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Effect of Dietary Inclusion of Sunflower (*Helianthus Annus*) Oil on the Growth Performance of Broiler Finisher Chickens

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Abstract: A research was conducted to determine the dietary inclusion levels of sunflower (*Helianthus annus*) oil (SWO) on the growth performance of broiler chickens. One hundred and fifty four- weeks old broiler chickens were randomly allotted into 5 treatments with three replicates consisting of 10 birds each in a completely randomized design (CRD). Birds in T₂, T₃, and T₄ and T₅ were fed the basal diet mixed with 100, 200, 300, and 400 mg/kg of sunflower oil, while birds in T₁ were fed the basal diet and Neomycin at 2.0 g/kg. The experiment lasted for 28 days. Feed and clean water were offered *ad libitum* and all other management practices were strictly observed throughout the experimental period. Data were collected on average weight gain (AWG), total feed intake (TFI), and feed conversion ratio (FCR). Data generated was analyzed using analysis of variance (ANOVA) using SPSS. Phytochemical composition of sunflower oil revealed the presence of bioactive chemicals like Flavonoids (10.06 %), tannins (6.96 %), phenols (7.06 %), trepenoids (5.01 %), steroids (4.47 %), alkaloids (3.86 %) and saponins (4.47 %). Results of the growth performance showed that birds fed sunflower oil had significantly ($P<0.05$) higher final body weight, average body weight gain, total feed intake and better feed conversion ratio compared to the control given synthetic antibiotics (T₁). Mortality was only recorded among birds in T₁ and none was recorded in the other treatments ($P<0.05$). It can be concluded that the inclusion of sunflower oil up to 400 mg/kg in the diets of broiler chickens enhanced growth performance and suppressed the activities of pathogenic microorganisms.

Keywords: Broiler chicken, Sunflower oil, Growth Performance, Phytochemicals

Introduction

Broiler is the most widely organic meat consumed and predicted to have increased consumers demand and production because it's a good source of protein with relatively high concentration of polyunsaturated fatty acids (Bourre, 2005). Broiler consumption has no religious sentiment or taboo and it has an overall acceptable nutritional profile and taste, and many Nigerians consume it (Hatab *et al.*, 2019). The need for the use of antibiotics to decrease the spread of diseases (Waldrop *et al.*, 2003) and as a growth enhancer is increasing day by day to sustain the growth of livestock production and management (Roura *et al.*, 1992). However, the continuous and indiscriminate use of antibiotics has led to increasing cases of antimicrobial resistance and possible transmission of toxic residues into livestock products such as meat and eggs (Oluwafemi *et al.*, 2021). The replacement of antibiotic growth promoters with other safe and natural alternatives is crucial to prevent environmental pollution and promote food safety (Alagbe, 2022; Agubosi *et al.*, 2022). There are some promising results on the use of Essential oils and other natural products as performance enhancers.

Plant-derived feed additives known as phytogenic feed additives (PFAs), comprising of herbs, spices, Essential oils (EOs), plant extracts, and their components have therefore become a growing class of feed additives for livestock production because they contain phytochemicals or secondary metabolites (Burt, 2004; Wenk, 2000; Dorman and Deans, 2000). The potential of PFA to improve performance is attributed to their ability to maintain a healthy gut environment and prevent dysbiosis (Windisch *et al.*, 2007; Burt, 2004). In a significant number of scientific studies, Essential oils containing most of the active substances of the plant have been reported to promote health and enhance the zoo technical performance by increasing nutrient availability for animals due to their antioxidant and anti-inflammatory effects, gut microbial modulation, beneficial impacts on the gut quality resulting in better performance (Diaz-Sanchez *et al.*, 2015; Upadhaya and Kim 2017; Luna *et al.*, 2019), improved nutrient digestibility (Jamroz *et al.*, 2003). Essential

oils can be extracted from the leaf, stem, roots, buds and flowers of plants (Shittu *et al.*, 2021). Among the potential plants loaded with several bioactive chemicals is Sunflower seeds.

Sunflower *Helianthus annuus*, is a short season plant classified into family Asteraceae and genus *Helianthus* with more than 70 species known worldwide (Adesina, 2018). Sunflowers have been employed in the preparation of various delicacy as seed, in the processed or extracted form, or form of composite products (Adesina, 2018). Sunflower seeds can be processed into different forms, such as flour, roasted, baked, or boiled as composite functional foods (Grasso *et al.*, 2019). Sunflower remains a source of nutritional food for humans. Studies have revealed that sunflower seeds are rich nutrients and certain different phytochemicals such as antioxidants, flavonols, phenolic acids, procyanidins, phytosterols, amino acids, Dietary fiber, potassium, arginine monounsaturated, and polyunsaturated fatty acids which contribute to the improvement of human health (Alagawany *et al.*, 2015; Islam *et al.*, 2016).

The presence of some essential amino acids such as aspartic acid, glutamic acid, serine, histidine, glycine, threonine, arginine, alanine, tyrosine, cysteine, valine, methionine, phenylalanine, isoleucine, leucine, lysine, and proline in sunflower products has also been reported (Karangwa *et al.*, 2015); (Karefyllakis, *et al.*, 2019).

This experiment was designed to effect of dietary inclusion of sunflower (*Helianthus annus*) oil on the growth performance of broiler finisher chickens.

Materials And Methods

Experimental sites

The experiment was carried out at the University of Abuja Teaching and Research Farm, Poultry Section University of Abuja, Gwagwalada- Abuja, is geographically located within the guinea savannah zone with latitude 8.9807°N and longitude 7.1805°E with an altitude of maximum elevation change of 180 feet and elevation above the sea level of 642 feet.

Pre-experimental actions

Pens and galvanized battery cages were washed and disinfected with CID-20 two weeks before the commencement of the experiment. Plastic drinkers and feeders were properly washed and foot dip was constructed to prevent the transmission of diseases.

Collection and processing of Sunflower oil

The seeds of sunflower (*Helianthus annuus*) plant were collected within the University of Abuja Teaching and Research Farm Abuja, Nigeria. Taxonomic authentication was conducted in the Department of Crop Science, University of Abuja, Gwagwalada. The dried seeds were granulated into coarse particles using a laboratory grinder. Oil was extracted from the granulated seeds using soxhlet extraction method and subjected to further analysis.

Experimental animals, management and diet formulation

A total number of 150 unsexed 4 weeks broiler chickens (Ross 308) were purchased from a commercial hatchery in Ibadan, Oyo State, Nigeria. The birds were weighed on arrival and randomly allotted into 5 dietary treatments. Each treatment was further subdivided into 3 replicates consisting of 10 birds in a completely randomized design. A galvanized wire battery cage measuring (705 × 300 × 100 cm) (length × breathe × height) suspended 80 cm above the floor level was equipped with manual feeder and drinker in a well ventilated pen and 200 Watt bulbs in each cage to provide heat for the animals. Anti-stress and glucose was also administered on arrival of the birds to reduce stress on the animals. Feed was formulated to meet the nutritional requirements of birds according to NRC (1994) as presented in Table 1. Clean water and feed were given to the birds *ad libitum* throughout the experiment which lasted for 28 days.

Experimental set-up

Treatment 1: Basal diet + 2 grams of neomycin/kg feed; treatment 2: basal diet + 100 mg sunflower oil/kg feed; treatment 3: basal diet + 200 mg sunflower oil/kg feed; treatment 4: basal diet + 300 mg sunflower oil/kg feed; treatment 5: basal diet + 400 mg sunflower oil/kg feed.

Measurements

Initial weight (IW): The initial weights of the birds were measured before the commencement of the experiment.

Final weight (FW): The weight of the broiler chickens was measured at eight weeks of the experiment, where birds per replicate were weighed and the average was calculated and recorded.

Weight gain (WG): It was calculated by subtracting the initial weight from final weight.

Average daily weight gain (ADWG) =
$$\frac{\text{weight gain (WG)}}{\text{No of days of the experiment}}$$

Daily feed intake: It was determined by subtracting quantity of left over feed from quantity of feed given.

Feed conversion ratio: It was calculated by dividing the quantity of feed consumed by weight gain.

Phytochemical analysis

Alkaloids and terpenoids were determined using the method described by Harborne, (1973); Odebiyi and Sofowora (1978). The alkaline method of titration was employed for the determination of tannins (AOAC, 2000). The percentage composition oxalate was determined by the permanganate titration method by Dye (1956) while saponin content was determined using the method of AOAC (2000). Determination of flavonoid content was done by the method described by Boham and Kocipai (1974).

Statistical analysis

Completely randomized design was used in this study. The data generated were subjected to analysis of variance (ANOVA) using SPSS (25.0) software. Where differences in means manifest, the Duncan's multiple range test (DMRT) was used to separate them at (P< 0.05) level of probability.

Table 1 Chemical composition of experimental diets

Ingredients (kg)	T1	T2	T3	T4	T5
Maize	66.53	66.53	66.53	66.53	66.53
G/cake (44%)	7.58	7.58	7.58	7.58	7.58
Soya cake	17.00	17.00	17.00	17.00	17.00
Fish meal	5.00	5.00	5.00	5.00	5.00
Bone meal	3.00	3.00	3.00	3.00	3.00
Salt	0.25	0.25	0.25	0.25	0.25
Vit TM Premix	0.25	0.25	0.25	0.25	0.25
L-Lysine	0.25	0.25	0.25	0.25	0.25
Di- Methionine	0.14	0.14	0.14	0.14	0.14
Sun flower oil (mls)	0	0.10	0.20	0.30	0.40
Total	100	100	100	100	100

Calculated analysis (% DM)

Crude Protein (%)	20.5	20.5	20.5	20.5	20.5
ME: kcal/kg	3015	3015	3015	3015	3015
Crude fibre	3.30	3.30	3.30	3.30	3.30
Ether Extract	1.40	1.40	1.40	1.40	1.40
Ash	7.80	7.80	7.80	7.80	7.80

*Biomix premix supplied per kg of diet: Vit.A:10,000IU; Vit.D3:2000IU; Vit. E: 23mg; Vit. K: 2mg; Vit.B1:1.8mg; Vit.B2:5.5; Niacin: 27.5mg; pantothenic Acid: 7.5mg; Vit. B12:0.015; Folic acid:0.75mg; Biotin: 0.06mg; Choline Chloride:300mg; Cobalt: 0.2mg; Copper: 3mg; Iodine :1mg Iron:1mg; Manganese: 40mg; Selenium:0.2mg; Zinc:30mg; Antioxidant:12.5.

Table 2: Photochemical Composition of Sunflower oil (SWO)

Parameters	% Composition
Alkaloids	3.86
Tannins	6.96
Phenols	7.06
Terpenoids	5.01
Saponins	4.47
Steroids	3.51
Flavonoids	10.06

Table 3: Effect of dietary inclusion of sunflower oil on the growth performance of broilers

Parameters	Inclusion levels of sunflower oil (mg/kg)					SEM	SIGN
	2.0 g/kg Neomycin	100mg	200mg	300mg	400mg		
IBW(g)	718.86	717.6	717.7	718.3	718.9	0.15	NS
FBW(g)	1320.8 ^c	1722.1 ^d	2200.4 ^c	2570.2 ^b	2850 ^a	15.70	*
WG(g)	601.94 ^e	1004.3 ^d	1482.7 ^c	1851.9 ^b	2131.1 ^a	2.55	*
ADWG(g)	21.498 ^e	35.875 ^d	52.954 ^c	66.139 ^b	76.111 ^a	5.01	*
TFI (g)	2910.4 ^e	2916.6 ^d	2956.1 ^c	3008.3 ^b	3033.3 ^a	0.55	*
ADFI(g)	103.942 ^e	104.164 ^d	105.575 ^c	107.439 ^b	108.332 ^a	0.16	^*
FCR	2.13 ^c	1.74 ^b	1.73 ^b	1.71 ^b	1.53 ^a	0.02	*
Mortality(%)	1.5	-	-	-	-	0.01	*

^{a-c}Means in the same row with different superscripts differ significantly ($P < 0.05$)

SEM: Standard error of mean; IBW: initial body weight; FBW: final body weight; WG: weight gain; ADWG: average daily weight gain; TFI: total feed intake; ADFI: average daily feed intake; FCR: feed conversion ratio.

Results and discussion

Phytochemical composition of Sunflower oil (SWO)

Table 2 shows the phytochemical composition of sunflower oil. Phytochemical components revealed the presence of alkaloids (3.86 %), tannins (6.96 %), phenols (7.06 %), terpenoids (5.01 %), saponins (4.47 %), steroids (3.51 %) and flavonoids (10.06 %). Flavonoids had the highest concentration while steroids had the lowest concentration. In order of abundance flavonoids > phenols > tannins > terpenoids > saponins > alkaloids > steroids respectively. Phytochemicals are bioactive chemicals that occur naturally in plants and are capable of promoting the health status of animals (Alagbe, 2019; Agubosi *et al.*, 2021). According to Oluwafemi *et al.* (2021), phytochemicals also have therapeutic properties and are capable of performing multiple biological functions such as antibacterial, antiviral, anti-inflammatory, anti-helminthic, antidiuretic, antioxidants, antifungal, antispasmodic, immune-modulatory, neuro-protective, anti-inflammatory and neuroprotective functions (Adewale *et al.*, 2021; Singh *et al.*, 2021; Agubosi *et al.*, 2022).

The concentration of phytochemicals in plants are not the same for all species, it depends on the extraction method, storage condition, environmental factors, anti-nutrients, stage and age of plants, parts of plants used as well geographical origin (Oluwafemi *et al.*, 2022; Alagbe, 2022; Shittu *et al.*, 2021). Phytochemicals have also been reported to be safe and effective without causing any negative effective on animals once administered in right doses and concentrations (Alagbe, 2022). For instance, Alkaloid exhibits cytotoxic and analgesic effects and also capable of inhibiting bacteria growth (Faizi *et al.*, 2008; Agubosi *et al.*, 2022). Tannins have been shown to possess antimicrobial and antibacterial activity (Redondo *et al.*, 2014; Oluwafemi *et al.*, 2021). Phenols are strong antioxidants capable of scavenging free radicals, thus strengthening the immune system and preventing diseases (Shittu *et al.*, 2021). Saponins inhibit the growth of gram positive and gram-negative bacteria (Min *et al.*, 2005) and also performs antiprotozoal role (Wallace *et al.*, 1994; Alagbe and Oluwafemi, 2019). Flavonoids are used as adjuvants in vaccine production and have the ability to scavenge free radicals (Allan and Miller, 1996; Agubosi *et al.*, 2021).

Steroids play a vital role in fertility (Allan and Miller, 1996). However, all the phytochemical components were within the safety level recommended for broiler chickens according to Alagbe and Oluwafemi (2019).

