscillators obtains a "shear rate," and the accompanying "shear stress" is in turn loaded into the oscillators. By this method, there is neither a barycenter shift nor widespread rotational movement of the liquid, which makes it possible to measure viscosity in the resting state. In addition, the energy possessed by the measuring system of the vibration type is minimum. Thismeans that the energy transferred from the measuring system to a liquid is alsominimized. The vibration type is the only method in which no macro movement of theliquid is generated. Thus, I would argue that it is reasonable to term the physical quantity "viscosity × density," the "static viscosity." By using the terms "kinetic viscosity," "viscosity," and "static viscosity," it becomes possible to accurately express the motion or the state of the liquid measured by each viscosity measuring method [9].

Examples and Future Prospects of Static Viscosity Measurement

The following are actual measurement examples. In some cases, phenomena that onceseemed impossible in conventional viscosity measurements, such as cloud point measurements, have been rendered possible, (See Figures 1, 2, 5, & 6).

- Engine oil: Measurement of temperature characteristics of oil from the "static viscosity" of when the temperature is changed
- Change from a liquid to a solid: Monitoring the curing process of a protein material (egg albumen) from its "static viscosity" change
- Analysis of constituents of a liquid: Inference of constituent elements by measuring the concentration change of alcohol from the "static viscosity."

In future measurements of "static viscosity," applications in the following fields may also become possible:

- Evaluating the viscosity of the base material necessary for the measurement of the particle size distribution (evaluation of Brownian motion)
- Inferring the molecular weight of a turbid solution by measuring the viscosity
- Measuring the cu re processes and temperature characteristics of functional liquids such as coating materials and inks
- Quantifying the "swallow ability" of soft drinks or physical properties of biological objects such as blood viscosity [10].

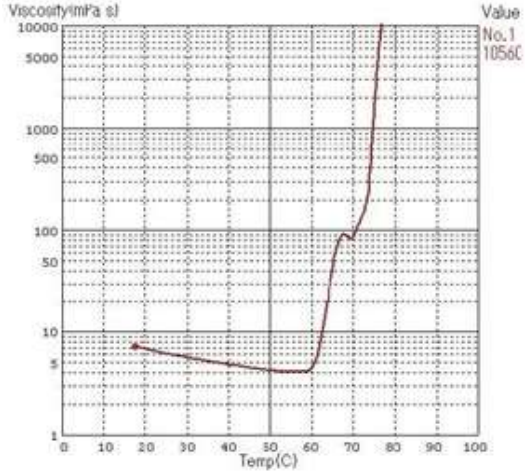

Figure 5. Coagulation and temperature dependency of chicken egg albumen

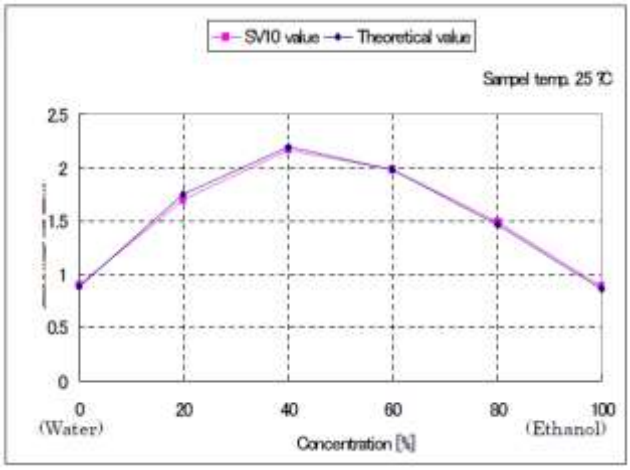

Figure 6. Concentration and viscosity of ethanol solution

Conclusion. This article provides a brief explanation of the features of a new viscosity measurement method, the tuning-fork vibration viscometer, accompanied by actual measurement examples. The vibration viscometer measures "viscosity × density," and using water asan example (the temperature coefficient of the density value is as low as 1/100 of theviscosity value) expresses the "viscosity × density" as the "static viscosity." As a result, it has become possible to easily perform continuous measurements of various viscosity-related physical property changes. Various measuring methods for viscosity and the uncertainties of these methods have already been verified and made publicly available as the JCSS standardized methods for viscosity measurement. Based on these experiences, it is expected that there will be more opportunities for precise viscosity measurements in such areas as research & development, production, and quality control in a variety of industries, thereby further contributing to their development.

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SUBSTANTIATION OF THE PARAMETERS FOR THE DEVELOPMENT OF THE DESIGN OF A COTTON CLEANER WITH A DRUM WITH AN INCLINED PILE

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Annotasiya. Ushbu maqolada yangi konstruksiyali mayda ifloslikdan tozalovchi qiya qoziqchali barabanning ishlash prinsipi keltirilgan. Nazariy tadqiqotlar asosida qiya qoziqchali barabanning diametrini aniqlash formulasi olindi.

Kalit so‘zlar. Paxta xomashyosi, qiya qoziqcha, mayda ifloslik, qoziqchali baraban, tozalash, diametr.

Аннотация. В данной статье представлена новая конструктивная схема и принцип работы хлопкоочистительной машины с наклонным ворсовым барабаном. На основе теоретических исследований получена формула для определения диаметра барабана сваи.

Ключевые слова. Хлопковое сырье, наклонный ворс, мелкие загрязнения, ворсовый барабан, очистка, диаметр.

Abstact. This article presents a new design scheme and the principle of operation of a cotton cleaner with an inclined pile drum. On the basis of theoretical studies, a formula for determining the diameter of the pile drum is obtained.

Keywords. Cotton raw material, inclined pile, small dirt, pile drum, cleaning, diameter.

Introduction. Cotton fiber makes up 57-62% of the amount of fiber used in Jahan's textile industry. According to world statistics and information from the International Cotton Advisory Committee (ICAC), “the top four exporters of cotton fiber in the 2020-2021 season. includes the USA, Brazil, India and Australia, while the importers are China, Bangladesh, Vietnam and Indonesia” [1]. The basis is the development of cotton-cleaning enterprises in the system of the cotton-textile cluster, the introduction of modern equipment and technologies, the increase in the level of efficient and rational use of production capacities, the production of competitive semi-finished products and finished products on the world textile market.

In the well-known design of the cotton-cleaning unit, the sections for cleaning cotton from small and large litter are combined. Under the brush drums, there are two

serrated drums and under them grate forming sections for cleaning raw cotton from large weeds. In the fine cleaning section, peg drums and mesh surfaces are installed in series [2].

The main disadvantage of this design is the low effect of cleaning cotton from weeds. The general removal of the selected weedy impurities, resulting in the mixing of small weedy impurities isolated in the fine cleaning section with large debris and volatiles falling out in the coarse cleaning section. This leads to additional difficulties in the regeneration and re-cleaning of cotton.

In the design of the cleaning section of the cotton-cleaning unit, which includes four sequentially installed composite drums made with pegs, slats and rubber annular bushings installed between the outer cylinders with pegs, slats and hubs, mounted rigidly on the drum shaft, and the thickness of the rubber annular bushings of each subsequent drum with pegs and slats, less by 10-15% than in the previous drum (in the direction of cotton movement). Mesh surfaces are installed under the peg-and-slat drums, and a pneumatic waste disposal system is installed at the bottom to remove the separated small weeds. Each subsequent cylinder with pins and bars will additionally perform torsional vibrations with a higher frequency and lower amplitude, leading to an effective separation of weeds [3]. The main disadvantage of the known design is the complexity of the design, the low effect of cotton cleaning due to the monotonous interaction of the drum pins with the cotton flyers dragged along the mesh surface. In addition, the high dust content of the air due to the lack of aerodynamic removal of small weeds (usually in production, small debris falls freely on the floor at a height of 700 mm).

To increase the effect of interaction between the design of the peg loosening drum of the cleaning section of cotton cleaning, there is a cylindrical shell with pins installed in longitudinal rows and located in adjacent rows at different angles, while in order to increase the efficiency of cotton cleaning by eliminating the monotony of the impact, the pins of each row are installed at an angle corresponding to given row of the radial plane with the formation of the ends of the pins of each row of a sinusoid [4].

The disadvantage of this design is the low effect of cotton cleaning in flows, the degree of cotton loosening in each drum of the cleaning section of the cotton cleaning unit is not taken into account.

It should be noted that according to the results of the data in [5], the most rational value of the tilt angle of the pins is from 18 to 22 degrees.

In the design of the raw cotton cleaner from small weeds 1XK, SCh-2, in which four identical peg drums are installed in series with a mesh surface underneath them in a horizontal plane. In this design, the sorrow is a box or floor, from which small litter is periodically removed by hand.

In order to increase the efficiency of cleaning cotton from fine litter, taking into account the degree of cotton loosening in each cotton cleaning zone, the peg drum - mesh, the design of the peg drums of the fine cleaning section of the cotton ginning unit has been improved.

Methods. The essence of the design lies in the fact that the cleaning section of the cotton-cleaning unit, consisting of four sequentially installed peg drums and mesh surfaces under them, the peg drums are installed at an angle to the radius of the

corresponding peg drum. In this case, the inclination angle of the input drum is chosen α_1=20 degrees, and the inclination angles of the pins of each subsequent drum are chosen less by 5 degrees, and the angle of inclination of the pins of the output drum is chosen to be 5 degrees.

The implementation of the angles of inclination of the pegs in successively installed drums with a decreasing value ensures shaking and pulling of the cotton, depending on its looseness in each cleaning zone, and leads to an effective separation of weed impurities. At the same time, looseness will be the smallest in the input zone of cotton cleaning. Therefore, the largest angle of inclination of the splitter allows efficient and complete capture of the cotton parts, and in subsequent cleaning zones, the cotton will be more loosened and therefore the angle of inclination of the splitter will be smaller, allowing the required braking of the cotton in these zones, resulting in effective cleaning of the cotton.

The design consists of a body 1, feed rollers 2, peg drums 3, 4, 5, 6, mesh surfaces 12 under them, obliquely mounted on the surfaces of the drums 3, 4, 5, 6, respectively pile 7,8,9,10 and a waste disposal screw 11 (Fig. 1).