Effect of dietary inclusion of sunflower oil on the growth performance of broilers

The effect of dietary inclusion of sunflower oil on the performance of broiler chicks is presented in Table 3. Initial body weight (IBW), final body weight (FBW), weight gain (WG), average daily weight gain (ADWG), total feed intake (TFI), average daily feed intake (ADFI) and feed conversion ratio (FCR) ranged from 718.86 – 718.9 g, 1320.8 – 2850g, 601.94 – 2131.1 g, 21.498 – 76.111 g, 2910.4 – 3033.3 g, 103.942-108.332g, 1.53- 2.13 g respectively. FWG and ADWG were highest in T3, T4 and T5, intermediate in T2 and lowest in T1 ($P < 0.05$). ADFI and FCR were significantly ($P < 0.05$) influenced by the inclusion of SWO.

The Result of the growth performance revealed that dietary inclusion levels of sunflower oil had significant effect ($P < 0.05$) on the final body weight (FBW), weight gain (WG), total feed intake (TFI), feed conversion ratio (FCR). The dietary inclusion of SWO has shown to be able to enhance growth and feed intake compared to the treatment fed antibiotics T1 (neomycin). Higher weight gain recorded in T3 – T5 could be attributed to the presence of bioactive chemicals especially flavonoids and phenols in SWO which is capable of exerting positive effects on nutrient utilization possibly by stimulating digestive enzymes such as lipase, amylase, or protease, preventing dysbiosis and improving the gastrointestinal morphology of birds (Jamroz *et al.*, 2006; Dhama *et al.*, 2014). Higher feed intake observed among birds in T3 – T5 is a clear indication that the oil can enhance good smell and palatability (Oluwafemi *et al.*, 2021).

This result is in agreement with the reports of Khattak *et al.* (2014); Giannenas *et al.* (2018) and Mathlouthi *et al.* (2012) who fed mixtures of essential oils, rosemary or garlic oils to chickens and reported a positive impact of essential oil on the growth performance of birds compared to the control group fed synthetic antibiotics. Similar result was recorded by Aji *et al.* (2011) who found out that body weight gain and feed conversion ratio were improved by the dietary inclusion of garlic oil at 100 mg/kg feed. Conversely, Lee *et al.* (2004) reported that the incorporation of oregano essential oil at 50 -100 mg/kg in normal broiler diets had no effect on the overall growth and feed conversion ratio compared to the control. This variation could be linked to the inclusion level of the oil, extraction and storage mechanisms of the oil.

Mortality was recorded only among birds in (T1) – antibiotics group while none was recorded in the other treatments ($P < 0.05$). This result is consistent with the reports of Olafadehan *et al.* (2020) when *Daniellia oliveri* leaf extract was fed to broiler chickens at 80 ml/liter of water. This result implies that phytochemicals in the diets (oil) which alters and stabilizes the intestinal microbial and reduces microbial toxic metabolites in the gut, owing to their direct antimicrobial properties on various pathogenic bacteria, which results in relief from intestinal challenge and immune stress, thus improving performance. A reduction in the number of pathogenic bacteria changes the microbial ecology in favour of beneficial species such as *lactobacillus spp* in the intestine (Lee *et al.*, 2010) resulting in improved ability of epithelial cells to regenerate villus and thus enhances intestinal absorptive capacity.

Conclusion

The dietary inclusion of sunflower oil (SWO) in the diets of broiler chickens up to 400 mg/kg enhanced growth performance and reduced mortality among birds. This could be attributed to the presence of phytochemicals in the oil especially flavonoids which had the highest concentration. The dietary inclusion of SWO resulted in better body weight gain and feed conversion ratio. This implies that the oil at 400 mg/kg is safe for the birds and could be use as a natural alternative to antibiotics to ensure food safety.

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Provision of Carbohydrates to the Body of the Elderly

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Abstract: In this article, the longevity of the elderly and the elderly is important in furthering the culture of life, in other words, in shaping their healthy lifestyle. One of the most important determinants of a healthy lifestyle is proper nutrition.

Keywords: Organism, Ontogeny, Macronutrient, Biopolymer

Introduction

Aging is generally considered to be a natural process that occurs during the ontogenetic development of an organism. The various morphological and structural changes that occur during aging should be considered, taking into account the evolution of age and the limits of the organism's ability to adapt. Therefore, a comprehensive scientific study of the physiological functions of the body, including the activity of the digestive organs, helps to prevent various adverse events that occur in the body of the elderly in the future. In this regard, the study of the physiological demand of the body of the elderly and the elderly for macronutrients and its satisfaction is one of the important tasks of today.

Provision of carbohydrates to the body of the elderly.

Carbohydrates are a macronutrient that is important for the body along with proteins and fats. Many of the vital processes that take place in the cell are caused by biopolymers in carbohydrates. The energy required for all activities is primarily due to carbohydrates (2, 5,). The contribution of carbohydrates in the daily diet is 4-5 times higher than that of proteins and fats. 50-55% of the total energy consumed by people during the day is due to carbohydrates (4), and the allocation of this energy corresponding to total carbohydrates to 10-12% due to refined sugar is currently the norm (3.4).

It should be noted that they are the main source of energy, as well as in a number of catalytic reactions (D-glucose-1,6-diphosphate, pentoses, etc.), are part of muscle, connective and other tissues and form reserve carbohydrates. Carbohydrates are an important part of nucleic acids and are part of a number of hormones (sex hormones, pituitary hormones, etc.). Participates in the motility of the intestine and participates in the secretory activity of the digestive glands. They also form complex compounds with proteins, actively participate in the protective function of the body (mucoproteins, etc.), exhibit bactericidal properties (pectins) and neutralize toxins formed during metabolism. Carbohydrates are abundant in many foods, unlike proteins and fats. Observations Protein and fats in the daily diet of 20 elderly people aged 60-74 (including 8 men and 12 women) and 20 elderly people (including 10 men and 10 women) over the age of 75 living in Miraki village, Shakhrisabz district, Kashkadarya region and the amount of carbohydrates was studied. All the subjects taken as the object of the study were the elderly and the elderly who live permanently in rural areas under the same climatic conditions. This is important in a comparative study of the amount of essential nutrients in their daily food intake relative to the relevant physiological norms (2.5).

Material and methods

As for the survey methods, we mainly used the questionnaire method, which is the most convenient and popular way to study the current nutrition of different groups of the population.

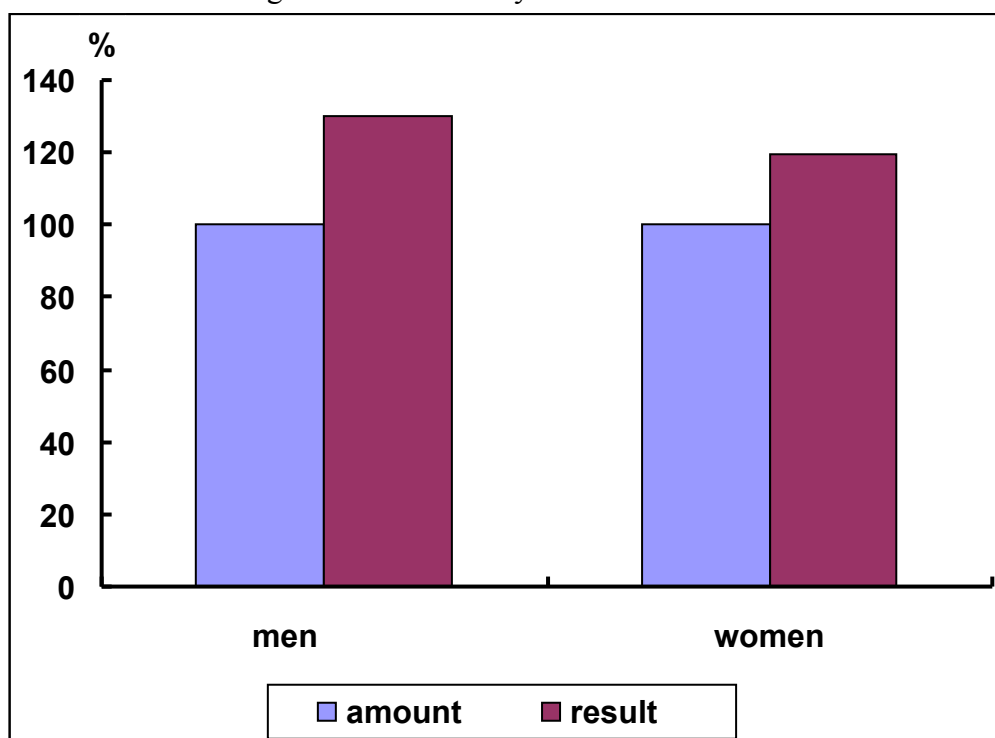
However, the survey method was also used to learn some information about the current diet of the elderly [1,2].

Carbohydrates in the food are the first in terms of quantity, and they are the main substances that provide energy to the body, and to some extent also serve as a plastic material. It is advisable to include

carbohydrates in the daily diet of the elderly in relation to the amount of protein and fat. Most of them are taken with daily consumption of plant products (bread and flour products, cereals, pasta, potatoes, fruits, vegetables, melons, etc.).

In particular, the amount of carbohydrates in the daily diet of older men and women aged 60-74 years was 422 and 340 grams, respectively. The norm is 335 grams for men and 284 grams for women at the same age[3,4]. An increase of 30.0 and 19.7 percent, respectively, compared to this norm.

Similar figures, i.e., excess carbohydrates in the foods consumed, were observed in 75-year-olds and older. However, the amount of carbohydrates consumed in men of this age appeared to be slightly above the norm, i.e., 305 grams of carbohydrates were consumed instead of the 280 grams considered the norm. Women of this age were found to consume 37 grams more carbohydrates than normal.



Percentage of the amount of carbohydrates (60-74 years old) in the daily diet of the elderly in the town of Miraki, Shahrisabz district.

Commenting on these cases, it should be noted that a number of changes that occur in the body of the elderly do not go unnoticed in their nutritional status. For example, they have a significant decrease in the activity of the gastrointestinal tract, such as motor, secretory, which makes it difficult to digest the nutrients consumed[5]. While disruption of secretory activity makes it difficult to break down nutrients, motor activity makes it harder for them to move around the gut, while disruption of absorption worsens the absorption of broken down nutrients from the intestines into the blood.

Conclusion

The study found that the amount of carbohydrates in the daily diet of the elderly and the elderly was consumed in excess of the norm. The above-mentioned changes related to malnutrition in the elderly lead to a number of unpleasant diseases, disruption of the normal functioning of the organism, the disruption of various biochemical and physiological reactions that take place in it.

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Social protection of the population and development of social relations

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Abstract: The purpose of the formation of a socially oriented market economy in the country is to improve the welfare of the population, to meet its growing needs, to raise the cultural and spiritual level and to ensure the peaceful coexistence of society. Due to the formation of market relations in our country at the level of society, there are financial difficulties among certain segments of the population. This will be achieved by the state using the funds of the centralized social protection system to solve the problems that have arisen temporarily. Social problems, social protection and social security problems cannot be left alone. The world's population is growing every year. At the same time, the United Nations is concerned about the growing poverty of the world's population

The purpose of the formation of a socially oriented market economy in the country is to improve the welfare of the population, to meet its growing needs, to raise the cultural and spiritual level and to ensure the peaceful coexistence of society. Due to the formation of market relations in our country at the level of society, there are financial difficulties among certain segments of the population. This will be achieved by the state using the funds of the centralized social protection system to solve the problems that have arisen temporarily. Social problems, social protection and social security problems cannot be left alone. The world's population is growing every year. At the same time, the United Nations is concerned about the growing poverty of the world's population. To get rid of this problem, the state has put forward the concept of centralized social protection. In particular, in 2021, the cost of financial assistance and compensation to low-income families in the country for social protection benefits amounted to 9.8 trillion soums. This, in turn, will allow in 2021 to provide financial assistance to citizens in need of social protection, to pay all types of social benefits to families with children, to provide financial assistance to low-income families, to pay benefits to children with disabilities from childhood. In the system of social protection of Uzbekistan through the budget policy in the system of centralized social protection of the population can be guaranteed protection through the use of new methods and the possibility of lifting the population out of poverty, so we consider it appropriate to establish a system of state social assistance.

Improving children's nutrition rations, covering education costs (free books and non-winter clothing provided by the state), participation in school and preschool education, vaccinations, regular medical examinations in the provision of benefits to direct funds to the development of human capital in the social contract conditions such as the provision of transit, the purchase of basic hygiene products should be developed.

Gradual implementation of the mechanism of social work at the local level (based on the principle of "Mahallabay") in the provision of state social assistance and services in our country from 2023. that is:

Stage 1: identification of low-income families through a single register of social protection;

Phase 2: Individual study of family problems, causes of low income and their needs;

Phase 3: Social protection of the family through the development of an individual social protection plan that includes all social assistance and service programs necessary to lift the family out of poverty;

In our country, in 2021, salaries, social benefits, pensions of employees of budgetary organizations have been increased by a total of 20% (from February 1 to 10%, from September 1 to 10%). At the same time, due to the introduction of minimum consumption expenditures, the minimum pension and social benefits have been increased by an average of 3.5%, as well as significantly differentiated salaries of employees of some government agencies, tax, judicial and other organizations. As a result, salaries and other primary payments of budget organizations in 2021 increased by 17% compared to 2020 and amounted to 45% of total

expenditures (43.4% in 2020) or 87.5 trillion soums¹. In Uzbekistan, since the first year of independence, social protection of the population has been carried out in a centralized manner. In the process of transition to a market economy, the country has pursued a social policy to address social problems. In order to financially support the implementation of entrepreneurial initiatives of the population, in connection with the introduction of the post of assistant governor for employment and reduction of poverty in each mahalla, in 2020 the state budget will allocate 2.5 trillion soums for the new system of mahalla work. soums were allocated. 996.0 billion soums have been allocated through the Employment Promotion Fund to finance the work of mahallas in Uzbekistan, including employment, vocational training, purchase of seedlings, equipment and mini-technologies, subsidies for the construction of light greenhouses and compensation. soums, 222.0 bln. soums through the Public Works Fund for the involvement of the unemployed in paid public works. soums, 500.0 bln. soums through the Entrepreneurship Support Fund to cover 1 part of interest payments on bank loans received by citizens for starting a business. 50.0 billion soums to cover part of the cost of drilling wells for irrigation of farms through the Fund for Support of Farmers, Dehkan Farms and Landowners. soums, as well as 250 bln. soums in local budgets for improvement of mahalla infrastructure on the basis of recommendations of assistant governors. soums are being directed².

Introduction of the institute of social workers at the mahalla level in our country to study the social and economic causes of families and their needs, to develop individual social protection programs aimed at removing families from poverty on the basis of identified causes and needs;

To prevent the decline of the family's social status through the timely appointment and provision of public social services and assistance, to ensure that programs are aimed at removing the family from a difficult life situation;

Integration of the mechanism of providing social services in mahallas of the Republic with the information system "Single Register of Social Protection". Transformation of the information system "Single Register of Social Protection" by 2026 into a single database of all socially vulnerable segments of the population and all social assistance services provided to them. Therefore:

digitization of public services;

simplification of the procedure for applying for social benefits;

Transfer of databases "Iron Book", "Women's Book", "Youth Book" and "Book of Mercy" to the "Single Register of Social Protection";

elimination of corruption factors in the system of social protection.