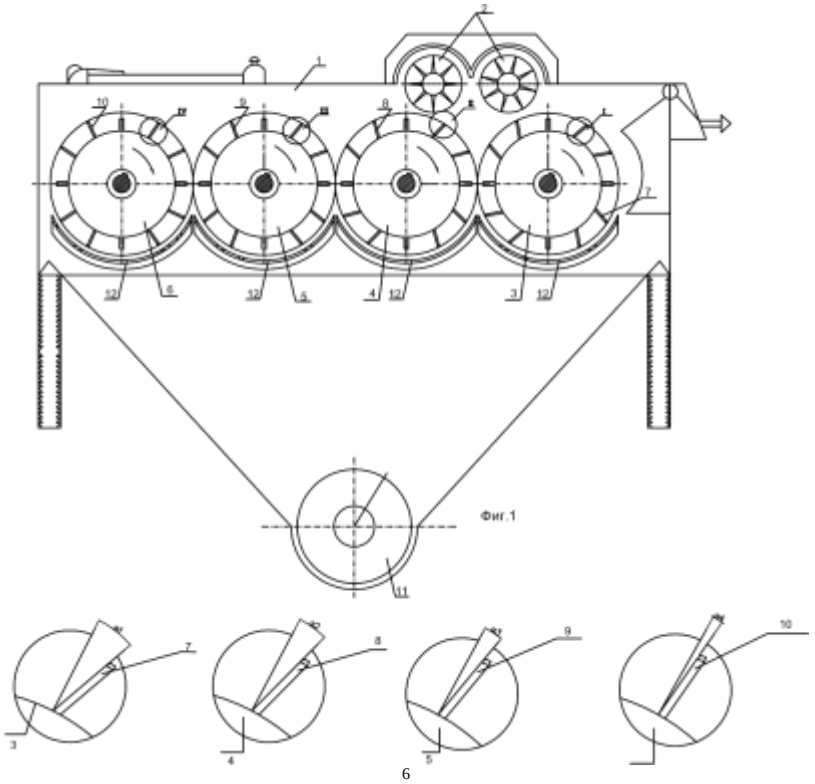


Fig.1. Cleaning section of the cotton cleaning unit

The cleaning section of the cotton cleaning unit operates as follows. Clogged raw cotton enters through the feed rollers 2, to the drums 3,4,5,6, the pins 7,8,9,10 capture the cotton bats and drag them through the 12 mesh surfaces. The cleaning sections of all four drums 3,4,5,6 are the same. Only they differ in the installation angle of the pegs 7,8,9,10 on the peg drums 3,4,5,6 differ in values. In this case, the pins 7 of the drum 3 are set at an angle of $\alpha_1 = 20^0$ relative to the radius in the direction of rotation of the drum 3. Accordingly, the installation angles of the pins 8 of the drum 4

are selected to be $\alpha_2 = 15^0$, the installation angle of the pins 9 of the drum 5 is selected to be $\alpha_3 = 10^0$, and the installation angle of the pin 10 of the drum 6 is selected to be $\alpha_4 = 5^0$. This is due to the fact that in the cleaning zone of the drum 3 raw cotton will be less loosened and therefore, for better capture and pulling of parts of the cotton, the pegs 7 are installed on the surface of the drum 3 at an angle of 20° from its radius in the direction of rotation of the drum 3. In the course of transporting and cleaning cotton in the zones fine cleaning, the looseness of raw cotton will increase and therefore, in each subsequent drum, the pegs are set 5° less than in the previous drum. This provides the necessary deceleration of the cotton parts in the cleaning zones, which allows sufficient and efficient separation of weeds when dragging them along the mesh surfaces 12.

The design allows an increase in the effect of cleaning cotton from small litter up to 20% relative to the existing design.

Results and Discussion. It is known [6, 7] that the larger the diameter of the pile drum, the greater the linear speed of the pile when extracting the fiber seed. In this case, the pile can interact with the piece of cotton and increase damage to the fiber and seed. If the line speed is low, the ability to extract fiber seeds is reduced. Therefore, it is important to determine the appropriate pile drum diameter in order to determine the optimum line speed. It should be noted that the larger diameter of the drum leads to an increase in its mass, thereby increasing the power consumption [8,9]. Therefore, the diameter of the drum must be large enough to accommodate the fiber seeds trapped in the sloping pile.

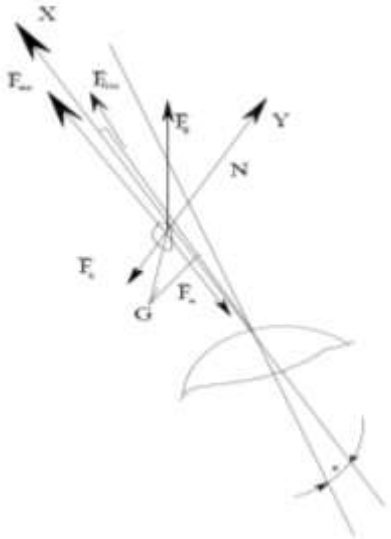


Figure 2. Calculation scheme of the equilibrium condition of the fiber seed on the surface of the inclined pile of the cotton cleaner drum.

Based on the calculation scheme (Fig. 2), we can write the following system of differential equations based on [10,11], taking the condition of equilibrium of the fiber seed on the surface of the inclined pile, taking the projections of the forces on the coordinate axes:

$$m_n\ddot{x} = -m_n g\sin(\alpha+\alpha_1) + F_{fric} + \frac{G}{2g}\omega^2 D\cos\alpha + F_\delta\cos(\alpha+\beta) + F_{nor}\cos\gamma$$

$$m_n\ddot{y} = -m_n g\cos(\alpha+\alpha_1) + N + \frac{G}{2g}\omega^2 D\sin\alpha + F_\delta\sin(\alpha+\beta) - F_{nor}\sin\gamma \quad (1)$$

here: N - reaction force;

γ - Coriolis force is the location angle $\gamma = \frac{\pi}{2}$;

According to [12] friction force:

$$F_{fric} = fN \quad (2)$$

here: f - coefficient of friction between the fiber seed and the surface of the pile.

It should be noted that the fiber seed moves along the x-axis on the inclined pile surface, but the fiber seed does not move along the y-axis. Therefore, the second equation of system (2) can be written as follows:

$$N = m_n g\cos(\alpha+\alpha_1) - \frac{G}{2g}\omega^2 D\sin\alpha - F_\delta\sin(\alpha+\beta) + F_{nor} \quad (3)$$

Taking into account the received (3) and (2), putting (1) into the first equation of the system, the following equation was created:

$$m_n\ddot{x} = m_n g[\cos(\alpha+\alpha_1) - f\sin(\alpha+\alpha_1)] + \frac{G}{2g}\omega^2 D(\cos\alpha - f\sin\alpha) + F_\delta[\cos(\alpha+\beta) - f\sin(\alpha+\beta)] + 2f\dot{x}\omega m_n \quad (4)$$

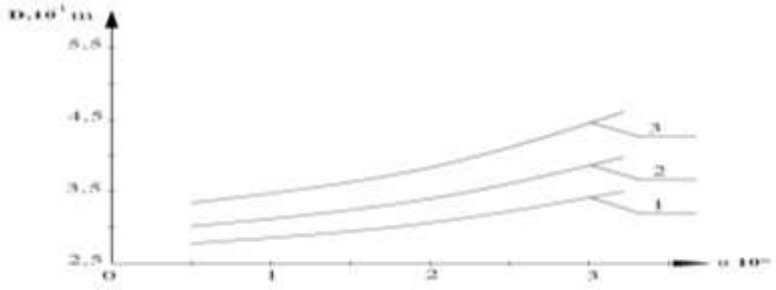
The slope must be equal to $x = 0$ to separate the fiber seed trapped in the pile from the neighboring pieces of cotton, otherwise the fiber seed moves along the x axis and leaves the surface of the pile, remaining with the neighboring pieces of cotton [13]. Therefore, taking into account this situation, we will make an expression for determining the outer diameter of the drum with piles (along the tip of the piles) from equation (4):

$$D \le \frac{m_n g[f\sin(\alpha+\alpha_1) - \cos(\alpha+\alpha_1)] - F_\delta[\cos(\alpha+\beta) - f\sin(\alpha+\beta)]}{\frac{G}{2g}\omega^2(\cos\alpha - f\sin\alpha)} \quad (5)$$

The numerical solution of the problem was carried out at the following initial calculation parameters:

$m_n = (0{,}25 \div 0{,}07)*10^{-3}$ kg; $g = 9{,}8$ m/s^2; $\alpha = (5^\circ \div 20^\circ)$; $\alpha_1 = (25^\circ \div 35^\circ)$; $\omega = (40 \div 45)$ s^{-1}; $\beta = (10^\circ \div 25^\circ)$; $F_\delta = (0{,}8 \div 1{,}5)$ N; $f = (0{,}2 \div 0{,}4)$;

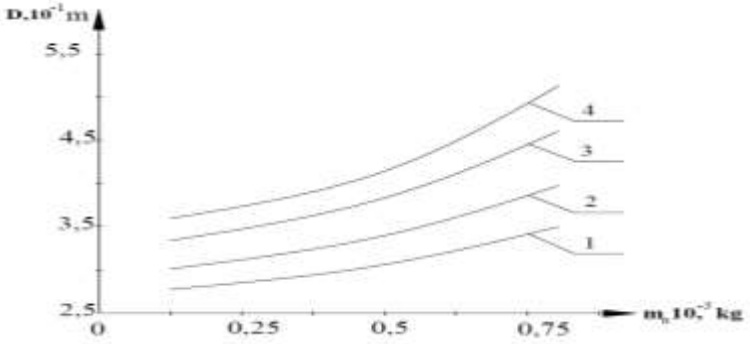
As a result of the numerical solution of the received expression (5), the laws of interconnection of the system parameters were determined.



1- $f = 0{,}25$; 2- $f = 0{,}3$; 3- $f = 0{,}35$;

Figure 3. Graphs of the dependence of the diameter of the drum with piles placed obliquely on the angle of inclination of the piles

On fig. 3 shows graphs of the diameter of the drum with oblique piles on the cotton gin from small impurities and the angle of inclination of the piles. Analyzing the obtained connection graphs, it was found that the diameter of the pile drum increases from $2.76*10^{-1}$ m to $3.51*10^{-1}$ m in a non-linear connection, when the friction coefficient $f = 0{,}25$ and the angle of inclination of the piles increase from 5° to 30°. When coefficient of friction, taken equal to 0.35, it was found that the values of the diameter of the pile drum increase from $3.4*10^{-1}$ m to $4.61*10^{-1}$ m in a non-linear manner. It should be noted that an increase in the recommended diameter of an inclined pile drum increases the energy consumption for its movement. But a large angle of deviation of the piles in the starting drum requires a large diameter of the drum. Thus, the moisture content of the cotton is normal, the coefficient of friction is $f \le 0{,}3$, the diameter of the drum is within $(0{,}31 \div 0{,}35)*10^{-1}$ m, when the pile angle is taken as $\alpha \le 20^{\circ}$.



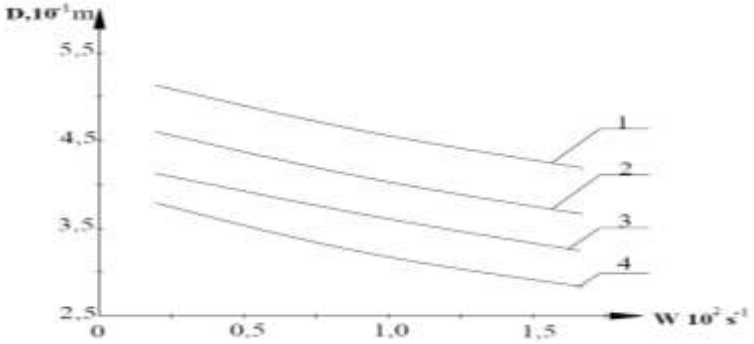
1- $\omega = 50\,s^{-1}$; 2- $\omega = 45\,s^{-1}$; 3- $\omega = 40\,s^{-1}$; 4- $\omega = 35\,s^{-1}$;

Figure 4. Graphs of the dependence of the diameter of the drum with piles placed on the cotton cleaner from small impurities on the change of the mass of the cotton piece hung by the piles.

On fig. 4 shows the graphs of the diameter of the pile drum used to clean cotton from small impurities, on the change in the mass of a piece of cotton suspended from the pile. Based on the analysis of the obtained graphic relationships, with an increase in the mass of cotton pieces suspended on drum piles from $0.18*10^{-3}$ kg to $0.75*10^{-3}$ kg, and with an angular velocity of the drum equal to 50 s^{-1}, its diameter increases from $2.81*10^{-1}$ m to $3{,}58*10^{-1}$ m, there is an increase in non-linear communication. Accordingly, it was determined that the diameter of the pile drum increases from $3.52*10^{-1}$ m to $5.23*10^{-1}$ m at an angular velocity value of 35 s^{-1}. Therefore, it is desirable to separate the cotton into a sufficient number of individual seed fibers so that the pile drum does not exceed its diameter.

With a sequential arrangement of drums with inclined piles [14] in order of increasing angular velocity of tamping cotton will be enough. Therefore, the angular

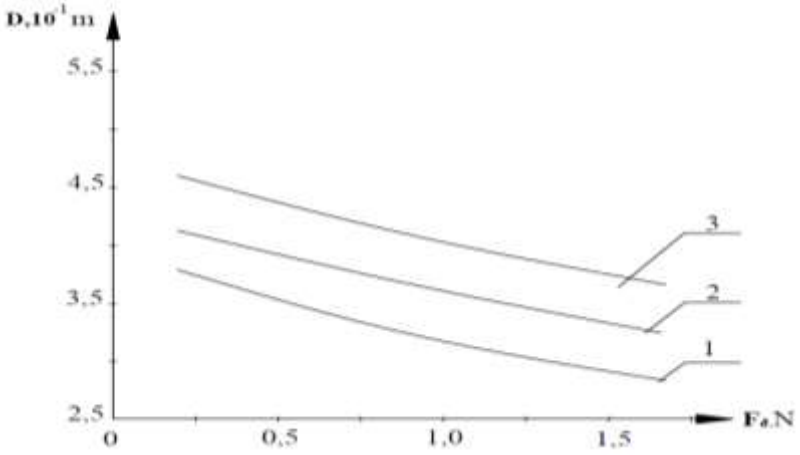
velocity of the drum directly plays an important role in choosing the values of its diameter.



1- $\alpha = 5^{\circ}$; 2- $\alpha = 10^{\circ}$; 3- $\alpha = 15^{\circ}$; 4- $\alpha = 20^{\circ}$;

Figure 5. Graphs of the dependence of the diameter of the pile drum on the cotton cleaner from small impurities on the angular speed of the drum

On fig. 5 shows graphs of the dependence of the diameter of the pile drum, on which the cotton gin is cleaned from small impurities, on the angular velocity of the drum. With an increase in the angular velocity of the pile drum from $0.325*10^2$ s^{-1} to $0.45*10^2$ s^{-1} and the deviation angle of the pile $\alpha = 5^{\circ}$, the values of the outer diameter of the drum change from $5.23*10^{-1}$ m to $3.73*10^{-1}$ m in non-linear regularity, one can note a decrease in the diameter of the drum from $3.52*10^{-1}$ m to $2.74*10^{-1}$ m at a pile deflection angle of 20. In order for the diameter of the pile drum to be within $(3{,}5 \div 4{,}5)*10^{-1}$ m, it is desirable that its angular velocity be within $(0{,}38 \div 0{,}43)*10^2$ s-1.



1- $\beta = 10^{\circ}$; 2- $\beta = 15^{\circ}$; 3- $\beta = 20^{\circ}$;

Figure 6. Graphs of the dependence of the diameter of the drum with piles on the cotton cleaner from small impurities and the strength of the connection of the fiber seed with the adjacent cotton pieces.

On fig. 6 shows graphs of the dependence of the diameter of the pile drum of the cotton gin from small impurities on the change in the bond strength of the seed fiber with neighboring pieces of cotton. It is known that the fibers of cotton pieces intertwine and intertwine. Therefore, in order to separate them into individual monofilament

seeds, binding forces must be overcome. According to existing studies, these binding forces are about $(0{,}5 \div 1{,}5)$ N, but in some cases they can reach $(2{,}0 \div 5{,}0)$ N. According to the analysis of the graphs, with an increase in the weaving force of cotton pieces from 0.5 N to 1.5 N, the values of the diameter of the pile drum D are non-linear from $3.81*10^{-1}$ m to $2.75*10^{-1}$ m. In inclined $\beta = 10^{\circ}$, legitimacy decreases. It can be seen that the drum diameter values decrease from $4.46*10^{-1}$ m to $3.59*10^{-1}$ m when the bond force vector reaches the formed angle. Therefore, it is recommended that the adhesive force values do not exceed $(1{,}0 \div 1{,}4)$ N, so that the drum diameter is within $(3{,}5 \div 4{,}5)*10^{-1}$ m.

Conclusion. A new structural scheme of the cotton cleaner with drums with inclined piles from small impurities has been developed. Based on theoretical studies, the formula for determining the diameter of the piled drum was obtained, based on the numerical solution, optimal values of the circuit parameters were recommended.

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FROM THE HISTORY OF THE POLICY OF THE GOVERNOR GENERAL OF TURKESTAN IN THE ILI VALLEY (EARLY 60S-70S OF THE 19TH CENTURY)

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Annotatsiya: Rossiya imperiyasi O‘rta Osiyoda Angliya bilan uzoq raqobat olib borgan. Endi metropoliya chegara masalasida Xitoy bilan "Ili muammosi" xususida tortishib, bu jarayon o‘n yildan ortiq davom etdi. Garchi Rossiya va xorij tarixshunosligida ushbu muammoga oid qator ishlar olib borilgan bo‘lsa-da, Vatan tarixshunosligida mazkur masalani atroflicha tadqiq etish maqsadga muvofiqdir. 1870 yilga kelib Turkiston general-gubernatorligiga tegishli Yettisuv viloyati chegaralarida vaziyat yanada keskinlashadi. Aslida Xitoy imperiyasiga tegishli chegara hududlari bu vaqtga kelib, amalda Xitoyga bo‘ysunmagan holda bu hududda uyg‘urlarning Taranchi sultonligi vujudga kelgan edi. G‘ulja aholisi tomonidan Yettisuv hududlariga doimiy talonchilik harakatlari olib borilgan. Bunday vaziyat nafaqat Turkiston general-gubernatorligi ma'muriyati, balki yuqori hukmron doiralarni ham tashvishga soladi. Ikkinchi tomondan Qoshg‘arda Yoqubbekning siyosiy pozitsiyasi mustahkamlanib, G‘ulja aholisi bilan birlashish kayfiyati paydo bo‘ladi. O‘z navbatida Yoqubbekning Muzort dovonining janubiy qismlari va Turfon shahrini egallashi, G‘ulja uchun yo‘l ochish bilan birga uni ingliz va turk sultoni tomonidan qo‘llab-quvvatlanishi Rossiya imperiyasi chegaralarida real xavfni vujudga keltirdi.

Kalit so‘zlar: Rossiya imperiyasi, Angliya, O‘rta Osiyo, Xitoy, Turkiston, Taranchi sultonligi, G‘ulja

Аннотация: У Российской империи было долгое соперничество с Англией в Средней Азии. Сейчас мегаполис спорит с Китаем по поводу границы, «илийской проблемы», и этот процесс длится уже более десяти лет. Хотя в отечественной и зарубежной историографии выполнен ряд работ по этой проблеме, целесообразно детально изучить этот вопрос в историографии Отечества. К 1870 г. обостряется обстановка на границах Йеттисувской губернии, относящейся к Туркестанскому генерал-губернаторству. Фактически приграничные районы, принадлежавшие Китайской империи, к этому времени практически не подчинялись Китаю, и на этой территории возник Таранчийский султанат уйгуров. Жители Кульджи осуществляли постоянные грабежи йеттисовских районов. Такая ситуация беспокоит не только администрацию Туркестанского генерал-губернаторства, но и высшие правящие круги. С другой стороны, в Кашгаре укрепятся политические позиции Якуббека, появятся настроения на объединение с кульджинцами. В свою очередь, занятие Якуббеком южных участков перевала Музорт и города Турфон, открывших путь

на Кульджу, и его поддержка британскими и турецкими султанами создали реальную опасность на границах Российской империи.

Ключевые слова: Российская империя, Англия, Средняя Азия, Китай, Туркестан, Таранчинский султанат, Кульджа.

Abstract: The Russian Empire had a long rivalry with England in Central Asia. Now, the metropolis is arguing with China about the border issue, the "Ili problem", and this process has lasted for more than ten years. Although a number of works on this problem have been carried out in Russian and foreign historiography, it is appropriate to study this issue in detail in the historiography of the Motherland. By 1870, the situation on the borders of Yettisuv province, which belongs to the general governorship of Turkestan, becomes more tense. In fact, the border regions belonging to the Chinese Empire had by this time been practically not subject to China, and the Taranchi Sultanate of the Uyghurs had emerged in this area. Residents of Gulja carried out constant looting of Yettisuv areas. Such a situation worries not only the administration of the Turkestan General Governorate, but also the higher ruling circles. On the other hand, Yakubbek's political position will strengthen in Kashgar, and there will be a mood to unite with the people of Gulja. In turn, Yakubbek's occupation of the southern parts of the Muzort pass and the city of Turfon, opening the way for Gulja, and his support by the British and Turkish sultans created a real danger on the borders of the Russian Empire.

Key words: Russian Empire, England, Central Asia, China, Turkestan, Taranchi Sultanate,Gulja

Introduction. In September 1870, the military governor of the Yettisuv region sent von Kaufmann a report that the military forces of the Yettishahar state consisted of about 30,000 soldiers, and rumors about starting a war against the Russians began to spread among them [1].

It should be noted that between 1865 and 1870, the ruling circles of St. Petersburg appealed to the Chinese government several times to regulate the border situation. However, as the Sin Empire was under pressure from internal rebellions and an external threat (Great Britain), the notes sent by the Russian government went unanswered. Based on the powers given to him, even without the approval of the higher administration, Kaufman decided to end the Taranchi sultanate and prevent Yaqubbek from occupying Gulja. In August 1870, at the request of G. Kolpakovsky, the Governor-General of Yettisuv, the military governor sent the Tianshan border detachment led by Lieutenant Colonel Tchaikovsky to capture the Muzort pass. The occupation of this strategically important pass stopped the communication between Kashgar and Gulja [2]. On the other hand, it destroyed the possibility of unification of the entire East Turkestan.

Kaufman's decision was unexpected for everyone. Since 1867, every part of the pass has been seriously studied and recommended for conquest by the Russian military. Also, the capture of the Muzort pass would cause a geopolitical crisis with the British government. The Governor-General of Turkestan, having a favorable situation, began to slowly implement plans to occupy the Ili Valley. Of course, the representatives of the military administration of Yettisuv region and the neighboring governor general (Western Siberia) should be noted as the forces supporting von Kaufman in this

process. In particular, Major-General V. Poltorasky in his letter dated March 7, 1871 emphasizes that the non-interference policy of Russian diplomacy in the West China issue will lead to big mistakes. In this correspondence sent to the Minister of Foreign Affairs, the issue is explained as follows: "First, a strong state of Muslims led by Yakubbek will emerge on the southern borders of Russia, and great dangers will arise. Secondly, this situation will lead to a decrease in the Russian position in Asia. Because Asians, unlike European law, follow the principle of power and the policy of non-interference or compromise represents weakness. Thirdly, it will damage the friendly relations with China for centuries. In this respect, Russia's military assistance to Beijing's ruling circles must ultimately show its strength to the helpless Asians" [3]. It can be understood that General Poltorasky proposes to take over Western China from the point of view of Russia's political and commercial interests.

Literature Review. In the process of analyzing the political situation in the Ili Valley, the administration of the Turkestan Governor General tries to study the local population and its ethnic composition in detail. According to him, the total population according to the data of 1870 was over 100,000, of which about 66,000 were Muslims. The Russian government considers it necessary to conduct a military campaign in order to protect the interests of the Dungans from the Uyghurs, who have appealed to them several times [4]. In fact, the largest number of people living here are Uyghurs, and Dungans are seven times less than them. It is important that there was no serious conflict between the Dungans and the Uyghurs. G. Kolpakovsky, the initiator of the idea of occupying Gulja and "establishing peace on the border", was supported by Pavlinov and Vardugins, who were working as Russian consuls in Gulja and Chuguchak, but this idea was it was not possible. Of course, K.P. Kaufman's clear instruction was necessary for such decisions to be made. In such a difficult situation, von Kaufman made a cunning policy. In his position in this process, the governor-general had to take into account the international political situation, the interests of the ruling circles of Russia, as well as the mood of the subordinate authorities. First of all, it was necessary to convince the authorities of St. Petersburg to conquer new territories, and on the other hand, it was necessary to fulfill the tsar's demand that a careful policy should be pursued in the Central Asian issue. A precautionary measure was necessary in relations with England at that time. Because at this time, negotiations between the two empires were continuing on the issue of Afghanistan. In this regard, in his letter to the head of the Asian Department, von Kaufman states the following: In this regard, in his letter to the head of the Asian Department, von Kaufman states the following: "Of course, we must establish convenient communication within the interests of the metropolis and, of course, our own platform... If we do not warn them in time, the British will lose relations with Yakubbek and would soon be able to enter through Yorkent. The key to our victory over England is Kashgar, we left them behind without a fight [5]".