Take measures to provide housing for all orphans in need of housing and children deprived of parental care.

In 2022, 13.0 trillion soums will be allocated for the provision of financial assistance to citizens in need of social protection through the centralized state social protection system, the payment of benefits to children with disabilities. UZS or 6.0% of the total expenditures, which is planned to be allocated in 2021, which is 26.7% more than the approved parameter.

These costs are directed to:

- Expenditures related to the payment of benefits for the birth of an average of more than 78 thousand children per month - 546.1 billion. sum;
- 2,384 billion soums per month for more than 303,000 children with disabilities. sum;
- 762 billion soums will be spent on pensions for the elderly and the disabled who do not have the required length of service to receive an average of more than 134,000 pensions per month. sum;
- On average, about 70,000 citizens receive compensation payments in lieu of housing and communal benefits every month - 101 billion soums. sum;
- On average, more than 19,000 citizens receive monthly funeral benefits - 258 billion. sum;
- 1,413,000 to low-income families with children under 18 - 7,278 billion. sum;
- For financial assistance to 27,000 low-income families - 222 billion. sum.

¹Budget for December 10, 2021.

² Budget for December 10, 2021.

In 2022, the number of families receiving child benefits and financial assistance for low-income families will be increased from an average of 1,200,000 in 2021 to 1,440,000.³

From September 2021, benefits for families with children under 14 years of age and child benefits for low-income families will be introduced instead of childcare benefits until the child reaches 2 years of age. At the same time, the age of children taken into account in the appointment of child benefits was increased from 14 to 18 years, the payment period was increased from 6 to 12 months, and the procedure for determining the amount based on the number of children in the family was introduced. There is also a procedure for assigning financial assistance to single citizens, childless or low-income families with all children over 18 years of age. In addition, through the Public Works Fund in order to support the population, to provide employment on the basis of broad involvement in paid public works, entrepreneurship In 2022, 300 billion. soums, 940 bln. soums through the State Fund for Employment Promotion. soums, 91 bln. soums through the State Targeted Fund for Women and Family Support. UZS is planned to be allocated. In order to increase the efficiency of budget expenditures for entrepreneurship and employment in the country from 2020, the following is proposed:

- Determining the timing and targets of subsidies in the country, taking into account the subsidies allocated from the state budget and trust funds.

- Introduce a system of allocation of funds from the state budget to state trust funds on the basis of orders of the funds, in order to ensure budget discipline and the targeted use of budget funds, based on international practice.

- Introduce a mechanism for judicial recovery of inefficient or inefficiently spent subsidies, compensation and other costs.

At the same time, the establishment of an effective social insurance system in the country allows to eliminate social problems. From the activities of developed countries around the world, it is clear that the social insurance system created in them plays an important role in solving social problems at all stages of human development. Social insurance management of social protection is a form of social protection of the economically active population from various risks associated with the loss of jobs, ability to work and income. There is a state social insurance fund in the country, which is a centralized nationwide fund, distributed by territories and sectors, the state social insurance fund is formed on the basis of mandatory participation of funds of enterprises and organizations of various forms of ownership and individuals engaged in business activities. The sources of the state social insurance fund are different: insurance premiums of enterprises and organizations, state budget funds, receipts from sanatoriums and holiday homes, and other income.

"Insurance as an economic category reflects a system of economic relations, which includes a set of forms and methods of formation of trust funds and their use in covering losses in the event of various adverse events, as well as in assisting citizens in certain events."⁴

It is known that social insurance is the loss of ability to work due to illness, old age and various accidents, as well as loss of employment and social insurance of the unemployed against social risks.

In our country, the types of protection from social risks are unique, there are differences in the organization of social insurance, early detection of risk, financial responsibility of the team for specific risks, organization in a particular area, etc. are the main features of insurance. Social protection of the population determines the legal, socio-economic relations underlying insurance. However, the amount of insurance is related to the costs of labor reproduction. It is caused by incapacity for work, illness, accident, disability, pregnancy and old age and other circumstances. Social insurance can be classified as a system of legal, economic and organizational measures to minimize and cover certain forms of social risk. For the formation of social insurance in the country, it is necessary to have economic, social bases, a strong accounting system, social and demographic statistics. To do this, the society must fully understand the problems that arise in the field of social protection of workers and their families, the self-protection of workers in order to solve it. It should be noted that social insurance, unlike other types of social protection, covers the population with a high level of social insurance. Social assistance, unlike social insurance, is provided to the population not at the

³ Budget for December 10, 2021.

⁴ Shaxov V.V. Introduction to insurance: ekonomicheskii aspekt. M., Finance and Statistics, 2018, p.10

discretion of the authorities, but at the discretion of the authorities. Social protection of the population Social assistance is provided individually after the identification of vulnerable and needy categories of the population and is carried out at the expense of tax revenues. In social protection, the social assistance program is in the form of compensation, is aimed at supporting the needy and is funded from various levels of the budget. Self-help of insurance system participants and self-management of insurance companies is an important feature of insurance. The social assistance provided is of a guardianship nature and is a feature of public administration.

The difference between social insurance and social assistance is due to the different roles and responsibilities of the state in the activities and organization of institutions, and social protection in the complex of the two sectors ensures the reproduction of the labor potential of the population.

Here, social insurance funds operate on the principles of solidarity of employers and employees, self-government, non-profit economic activity. It should be noted that there are compulsory and voluntary forms of social insurance, compulsory social insurance is a special type of state social guarantee provided by extra-budgetary funds and is based on the principle of incomplete self-financing. It should be noted that voluntary social insurance is formed on the basis of collective solidarity and mutual assistance, full implementation of the principle of democracy self-government in the management of insurance funds, social partnership of employees and employers, insurance payments and programs directly related to insured income. is a characteristic feature.

Conclusion

1. We believe that it is necessary to strengthen control over the provision of financial assistance only to the needy through the channels of governance in order to prevent the existing strata of the population in need of assistance through targeted social protection.

2. It is a requirement of the period to ensure that the funds allocated from the state budget for social protection in 2022 will reach each family member in a targeted manner through the mahalla.

3. In general, based on the process of social protection and the system of citizen management, we believe that the development of the system of organization and stabilization of social protection in Uzbekistan can be solved gradually.

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The Human Factor in the Development of Innovations in the Context of Globalization

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Annotation: The issues related to the human factor and its activation in innovative development play an important role in the development of programs for socio-economic development of the country, the deepening of reforms. This article provides views on the development of competitive training for innovation in the context of globalization, increasing the prestige of scientific work, as well as scientifically based recommendations for capacity building.

Keywords: national economy, national education system, innovative development, human capital, intellectual competence.

1. Introduction.

In order to be competitive in the world market, it is necessary to actively use the knowledge, potential and energy of the population to produce cheap and high-quality products. At the same time, it is important that the innovative development of the national economy shifts from an economy based on the use of natural resources to development based on the most powerful reproductive resources, such as human knowledge.

The structural changes taking place in the national economy are among the busy ones who are able to master the advanced achievements of science and technology, have the ability to put innovations into practice, and are busy and skilled. This indicates the need for a steady increase in the educational and professional requirements for the workforce in society. Because today the role of the state in the international community is measured by its intellectual potential, the ability to create and effectively use new knowledge.

Scientific activity is the most active area of public policy. At a time when new approaches to increasing scientific and innovative capacity in world markets are emerging, Uzbekistan is also implementing radical reforms in this area. All of these reforms raise the human factor to a higher level than ever before, making its power a matter of urgency, directly linking its perception and competence to development and civilization. Therefore, the scientific and practical solution of problems related to the organization, formation and strategic management of innovative activities is of particular importance, and one of the most important indicators of scientific and innovative competence in the reform of the national economy.

2. Review of scientific research

Resolutions of the President of the Republic of Uzbekistan Sh.M.Mirziyoev dated September 21, 2018 "On approval of the Strategy of innovative development of the Republic of Uzbekistan for 2019-2021" state that the level of competitiveness of the country in the international arena and the quality of innovation The main goal of the strategy. [1] Special emphasis is placed on the training of national personnel in the words of the President, "We consider it our priority to improve the functioning of all links of the education system in accordance with modern requirements." [2]

In the formation of an innovative economy based on human capital, science and education should be considered as a priority, deepening the integration of science, higher education and production, creating an innovative environment, increasing the effectiveness of research and encouraging creativity. Special

attention is paid to the training of personnel capable of innovative management and innovative development through the internal and external integration of disciplines, the effective use of existing competencies in academic science and higher education. In particular, according to Gulyamov, in order to raise the living standards of the people of Uzbekistan, it is necessary to solve the problem of transition to the path of innovative development. The problem of unlimited use of human intelligence "satisfying unlimited needs with limited resources" has found its own solution. [3]

3. Research methodology.

During the research, scientific methods of studying the processes of economic reality were used, such as historical, structural, structural, accurate sociological, complex study of scientific sources, induction and deduction, analysis of statistical data.

4. Analysis and discussion of results.

Competitiveness of the country's economy in the field of competitiveness in the field of competitiveness in the field of deepening democratic reforms, modernization and diversification of leading industries in the Strategy of Actions for the five priority areas of development of the Republic of Uzbekistan for 2017-2021, adopted at the initiative of the President. The reforms are being carried out. In particular, over the past two or three years, attention has been paid to the development of human capital, which is an integral part of national wealth in our country, and the quality and territorial aspects of training are being strengthened. In particular, the goal is to further develop science in our country, to educate our youth as masters of deep knowledge, high spirituality and culture, to continue the work we have begun to build a competitive economy and to raise the economy to a new, modern level. year."

Thanks to the ongoing reforms in the national education system, positive changes are taking place in the structure of higher education institutions in our country. It should be noted that currently there are 117 higher education institutions in Uzbekistan. The coverage of graduates with higher education in the 2018/2019 academic year was 15%. As a result of the reforms launched to develop pre-school education, 5,722 public, private and family kindergartens were established last year. In particular, in 2019, 4 schools of the President and 3 schools of creativity will be launched with completely new content and form. Increase the coverage of graduates with higher education by at least 25% by 2020 and 50-60% in the future, double the number of state grants for admission to higher education institutions, transfer of the educational process to the credit-module system of higher education, higher education; and financial independence, by selecting at least 5 higher education institutions on a competitive basis, and in cooperation with prestigious foreign higher education institutions, it is planned to transform them. Last year, 19 higher education institutions, including 9 branches of prestigious foreign universities, were opened to promote higher education. In cooperation with leading foreign universities, training on 141 joint curricula has been launched. 146,500 people were admitted to higher education institutions, or twice as many as in 2016. [4]

At the beginning of the 2018/2019 academic year, the total number of teachers was 444.2 thousand (excluding students), of which 54% work in rural schools and 46% in urban schools. In Uzbekistan, there is an average of 13 students per teacher. The number of students who achieved a bachelor's degree in 2018 was 66,594, of whom 19,105 were educated on the basis of state grants. In 2018, 25,566 undergraduate graduates will be girls (38.4%). 43.8% of undergraduate graduates are in the humanities, 10.7% in the social sphere, economics and law, 28.0% in the field of production and engineering, 7.4% in the field of agriculture and water management, 4.4% in the field of health and social care. 5.6% graduated in the field of services.

If we analyze the distribution of students in higher education by master's degree, the total number of masters is 11,647, of which 34.9% are in the humanities, 19.8% in the social sphere, 21.7% in the social sciences, economics and law. 4.9% are trained in agriculture and water management, 16.0% in healthcare and social security, and 2.7% in services.

One of the world's most influential publications, The Economist, has recognized Uzbekistan as the country that will implement the most rapid reforms in 2019. "Uzbekistan still has a long way to go, but it's not the fastest country in the world this year," the Economist said. Recognition by such international publications will undoubtedly serve to strengthen the creative image of Uzbekistan in the international arena, to make Uzbekistan one of the leading business, cultural and tourism centers in Asia.

Singapore's first leader Lee Kuan Yew "Talented people are the most valuable assets of the country," he said The more talented people work as ministers, administrators and specialists, the more effective the government's policy will be and the better the results. We need to be educated and become part of a knowledge-based world. The presence of capable ministers in the government and civil servants with high moral qualities who have assisted them has become a key, decisive factor in ensuring Singapore's successful development." [5]

The overall quota for admission to master's degree programs in higher education has increased significantly. Due to the reforms implemented in the national education system, the expected duration of education was 13.7 years in 1990, [6] and in 2017 it was 12.0 years. [7] As a result of reforms in recent years, this figure has risen. The expected duration of education for the most economically developed countries in the world is 15.9 years. Also, in developed countries, great emphasis is placed on investing in the full cycle of education, that is, investing in the upbringing of a child between the ages of 3 and 22. Because this investment will benefit the society in the amount of 15-17 times. In the United States, for example, young people between the ages of 3 and 22 spend an average of \$ 260,000, while in South Korea, an average of \$ 130,000 is spent on a full cycle of education. [8] In Japan, if a child under the age of 16 does a project of his or her own, the project will be purchased by the government, whether or not it is beneficial to the state. This encourages the authors of this project to be more active in their future research.

The able-bodied part of the population of the Republic of Uzbekistan with a population of more than 33 million is 18,151.8 (55%) per thousand people (16-54 years old), pre-school age (3-6 years old) is 2,712.1 (8%), schools, academic lyceums and The age of education in vocational colleges is (7-18 years) 6783.9 (20%) and higher education - (19-30 years) 7331.5 (22%). [9] Qualified labor resources are formed in the existing system of continuous education in the Republic. As of January 1, 2019, 35% of preschool children in the country are enrolled in preschool education. The distribution of these values by regions is as follows: Tashkent 74%, the Republic of Karakalpakstan 41%, Fergana 40%, Bukhara 39%, Navoi and Syrdarya 38%, Tashkent 37%, Jizzakh 32%, Khorezm 30%, Samarkand and Kashkadarya 24%. %, Surkhandarya is equal to 18%. [9]

Along with the improvement of the system of higher education in our country, great attention is paid to postgraduate education. The system has a unique history of development, with two levels (Doctor of Science and Candidate of Science) in 1992-2012, one level (Doctor of Science) in 2013-2017, and two levels (Doctor of Science) (DSc) from July 1, 2017. and a Doctor of Philosophy (PhD).