The Governor-General of Turkestan, who stated that he is firm about Kashgar, shows that he is also in favor of active actions in the case of the Ili Valley. In this regard, von Kaufman states that the province of Ili should belong either to Kashgar, or to China or Russia[6].

Research methodology. It can be said that the son of Sultan Abil of Gulja sent ambassadors several times as a supporter of good relations with the governorate. However, the governor's administration leaves them unanswered. Because Kaufman considered woodpeckers as dangerous neighbors from the very beginning. In the meantime, on his behalf, Kolpakovsky sends a Russian merchant ship under the pretext of trading with the local population in the lands belonging to the Sultan on the Ili River. However, it was reported to the administration that the Russian merchant ship that reached Gulja was strongly opposed by the opponent and was not allowed to trade [7].

Analysis and Results. This was certainly an important factor for von Kaufman to justify his actions. Once again confident, Kaufman sent a letter to the Minister of War Milyutin on September 25, 1870. His departure indicates that he is concerned about the increasing number of incidents such as organized robbery attacks on ships sailing along the Ili River[8]. Of course, the minister of war, who agreed with the governor-general and was an adviser, was one of the ruling circles of the empire that supported von Kaufman's further actions. D. Milyutin realized that after the capture of Gulja, even if it was returned to the Chinese, they would not be able to hold on to the government for a long time due to the weakness of the Chinese government. Despite the fact that the plan to conquer the Ili Valley was clearly developed, it was impossible to allow the relations with the Chinese government to become tense during this process. Taking this into account, von Kaufman wrote in a letter to the Beijing government on November 1, 1870 that after the occupation of the Gulja territories by the Russian military, the occupied territory would be returned to them as soon as the Chinese side sends its official representative there.To request the sending of Chinese administrative or military representatives, through whom von Kaufman wanted to convince the Governor General that the work he was doing was correct and friendly. Here, in exchange for this military assistance and the settlement of the rebellious population of Western China, the governor demands the right of Russians to trade freely in Western China and other Chinese provinces [9].

Preparations for the conquest of the Ili Valley did not last long. Although the Russian troops on the border were in a state of military readiness, there were other reasons for the delay of the military campaign. State Chancellor of the Russian Empire A. Gorchakov, Head of the Asian Department P. Stremoukhov, and even Tsar Alexander II did not fully support Kaufman's views and plans for some time. In particular, state chancellor A. Gorchakov refuses to invade the Ili valley at all. The head of the Asian Department informed about this in a letter sent to the Governor General of Turkestan on November 17, 1870. Also, when P. Stremoukhov will soon start a special commission, they will study the situation in border issues, in the regions from the Caspian Sea to the Pacific Ocean, including in Asia, what should be our views on the future political, trade and other issues of Russia. states that we will inform you about it[10].

Of course, Governor-General von Kaufman did not expect such opposition to his opinion. Therefore, expressing his reaction to this letter, von Kaufman wrote on February 7, 1871 that the views of the Ministry of Foreign Affairs cannot be contrary to my views, it is necessary to determine what factors motivate them to oppose me[11].

It is clear from this that no matter how much the high officials of the Russian government opposed von Kaufman, the governor-general did not count on them and independently started military operations aimed at conquering Gulja. Von Kaufman, in his letter to the military governor of Yetisuw (February 27, 1871), advises our border detachments not to limit themselves to defense, but to go on the offensive if the military forces of the sparrows start military operations. In this case, the strengthening of the border troops also clearly indicates that Kolpakovsky is personally responsible[12].

The Russian ambassador in Beijing also took an active part in the discussions of the Russian ruling circles on the Ili issue. During his negotiations with the Chinese government over the issue, the Chinese ministers finally agreed to the Russian invasion of Ili. The only suggestion made by the Chinese government was not to deliberately increase the number of military troops entering the Ili Valley. A large number of troops that could be brought into the valley could cause international conflicts[13]. This is exactly what Chinese officials were worried about.

In the letter of the governor of Yettisuv region, lieutenant-general G. Kolpakovsky, to the governor-general of Turkestan von Kaufman, the military operations in the Ili Valley will be over by the end of June, and now the issue to be resolved here is the problem of the future fate of the country. will be discussed in detail. The military governor stated that the formation of management procedures in the Ili Valley is organized based on the decision of the Governor-General of Turkestan No. 21 of August 18, 1871. Management in the region continued as before. It was determined that the chiefs of the local clans and tribes will lead the administration and court proceedings. Local residents elected their own leaders. The Russian government will appoint 4 officers to the Ili Valley. Because the valley was divided into four sections based on ethnographic and geographical conditions. The duties of these officers included maintaining order in their assigned areas, controlling and monitoring the relations between the various tribes and clans in the country, their friendly or hostile mood towards each other[14].

The main goal of maintaining a less complicated system of governance is that it would make it possible to maintain relations in the event of a critical situation in the relations between the Russian government and the Chinese state, and the need to leave it.

One of the biggest reasons for maintaining local government in the region was the fact that the population of the valley consisted of different tribes and clans. For every one hundred thousand people, 38,000 Taranians, 22,000 Kyrgyz, 5,000 Dungans, 5,000 to 7,000 Chinese, 15,000 Sibos, and 15,000 to 17,000 Kalmyks lived in Gulja [15].

Conclusion. If we pay attention to the numbers, one of the tribes living in the Ili Valley did not differ much from the other in terms of numbers. In such circumstances, handing over the administration to one of these tribes (meaning the rule over the entire valley) could lead to a controversial situation.

One of the aspects that caused difficulties for the government during the management process was the issue of ensuring justice between Buddhists (Sibos, Chinese, Kalmyks) and Muslims (Kyrgyz, Taranchi, Dungan). But it should be noted that taranils from these clans had the ability to manage the territory. This can be known from the fact that

the Ili Valley was ruled by a 4-year-old ruler of the Taranchi. Another reason for the dominance of the Taranchi in the Ili Valley was their friendly relations with Yakubbek, the ruler of Kashgar [16]. K. P. Kaufman carefully studies the military governor's suggestions and comments and supports his views. In fact, Kaufman was also against giving the territory to the Chinese. In this way, the Ili region will be temporarily included in the Turkestan General Governorate and given to Yettisuv region. In the city of Verny, a special office for Gulja affairs was established, which was headed by N. A. Aristov and later by N. N. Pantusov. Administratively, 4 sections were established, and the Russian military Major K. Balisky, Yasovul I. Gerasimov, Staff-Captain N. Shneider and Sub-Lieutenant M. Lyashevsky worked as chiefs. The third section was completed in 1874, and the fourth section in 1876. A tax of 3 rubles per family will be imposed, all previous taxes on the population will be abolished. He even used these taxes to temporarily cover all expenses of the Gulja region. In short, the Ili Valley will be occupied as a result of the actions of the General Governor of Turkestan, deviating from its authority, to include the lands in the Ili Valley into its territory. The Russian administration of Turkestan pursued a policy of border expansion. A temporary Gulja district will be established as part of the General Governorship. However, it was not easy to manage. From the very first day, the Chinese started the movement to return it. Disputes continued for more than ten years. Both countries pursued their own interests, and the will of the local people was completely ignored.

References:

[1]. NaUz, fund 715, list 1, case 44, sheet 3.
[2]. NaUz, Fund 715, List 1, Case 44, Sheet 6.
[3]. NaUz, fund 715, list 1, case 45, pages 250-252.
[4]. NaUz, Fund 715, List 1, Case 44, Sheet 331.
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FROM THE HISTORY OF RELATIONS BETWEEN TSARIST RUSSIA AND KHIVA KHANATE IN THE 18TH-FIRST HALF OF THE 19TH CENTURIES

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Annotasiya. Ushbu maqolada Xiva xonligiga XVIII asrda va XIX ning birinchi yarmida kelgan kapitan A.P. Bekovich-Cherkasskiy qo'mondonligida harbiy ekspedisiya, rus injeneri Nazimov, Dmitriy Gladishev va Ivan Muravin boshchiligidagi ekspedisiyalar, 1819 yil 17 iyunda Kavkaz harbiy gubernatori general A.P. Yermolov topshirig'i bilan shtab-kapitan N.N. Murav'ev boshchiligidagi elchilik missiyasi va Orenburg harbiy qo'mondoni V.A. Perovskiy boshchigidagi ekspedisiyalar tomonidan to'plangan Xiva xonligidagi sug'orish tizimlariga taaluqli ko'pgina ma'lumotlarni ko'rishimiz mumkin.

Kalit so'zlar: diplomatik munosabatlar, A.P.Bekovich-Cherkasskiyning harbiy ekspedisiyasi, Rossiyaning iqtisodiy manfaatlari, sun'iy sug'orish, arna, O'zboy, irmoq, kanallar qurilishi, N.N.Murav'evning ma'lumotlari, Amudaryoning o'zanlari, V.A.Perovskiyning harbiy ekspedisiyasi, geosiyosiy maqsadlar.

Аннотация. В данной статье содержится множество сведений, касающихся систем орошения в Хивинском ханстве, которые были в свое время собраны побывавшими здесь в XVIII – первой половине XIX века военной экспедицией под началом капитана А.П.Бековича-Черкасского, экспедициями русского инженера Назимова, Дмитрия Гладышева и Ивана Муравина, посольской миссией штабс-капитана Н.Н.Муравьева от 17 июня 1819 года по поручению военного губернатора Кавказа генерала А.П.Ермолова и военная экспедиция во главе военного губернатора Оренбурга В.А.Перовским.

Ключевые слова: дипломатические отношение, военная экспедиция А.П.Бекович-Черкасский, экономические интересы России, исскуственное орошение, арна, гидроним Узбой, приток, строительство каналов, сведения Н.Н.Муравьева, руслы Амударьи, военная экспедиция В.А.Перовского, геополитические цели.

Abstract. This article contains a lot of information regarding the irrigation systems in Khiva Khanate, collected by the military expedition under the command of Captain A.P. Bekovich-Cherkassky, who came in the 18th and the first half of the 19th century, the expeditions led by the Russian engineer Nazimov, Dmitry Gladyshev and Ivan Muravin, the embassy mission led by staff captain N.N. Muravev on the assignment of the military governor of the Caucasus, General A.P. Ermolov and the expedition led by Orenburg military commander V.A. Perovsky on June 17, 1819.

Key words: diplomatic relations, military expedition of A.P. Bekovich-Cherkassky, economic interests of Russia, artificial irrigation, arna, hydronym Uzbay,

inflow, construction of canals, N.N. Muravyov about the channels of Khorezm, the channels of the Amu Darya, the military expedition of V.A. Perovsky, geopolitical goals.

Introduction. The emergence of a centralized state in Russia at the beginning of the 18th century and its declaration as an empire led to the fact that in its relations with the khanates of Central Asia, in particular, with Khiva khanate, certain pressure began to prevail. This was clearly manifested in the policy of the Russian Empire in the form of the humiliation of Khiva Khanate, the desire to covet its natural resources and the strengthening of sentiments in the aspect of the implementation of strategic goals and objectives.

Due to the fact that the basis of the economy of Khiva Khanate was agriculture, focused on artificial irrigation, the Russian government began to collect information about the irrigation systems in the country, about the Amu Darya, various canals and irrigation facilities.

Undoubtedly, one of the important factors in obtaining a plentiful and stable harvest in agriculture in our country is the effective irrigation of lands, the rational use of available resources and opportunities. Against the backdrop of global climate change, demographic growth and economic development, the demand for water resources is increasing year by year. This, in turn, can be seen in their growing shortage in Uzbekistan. At the same time, consistent reforms are being carried out to ensure the efficient use of land and water resources, improve the system for their rational use, modernize and develop hydraulic structures.

A century after the death of the Russian expeditionary detachment led by A.P. Bekovich-Cherkassky, sent by the Russian Tsar Peter the Great to Khiva Khanate, in 1819, ambassadors arrived from the Caucasus under the command of Staff Captain N.N. Muravyov. Muhammad Rakhimkhan suspects the Russians of espionage, who have gone through a difficult path for 6 months. Khan accepts them only after 48 days of detention in Elgaldi village in Kushkupir district and after a certain time, accompanied by his people, sends them back to their homeland. N.N. Muravyov, who kept a diary during the trip, later collects his impressions in a separate book. The publication contains interesting information about the Amu Darya and its tributary Uzbay, the arna (a small canal) and the channels in Khorezm oasis.

Literature review. Along with the construction of irrigation facilities in Khorezm oasis in the 17th-19th centuries, such rulers as Abulgazi Bahadyrkhan and Anusha Muhammadkhan, as well as historians Shermuhammad Munis and Muhammad Riza Agahi, who served as mirabs (water-supervisor), paid great attention to the problems of studying and the history of such structures.

Research methodology. This article is written on the basis of generally accepted scientific methods – historicity, comparative logical analysis, consistency, principles of objectivity. Also, when writing the article, such methods as system analysis, the relationship of facts, inductive analysis of the issue under study, generalization of the results obtained, comparability were used.

Russian experts and ambassadors and soldiers who came to the Khanate of Khiva for various purposes also studied the subject. A century after the disaster of the A.P. Bekovich-Cherkassky expedition sent to the Khanate of Khiva by the Russian emperor

Peter the Great in 1819, ambassadors led by Captain N.N. Muravyov arrived. Muhammad Rahimkhan, received the Russians after they were detained for 48 days in Elgaldi village of Kushkupir, because they were suspected of being spies who traveled a difficult path for 6 months and sent them back to their country with his own people. N.N. Muravyov, who kept a diary during the trip, wrote a book about his impressions. It contains interesting information about the Amu Darya and Uzbay, channels and arnas in Khorezm oasis.

Analysis and results. Relations between Khiva Khanate and Russia began to take shape from the middle of the 16th century. The main aspect in these relations was determined by the fact that both states were equally interested in mutual trade. However, the transformation of Russia into an empire at the beginning of the 18th century and the strengthening of its political positions in Europe led the Russian Empire to pursue a discriminatory policy against Khiva Khanate, defining it as an unequal party.

Often this was facilitated by the embassies of representatives of individual Turkmen, Karakalpak and Uzbek tribes, who harbored hatred for Khiva Khanate, in order to obtain political asylum or citizenship in the Russian Empire.

Khodja Nafas, a representative of the Turkmen families who arrived in Astrakhan in 1713, conveyed deliberately false information that the Amu Darya flows into the Caspian Sea near the Balkhan Mountains, and the ruler of Khiva, in order to prevent a threat from the Russians, turned the river towards the Aral Sea. The Turkmen representative, just in case, expressed mercenary judgments that when the river returned to its former course, gold deposits would be found in the Kara-Kum Desert. In fact, it was about the dried-up tributary of the Amu Darya, the Uzbay. The Turkmens were interested in introducing a tributary of the Amu Darya, because it stopped flowing in a westerly direction, and all their aspirations were placed on Russia. In turn, Russian statesmen, observing the political processes in the East and, above all, the actions of the British in India, China, Afghanistan, began to pay serious attention to information relating to Central Asia.

At the beginning of the 18th century, Russian military officials began to take action to determine the strategic importance of the Amu Darya as a waterway for shipping. In particular, according to the decree of Emperor Peter 1 from May 29, 1714, the military expedition under the command of Captain A.P. Bekovich-Cherkassky, sent to the territory of Khiva Khanate through the Caspian Sea, the following was prescribed: “With caution, observe the course of the river (Amu Darya) and the dam, if possible, turn the waters of the river in the same direction, if necessary, block the tributaries flowing towards the Aral Sea. By means of the Amu Darya, send merchants to India to those places where shipping is possible” [1].

In the autumn of 1716, A.P. Bekovich-Cherkassky began to build fortresses: St. Peter – in Mangyshlak, not far from Krasnovodsk – Tsarevich Alexei and Ugurchi, as where the Uzbay was supposed to flow into the Caspian Sea. At the same time, together with engineers and topographers, he checked the channel of the Uzbay to the very lake Sarikamish. Returning to Astrakhan, A.P. Bekovich-Cherkassky receives a notice that the Khiva Khan Shirgazi ordered to detain 3 Russian ambassadors and began to gather an army.

On June 9, 1717, Bekovich-Cherkassky, having at his disposal 3727 foot soldiers, 617 horse dragoons, 2 thousand Cossacks, 230 sailors and 22 guns, set out from the city of Guryev in the direction of Khiva, having overcome the most difficult path through Ustyurt [2]. In the work "The Garden of Eden of Happiness" by the historiographers Munis and Agakhi, one can read the following: "In the year of the chicken, Russian nobles Davlet Giray and Andrei with thirty thousand soldiers invaded territory of the Aral Sea, either in an effort to seize the gold and silver mines of Mount Sheikh Jalil or in order to conquer Khorezm. The Khan instructed Kulmukhammad atalyk from Kungrad and the Naiman emir Avaz inak to lead the defense. They summoned Davlet Giray for negotiations, arranged a big feast and sent all the foreigners present to the underworld" [3].

The expedition ended tragically in August 1717, failing to carry out the instructions of Peter 1. However, Peter 1, who informed in France about the information received, was elected a member of the Paris Academy. The map of the Caspian Sea, compiled by A.P. Bekovich-Cherkassky, was presented to the court geographer Delil. He, in turn, reflected the Caspian and Aral Seas on the world map, which was compiled in 1723.

Apparently, the members of the expedition, in order to establish trade routes to Central Asia and India, and, if possible, subjugate the local khanates of Russia, sought to collect information about the seas, lakes and tributaries of rivers. Probably for this reason, A.S. Pushkin, who collected material to create a work about Peter 1, called him a "spy".

In 1740, expeditions were sent to Khiva under the leadership of the Russian engineer Nazimov, Dmitry Gladyshev, Ivan Muravin. Along the way, they collected information about a number of tributaries and lakes located near the Aral Sea, the Syr Darya and Amu Darya deltas, looking for a suitable place for building a military fortress. At the same time, the British Hooke and Thomson arrived in Khiva under the cover of commercial affairs [4].

At the end of the 17th – beginning of the 18th centuries, for the purpose of water use, Otalik-arna (Mangit Canal) was dug on the left bank of the Amu Darya, and on its right bank – Makta arna (Pahta-arna), Eshim Yorgan, Omonkuli, Ingichka, Ikhlos, Rakhmonberdibiy (not far from Biybozor village). Muhammad Rahimkhan I, who ascended the throne of Khiva in 1806, starting to rule the state, according to the testimony of a prominent historiographer Bayani: "Sent Sultan-mirab, Munis-mirab and Bekali-mirab to the town of Tuynukli in order to explore the need to clear the mouth of the Kheyvak (Polvonep) canal" [5].

By the beginning of the 19th century, politicians of tsarist Russia continued to be interested in the cultivation of cotton in Khiva Khanate in the aspect of its transportation to their country. On June 17, 1819, by order of the military governor of the Caucasus, General A.P. Yermalov, Staff Captain N.N. Muravyov was sent to this region in order to persuade the Turkmens living on the coast of the Caspian Sea to establish relations with Russia, to build a nodal point or a small citadel for merchants. Since in this period the lands beyond the Caspian Sea were the property of Khiva Khanate, in order to negotiate, he had to meet with Muhammad Rahimkhan.

Leaving Tiflis, through Shemakha and Baku, N.N. Muravyov reached the shores of the Caspian Sea, which he crossed by boat and ended up on an uninhabited island. First of all, it was necessary to find fresh water and quench their thirst. However, the water found in 2 dug wells turned out to be salty. Later, with the help of the Turkmens, the members of the embassy continued their difficult journey and by September 29 reached the tributary of the Amu Darya – the Uzbay. N.N. Muravyov notes "The dry bed of a large river is 100 sazhens wide and 15 sazhens deep, the banks of the river, which flows to the northeast and southwest, are steep, and the channel is overgrown with all sorts of grass. For this reason, I had to overcome up to 3 versts along the riverbed and spend the night in the place Besh Dishik (Five holes)" [6, 75].

Mentioning that the Amu Darya in ancient times flowed towards the Caspian Sea, which made it possible for Indian merchants to bring their goods on ships, the author refers to the information obtained at one time by the expedition of Bekovich-Cherkassky [6, 11]. While traveling from Krasnovodsk to Khiva, he comes to the conclusion that, in addition to the Uzbay, there is another dry river – Dthe Engunj, which he identifies as the remnants of the Amindarya (Amu darya) [6, 14]. Talking about mulberry trees near Balkhan, he makes the assumption that their seeds were at one time brought by the flow of water from Khiva or Bukhara.

In the diary entries of N.N. Muravyov, the toponym, or rather, the hydronym Uzbay, is mentioned in the form "Usboy", and it is said that it is the ancient channel of the Amindarya, the search for which was carried out at the direction of Peter 1, and the waters of the mentioned river flowed into Balkhan Bay. It is suggested that the ancient structure, located on the river bank, was built by the people of Bekovich-Cherkassky. In the dry bed of the Amu Darya, there are several wells with clean fresh water, it is overgrown with trees and dense shrubs. In this place we meet with the concept, which in Russian sources is defined as a water pipe, but in fact it is such a very common irrigation structure in the Khanate as an arna (small canal), information is given about the villages and auls located around [6, 85].

N.N.Muravyov's information about the canals of Khorezm differs slightly from modern ideas. In particular, the main water artery from the Amu Darya, which fed Khiva, is identified by the name Gyuik tam (probably the Polvonota canal). 3 channels flowed from it, which were called Buz-Gemen, Ah-Saray (Aksaray) and Dash-Gous (Tashauz). Khizarist (Khazarasp) was located south of Buz-Gemen, and Arna flowed north of Dash-Gous. From these canals, small ditches were brought out, which enlivened nature in the process of irrigating the land. In some places, small "lakes" were built, these reservoirs were used during the drought period. Large channels in width reached 7-8 meters. In places, water was raised by means of natural dams, sometimes their waters flowed over each other. Well water is rarely used, since it is mostly salty [6, 15]. There are judgments that in Khorezm, along with wheat, barley, millet, sesame, maize, melons and watermelons were planted [6, 85].

From November 1839 to February 1840, an army of 5325 soldiers led by the military governor of Orenburg V.A. Perovsky carried out active operations to conquer Khiva Khanate. However, due to severe frosts on the Ustyurt plateau, another Russian expedition ended tragically. According to Professor H. Ziyoev: "Hundreds of people from the Russian army, getting lost or being in an unhealthy state, were captured by

the Khivans. Later, 600 of them were returned to their homeland" [7, 94]. As local historian K. Nurzhanov notes: "425 Russian soldiers were captured, they were taken to New Urgench, using their labor to dig drainage ditches. The ditch Urisyap flowing near Urgench is known to us as an echo of those bloody events" [8, 26].