In the past, the coverage of graduates of higher and specialized secondary education in Uzbekistan with higher education was maintained at 9-10%. As a result of measures taken in the last two years, this figure was 20% in the 2019/2020 academic year. Compared to the developed countries of the world, this figure is 60-70%. Uzbekistan conducts 0.02% of world research and has a low level of evidence. Scientists and researchers make up a small part of the working population (0.12%) and their absolute number is only 16.7 thousand people. Although our country has risen to 8 places in 2019 according to the "International Information and Communication Technologies Development Index", we are still far behind. Also, despite the fact that Uzbekistan is a net importer of high-tech and research products, it accounts for only 6.2% of total imports. [9]

The full implementation of such tasks as the discovery of human potential and the mobilization of man to achieve certain goals is the basis for the development of our country. Research shows that there are the following problems in our country: Lack of education hinders innovative development in Uzbekistan: investment in education is 10 times lower than in developed countries, despite the availability of state-supported programs and annual wage fluctuations 'low salaries of teachers (30 times lower than in developed countries) [9]

- all this is complicated by the weak material and technical base and the lack of computer classes;
- old educational infrastructure with a high level of depreciation of fixed assets: 3644 schools (38%) are in need of major repairs, only 37% of schools have modern computer equipment, and 7% have access to the Internet; [10]

- Lack of investment in education has a negative impact on the material and technical base of educational institutions. According to experts, water and electricity supply remain a major problem in all regions of the Republic of Uzbekistan;

-From 2008 to 2015, the average cost per student doubled, [10] but still much lower than similar rates in other developed and developing countries;

- In some schools of the Republic of Uzbekistan, the number of students in the classroom reaches 45-50 people, which prevents them from receiving quality education.

5. Conclusions and suggestions

In our opinion, the following measures should be taken to gradually eliminate these problems and to activate the human factor in ensuring innovative development in Uzbekistan:

- Adaptation of teaching methodologies and programs at all levels of education to the needs of the economy;

- Encourage the formation of a developed private education market;

- creation of a network of schools implementing experimental and innovative programs;

- Development of educational projects that allow students to work without interruption;

- Encourage the acquisition of academic degrees to improve the share of highly qualified personnel, improve their conditions;

- Increasing the number (branches) of universities;

- active introduction of online education;

- take measures to prevent the outflow of highly qualified personnel;

- Improving the quality and coverage of education at all levels, developing a system of continuing education, ensuring the flexibility of the training system to the needs of the economy;

- creation of effective mechanisms for the integration of education, science and entrepreneurship to strengthen the scientific potential and increase the efficiency of research and development, the widespread introduction of the results of research, development and technological work;

- strengthening the introduction of public and private funds for innovation, research, development and technology, the introduction of modern and effective forms of financing activities in these areas;

- increase the efficiency and responsibility of public authorities in matters of education through the introduction of modern methods and tools of management;

- Ensuring the protection of property rights, the creation of competitive markets and equal conditions for doing business, the development of public-private partnerships;

- creation of sustainable socio-economic infrastructure.

In short, in order for a person to become a key factor in innovative development, it is expedient to carry out its development in a comprehensive manner, taking into account the processes in all elements of the system and complementing each other.

In order for Uzbekistan to be globally competitive in the field of science, intellectual potential, modern personnel and high technologies, the head of state said, "Many more Beruni, Ibn Sino and Ulugbeks will grow up in our country. I believe in this. "If we all unite around the idea of human capital, not only in the state, but also in the family, we can be the first to train highly educated personnel in the field of innovation, raise the innovative environment and innovative thinking to a new level.

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Specific Features of the Use of Borrowings in the Language of Advertising

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Annotation: The article looks at the specific features of the usage of borrowed Anglicisms in Russian texts and their perception by native speakers of Russian. Analysis of relevant linguistic studies in the sphere of media linguistics and borrowings, media texts, as well as lexicographic resources capturing the expansion of the thesaurus of the Russian language due to borrowings, shows that one of the stylistic features of the modern media is a growing number of only partly assimilated borrowings from the English language, including lexemes that form the value system guiding native speakers of the recipient language. The purpose of introducing borrowings into media texts is the attraction of the audience's attention. However, it appears that the effect produced by borrowings on an average recipient is controversial. In order to test the suggested hypothesis, the authors examine the specific features of the usage of partly assimilated borrowings in media texts that refer to the issues of tolerance and their derivatives (bullying, cyberbullying, abuse, ageism, etc.).

Keywords: mediatization, media texts, headlines, borrowed words, loanwords, anglicisms, Americanisms, tolerance, sociolinguistics.

The specifics of the modern socio-cultural space are determined by globalization processes that are actively manifested in the world community. Globalization is usually regarded as a qualitatively new stage in the internationalization of the political, production and economic spheres of society. "If in the distant past the main direction of cultural and civilizational growth was the creation of large nation-states, now there is an increasing tendency for economic systems to go beyond the boundaries of national-territorial formations". According to Ya.V.Tishchenko, globalization is "the process of transforming the existing diversity of historical and modern forms of human community (ethno-cultural, national, state-political and others) into a single all-planetary social organism with its characteristic forms of social stratification, governance and power." Globalization tendencies, which manifested themselves primarily in the field of politics and economics, have recently increasingly covered the sociocultural sphere as well. The emergence of new information technologies, the creation of global Internet networks make it possible to easily receive, transmit and process the latest information about the political life of individual states and state associations, respond to the slightest changes in world economic markets, and expand international cultural ties. Intercultural interaction is carried out using various means of communication, the main of which is language.

Politicization, juridification and mediatization of public communication have caused differentiation of linguistics; as a result, media linguistics has acquired the status of an independent discipline. The tradition of studying foreign lexis is taking on new significance in the light of the transformation of the media space. Simultaneous transformation and differentiation of genres of media texts, as well as extension of regulatory boundaries of the used linguistic devices, especially their democratization and "Americanization", increase the relevance of studies of borrowings used in media texts. Lexical borrowing is a natural process. Ontogenesis of languages is connected with the history of their interaction, which transforms all levels of a language. Shifts in the lexical system are the most accessible for observation. The spread of Anglicisms (or, to be more precise, Anglo-Americanisms) in national languages (in particular, in the Russian language) is caused by social, political and economic reasons. Performing the function of a lingua franca (International English, Global English, World English) in science, business and other spheres, the English language can be called the 21st-century Latin; English is also the leader in terms of Internet users relying on it as a language of communication (English in the World, 2012). As a global language, English influences a lot of other languages. Anglicization of the lexical system of the Russian language intensified in the 1980s, the main source of borrowings being the American variant of the English language. Nowadays, the process of borrowing Anglicisms has acquired a universal character. The fact that a great number of English borrowings have penetrated various spheres is proved by the content of dictionaries of loanwords and borrowings of different formats that have been actively

published and reprinted in the last two decades: V.V. Adamchik (2007), L. Baranova (2009), L.M. Bash, A.V. Bobrova, G.L. Vecheslova, E.M. Sendrovits, R.S. Kimyagarova (2009), A.N. Bulyko (2007), T. Volkova (2000), Kh. Valter (2004), E.A. Grishina (2015), E. Guber (2005), T. Gureva (2004), E.V. Davydova (2004), A.I. Dyakov (2016), T.V. Egorova (2014), M.Yu. Zhenilo, E.S. Zenovich (2006), I.E. Zemlyanskaya, L.N. Cherkasova, M.N. Cherkasova (2009). Dictionaries that cover the problem of borrowings in the Russian language demonstrate various degrees of scientific elaboration, but they all contain a significant amount of Anglicisms. Compilation of a dictionary of loanwords, like any other lexicographic work, is a time-consuming process, even taking into consideration the development of modern systems of data collection and processing and the current state of the publishing industry. First, the criteria for selection of vocabulary for the creation of a lexicographic work are a subject of debate. Second, the latest borrowings have not stood the test of time. Third, lexicographic description hampers the acceleration of social development and the process of linguistic transformation.

Having analyzed lexicographic sources and research into borrowed Anglicisms and having summarized empirical observations of the usage of borrowings by native speakers of Russian, we agree that Anglicisms (Anglo-Americanisms) in the Russian language, like in other languages, first and foremost reflect the general trend towards development of a global industrial civilization. At the same time, there is a growing number of borrowings reflecting value orientations. We have focused on borrowings denoting violations of social norms in the course of personal and virtual communication and other lexemes denoting bullying at school or at work, abuse, problems of gender relations (троллинг [trolling], моббинг [mobbing], буллинг [bullying] and others intolerant and non-politically correct behavior. The concepts “tolerance” and “political correctness” have been studied by linguists from different angles. We understand tolerance as “readiness to accept otherness and coexist with it; flexibility and restraint in any situations, and a worldview without stable negative emotions or assessments”, while as far as political correctness is concerned, we tend to consider it a more narrow concept: “undifferentiated attitude to other people regardless of their race, nationality, ethnic group, gender, age, culture, education, incurable diseases, disabilities or sexual identity”.

Like many other borrowings, the group of lexemes denoting intolerant and non-politically correct behavior spreads through media texts. As early as in the second half of the 20th century, P.L. Kapitsa metaphorically compared the effect produced by such texts with weapons of mass destruction in terms of their scale and force. This comparison is still relevant in the 21st century. It would be an oversimplification to say that borrowings are spread only through media texts; however, this way of integration of borrowings into the speech of native speakers of the recipient language should not be underestimated either. More often than not borrowings are used in media texts for “ornamental” purposes. The media are trying to attract the attention of the audience by exploiting the pragmatics of novelty. A logical question arises as to the response of potential readers to this device. Therefore, the objective of this research is to describe the specific features of functioning of borrowed lexemes denoting intolerant/non-politically correct behavior in Russian media texts and their perception by native speakers of the Russian language.

We have selected lexemes denoting various kinds of intolerant and non-politically correct behavior and determined their derivatives. The next stage was to analyze the definitions of these lexemes in various English and Russian lexicographic sources, in the Russian National Corpus and media texts. For analysis, we selected new texts posted on websites of famous news agencies, newspapers and magazines. The second stage of the research was the analysis of comments to media texts and conducting a survey designed so that native speakers of the Russian language could assess the reasonability of using borrowings denoting intolerant/non-politically correct behavior.

A new theory of globalization as a new environment, in which languages exist, is developed in modern sociolinguistics. The processes of borrowing are particularly relevant within this paradigm, and we agree that media plays a significant role in extending globalization. The number and spreading speed of borrowings are increasing and the stages of assimilation into a recipient language are very swift. When we record the latest borrowings, we cannot even imagine, which of them will remain in the language and which ones will disappear. We tend to believe that most of the above-mentioned lexemes remain in the group of foreign language inclusions and their usage depends on the degree of familiarity of the speaker with the foreign language, is marked stylistically and in terms of genre. Perception of such inclusions by native speakers of a recipient language is controversial. The scientific community demonstrates the opposite points of view at the

problem of borrowings in general. Many researchers show an alarmist approach to the issue of borrowings, talk of “deterioration of language” and use the lexeme “Runglish” with negative connotations (although this word is used to describe the communication of Russians in English as a nonevaluative term. In our turn, we tend to support the viewpoint, according to which, the current changes should not be labeled as degradation of language. Only the borrowings necessary for the language will remain. The answer to the question is still under discussion among Russian studies specialists as well as German scholars, French studies specialists and others. The discussion concerning loanwords is heated among specialists but we tend to agree with the idea that loanwords should not be presented as a reason for language degradation.

Globalization is connected with the spread of the English language (predominantly its American variant) and, consequently, expansion of borrowed cultural and behavioral patterns. One example is the group of borrowings discussed above that are filling the existing cognitive and semantic lacunae. This process is being actively reflected and to a large extent initiated by the modern media. At the same time, analysis shows that the attitude of native speakers to such borrowings is controversial. The spread lexemes are connected with ideas that contradict many traditional beliefs about tolerance and political correctness.

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Autonomous Learning and Metacognitive Strategies Essentials in ESP Class

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Abstract: The reform in teaching and curriculum involves not only in the teaching content, but more so in teachers' methodology, the students' learning strategies and the changed relationship between students and teachers in the classroom setting.

The purpose of this paper is to suggest that what is needed for ESP is a different orientation to English study and to outline an approach which departs from that which is generally taken. Broadly, what is involved is a shift of the focus of attention from the grammatical to the communicative properties of language. This view that the difficulties which the students encounter arise not so much from a defective knowledge of the system of language but from unfamiliarity with English use is acceptable but not sufficient.

It is suggested that although specification of language needs is necessary for ESP course and it will be useful for selecting and grading materials, in teaching ESP learning strategies should play an important role. Accordingly, autonomous learning and metacognitive strategies are suggested as basic essentials for teaching and learning ESP.

Keywords: Autonomy, Cognition, Metacognition, Product, Process, ESP, Goal-oriented, Course design

Introduction

English for specific purposes (ESP) is a movement based on the proposition that all language teaching programs should be tailored to the specific learning and language use needs of identified groups of students. After the Second World War English became the accepted international language of technology, science, and commerce, it created a new generation of learners who knew specifically why they were learning the language. In fact there was a pre-determined goal in their learning English. Whereas English had previously decided its own destiny, it now became subject to needs, and demands of people other than language teachers. Dovey (2006) states courses which prepare students for the workplace in specific ways can be expected to have purposes quite different from those of discipline-based courses and can also be expected to introduce new questions.

ESP also became an important part of English –as-second language teaching in the 1970s and 1980s, probably as a direct result of the introduction of communicative teaching curricula. Its main drive was practical, driven by the increasing numbers of people around the world who needed English for clearly defined reasons such as reading academic textbooks or transacting business (Hutchinson and Waters, 1987). It is suggested that ESP could easily be outlined based on the sorts of texts that learners need to become familiar with, or the needs-related nature of the teaching (Swales, 1985). The early analyses of ESP texts took the form of frequency counts of structures or verb forms, but such analyses only provided descriptions and had little or no explanatory force. These limitations, together with the increasing importance of the communicative aspects of language and an increasing interest in linguistic use rather than form, led to researchers using rhetorical or discourse analysis methods to discover the main characteristics of texts in different academic fields (e.g. Widdowson, 1979). During the late 1970s ESP course designers started to carry out needs analysis of their students' future linguistic requirements. These needs analysis were often

expressed in terms of notions and functions (Wilkins, 1976) and the most celebrated model of such a needs analysis are described by Munby (1978) in his communicative syllabus design in which he presented a system for devising appropriate syllabus specification from adequate profiles of communicative needs. These profiles included the purposes of communication, the communication settings, and the language skills, functions and structures required.

In early 1981 Curriculum development committees started functioning. The English committee asked different universities to compile textbooks with ESP flavor without providing them with any specific framework. In 1985 SAMT was responsible for compiling and publishing textbooks in different areas of specializations. Accordingly more than one hundred sub-technical and technical textbooks have been published. Without saying it is evident that ESP is not equal for producing sub-technical and technical textbooks. As Celce – Murcia (2001) mentions ESP practitioners approach course development must consider a multitude of factors, and some essential questions, before, and during, project initiation.

In this regard Yarmohammadi (2005) claims that language teaching in Iran does not follow any specific purpose. The first and the most important thing we have to embark on is to verify and operationalize the objectives of language teaching and learning in Iran.

Statement of Problem

As an ESP teacher at Karbala University for twenty years this question whether an English teacher courses or the specialists from the field should teach ESP course does not leave me. Some students think that ESP is a new label for GPE and nothing else. For them this is invented by English teachers to make students interested in English programs. They believe that their instructors in their field will be more successful to teach ESP courses even not being familiar with English teaching and learning theories. For some others having knowledge in the field is not sufficient for an ESP Instructor, they should have a good command in general English and they should be familiar with the basic principles and teaching and learning theories.

Review and Discussion

To pave the way, it is better to have a brief look at some definitions and explanations by some specialists in the field to support the idea that ESP is not the same as EGP. One of the generally accepted definitions refers to Hutchinson and Waters. What is the difference between the ESP and General English (EGP) approach? Hutchinson and Waters (1987:53) answer this quite simply, "... in theory nothing, in practice a great deal". This definition by Hutchinson and Waters raises one important question. If in theory there is no difference between ESP and EGP, what is the theoretical justification for ESP? It seems that without a theoretical justification to ESP there will be no acceptable rationale for such a course.

But Widdowson (1983) attempts to theorize ESP and this can be followed in his works under two interrelated headings: Learning purpose and Language use. For Widdowson GPE is no less specific and purposeful than ESP. What distinguishes them is the way in which purpose is defined, and the manner of its implementation. Based on this definition there are two interpretations from learning purpose. One might be regarded as objective-oriented learning and the other as aim-oriented one. In ESP Specification of objective is equivalent to aim that is a training operation and deals with development of restricted competence. Whereas, in GPE Specification of objective is not equivalent to aim but it leads to aim that is an educational operation and deals with development of general capacity. The following quotation (Widdowson, 1983) clarifies the point:

...ESP is essentially a training operation which seeks to provide learners with a restricted competence to enable them to cope with certain clearly defined tasks. These tasks continue the specific purposes which ESP course is designed to meet. The course, therefore, makes direct reference to eventual aims. GPE, on the other hand, is essentially an educational operation which seeks to provide learners with a general capacity to enable them to cope with undefined eventualities in the future. (p.6)

To suggest his model of language use, Widdowson (1983) criticizes the two models of idealization, registers

analysis and needs analysis and suggests his own model of idealization.

1. Register analysis approach is a kind of idealization that involves the dissociation of linguistic forms from their communicative function in discourse. In fact the specification based on register analysis does acknowledge the pedagogically necessary distinction between aims and objectives. It rests on the assumption that a definition of objectives in terms of linguistic terms will provide for the subsequent satisfaction of communicative aims. That is to say that the imparting of linguistic competence will enable the learner to develop communicative capacity under his own steam. In this respect, it allows for learning to take place beyond the limits of the teaching input. So it is based on educational theory.

Needs analysis approach is a kind of idealization that seeks to retain the communicative value of linguistic elements and analyses language into its notional and functional. What this needs analysis approach seeks to do is to bring aims into closer approximation to objectives. Here, findings that emerge from needs analysis characterize aims. This is, in fact, the orthodox view of ESP course design.

This idea can also be followed in methodology literature where ESP is considered as the natural product of Notional functional approach to language teaching. Richards and Rogers (2001) state that a notional functional syllabus would include not only elements of grammar and lexis but also specify the topics, notions, and concepts the learner needs to communicate about. The English for specific Purpose (ESP) movement likewise begins not from a structural theory of language but from a functional account of learner needs.

As it mentioned earlier, Widdowson challenges this orthodox view of ESP and he suggests a discourse approach to ESP. For him what we must look for is a model of language, using which does not simply atomize the user's behaviour into components of competence, but which accounts for the essential features of the discourse process. At the same time, such a model should provide us with the means of characterizing ESP at different points on the scale of specificity and consistent with the distinctions I have proposed in the preceding chapter. The model therefore has to lend support to the concepts of training and education, of competence and capacity, of aims and objectives, and so give us a theoretical basis for ESP (Widdowson 1983:34). For Widdowson the register analysis and needs analysis approach to ESP focus on systematic knowledge whereas in his suggested discourse process approach both systemic knowledge and schematic knowledge are involved.

Hutchinson and Water (1987) challenge this view and claim that ESP must be seen as an approach not as a product, ESP is not a particular kind of language or methodology, nor does it consist of a particular type of teaching material, it is an approach to language learning, which is based on learner need.

It seems that in the three approaches stated earlier (register analysis, needs analysis and discourse process approaches) the idea of what to learn plays an important role and how learn is not the main concern. The following quotation from Hutchinson and Waters (1987) is to support this idea.

.... But our concern in ESP is not with language use –although this will help to define the course objectives our concern is with language learning. We cannot simply assume that describing and exemplifying what people do with language will enable someone to learn it. If that were so, we need to do no more than read a grammar book and a dictionary in order to learn a language. A truly valid approach to ESP must be based on an understanding of the processes of language learning.” (p.24)

There is a need to an attempt to seek possibilities of fostering learner autonomy in ESP course design in Iranian EFL teaching context. This importance can be followed by applying metacognitive strategies for ESP learning. In fact, an autonomous learner should be able to manage or regulate the process of learning which involves making decisions as to what to learn, how to learn, when to monitor, and in what way to evaluate success or failure of learning (Wenden 1987; Holec 1987; cotteral 2000).

Goal-oriented and Process-oriented Syllabuses

Generally speaking, the process of deciding what to teach is based on consideration of what the learner should most usefully be able to communicate in the foreign language. In ESP, According to Mackay and Mountford (1978) when needs are clear, learning aims can be defined in terms of these specific purposes to which the language will be put, whether it be reading scientific papers or communicating with technicians on an oil rig. The result is that almost immediately, teaching can be seen to be effective in that the learner begins to demonstrate communicative ability in the required area. What Mackay and Mountford suggest is only the realm of Goal-oriented syllabus and there is no place to processes-oriented one in such an interpretation of the learner needs.

We know goal-oriented approach focuses on the selection of language by reference to the ends of learning, but the process-oriented approach focuses on the presentation of language by reference to the means of learning and allows the ends to be achieved by the learner by exercising the ability he or she has acquired. The first approach assumes that the completion of a course of instruction marks the completion of learning and that all that is left for the student to do is to apply this ready-made knowledge. The second approach assumes that learning will continue beyond the completion of instruction since the aim of such instruction precisely is to develop a capacity to learn: it does not itself realize any special purpose but provides the learner with the potential for its realization.

In practice, syllabuses in which the selection and grading of items was carried out on a grammatical basis fell into disfavor because they failed adequacy to reflect changing views on the nature of language. In addition, there was sometimes a mismatch between what was taught and what was learned. Some SLA researchers have claimed that this mismatch is likely to occur when the grading of syllabus input is carried out according to grammatical rather than psycholinguistic principles, while others suggest that the very act of linguistically selecting and grading input will lead to distortion. Moreover it seemed that functional-notional principles would result in syllabuses which were radically different from those based on grammatical principles. However, in practice, the new syllabuses were rather similar to those they were intended to replace. In both syllabuses, the focus tended to be on the end products or results of the teaching / learning process.

According to Widdowson (1983) the absence of distinction between aims and objectives leads to an ambiguity in the expression "learner needs". On the one hand, it can refer to what the learner has to do with the language once he has learned it: in this sense it has to do with aims. On the other hand, it can refer to what the learner has to do in order to learn: in this sense, it relates to pedagogic objectives.

If one follows a goal-oriented approach one needs to take one's bearing from models of linguistic description, since these will define the units of course content. A process-oriented approach, on the other hand, can only be pursued by reference to some idea about how to learn. In this regard, according to Atay (2007) the interest in the strategies has paralleled a movement away from a dominantly teaching-oriented perspective to one that emphasis the learner's active role in the learning process. Thus, if ESP is an approach not as a product, it must be an approach to language learning. And here, Learning strategies and activities should play more important role than selecting and grading appropriate materials to meet the students' needs.

Learner Autonomy

Holec (1987) defines Learner autonomy as the ability to take charge of one's learning.

It is good for teachers introduce such key concepts as "learner-centeredness" and Learner autonomy" and their theoretical underpinning, and stress the importance of learning how to learn so that students would be psychologically prepared and are likely to cooperate. As learner-centeredness is one of the tendencies that support autonomous language learning, students should be given a clear explanation as to what it means, how it is conducted, and what benefits could be gained through this approach. Aebersold and Field (1997) define the term" student-centered and describe itsadvantages as the following:

Courses in which the students have some degree of control over what goes on in the course and how it occurs are considered to be student-centered... Giving students some control over their learning process has many benefits: It makes them feel confident; it puts some of the decision making in their hands; it puts the responsibility for learning in their hands; and over the long term it builds independence and self-

reliance so that they can read on their own without being dependent on teacher direction and supervision. It activates the students' own learning spirals. (P, 37).

Even giving students' freedom to choose materials is not only compatible to the theory, but also satisfies learners' needs. A better understanding of the theory would stimulate learners' interest and motivation to practice autonomous learning. Thus consciousness raising was chosen as the first measure to implement the innovation. To transfer the responsibility of selecting materials to learners is supported by (Hollec, 1987, Vitori, 1995), because it stimulates their interest, enhance the do-it-yourself ability. To my own experience engaging learners in activities of selecting, preparing and presenting materials could be considered creative because these activities involve problem-solving and decision-making.

Cognitive Strategies

The term cognitive strategy refers to specific measures or steps that learners take in order to fulfill learning tasks (O'Malley and Chamot 1990). Literature in reading research has shown that cognitive strategy use can facilitate understanding and successful learners seem to be differentiated from less successful ones in terms of strategy use. Similarly learners who possess summarizing skills (Kintch and Van Dijk 1978) have improved comprehension on the texts and increased recalls.

Monitoring

Monitoring refers to both learners' identifying learning difficulties and pointing out shortcomings of the program so that decision could be made as to what to do about it (Rubin 1987). As the shift of responsibilities from the teacher to the learners takes place, it is important for the learner to do self-evaluation and provide feedback to the program in order to regulate learning process. Nunan (1997) suggests that monitoring plays an important role in informing the learner of the problems encountered during the course of learning. Thus the course should intend to raise learners' consciousness to monitor their learning process.

Metacognitive Strategies

One can probably figure out from analyzing the term itself, metacognition is cognition about cognition or thinking about thinking. Thinking can be of what the person knows and what the person is currently doing. Metacognition is deliberate, planned, intentional, goal directed and future-oriented mental processing that can be used to accomplish cognitive tasks (Flavell, 1971). Metacognition involves active monitoring and consequent regulation and orchestration of cognitive processes to achieve cognitive goals. As metacognition involves an awareness of oneself as an actor, a deliberate storer and retriever of information, it may be reasonable to reserve the term metacognitive for conscious and deliberate thoughts that have other thoughts as their objects (Hacker, 1998).

According to Block (2004) metacognition can be defined as a reader's awareness of (1) what he or she is thinking about while reading, (2) what thinking processes he or she initiates to overcome literacy challenges, and (3) how a reader selects specific thinking processes to make meaning before, during, and after reading.

Auerbach and Paxton (1997), define metacognition as "knowledge of strategies for processing texts, the ability to monitor comprehension, and the ability to adjust strategies as needed" (pp. 240-41). Research studies (Duell, 1986) seem to confirm that as children get older they demonstrate more awareness of their thinking processes. Metacognition is relevant to work on cognitive styles and learning strategies in so far as the individual has some awareness of their thinking or learning processes.

Cognitive strategies differ from metacognitive strategies in that they are likely to be encapsulated within a subject area (e.g., EFL), whereas metacognitive strategies span multiple subject areas (Shraw, 1998).

Cognitive strategies are, for example, making a decision, translating, summarizing, linking with prior knowledge or experience, applying grammar rules and guessing meaning from texts (e.g., O'Malley and Chamot, 1990). Metacognition refers to awareness and control of cognitive activities. Empirical studies show that successful learners differ from less successful ones in both the quantity and quality of cognitive and metacognitive strategy use (e.g., Oxford, 1989).

The literature of metacognitive strategies in reading comprehension reveals that poor readers in general lack effective metacognitive strategies and have little awareness on how to approach to reading. They also have deficiencies in the use of metacognitive strategies to monitor for their understanding of texts. In contrast, successful L2 readers know how to use appropriate strategies to enhance text comprehension (e.g., Pitts, 1983).

I have experienced metacognitive strategies with intermediate-level students in most of my ESP courses at Tabriz University, and in some cases I invited feedback from the students on their impressions and thoughts of the strategies covered during the terms. What follows are an indication of students' retrospective comments on the efficiency of these strategies at ESP class.

1. Now, I think my brain is more active in reading as if, I read with my brain rather than my eyes.
2. After previewing I can decide how I will deal with any particular text, and which other strategies I am going to follow to have better comprehension.
3. The strategies you applied made me conscious and active I used to read a text word for word until then, being afraid to misunderstand the contents. Now I'm trying to skip as many words as possible even when I am going to read about something not familiar, and I am going to deal with the text I have already had quite a few knowledge.
4. There are many positive aspects of using predictions. Firstly, we immediately thinking about the topics help us to understand contents of articles. Secondly, we can improve our reading speed by predicting the following contents. Thirdly, we can associate our knowledge we have concerning the topics and it can help to make our learning much easier.
5. Finding key words in any text was an interesting technique. I think relying on Key words is more helpful than relying on the structure in reading a text.
6. I think it is easier to ask question when I read something I have prior knowledge with because I have something to base in to ask question.
7. Now, I have a critical reading and I can use my background knowledge

3. Conclusion

We conclude that ESP is an approach to language teaching which aims to meet the needs of particular learners. This means in principle that much of work done by ESP teachers is concerned with designing appropriate courses for various groups of learners. In fact, with ESP and content-based syllabuses, an obvious means of grading content is with reference to concepts associated with the subject in question

It seems reasonable enough to assume that a specification of language needs should define the language content of a course designed to meet such needs. Here "learner needs" is open to question. In fact two different interpretations may be extracted from learners needs. It may refer to terminal behavior, the ends of learning or it may refer to what the learner needs to do to actually acquire the language.

In recent year, some applied linguists have shifted focus from the outcomes of instruction, i.e. the knowledge and skills to be gained by the learner, to the processes through which knowledge and skills might be gained. Although specification of language needs is necessary for ESP course and it will be useful for selecting and grading materials, in teaching ESP, Learning strategies should play an important role. Accordingly, Autonomous learning and metacognitive strategies are suggested as the two basic essentials for teaching and learning ESP. Finally, if we limit teaching ESP to what to learn and forget how to learn, it will be safe to claim that familiarity with teaching and learning theories is not an essential for ESP teacher, otherwise it should be regarded as a *sin qua non* for ESP teacher.

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Political Defections in Nigeria: Implications for Our Nascent Democracy

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Abstract: The Nigerian political turf is replete with a monstrous phenomenon which has emerged as a potent retrogressive factor with the capability of torpedoing our nascent democracy. This sinister offshoot of our democratic experience is the fanciful multi-nomenclated phenomenon called Political Defection. The prime focus of this discourse is to undertake a philosophical expository analysis of the conversational narratives bordering on the subject under investigation. In this essay, therefore, a historical exposition of particular cases of cross-carpeting as well as a corresponding analysis of the causes, legitimacy and implications of political porting will be surveyed. The essay will also discuss the possible ways of curbing incessant party switching so as to strengthen and foster the deepening of democracy in Nigeria.