In 1841, the Russian officer Nikiforov, in 1842, lieutenant colonel G.I. Danilevsky and researcher T.F. Baziner collected geographical information about the Aral Sea and its nature, about the Amu Darya delta. Starting from 1848, the Aral Sea in the aspect of the infusion of the waters of the Amu Darya into it and the possibilities of navigation was studied by the expedition of Lieutenant Commander A.I. Butakov. The Aral Sea and the vicinity of the lower reaches of the Amu Darya were also observed by the expedition of Colonel N.P. Ignatiev sent to Khiva in 1858, which numbered about 150 members. In 1859, Russian navy ships sailed from the Aral Sea through one of the widest tributaries of the Amu Darya to the city of Kungrad, landing a landing force of 140 people [9].

Conclusion. By the middle of the 19th century, the political situation in the international arena, economic interests associated with the acquisition of natural resources, contributed to the acceleration of the military conquest of the Russian Empire by the Central Asian khanates.

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GREAT SILK ROAD TRANSLATORS

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Annotatsiya. Ushbu maqolada karvon yo'lining ko'p tilli muhiti bo'ylab tarjimonlarning tarjimonlik mahorati, savdo munosabatlaridagi tutgan o'rni, ya'ni ularning hokimiyat jilovidagi, dinlarni tarqalishida, madaniy qadriyatlarning yetkazilishi hamda milliy adabiyot bilimlari tarqalishidagi ahamiyati haqida umumiy ma'lumotlar beriladi. Bu maqolaning alohida e'tibori karvon yo'lining nafaqat eng muvaffaqiyatli savdogarlari, balki so'g'dlar hamda buddist matnlarini xitoy tiliga tarjima qilishga uringan rohib tarjimonlari, shuningdek ipak yo'lining ko'p tilli va ko'p madaniyatli ta'sir o'lchoviga qaratiladi.

**Kalit so`zlar:** Maniax, So`g`d bilinguallari, Shi-li, Kan-Men-Syan, An Shigao, Jefri Choser, Ugradamma, Tripitakadagi usta, Alam, Kucha, Filo Judaeus.

Аннотация. В данной статье приведены общие сведения о переводческом мастерстве переводчиков в многоязычной среде караванного пути, об их роли в торговых отношениях, в основном, их значении в бразды правления, распространении религий, передаче культурных ценностей, распространения национальных литературных знаний. Особенностью данной статьи является то, что наиболее успешными торговцами караванного пути были не только переводчики, но и согдийцы и монахи, пытавшиеся переводить буддийские тексты на китайский язык, а также многоязычные и мультикультурное влияние Шелкового пути сосредоточено на измерении.

Ключевые слова: Маниакс, согдийские билингвы, Ши-ли, Кань-Мэнь-Сянь, Ан Шигао, Джеффри Чосер, Уградамма, Мастер Трипитаки, Алам, Куча, Филон Иудей.

Abstract. This article provides general information about the translation skills of translators in the multilingual environment of the caravan route, their role in trade relations, that is, their importance in the reins of power, the spread of religions, the transmission of cultural values, and the spread of national literary knowledge. This article is focused not only on the most successful merchants of the caravan route, but also on the monk translators who attempted to translate Buddhist and Sogdian texts into Chinese, as well as on the dimension of the multilingual and multicultural influence of the Silk Road.

Key words: Maniax, Sogdian bilinguals, Shi-li, Kan-Men-Xian, An Shigao, Geoffrey Chaucer, Ugradamma, Master in Tripitaka, Alam, Kucha, Philo Judaeus.

Introduction. The Great Silk Road is the most famous and largest road that has played an important role in the economic, social and political life of the peoples of the

East and West, and at the same time has served to strengthen the cultural and educational ties of the peoples of the world. This is not only a road, but also one of the most amazing achievements of civilizations, a transcontinental road that connected East and West, Mediterranean and Far Eastern countries with ancient Chinese civilizations for the first time in human history. Diplomatic and commercial economic relations of many nations and peoples were established through this road. Kings made it a tradition to send gifts to each other through ambassadors on the Silk Road. In the development of these relations, the role of translators became important. This road, which started in Xi'an, located in the middle reaches of the Huanghe River, needed interpreters.

Literature review. By the 15th century, the discovery of the sea route gradually led to the oblivion and disappearance of the Great Silk Road, which had been the main trade and diplomatic route for several centuries. By the 19th century, interest in the Silk Road, which had been lying under the soil for several centuries, began and major state scientists organized archaeological expeditions. Basically, at the end of the 90s of the 20th century, E. Rtveladze first published his monograph entitled “The Great Silk Road”. In this book, the work of scholarly translators on the Silk Road, their role in the wide spread of Buddhism and Christianity and the importance of Central Asia on this road, as well as the ability of the Sogdian people to translate in addition to their commercialism, were revealed in detail. The scientist gave information about the division of translators into 4 groups, that is, traders from the 1st level to the 4th level. In addition, research scientists such as A. Khojayev, A. Berdimurodov, O. Kobzeva, A.A. Radkevich, S. Qurbanov, B. Olimov gave interesting information about translators in their books and monographs and contributed to the increase in the number of literature on the Great Silk Road.

Research Methodology. This article uses historical-comparative analysis, generalization of historical data, objectivity and other scientific research methods based on historical sources.

Analysis and results. The Sogdians played a major role in the direction of the Great Silk Road and they probably began to settle in the eastern direction after the conquest of the people of Sogdiana by Alexander the Great. Later, Sogdian trading posts appeared along the entire eastern part of this road from Central Asia to Chanan city in China and possibly Japan in the late 6th century. The Sogdian merchant Maniakh bypassed the Caspian Sea, reached Constantinople through the Black Sea and laid the foundation for a new silk trade route – the Caucasian Silk Road. There is information that the Sogdians also traded on the sea routes of the caravan route. They went from Arabia to India and then to China[1].

Many people who came out of Sogdia served in the administration of China's confession and even in the army. Sometimes those who have achieved high positions. They also became famous as commentators and translators of Buddhism and Monicum. Sogdians have also communicated in a living standard of living with Chinese industrial population. With the Decree of the Emperor in 628, they were allowed to marry to the Chinese woman, but with this marriage, women should not be taken out of Chinese borders[2].

Because of the fact that Sogdian traders became very important in the certain part of the Great Silk Road, Sogdian language became the lingua franca of the trade network during the reign of Tan dynasty. We also know that many Sogdian merchants were polyglot, that is, multilingual, and this benefited them not only as merchants, but also as translators. Sogdians mainly played a significant role in trade between the other parts of China and Asia. The 4th-8th centuries were considered a golden age of Sogdians, that is, they gained great influence through trade along the Silk Road[6]. Sogdians became transporters of culture, art, religious ideas, technologies, as well as innovations, rather than transporting something simple. Sogdians linked the empires of different regional cultures due to their flexibility, mobility. The Sogdian language, an ancient Iranian language, is recognized as the commercial language in Central Asia from the 6th till the 10th century. Their multifaceted ability allowed to become a convenient intermediary in trading with different nations along the Silk Road. These Sogdians, who worked as translators, worked not only as commercial translators, but also as agents representing the interests of other nations in negotiations on trade and political rights. For example, in 755 AD, after the Anushan uprising, the Uighurs had great benefits at the Tan Palace. At that time, most of the Sogdian translators chose to support Uighurs and acted as an agent to negotiate the Uyghurs with the Tan Palace[4].

The Sogdian people, who were aware of the Chinese culture, even had Chinese names. One of the Chinese surnames of Sogdians from Tashkent was the “Shi-Li” of Sogdians. Many of them served as a language intermediary for travelers and traders in the early Middle Ages. Some have held the position of officials as translators to solve problems with foreign peoples at the palace of Chinese Emperor. These Sogdian translators are particularly useful in diplomatic and trade relations with Northern and Central Asia. In addition, since there was no desire to learn foreign languages in China at that time, they used the services of Sogdian language agents in order to conduct diplomatic mediation in the imperial palace[5].

Some of the initial translations of Buddhist verses were translated by Sogdians. These translations helped translations to spread from China to the east. In Chinese written sources, there were found the names of 4 Sogdian Buddhist monks: K’ang - Chu, K’ang, Meng, Xsiang. The most famous of them were K’ang- Seng- Kai or K’ang- Seng- Hui (Hindi name E.Tsyurxer) and Bao I (Ratnami). Kang- Izyy was born in Loyan city and then moved to Kanan, because there was a large group of Buddhist monks who translated Mahayana works into Chinese.

Sogdian Kan Men Syang worked on the translation of Buddhist texts. Kan-Sen-Wey's parents (died in 280) moved from Sogdia to India, then Tonkin, where Sen-Wey was born in the first quarter of the 3rd century. After his father's death, he left the world style and monked. He moved to Nankine in 247 AD, where he built a monastery and founded Buddhist school. Kan-Sen-Way was the first preacher of Buddhism in Southern China. He wrote that the Emperor Sun Hao accepted Buddhism and about the construction of many monasteries and stupas, translated many Buddhist inscriptions and comments into Chinese; some of them survived. Another Sogdian monk Bao-i (Indian name Ratnami) moved to India together with a Sogdian man, then in 454-456 to China. The Vagansi monastery became his place of residence. Ratnami was

knowledgeable of Buddhist verses, various spells and prophecies and was nicknamed “the master in Tripitaka” by his contemporaries[3].

In the written sources, five Parphians were mentioned in the spread of Buddhism. Two of them – An-Shigao and An-Shan, worked in the end of the Han dynasty (25-220). Tang U Ti (Dharmasatya) and Al Fazhen (Dharmamadhaera) were active during the Wei Dynasty between 220 and 265. The most famous of them, An-Shiago, was famous as the primary translator of Buddhist texts into the Chinese language. Later, he created a school of Buddhist text translators. An-Shigao was a crown prince who abandoned the throne for religion. The first Chinese monk Yang Fatao was an apprentice of An Shigao. He, translated the Buddhist work “Ugradamma parirera” including the information about life into Chinese. In 148, he came to Loyana and translated 95 volumes of various surahs in Mahayana and Hinayana into Chinese language. Only 54 volumes of them left. He traveled various countries for distribution of Buddhism because he knew the Chinese language well.

Kulanatha, a Buddhist monk, who traveled to the East, was the western India and the third of the great translators Kumarajiva and Syuantsang. His Chinese name was Paramartha. He translated 64 verses containing 278 volumes. For the first time in China, the Mahayana beliefs appeared through his interpretations.

A Tokharian Kumarajiva from the city of Kucha, was the founder of the center of translating valued scriptures, the facts say that he had about 5,000 students. During his 10 years of career in Chanan, he translated 35 verses. These Buddhist monks made it widespread in China.

The Chinese government set certain text-books to prepare translators and a dictionaries as text-books for translators to translate letters brought by foreign ambassadors during the Min dynasty and a special office named “Four barbarian languages” was organized. The first high quality dictionary is a dictionary for the Mongol language established in 1382 and later was composed for more languages. The institute was originally consisted of eight departments and later their number reached 10.

Huang Zang, a Buddhist monk from the Tan Dynasty, even traveled to India to study and translate Buddhist scriptures. He was born as Chen Yi in Yanshi city, Henan Province. At the age of 13, Huang Zang took the Buddhist name. He was of the Gakara sect of Mahayana Buddhism. No matter how much he studied Buddhist texts, he became suspicious of his translations. For this reason, he decided to travel to Tianzhu, the birthplace of Buddhism and bring back the originals. He sought permission from the Tan Court to travel to India, but his request was denied. At that time, westward travel through the Yumen Pass was restricted. He did not give up and secretly traveled through the roads. In 627-645, he successfully completed his journey. He devoted 19 years to the creation of the school of Buddhism and to translate verses and these translations made Buddhism to strengthen in China. A total of 1335 volumes, which included a total of 13,000 signs containing 75 verses and comments were translated by him. According to statistics, from 581 to 781, 54 Buddhist translators translated texts of 2713 volumes. More than half of them belonged to Huang Zang. The Chinese version of Mahayana is translated into Sanskrit due to its disappearance of India[7]. He wrote the work “Great Tan Travel”, which is important for Central Asia[8].