Introduction

The Nigerian political landscape is laced with an insidious macabre egomaniacal phenomenon whose current burgeoning propensity has attracted widespread excoriation from dispassionate intellectual observers. Within the Nigerian political circus the active players are notorious for wantonly invoking the abracadabra provision availed them by virtue of the enshrinement and protection of this phenomenon in the constitution.

The phenomenon under discourse is known by various appellations ranging from *political defection*, *political Nomadism*, *cross – carpeting*, *decampment*, *party – switching*, *floor – crossing*, *party – hopping*, *canoe – jumping*, *party – jumping* and recently, the most trending epithet that has been employed to describe it is *political porting*. Porting is a term introduced by telecommunication companies to describe the situation of swapping from one network to the other.

History Of Political Porting In Nigeria

The remotest incident of political defection in pre-independent Nigeria that snowballed to the tirade of future cases, happened in 1941 when Ernest Ikoli, an Ijaw man emerged victorious over Samuel Akinsanya, a Yoruba, in the contest for the vacant seat in the Legislative Council. Samuel Akinsanya and other Ijebu Yoruba pulled out of the Nigerian Youth Movement in protest against Ernest's victory. The provoked Eastern and Southern components of the party who supported Ikoli were incensed by this act of ethnic chauvinism; which was against the cosmopolitan charter of the party and as a result persuaded Nnamdi Azikiwe to constitute a new political platform. The great Zik rose to the challenge by joining forces with Herbert Macauley to form the National Council of Nigeria and the Cameroons (NCNC) (Moses Ogbonna Agudiewu et al "Party Defections and Survival of Democracy in Nigeria" 103 – 112).

The most salient case of political porting in pre-independence Nigeria, which is notoriously christened as "the most celebrated" floor crossing escapade (Olaolu S. Opadere et al "Cross Carpeting in Nigerian Politics: Some Legal and Moral Issues Generated" 22 – 39) occurred in 1951. The theatre of porting in this event was the defunct Western Regional House of Assembly and the main protagonists were Nnamdi Azikiwe of NCNC and Obafemi Awolowo of Action Group (AG).

The NCNC had won 42 seats out of 80 seats in the house and it was evident that Azikiwe, who was the leader of the party following the death of Macauley; a Yoruba man, would emerge the premier of the Western Region. This was not to be as the mechanics of *political xenophobia* was devised against Azikiwe. It is reported that Chief Awolowo; who was the opposition leader, signaled the house that he had a matter of utmost urgency to raise which will avert the country of impending anarchy. At the submission of Awo's speech, one Yoruba parliamentarian rose up and said that he will not be a party in a case where Yoruba land will be incinerated and as such that he is crossing over from NCNC to the AG (Udeuhele Godwin Ikechukwu. "Political Nomadism and its Implications on Political Development in Nigeria: A critical Analysis". *International Journal of African and Asian Studies* Vol. 9, 2015). In a spasmodic

acquiescence to Awolowo's speech, 20 NCNC members ported to the AG within 24 hours and the possibility for the emergence of Dr. Azikiwe as the Western Premier was torpedoed. The gargantuan shock and inter ethnic animosity orchestrated by this act makes it to be reckoned as the turning point and the ontogenetic exemplum classicus of ethnic cum political xenophobia in Nigeria.

The gale of political porting; from this inept twilight, has progressed unabated with geometrical progression till date. Though it will be *ad nauseam* to recount the recorded cases of political defection in Nigeria, it is pertinent to mention some of the high profile instances of this phenomenon in Nigerian political history. The first republic of 1960 – 1966 witnessed the decamping of Chief Ladake Akintola, the former Premier of the defunct Western Region from the AG to form the United Progressive Party (UPP) which later allied with the NCNC of Zik to constitute the Nigerian National Democratic Party (NNDP). In the same vein, Zik and Dr. Kingsley Ozumba Mbadiwe clashed and Mbadiwe broke out from the NCNC to form the Democratic Party of Nigeria Citizens (DPNC). The Second Republic (1979 – 1983) recorded a tirade of political defections with the members of the rebranded offshoots of the major First Republic parties hobnobbing and shoveling between parties so as to pitch camp with a formidable political structure. This culminated in the high profile cases of Chief Akin Omobiorio; the Ondo State Governorship Candidate, who transited from Unity Party of Nigeria (UPN) to National party of Nigeria (NPN) and that of Alhaji Abubakar Rimi; a former Kano State Governor, who was elected on the platform the Peoples Redemption Party (PRP) but later transited to Nigeria Peoples Party (NNP).

The act of political defection reached a fever pitch and basest nadir in the fourth republic (1999 – now) after the ill-fate and controversial Third Republic which is called the “Abiola Republic”. Political decampment has become the norm rather than the anomie in contemporary Nigerian politics such that recounting the frequency of cases will result in almost an infinite rendition. The top profile cases of this phenomenon in the era include that of the incumbent President, Muhammadu Buhari, who has contested for the presidency three times under different political parties namely All Nigeria's Peoples Party (ANPP) in 2003 and 2007, Congress for Progressive Change (CPC) in 2011 and the All Progressive Congress (APC) in 2015. The case of Alhaji Atiku Abubakar is another one worth mentioning. He served as a Vice President under President Obasanjo from 1999 to 2007. In his aspiration to the presidency, he has trajected from PDP to AC, then came back to PDP, switched back to APC and currently he is with the PDP. The case of Rochas Okorocha is monumentally outlandish as he seems to have been a member of almost all the known political parties in Nigeria. Factually, there are scanty or hardly any top notch APC figure in the National Assembly or the Executive who is not a decampee.

Causes, Legitimacy And Implications Of Political Defection

Myriads of reasons could be gleaned and critical truths distilled from the confessions made by political defectors in accounting for the rationales upon which their acts are premised. The propelling factor behind most defections is the compulsive desire by politicians to pitch camp with the ruling party.

The catastrophic will of some politicians to secure political office through hook or crook constitutes the rationale for the most of the party switches observed after party primaries. At this juncture, losers during the primaries will seek for another platform to effectuate their ambition. Lack of internal democracy, absence of transparency, imposition of candidates, disregard of courts orders and the cult of hero-worshipping constitute most of the reasons upon which defection is predicated. It has to be stated that the egocentric desire of feathering one's nest stands as a predispositional rationale behind most cases of defection. Cross- carpeting is also utilized by political tacticians as a strategy to politically maneuver and infiltrate another party.

Political defection is not an obnoxious outlaw in the eyes of Nigerian laws. The Constitution of the Nigerian state gives warrant for political defection. The 1999 constitution of the Federal Republic bestows on all Nigerians the fundamental right to freedom of assembly and association. Specifically, section 68 1(a) allows a member of the National Assembly to become a member of another party other than the one from which he was elected on the grounds of division and or merger of his former party. Aside these grounds the legislator is supposed to vacate his seat if he defects. This same provision and the accompanying exceptions are replicated for the state assembly in section 109 (1)(g).

However, the term “division in the party” which constitutes one of the grounds for the defection of a legislator is shrouded in a Labyrinth of ambiguity as there is no litmus test measure for determining what counts as division in a political party. Thus, this provision is palpably and flagrantly exploited to suit the whims of defectors.

Whereas the constitution is explicit on the provision for the defection of a legislator, it is notoriously and conspicuously silent on the provision for the defection of members of the executive. The silence of the constitution on sanction/restriction on members of the executive from cross – carpeting implies that they can defect at will and such action will not be viewed as illegal.

Though political defection may be viewed as legal but it portends a very bleak moral connotation because most defections are greed driven. Recurrent defection leads to the heightening of tension in the politic and multiplication of animosity and hence does not enhance consolidation of peace. Frequent defection does not allow for ideological stabilization among parties as the parties are always in deficit of the critical mass needed to build party ideologies. Switching from party to party partially connotes that there is no ideological difference among the different parties hence the fluidity and the swiftness of assimilation of a member of one party by another. This implies that Nigerian political parties are driven by the power of self aggrandizement rather than by objective ideology.

Most political defections are orchestrated by the influence of hefty money bags in the party. This and other sundry allurements constitute the very corner stone of corruption and hence destructive of democracy which ought to be sustained by political party participation.

An analogy between cross – carpeting and adultery in religious parlance will highlight political defections as a form of infidelity, licentiousness, ungodliness and lack of love and longsuffering.

The Way Forward

Party defection or party porting has become a recurrent decimal in the Nigerian political scene. It possesses a kind of Jekyll and Hyde nature in that it can enhance or mar our nascent democracy. It is inhibitive of democracy when party porting is driven by reasons of self aggrandizement and promotive of democracy if premised on principles and ideological differences between parties. The different political parties should strengthen the internal democratic principles within parties as a measure of curbing incessant porting. Party primaries should be checked for compliance with the principles of transparency and consistency with the rules of the party and laws of the land. Government should set up machineries to curb corruption within parties and the influence of money bags. Another *sine qua non* for combating incessant party porting is to make political power less lucrative so that the fair-weather and opportunistic politicians who are prone to trajecting from party A to B and back to A can explore other means of livelihood.

Conclusion

The phenomenon of party defection is a healing balm for a politician who suffers unbearable grievances which have not been properly addressed by the party. It can however become a gruesome sore that is capable of bleeding any democracy to demise if left uncontrolled. Party defection will remain a positive phenomenon if it is exercised on the grounds of candour, objectivity and in pursuit of a sound and better political ideology. Otherwise it becomes a monstrous egocentric drive for self-aggrandizement.

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The Integration of Native Language in EFL Classes

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Abstract: This article shows how the integration of native language in EFL classes affect positively the teaching and learning processes of English as a foreign language. The methodology shows a quantitative approach performing different processes and techniques adapted to the requirements of the investigation, data is the result of tests done to two groups of fifteen students in two class at Karbala university, surveys and interviews. There is a theoretical research from authors about the use of native language in EFL classes which makes the investigation very solid. The results show that the integration of students' native language in the learning of English as a foreign language can help them achieve their learning goals.

Keywords: Native Language, EFL, English, Teaching and Learning Process.

1.Introduction

English is understood as the universal language and many people for different reasons need, must or want to learn it as a foreign language. González (2015) stated that English is a medium of instruction in many countries and is the connecting language of the world market. This author also mentioned that it is a priority in Colombian education to reach an optimum level in English for a good performance in different areas of occupation, (González 2015). It is also a requirement in the curricula of many educational institutions, due to its global importance. On the other hand, students of higher education have understood the importance of handling a foreign language to be able to obtain a good job.

Through the ages many approaches and methods have been implemented with the idea of improving the teaching and learning processes of English as a foreign language and the needs for which English is studied change through the time.

The use of the native language can become an ally and motivation for many students. Martín (2001) wrote that the native language can play a facilitating role in the different learning processes of a new language. This can be seen from a negative and a positive side; the use of the native language allows some students to assimilate a foreign language more easily. On the other hand, one might think that students enter the phase of ease and laziness when the professor speaks to them in their native language they do not need to strive for the acquisition of the language they are studying.

The quality of the teaching process will always be linked to transformation, (Valencia, Enriquez, & Acosta, 2018). In this process the professor plays a very important role, his/her performance in class can determine and affect the development of the students in class. The motivation that they can have in improving their labor and socio-cultural expectations with the acquisition of this language. The institution where this research was conducted has all the resources for teaching English as a foreign language. Very well qualified professors, facilities, all the necessary equipment and a very good physical structure.

Students who study at the institution have generally had some contact with the language, which could be seen as something positive in the learning process that they start at university. But on the other hand, one could say that the level they have received is very low, and that in their high school English classes the language under study was not used very frequently. According to Sánchez (2012) English levels in Colombia are quite

low.

2. Native Language in the Teaching of a Foreign Language

Currently, English is the most common foreign language in the world. The purposes for which English language is used create the need to implement strategies to optimize its learning. As good educators, the need to create strategies that allow the learner to improve the teaching-learning process is visualized. As Valencia, Enriquez and Agredo (2017) stated, the strategy is an integral concept in the field of education.

Many English professors in Colombia wonder if the use or non-use of the native language in English classes benefits or not. Understanding by native language, the first language a person learns. In general the issue of the use of the native language by the professors is not a matter of easy discussion among them since in many cases they think that it is not admitted.

Different studies have provided information about the use of the native language in the acquisition of English as a foreign language. For example, Widdowson (1979) stated:

“... Language students should be aware of what they are doing when they perform linguistic tasks. They should be guided to recognize that these tasks are related to the way they use their own language for the achievement of genuine communication. This principle naturally leads to the association of the language that is learned with that which is already known and to the use of the language for the exploration and extension of their knowledge”. (Widdowson, 1979)

Hearn and Garcés (2003) said that the professor use to speak the native language on top of the foreign language, since he/she used to explain and address the students in their native language and not in the language being studied and the books showed grammar in the same way. This teaching model deprived students of a long time of exposure to the foreign language, the first and essential element in the process of acquiring a foreign language.

On the other hand, different authors mention that the use of the native language can be forced in case of physical or emotional security of the student at risk or in disciplinary matters. The use of the native language was also justified when it comes to transmit explanations, expressions or very abstract or complex words and when other strategies become unfruitful.

According to Kavaliauskienė (2009), it is very important to distinguish between teaching using translation as a vocational skill and the use of the native language in a teaching situation as an aid in the learning of a language. We must also take into account concepts such as interlanguage; in the learning of a foreign language, the speaker will produce a linguistic system of transition called interlanguage which is a system that results from the combination of his/her native language with the foreign language he/she learns.

Many have presented the use of the native language in an English class as support, the amount of its use depends largely on the academic level of the students. It can also lead to a cultural approach to the language under study, but it can lead to a delay in the communication of students in the foreign language. The teaching of English through English is still the main idea, although discrimination against the use of the native language can be very stressful for many learners.

Del Rio (1996) suggested that the student's native language can be a valuable contribution to the foreign language in the classroom. Krashen and Terrell (1983), mentioned that students must use their native language to fill gaps in communication due to their insufficiency to initiate interlanguage statements. O'Malley and Chamot (1990) in their work of academic cognitive approach to language learning, which is based in part on their research on learning strategies, also demonstrated that the native language can be used as a useful learning aid. Corder (1981) seemed to agree on what he considers the use of the native language as a “heuristic technique” that results from the students' strategies to master the language.

Rutherford (1987), another defender of the native language, argued that, when trying to learn a foreign language, the student is equipped with two types of prior knowledge, the knowledge labels and the knowledge that form it. The first is, as he said:

“An unconscious ‘knowledge’ or innate ‘idea’ of what constitutes the organization that the language can assume. This ability is in the student's disposition and is activated every time the student has to deduce the unknown in the language on the basis of their rudimentary interlanguage and secondly, the technical

knowledge, the mirrors of the mother tongue, their learning experience: temporarily the ability to bend the new language in ways that, with the maximum efficiency, serving the initial will of rudimentary communication.” (Rutherford, 1987).