In the cities Kucha, Qocho, Xo`tan of Central Asia near to China, Buddhism was spread and these cities were involved in translating Buddhist texts into Chinese, Sanskrit, Tokhar and Khotan languages. Chinese Buddhists came to the cities to study[9].

Along with the religion of Buddha, Christianity also spread in China. The Persian priest Alan from Christian monks translated 36 Christian works into Chinese language; mainly Christianity was carried out by foreigners in China. There is no information that the Christianity spread among Chinese people.

As the Jewish translator Filo Judaeus wrote: “Artistic translation is distinguished from scientific and holy translations”. For Geoffrey Chaucer, recognized as England's greatest poet, translation was a major activity and he gained prestige and attention through this field. He translated classical works from French and Italian. In particular, he translated Guillaume de Lorris's French work “The Novel about the Rose” into English[5].

Conclusions and recommendations. In short, first of all, it is important to study the establishment of translation schools, which are the most important and necessary activity of the road that had worked across times and places, served international relations, the spiritual and educational importance of translators, the fact that they served to bring different centers of civilization closer together, the emergence of a cultural information field through them, the deep roots of the history of the international and inter-civilizational relations of the peoples of Central Asia as a historical experience for their communication with the peoples of the world in the current globalization process in cooperation with Russian, English scientists, Chinese and Indian scientists.

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UZBEK INTELLECTUAL PERSON IN MODERN VIEWS

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Annotasiya: Falsafiy qarashlar ijtimoiy-gumanistik bilimlar majmuining kategoriyasi hisoblanadi. Zamonaviy jamiyatda shaxsning intellektual xususiyatlari va qarashlari namoyon bo'ladi. Kognitiv va qiymat-motivatsion komponentlarga alohida e'tibor beriladi. Ta'lim tizimi, qo'shimcha ta'lim va o'z-o'zini tarbiyalash shakllantirish usullari hisoblanadi.

Kalit so'zlar: intellektual shaxs; zamonaviylik qarashlari; insonparvarlik; harakatchanlik; aql; fikrlash madaniyati; ta'lim; ta'lim

Аннотация: Философские взгляды рассматриваются как категория совокупности социогуманитарных знаний. Интеллектуальные характеристики и взгляды человека раскрываются в современном обществе. Особое внимание уделяется когнитивному и ценностно-мотивационному компонентам. Методами формирования считаются система образования, дополнительное образование и самообразование.

Ключевые слова: интеллектуальная личность; взгляды на современность; человечество; мобильность; разум; культура мышления; образование; образование

Annotation: Philosophical views are considered a category of a set of socio-humanistic knowledge. Intellectual characteristics and views of a person are revealed in modern society. Special attention is paid to cognitive and value-motivational components. The educational system, additional education and self-education are considered methods of formation.

Keywords: intellectual person; views of modernity; humanity; mobility; mind; culture of thinking; education; education

Introduction. Intellectuals seem to have had more influence in earlier times than in ours. This effect is exaggerated today. Intellectuals can influence people's speech more than their actions. They are believed to have caused the changes because they foresaw them a little earlier than others. Intellectuals who form their opinions based on evidence have little influence today. Since the war, intelligence men have had little or no influence on the course of events. This cannot be attributed to democracy, because their influence is not greater in totalitarian states. The great social forces are essentially irrational and drive people to act against the interests of humanity and against their own self-interest. A person who is truly self-interested is one who believes that he is sacrificing himself for the public good. Anti-intellectualism arises in situations where there are strong passions that cannot be satisfied. Intellectuals still have influence where passionate issues are not involved, as techies do more than social scientists to change the face of the world. But technical change is blind and without direction, without imagining the goals for which people should live. Respect for the intellectual and sage is inversely proportional to the intelligence of society; respect for intellectuals

decreases as their number increases. Education is unsatisfactory because it is enough to subjugate people to propaganda. Short of complete ignorance for all, the best thing is good education for all. This is the precondition for the influence of reason and rationality in the world. Modern means of communication expand the scope of collective hysteria - the great enemy of democracy. A critical and skeptical attitude developed through a healthy, happy childhood and education are the main sources of intelligence.

Literature review. Valuable approaches to intellectual views are considered in the scientific sources of researchers such as P. Sorokin, I. Gizinga, E.Fromm, K. Lévi-Strauss, J. Baudrillard, M. Scheler, N. Hartman, D. von Hildebrand. In particular, D. In the intellectual views of V. Lucin [1], it is manifested in the deepest views between the types of values other than values. First, those views separate ordinary pleasure and man from objective goodness. Then it divides into modern views and quality. Finally, within the framework of modern views, D.V.Lucin distinguishes an intellectual, intellectual person in his views.

Such an approach to intellectual views among foreign authors was developed by R.G.Apresyan, who defines modern and corresponding requirements and defines a number of basic moral values as the main content of ethics [2].

L.V.Maksimov studied intellectual views in detail about the nature and interrelationship of values. The history and content of the concept of "views" are deeply analyzed in the works of A.A.Ivin and V.K.Shokhin [4,5].

Research Methodology. According to modern views, an intelligent person should have a new level of thinking that gives an understanding of the structure of the material world, climate change, providing the inhabitants of our planet with clean water, food and energy, and protecting the natural environment. Important views - the new era requires the need to improve the quality of professional training not only in human, but also in natural conditions. It is carried out on the basis of the potential of culture, competence, skills and is determined by a number of requirements: science, education, production association; knowledge of innovative technologies; to understand integration processes and their specialization perspectives. The indicated factors strongly emphasize the development of human intellectual culture, which is in demand in various fields.

A strategy that allows an intelligent person to master the principles of organization and systematization of knowledge, the ability to classify and systematize information even when the principles of systematization change, allows easy assimilation of new knowledge. The requirements for the culture of intellectual thinking are increasing dramatically. "Thinking culture or logical culture is a system of thinking abilities that allows you to express existing thoughts in a clear and precise form and acquire new thoughts based on a logical form" [4]. The ability to learn is based on the culture of thinking and verbal intelligence formed on its basis. An intelligent person is the sum of the following competencies: 1) the ability to identify similarities, and establish connections between different types of information; 2) flexibility and speed of thinking; 3) the ability to objectively justify proposed rules, and prove hypotheses; 4) the ability to think coherently, unambiguously and reasonably; 5) ability to analyze and predict; 6) ability to develop complex activity

algorithms. The ability to learn, learn and re-learn [10], a person's methodological culture and cognitive mobility are the basis of future education. The illiterate of the future will not be someone who can't read, but someone who can't learn. Another element of the cognitive component of the intellectual potential of a modern person related to the realities of the information society is information culture [8], a phenomenon that has been thoroughly studied in current scientific literature.

Analysis and results. We can argue about the specific intellectual characteristics of a person embedded in socio-cultural, socio-psychological contexts in the analysis of the intellectual person from the point of view of the philosophical, classical concept. Philosophical understanding of intellectual culture as a basis for the formation of an innovative society determines the necessary and important main factors for the development of the intellectual culture of the society in the context of scientific and technical development, problems of intellectual development of the society and parameters of local changes.

Today, in the framework of global research, the intellectual culture of a society is a specific indicator of the effectiveness of implementing innovative achievements to increase the competitiveness of a particular society. At the local level, it can be noted that the concept of "intellectual person" is an indicator of the development of each member of society, the level of his scientific, spiritual and moral qualities, the culture of thinking in the performance of specific tasks. It mainly determines and shapes the quality of life of the population, it is a priority and is reflected in the concept of national socio-economic development.

During the research, it was proved that human intellectual development embodies the most important priorities. Intellectual culture as a result of educational activities that ensure equality of opportunities is among the main priorities, the factor of using scientific and cultural achievements of different generations. The leading role in the development and formation of human intellectual culture belongs to education. Their interdependence and interdependence reflect the main social parameters for a person: a healthy life, a decent standard of living and the culture of society [2]. A clearly important connection between education and the elements of intellectual culture is manifested in labor, scientific and intellectual activity of a person, which passes from generation to generation and constitutes the fund of general intellectual abilities (spiritual wealth) of a person. at the same time, it is a necessary condition for the development of the individual himself. Such an interdependent process is a point of increase in the efficiency of the whole process [3]. Let's dwell on some characteristics and indicators of the culture of the society and the intelligent person in general.

Conclusion/Recommendations. In order to determine the level of modern views of an intelligent person, suggestions were made based on the following indicators. 1. Collaborative activity (mental activity, solving tasks of increased complexity). 2. Scientific and research activities in modern terms (participation in contests, exhibitions, scientific publications, lectures, research tasks, and projects). 3. Mental work in the views of an intelligent person (wise use of time, responsibility, planning, goal setting, cognitive techniques, memory, attention, ways of developing thinking). 4. Reflexive activity in modern views (analysis, activity modelling; self-organization, the anticipation of obstacles). 5. Experience of environmental interaction

(constructive behaviour in professional situations, ability to cooperate, manifestation of communication, elements of general culture).

Finally, the most important element of the intellectual human activity structure is the result. Such a result of self-education activity should be an intellectual person required by modern views, which is significantly different from the modern product of educational activity. Thus, in modern views, the formation of intellectual human potential has a complex structure, a number of characteristics and methods of formation. As a social subsystem, not only education should be reformed in accordance with the requirements of modern high-tech production, the requirements for the human factor of production, its mobility, creativity and independence are increasing significantly.

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ANCESTRAL HERITAGE-THE THEORETICAL BASIS FOR THE EDUCATION OF YOUNG PEOPLE IN THE SPIRIT OF MILITARY-PATRIOTISM

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Annotatsiya: maqolada yoshlarning harbiy vatanparvarlik hislarini parvarishlashda ajdodlar me'rosining o'rni tahlil qilinadi. Ajdodlar me'rosi tarix davomida ko'plab mamlakatlar va davlatlar tomonidan qo'llanib kelingan ichki intizom va himoya manbalaridan biri bo'lib, bu tuyg'uning rivojlantirilishi vatanparvarlik hissiniv yuzaga keltirishda muhim ahamiyat kasb etadi.

Kalit so'zlar: yoshlar, vatanparvarlik, ajdodlar ruhi, mafkura, kuch-qudrat, erkinlik, siyosat.

Аннотация: В статье анализируется роль наследия предков в воспитании военно-патриотических чувств молодежи. Наследие предков является одним из источников внутренней дисциплины и состояния защищонности, которые использовались многими странами и государствами на протяжении всей истории, развитие этого чувства имеет важное значение для формирования чувства патриотизма.

Ключевые слова: молодежь, патриотизм, дух предков, идеология, власть, свобода, политика.

Abstract. the article analyzes the role of ancestral Meros in caring for young people's feelings of military patriotism. The ancestral norm is one of the sources of internal discipline and protection used by many countries and states throughout history, and the development of this feeling is important in creating a patriotic feeling.

Keywords: youth, patriotism, ancestral spirit, ideology, power, freedom, politics.

Introduction. A sense of patriotism cannot be formed on its own; it emerges when an individual realizes his social attachment to a concrete social space and his personal investment in his fate.

There are the terms "de jure" and "defacto" in the field of law. It means that, legally and legally, all social values are a manifestation of the natural rights of a society's members, "for citizens". This means "de jure". "De facto", on the other hand, is the personal attitude of one or more concrete individuals toward this social value, i.e., the degree to which they begin to comprehend their personal destiny in harmony with the interests and destinies of the general society.In another expression, every citizen in society has the legal right to patriotism, patriotism, and patriotism, in a general sense.Not only does a prominent artist, vocalist, or "star" croon about patriotism, but a typical kindergartener also recites the poem the instructors instructed them to memorize from memory. By chanting or perusing poetry, a person does not become patriotic.