Texidor (2007) wrote that the use of the native language in the teaching of a foreign language has been a point of discussion since the emergence of the methodology of language teaching. Bolitho (1983) stated that in some moments of language teaching one has to allow the students to say what they want to say, and if they are going to do that, one is going to have to allow them to use their native language on some occasions. The native language brings benefits for the student (Ur, 2000). Clark (1975) pointed out that the native language can be very useful.

Although Atkinson (1983) suggested the limited and careful use of the native language in foreign language classes, he also suggests that it can be used for translation as a technique in teaching, and in relation to this

Widdowson (1979) stated that the translation conceived in a certain way, can be a very useful pedagogical tool, and in some circumstances, can be seen as a service tool. Schweers (1999) stated that English must be the first vehicle of communication in the environment of teaching this language.

3. Methodology

The following is a quantitative research, since it is based on data which is intended to verify ideas obtained with quantitative techniques such as surveys and experimental tests with pre-post exams.

In this research surveys were obtained from students and professors of a university's language institute, where students were asked their opinion about the use of the native language by the professor (Spanish) in their English classes and how beneficial they believe it can be for their teaching and learning process.

They also asked the professors of the institute about the use of the native language (Spanish) by them in their English classes. Additionally, some directors from other institutes were interviewed.

A pre-test and a post-test were done to two (2) groups of students in A2 English level, selecting 15 students at random in each of the groups. The first exam was done before the professor explained the first four units, one of the professors did not use the native language, while the other one gave some instructions in the native language. After the professors explained the two units referring to the exam subjects, the same students were given the test again.

Based on this, an analysis and a description of the data was carried out, taking into account the characteristics of the participants and their interests, trying to establish in what degree the use of the native language affects or benefits in the teaching and learning process of a foreign language. The theory was related to these analyzes in order to make conclusions about the subject.

4. Results

For the following description, we will name one of the professors, professor A (who did not use the native language in his class) and the other one, professor B (who used the native language in his class). The groups studied a weekly three hours English class. For a period of five weeks, the professor's B group was given instructions and the grammar was explained in their native language, while professor's A explained only in the foreign language.

Class in both groups began with the introduction of a new topic in English. After giving the introduction and having presented the new topic, they continued to do evaluation exercises to identify their shortcomings. After having done the written and oral exercises; Failures in the subject were identified. To be sure of the appreciations professor B asked question in Spanish about who was not clear on the subject. At that time some students raised their hands and then proceeded to explain in the native language for a maximum period of 10 minutes. Once the clarifications were made, the class continued in English. While Professor A addressed the same question in English.

The following graphs show the results of the groups before and after the test, where the results have a very small margin of difference.

Table 1. Average score of the exams in a scale of 0.0 to 5.0 pretest and posttest of group A with 15 selected students

Students with average below 3.0 in the pretest.	Students with average below 3.0 in the posttest.
93%	60%
Students with an average of 3.0 or more in the pretest.	Students with average of 3.0 or more in the posttest.
7%	40%

Source: Heriberto Gonzalez Valencia.

Table 2. Average score of the exams in a scale of 0.0 to 5.0 pretest and posttest of group B with 15 selected students

Students with average below 3.0 in the pretest.	Students with average below 3.0 in the posttest.	100%
	53%	
Students with an average of 3.0 or more in the pretest.	Students with average of 3.0 or more in the posttest.	0%
	47%	

Source: Heriberto Gonzalez Valencia.

According to the different theories mentioned in this research, where it is noted that the use of the native language can be a tool in the teaching and learning process of a foreign language, we see that the difference of the use or not of this, does not showed a result with significant differences, we see how the professor's B group, who used the native language, did not get a significant difference in the test compared to the group of the professor A who did not use the native language in his class. It must also be taken into account factors such as the disposition of students at the time of the test, since that gives a small margin of alteration in the test.

The results of the questionnaire for the students showed that in 90% of the cases, they agree with the use of the native language in English class as a foreign language. And they also felt the need to use their native language to express their needs and doubts in the classroom.

Table 3. Questionnaire for students

Agree to the use of native language in class.	Do not agree to the use of native language in class.
90%	10%

Source: Heriberto Gonzalez Valencia.

In the questionnaire for professors, 80% of them answered that they used the native language as an academic strategy for teaching English, but all of them made different clarifications regarding the time and manner they use it.

Table 4. Questionnaire for professors

Use of native language in class.	Do not use of native language in class.
80%	20%

Source: Heriberto Gonzalez Valencia.

In several open talks with professors of the institution about the subject, many agreed on the use of the native language as a pedagogical strategy in their English classes, to explain grammatical clarifications in

which the concepts have not been clear to students; to give very important instructions in which there can be no errors; when there are problems both academic and behavioral.

In interviews with two directors from different institutions in the region, it was found that the use of the native language is not part of the academic strategy, however they claimed to know of some professors who use it at certain times of their classes.

In our environment, the use of the native language in English class does not stop being something that is not spoken very openly, many professors still think that admitting they use their native language as an academic instrument in the class can be seen as wrong. This is why in the surveys each professor explained his reasons for using it in his classes and all agreed that the use was very little

5. Conclusions

According to everything compiled in the theoretical part of this work and with the results obtained in the pretest and posttest done to students, it was observed that although there is no significant difference, the proper use of the native language English class as a foreign language can be beneficial, since it can facilitate the learning process of students.

On the other hand, it should be mentioned that although it is not possible to give an exact measurement, as to how much time or quantity of the use of the native language should be implemented, if it can be assured that it is not the purpose of this research to support the idea of a translation method in class, since this worsens the possibilities of the students of being in contact with the language in study most of the time and reduces their possibilities of practices.

The English professor must be recognized as such, and for this purpose nothing better than the constant use of English in all spaces. However, taking into account the specific characteristics of many students in the university, there are very specific situations and needs in which the use of the native language in the teaching and learning process of English as a foreign language can be decisive for the optimal performance of students and also for them to continue with a high motivation in a long-term learning process such as learning a foreign language.

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In Management of Enterprises in the Service Market: Methods of Evaluation of Efficiency of Services

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Annotation: The methods used in evaluating services in this article. In evaluating services, we recommended evaluating service-oriented investments, i.e., scientifically substantiating the possibility of increasing the economic efficiency of an enterprise by separating services from the main type of activity and increasing the investment efficiency of services.

Key words: BSC, EVA, 4M, KPI, Six Cigm, MBO, TQM, services market, Innovation fund

1.Introduction

When it comes to service businesses, you get married. Whether it's the service itself, whether it's offering something to someone, or meeting someone's needs, or easing someone's burden. This sounds simple in itself, but is more complicated when viewed from the point of view. If you look closely, the whole world serves each other. Everyone likes qualified and top-notch service. If no enterprise, organization, institution is focused on serving its purpose. It would be expedient if the service was provided with money so that it would be beneficial and sustainable in the future. Because the lifeblood of society is money. But money does not flow to everyone in the same way. He is more likely to achieve results only if he has a higher mind, who has the right knowledge, who has the right self-assessment and self-control. If there is a higher consciousness that controls time and environment, not time or environment. The higher mind, on the other hand, will be able to follow the minds, humanity, novelty, and world like itself. One of the most important directions in which the mind thinks and spreads it all over the world is that any work, whether it is a product, whether it is tourism, whether it is medical care, is complemented by a qualified service no matter what kind of work it is. This means that services are at the forefront of society and state building, economy and social life. We aimed to conduct research on methods to assess management effectiveness in service enterprises.

2.Literature review

Theoretical foundations for evaluating the effectiveness of management activities have been studied by many scholars on the basis of those directly related to the field of services.

F. Taylor, one of the founders of scientific management, said: "The art of scientific management is not an invention, but an evolution. It is necessary to analyze and systematize any skilled and unskilled labor." requires management influence on planning, organization, leadership, and oversight in four key areas. F. Taylor's services promote the idea of management effectiveness — the absolute adherence to science-based standards, rules, and regulations. [6; 7].

The founder of modern management theory A. Fayol divided all management functions into general, specific features that apply to any field of activity and are directly related to the management of an industrial enterprise. [11] A. Foyol developed Taylor's ideas and proposed a formal description of management functions: planning, organizing, managing, coordinating, and controlling. Formed management principles in the performance of management functions.

The German sociologist M. to the theory of criteria-based management in management. Introduced by Weber [1; 2] In the theory of "ideal bureaucracy": - "Power is a necessary condition for the existence of the organization. Without this or that type of authority of an organization, there can be no management in achieving its goal. Powerless action will be chaotic.

American scientist P. Drucker, one of the founders of management theory of the twentieth century [3; 4; 10] in the theory of "goal-oriented management": management should begin with the development of goals, and only then move on to the formation of functions, the system of interactions and the management

process. The basic principles of the method are to highlight that every leader, from the lowest level, should have clear goals that support the goals of the top leaders and strive to achieve the goals of the top leader. P. Drukker: "It's dangerous to rely on your own opinions when assessing consumer needs. Your opinion may turn out to be wrong. You shouldn't try to guess the right answer, you should always contact the direct customers you need and ask them clearly. It is necessary to continue the dialogue during the self-assessment".

Its main content:

- setting strategic goals;
- Involve all employees in the process of developing plans and strategies;
- Evaluation of management effectiveness based on the final results.

American economists K.R. McConnell and S.L. "Economics studies the problems of efficient use or management of limited production resources to achieve the maximum satisfaction of human material needs," Brew describes. It prioritizes management in meeting human material needs to the maximum. Focusing management on meeting human needs means that the economy is focused on human interests and that this cannot be achieved without effective governance.

"Yangi It is no longer possible to build a 'New Uzbekistan' with the old methods of governance. In other words, today's demand itself requires the introduction of modern methods of governance in every field."

Achieving high management efficiency in any management activity, the assessment of management effectiveness in the enterprise to record high results serves as a scientific basis for the implementation of the main objectives of management and ensuring its functional functions. A number of methods are used to determine the effectiveness of enterprise management. Here are some examples:

3.Research methodology.

With the methods of economic research, such as data collection, analysis, synthesis and logical thinking, the methods of evaluating services in terms of the role of the services market in the socio-economic life and economic development of the country are widely studied

4.Analisis and dissiionn results.

- **Norton Kaplan (Balanced Scorecard System) BSC** is a model of a balanced scorecard system. Development of a set of analytical indicators with control (set) values that reflect the profitability of operations in the long and short term from a strategic point of view within the framework of the company's new vision as a complex system of relations. It allowed us to find a tool that would allow us to assess the impact of accumulated intellectual capital on business value, which is not reflected in the financial statements. The evaluation of a company's performance was based on four balanced dimensions: finance, customer relations, internal business processes, and staff training and development. Through this model, you can participate not only in the analysis of financial results, but also in creating new opportunities for the participation of accumulated intellectual capital in business. This method can serve to regulate the acquisition of intangible assets for subsequent growth.

- **Lawrence S. Maisel - a balanced scorecard model.** The idea of the Meysel model is that, in general, improving enterprise efficiency depends not only on improving the efficiency of processes and systems, but also on the professionalism of employees. The components of the model serve to identify the following factors that affect performance: financial - profitability, growth in total value, earnings per share; customer service - service time and quality, service, price / cost; business processes - time, quality, productivity, costs; human resources - innovation, education and training, intellectual development.

- **K. McNair, R. Lanch, K. Cross** - In 1990, they introduced a model called the Pyramid of Efficiency. The pyramid consists of four levels and provides two-way movement. The manager's task is to gradually form the indicators that are transferred to the lower levels of the pyramid in the form of goals, and then direct the enterprise strategy at the highest level to the following performance. This model serves to ensure the efficiency of data circulation in the system. Because at the top of the pyramid, the data is processed at each level, and changes and additions are made to the highest level. At the highest level, data from below is summarized and evaluated and then passed on from top to bottom for completion.

- **EVA (visual economic value added) or EVA® (EVA®-based management)** is a model that allows you to monitor and evaluate decisions by key and support staff. This model works on the following principle: Owners invest capital to make a profit; the company was created to generate additional revenue; the share value will increase due to the incentive of the enterprise. This method is based on a mathematical scoring system. In the components of the formula, the company's goal tree is created by highlighting net income after taxes and capital value. Based on this, tasks are distributed according to the plan. Based on this method, Stern Stewart & Co. annually publishes rankings of the companies with the largest added value.

- **The concept of 4M is the concept of "management system"** - German scientists Stuart i Stern developed the concept of ensuring the efficiency of the enterprise on the basis of the EVA model and EVA indicator. This concept consists of: (Measurement) - an indicator that determines the profitability of the enterprise; (Management system) - covers the entire range of management decisions, such as strategic planning of the system, capital allocation, purchase and sale of assets, goal setting; (Motivation) - connects the interests of managers and shareholders through a system of incentive wages; (Mindset) have introduced a management culture based on corporate culture.

- **KPI (key performance indicators)** - As for the practical application of KPI, this indicator is introduced in enterprises to facilitate the direct measurement of the performance of the whole company, individual departments and employees, as well as to achieve and motivate employees. Quantitative and qualitative indicators of results through this system; resources expended; to evaluate the performance of business processes with performance indicators, to what extent they correspond to the algorithm required for its implementation; indicators of the ratio obtained and the time spent to obtain it; resources spent; used to evaluate indicators such as the ratio of the result obtained to the value of resources.

- **MBO (Management by Objectives) - goal management**, developed by professors at Harvard Business School in the United States in the twentieth century Created in the 80s and 90s, ie on the basis of the "Methodology for predicting the results of their activities and ways to achieve them" system "was developed. In this case, the main goal is divided into several operational goals, and they in turn are divided into smaller goals, followed by actions (tasks) to achieve. Such a division should contribute to goal setting, but in practice this is not always the case. For example, in this case, the sub-goals are not very vague and specific, because there are too many planning subjects, the tasks are specified, and the sub-goals are general. It is important to note that in the implementation of each goal, special attention is paid to ensuring high quality of service in small areas. But even this method could not reveal the exact parameters of the services.

- **Dr. Mikel Harry's Motorola Six Cigm Recerch Institute method**, a production management concept developed by Motorola in 1986 and popularized in the mid-1990s when Jack Welch adopted it as a core strategy at General Electris. The essence of the concept is related to the need to improve the quality of the results of each process, minimize operational shortcomings and statistical deviations. The concept uses quality management methods, including statistical methods, requires the use of measurable objectives and results, and includes the creation of special working groups in the enterprise that implement projects to address problems and improve processes. It also outlines the following key principles: sincere interest in the customer; data and fact-based management; process orientation, process management and process improvement; proactive (proactive) management; cross-border cooperation (transparency of internal corporate barriers); striving for perfection and giving in to failure. DMAIC (define, measure, analyze, improve, control) is often used in the implementation of process improvement projects: the following sequence of steps is used: defining project goals and customer requirements (internal and external); process measurement to determine current performance; analyze and identify the root causes of deficiencies; improving the process of reducing defects; to control the subsequent course of the process. puts the customer first and helps them find the best solutions based on facts and information. In general, the whole idea of 6 Sigma is to maximize the quality of organizational work. While prioritizing customer service reveals the core nature of the services sector, it does not complement the full range of functional functions of the services sector.