Materials And Methods. Gnoseologically, understanding patriotism is a complex and difficult process – it begins with an individual's comprehension of the history of the social ground on which he lives, the past of the ring, and, in part, the causes of his rise and fall.

Discussion And Results. The importance of ancestry is unparalleled in this location. Ultimately, patriotism is founded on and derived from the national self-perception.A. Hegel, renowned philosopher-hegelist, statesman, and eminent Uzbek scientist, died at this time. There is no doubt that jalalov, on the path to strengthen our independence from the legacy of Amir Temur, will demonstrate to the entire world the rich history of our country and the future of Nurafshan.Cromwell, Petre 1, stated, "To the extent that the Rings to which they belong with the Napoléons are honored, we have the right to be equally proud of Iron urine" [Jalolov a., 1996: 97-98 bb]. His statement was reiterated on May 28, 1996, at the Central Council of the OECD's scientific and theoretical conference commemorating the 600th anniversary of the birth of Sohibquron Amir Temur.

Knowledge of Amir Temur and his dynasty fosters a sense of pride, and young people's pride in their illustrious progenitors who left their mark on world history contributes to the formation of patriotic virtue.

As soon as national independence was achieved, our countryman, the first president I.Karimov's emphasis on the heritage of past ancestors, making it one of the important components of state policy, was also a resumption of deep goals, first and foremost the feelings of pride, pride, honor, and honor for his own people, culture, and history, which had been extinguished in the Uzbek ring during colonial and modern times.

The president of Uzbekistan stated, "Without historical memory, there is no future!" in an effort to form and strengthen a sense of patriotism in our ring, particularly in the ring containing the nation's future - the youth.Almost 130 ears Turkestan rings, Turonzamin remained under colonial rule; the word "homeland" was outlawed and transformed into a synonym for "rebellion". However, the sense of Homeland and patriotism in the ring, particularly among its progressive intelligentsia, persisted in their works.Poems by alikhonto'ra Soguni calling for patriotism, patriotic sorrow, Turkestan occupation, Chulpan, Fitrat, Makhmudkhoja Bekhbudy, Abdullah Qadiri calling for patriotism, freedom of the Fatherland, independence, serve as a historical source for unbiased knowledge of our ancestors who sacrificed their lives as "patriotism" was repressed.

In the upbringing of the youth of independent Uzbekistan in the spirit of ancestral patriotism, halq oral creativity, halq oral history, and poetry have a tremendously impressive strength and potential.If the noble poet Erkin Vokhidov's poem "Ozbegim" serves as an inspirational means of upbringing for the realization of national identity and the restoration of national pride, then the fiery poet Abdullah Oripov's oath "Uzbekistan" serves as a "guiding star" and "compass" in the field of Science for young people who seek to. In fact, today's written history is largely completed by khukmidars, officials or colonists, and their "servants" the Navis. For instance, the textbooks describe the history of the Uzbek SSR (7-8sinfo) as "voluntarily

annexed to Russia and has progressive significance" rather than "Russia conquered or conquered Turkestan, Central Asia" up until national independence.

Despite the fact that this study is not artistically promotional, it is important to note that poetry also serves a political function. A political event is the repression and persecution of poets and writers for their patriotism and glorification of the Motherland.In history and the social sciences as a whole, the colonialists' own "filtering" instrument, the Institute of censorship day and night, was not only a precursor to hard work, what to discuss and write, but also to thinking and thinking. Free thought did not have a place in this era, not only for scientific but also for creative thought.

Patriotism is evidence of enlightenment. In a person who is naïve and illiterate, this emotion is faint or absent. In this sense, the great representative of German classical philosophy, Georg Wilhelm Friedrich Hegel, one of the founders of idealistic dealectics, was correct when he stated, "The true courage of the enlightened Rings is reflected in their willingness to be sacrificed for the motherland."

A person who is enlightened is one who is willing to defend the history, culture, morality, traditions, and great personalities of his ring from those who would falsify them through their knowledge, their zeal, or their actions.

"Homeland" is not merely a poetically lovely word; it requires blood, if necessary, and soul. Only altruistic individuals can become Patriots. The independence of Uzbekistan necessitates patriotism and devotion.This is a worthwhile existence and destiny. Every youthful man-woman should understand this and be able to attain the motherland's value. We are the great mathematician, astronomer, and geographer of Samaria, the father of modern aljabr (algebra) Science, Muhammad al-Khwarazmiy, Sheikh ur-rais, Sultan of Wise Men, King of healers, the great thinker of the Eastern Renaissance, great alloma Abu Ali ibn Sino, who founded a number of modern sciences, a man of qomusian knowledge, who added This ancestral legacy, particularly the legacy of Amir Temur, plays a unique role in the formation of adolescent patriotism [3].

We stated that patriotism requires dedication and is synonymous with it. Academician Ibrahim Muminov, an ardent patriot in our recent history, one of the pioneers of the Academy of Sciences of Uzbekistan (1943y), and an exceptional philosopher scientist, is a concrete confirmation and example of this thesis.

If Academician Abraham Muminov's name and bravery were a golden volume devoted to patriotism, it would be a fitting tribute to place his name on the first page. Academician Ibrahim Muminov informed a group of fraudulent historians the historical truth about his progenitor Sokhibkiran Amir Temur, the Great Child of the Uzbek Ring, in opposition to the position of the Malay scholars of Soviet history science. It influenced the society's sense of bewilderment, spiritual provincialism, and admiration. Because Amir Temur was described as an invader, executioner, enemy of the ring, kallakesar, and illiterate in the official history texts.Even the Soviet artist Gerasimov, who "invented" the image of a tower made of human skulls as the work of Amir Temur, had depicted the executioner beheading and losing the corpse of an innocent man in a diary. Therefore, when the younger generation mentioned Amir Temur, it was necessary to visualize an executioner, a merciful person, or the demon.

The ideology of shouro led to profound, foolish, deceptive, and negative politics in the field of education and upbringing, the shumul reputation and attention of Sokhibquron in the international community. Amir Timur, who was incapable of falling in battle, extolled Ivan Grozny (dakhshat), Alexander Nevsky, Petr I and other Tsars by elevating them to grandeur, Blues. While Uzbek youth were cognizant of Dmitry Donskoy's victory over the Mongols at Kulikovo, Temur's triumph over the great Turkish sultan Boyazid completely obscured Amir.

Babur and the Shaybani Khan statehood believed that only Babir possessed a poetic collection titled The "Baburnoma" Therefore, academician Ibrahim Mouminov's objectively objective historical-sense article on "Amir Temur and his role and importance in the development of Central Asian culture" had the effect of a "bomb" that detonated around kuppa. As soon as the article was published, the Malays of Soviet history, who praised Ibrahim Mouminov but did not actually like him, translated it into Russian and distributed it to Russian khomys. In addition, they did not neglect to "add" themselves. In 1973, the magazine "Novy mir" from prestigious publications published an article accusing the Uzbek scientist academician Ibrahim Mouminov of nationalism and falsification of history. The scientist was called to a "interview" in Markozkam (Uzbek SSR), and he was fired.Raving about Soviet ideology, R.During this time period, when the historian Abdullaeva admired leaders, it was simple to thwart a courageous individual, stifle him, or belittle him. Academician Ibrahim Mouminov's comrades, adhering to the principle of Soviet "Socialist Realism", also turned away from him. The distinguished scientist was alone. His heart could not endure such agony, and he passed away on July 22, 1974. The scientific fortitude of Ibrahim Mouminov endured in the minds of those who knew him. Today's "Timurist" scientists, on the other hand, have become "Patriots" and are producing fully-fledged works after the moment of shifting national independence. They are referred to as pseudohistory, or pseudo-historiography, in their respective fields. Contrary to the historiographic traditions established by Herodotus, Narshahi, Ibn Arabshah, Khondamir, Babur, and Timur engaged in power-crazed, evidence - free politics.Therefore, the ring has both a history and a history. The subsequent one is associated with the ring's essence and its indelible memory, from which it receives pleasure, and abadiy becomes available. Today, the Uzbek Patriot is expected to analyze each historical fact in terms of its political significance, i.e., to employ the method and methodology of political science, and to support rationalism. Consider the issue from the perspective of the principle of rational unity of the principles of historicism and logic, and dialectical interrelationship [Zhurayev N., 2008: b-463]. The essence of history is philosophical. Without historical knowledge, it is impossible to develop patriotism.

The appeal of the president of the Republic of Uzbekistan Shavkat Mirziyoyev to our ring for the first time on December 22, 2017 emphasized that the role of the ring spiritual heritage in fostering patriotism among citizens is unparalleled: "It is known that thousands of scholars and scholars, great thinkers and poets grew up in the Middle Ages on the land of our country, which is a quarter of ancient cultures and civilizations. Their priceless contributions to the Exact Sciences and religious sciences are the spiritual property of all humanity. The book reserves of Uzbekistan currently hold more than 100,000 manuscript works. Unfortunately, these rare publications have not been

thoroughly examined; scientists and their consumers are still needed. In these distinct works, one can find solutions to the numerous urgent issues that the modern era poses" [Mirziyoyev Sh., 2018: 82 P.].

Statehood on the territory of modern-day Uzbekistan was established between the fourth and third centuries BCE. As long as a state exists, so will its politics and ideology. Patriotism is primarily associated with a specific state or nation. People become aware of a society, a network, and a state to which they belong, thereby establishing the state and the integrity of the nation as a whole. This is a result of the establishment and maintenance of moral rules, guidance, and traditions in society. "History of muluki Ajam" by the famous Uzbek theorist Alisher Navoi is an uncommon scientific and ethnographic source. There was in actuality no "novice" jurisdiction.X.Boboev and Z. The Gafurov, Uzbek historians of statehood who have conducted extensive research and analysis, assert that "Ajam means beyond Arabic in Arabic" [Boboev X., Gafurov Z., 2001: 38 p.]. The authors observe that the Ajam state existed in the fourth and third centuries B.C. on the territory of the present-day Iranian and Central Asian "Avesto" states, as reported in ancient Chinese inscriptions of the earliest lands of Turon. In Parkana, Khwarazm, Sogdians, Bactrians, and early states emerged. These states had their own economy, culture, and society. In 2001, the history of the states of Khwarezm, Soghd, Parkana, and Shosh is acknowledged at an international conference commemorating the 2700th anniversary of the ancient written monument – the Holy Book of Zoroastrianism "Avesto," which has a history comparable to that of Ancient Egypt, China, Indochina, Iran, and Greece. Ancient scholar E.Ziyoev A.Ziyoev and prominent representative of ethnomadaniyat science I.Jabbarovs noted that the first state in Central Asia was based on Justice, Humanity, and noble relationships.Turkic clans unite. Therefore, the first manifestations of democratic public administration were observed in these nations.The Turkish hokon, for instance, was elected to the Council of Tribal Chiefs. The hokim presided over the territories. Therefore, although the idea of democracy, i.e. halq khokimyatsiya, was first noted in the work of the Greek philosopher Plato "State", then in his disciple Aristotle's "categories", "Nicomachian ethics", "eudemonic ethics", "great ethics", was officially recognized by the international scientific community, it is reasonable to conclude that the studies of Oriental scholars of early statehood at the same time in the east, social institutions similar to democracy Kultegin khokanism during the Turkish state, its ideology affirms it more explicitly [Uthman Turon, 1994: 104-P.].

Conclusion. From the analysis and historical research conducted, it is evident that patriotism is linked to the formation of the "homeland," which is the muayan state power, or "political system" in contemporary political parlance. R.Jumaev, a prominent Uzbek political scientist, does not contend in futility that the political system of a society is the political structure that determines the essence of the society [Jumaev R., 1994].Every nation has its own political system. Such a political chrestomatic rule is intrinsically linked to the origin and development of the state fanomen.

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