- **Ishikawa diagram or "Fishbone Diagram"**, Cause and Effect Diagram or root cause analysis diagram is one of the main tools to measure, evaluate, control and improve the quality of production processes. The usual application of this method is to draw a diagram on the board by the team leader first to identify the main problems and ask for help from a group of employees to identify the root causes. Each

problem is written with at least 3 and at most 6 basic factors, which are described in detail in the diagram shown in the basic schematic. The group will make suggestions until all cause-and-effect diagrams are complete. Once the discussion is complete, the root cause of the problem is resolved. Insufficient data have been provided to apply this diagram to the services sector. In this diagram, the problem will have to be found by the team itself.

- **Lean manufacturing (lean production) - low-cost production.** According to the concept of economical production, all the activities of the enterprise are divided into processes that add value to the consumer and processes, as well as operations and processes that do not add value to the consumer. The goal of "rapid production" is to routinely reduce processes and activities that do not add value. "Just-in-Time" (visual Just-in-Time, JIT, exact-time) involves production and delivery without losses in the implementation of the concept. Production without losses includes: losses due to overproduction; loss of time due to unnecessary transportation; losses due to unnecessary processing steps; losses due to excessive inventory; losses due to unnecessary actions; losses due to the production of defective products; unfulfilled creative potential of employees; This method also allows, to a certain extent, to reduce non-profit services in the enterprise on the basis of savings.

- **TQM (Total Quality Management) -quality management system.** It is an organization-oriented management approach as a system, with a focus on teams, processes, statistics, continuous improvement, and the production of products and services that fully meet or exceed customer needs. The basic principle is that the level of quality is determined by the customer. Any efforts in the organization are decided based on the customer's opinion.

5.Conclus and suggestions.

It is necessary for our activity to evaluate the optimal assessment of various services, its interpretation, interpret the methods of improving management efficiency and adapt the main criteria from them to our work. However, it should be borne in mind that in any activity, the movement of entities involved in the management structure depends on scientific and motivational management and, of course, its proper organization and directed investment.

In the research work, we examined the investment provision of service sector entities in the form of a model. The main players of the services market include:

1. Individuals and legal entities providing services;
2. Government agencies and other organizations involved in the implementation of public policy in the field of services;
3. Research and higher education institutions, manufacturing and other organizations that create, introduce and use services;
4. Centers for innovative ideas, developments and technologies;
5. Property owners offering intellectual property to the Services;
6. Investors making investments in services.
7. Proponents of their final and final products in the services market.
8. Entities of private services operating on the basis of public-private partnership.

The public services market determines the institutional conditions for innovative development.

It should be noted that the three-tier model represents the relationship between "investors innovative fund - the subjects of the services market." However, this model can also describe the situation with "investors - service sector start-up projects", ie the role of the innovation fund is played by the service sector entity, which implements its portfolio of start-up projects. It is advisable to establish these corporate innovation funds. With these activities funded and supported by the state, the services market entities will take the lead in every area.

Package of investors $K = \{1, 2, \dots, k\}$ let's define it like this, $k \geq 1$. While a group of services market entities $N = \{1, 2, \dots, n\}$ let's define it like this $n \geq 1$. j - investor $C_j \geq 0$ costs (the contribution paid by the investor or the assistance offered to the innovation fund) will be. from these investments $D_j \geq 0$ earns income $j \in K$.

An innovative fund for the services market does not have its own personal devices, but it is from investors (founders) $C = \sum_{j \in K} C_j$ takes money and $D = \sum_{j \in K} D_j$ returns it to them.

The Innovation Fund will invest in the start-up project of the services market entity and an innovative fund in it i to an innovative business entity $c_i \geq 0$ allocates money and from him $d_i \geq 0, i \in N$ income (return investment) takes.

The total value of the Innovation fund as part of investing in the services market $c = \sum_{i \in N} c_i$ consists of, and the total income of the innovation fund from start-up projects of the services market entities $d = \sum_{i \in N} d_i$ consists of.

The services market entity to its start-up projects at its own expense $y_i \geq 0$ makes investments (If an entity invests in start-up projects of other entities, it should be considered as both an investor and a service market entity at the same time) $i \in N$, i subject in innovation activity, h_i the financial results that follow the start-up project project costs c_i and y_i as well as the type of services market entities $r_i \in \Omega_i$ (parameter that represents all the important features of the service market entity that affect the results of the start-up project) depending on $h_i = v_i(c_i, y_i, r_i)$, $i \in N$.

Thus, the objectives of the i services market entity are described as follows:

$$f_i(c_i, d_i, y_i, r_i) = v_i(c_i, y_i, r_i) - y_i - d_i, \quad i \in N \quad (1)$$

The objective function of the Innovation fund is as follows (here and in some of the following places the variables written in bold indicate the vector):

$$F(\mathbf{c}, \mathbf{d}, \mathbf{C}, \mathbf{D}) = \sum_{j \in K} C_j - \sum_{j \in K} D_j - \sum_{i \in N} c_i + \sum_{i \in N} d_i \quad (2)$$

j If the target function of the investor is as follows:

$$\Phi_j(c_j, d_j) = D_j - C_j, \quad j \in K \quad (3)$$

Services market entities, Individual possible conditions for innovative funds and investors, (in this case - non-negative conditions of success) to view as follows:

$$f_i(c_i, d_i, y_i, r_i) \geq 0, \quad i \in N \quad (4)$$

$$F(\mathbf{c}, \mathbf{d}, \mathbf{C}, \mathbf{D}) \geq 0 \quad (5)$$

$$\Phi_j(c_j, d_j) \geq 0 \quad j \in K \quad (6)$$

Figure 1 shows a set of financing mechanisms used at different levels of the hierarchy of the model "investors - innovation fund - market participants in services."

Thus, the above are listed six main mechanisms for financing the innovative development of service market entities, namely: independent financing mechanisms ($\eta(\cdot)$); investment distribution mechanisms ($w(\cdot)$); investment return mechanisms ($\pi(\cdot)$, $p(\cdot)$); mixed financing mechanisms ($\mu(\cdot)$); cost allocation mechanisms ($q(\cdot)$); income distribution mechanisms ($g(\cdot)$).

Searching for all six mechanisms at once is a complex process, and such a task is rarely set. Usually a certain part of the mechanisms will be predetermined and one (rarely several) mechanisms (s) will need to be developed and improved.

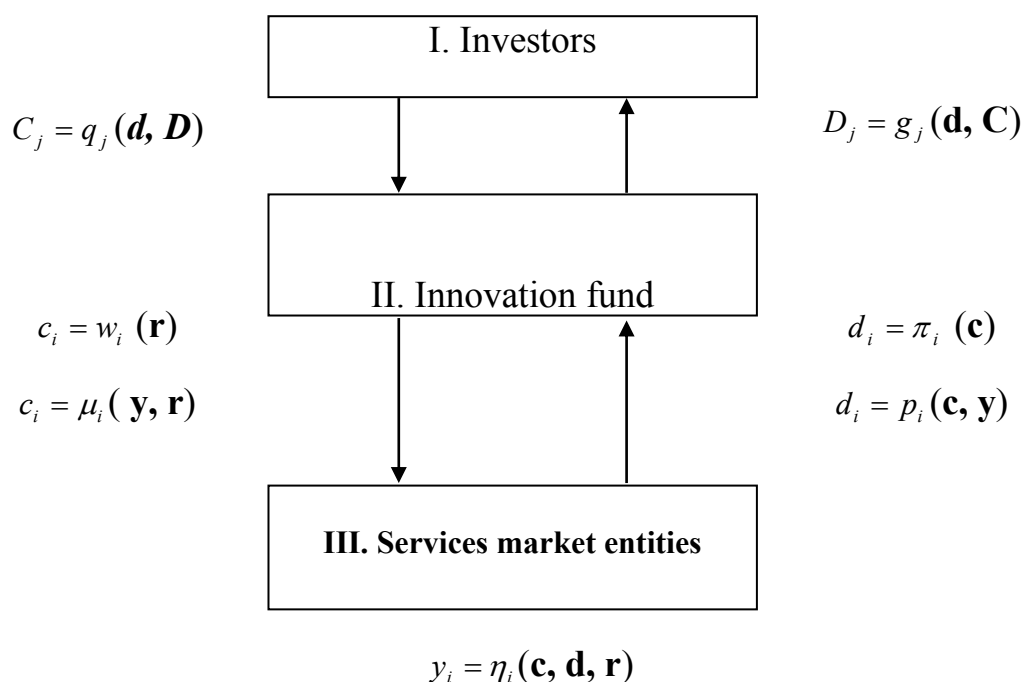


Figure 1. Mechanisms for investing in start-up projects of service market entities

The method of posing a problem aimed at synthesizing the funding mechanism mentioned above does not cover all the cases encountered in practice. First, the assumption that participants are aware of all parameters is rare in practice because participants do not have complete information about all the parameters that are important in practice. Second, funding mechanisms are often “flexible” or variable, meaning they depend on a number of parameters.

Therefore, first of all, when the volume of investments made by the innovation fund is known, the services market entities should consider the decision on the amount of investments to be made at their own expense. Then, after resolving this issue, it is possible to consider the decision of the Innovation Fund on how to finance the services market entities. It is then possible to explore decision-making mechanisms by investors.

The above describes three main categories of financing mechanisms - independent financing mechanisms (decision-making on investment in services by investment market entities), resource allocation mechanisms (fund decision-making), cost and income distribution mechanisms (by investors). decision making). The implementation of these mechanisms will allow the commercialization of the service sector and promising services as an innovative activity from the main type of activity, which will ensure the efficiency of services by creating effective types of innovative services

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The Importance of a Child's Brain Development in Mental Arithmetics and its Role in Life

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Annotation: This article discusses mental arithmetic in preschool education and provides a promising platform for further education, allowing to achieve excellent intellectual and creative development results in the learning process.

Keywords: Mental arithmetic, mathematics, ability, memory, numbers, figurative thinking, development;

Introduction

Mental arithmetic is a very effective program for developing mental abilities using arithmetic calculations. Develops the ability to be independent, enterprising and self-critical. Mental arithmetic already works in 52 countries around the world.

Main Part

Mental arithmetic develops a child's brain and mathematical thinking, allowing students to focus on assigned tasks, memorize large amounts of information, and solve complex mathematical examples. Acquired skills have a positive effect on the development of the mind and the individual to the child.

The rapid pace of scientific and technological progress encourages us to keep pace with the times and pay due attention to the education of modern children. There are not enough school and preschool programs. That is why mental arithmetic is so important.

During arithmetic, the child simultaneously moves the wooden bones with the thumb and forefinger of both hands, which helps the two hemispheres of the brain to develop harmoniously. At the same time, the child learns to express numbers and mathematical movements in the form of a certain position of the bones on a knitting needle.

For mental arithmetic, the age of 4 to 12-14 years is the most intensive period of brain development. After the age of 12-14, the brain's ability to acquire and use such complex quantities and speed decreases.

Practice has shown that for many children, learning outcomes improve not only identified computational ability, but also concentration, memory, figurative thinking, imagination and observation, and the ability to analyze and summarize. At the same time, emotional and volitional qualities (independence, determination to achieve results, voluntary regulation of behavior, self-confidence) develop.

The left hemisphere of the brain is responsible for logic, mathematical abilities, and language differences, while the right hemisphere is responsible for creativity, art, imagination, visualization, and nonverbal aspects. Malaysian scientists also support this conclusion. Using both hands when working on an abacus initially stimulates both sides of the brain. Because the child is always moving with both hands. Working with an abacus is a continuous process that constantly feels and moves the baby's bones. It activates both parts of the brain. In the past, man only achieved the extraction rate possible for mathematical geniuses.

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Conclusion

In conclusion, with the right approach to teaching and reinforcing the knowledge of preschool and primary school age children, it emphasizes that they demonstrate phenomenal skills in performing arithmetic operations in their minds with 2,3,4-digit numbers. Scientists and practitioners see an important factor in the

effectiveness of the program as the fact that in the learning process the child almost always experiences a process of success, which is associated with a positive reinforcement, a unique approach.

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Anti-Corruption Culture: Reforms And Main Directions Socio-Philosophical Analysis

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Abstract: Corruption as a phenomenon has been familiar to people since ancient times. It is not one of the oldest, but it is also not a relatively young phenomenon of social reality. For about seven centuries, history has taught us that in the course of civilization mankind has been quite successful in fighting this evil. But even at the beginning of the third millennium, we humans have not yet succeeded in eradicating corruption in the full sense of the word. Corruption is a self-perpetuating phenomenon that exists within public life and has no national or territorial borders. This concept testifies to its imperfection and weakness and arises from the "bowels" of the state, the low legal culture of not only officials, but also society as a whole. After all, officials are a part of society. At the same time, corruption is one of the elements of the "legal" shadow life.

Keywords: corruption lobbying, the concept of corruption; the essence of corruption; signs of corruption, corruption, society, state, public service. the concept corruption in the criminal law understanding.

Corruption as a phenomenon has been familiar to people since ancient times. It is not one of the oldest, but it is also not a relatively young phenomenon of social reality. For about seven centuries, history has taught us that in the course of civilization mankind has been quite successful in fighting this evil. But even at the beginning of the third millennium, we humans have not yet succeeded in eradicating corruption in the full sense of the word.

Since ancient times, power and corruption have been inseparable. Throughout history, corruption has evolved in parallel with the evolution of the state. While at the dawn of statehood, paying a priest, leader or warlord for personal recourse to their assistance was considered a universal norm, later, as the state apparatus became more complex, professional officials began to receive only a fixed income officially - which meant that bribes moved into the realm of the shadow economy.

The first mention of corruption (and, accordingly, the fight against it) can be attributed to the second half of the 24th century BC, when Urukagina, the king of the ancient Sumerian city of Lagash in modern Iraq, reformed the state administration in order to curb numerous abuses of his officials and judges. However, the fight against corruption in the ancient world usually did not bring the desired results, especially in the eastern despotisms. According to the author of the ancient Indian treatise Arthashastra[4], "it is easier to guess the way of the birds in the sky than the tricks of cunning officials. Corruption reached its apogee during the decadence of antiquity in the Roman Empire and became one of the reasons of its collapse. The word "corruption" has its Latin origin; corrumpere means "to corrupt, to spoil, to damage".

The world was changing and so was the scale of corruption. Globalisation and the development of the world economy have enabled corruption to spread internationally and become one of the most widespread and dangerous phenomena[5].

The definitions of corruption considered allow us to conclude that the following:

I. Having analyzed the existing definitions of corruption, set forth both in international legislation and in the national legal system, we come to the conclusion that there is no universally accepted definition of corruption does not really exist;

II. The analysis of the definitions given above allows us to identify the analysis of the above definitions allows us to identify the features of corruption that must be reflected in the national national legislation. The main signs are: the social essence of corruption (Example: degradation of power), normative nature of acts of corruption (Example: Prohibited by norms of law), selfish the normative nature of acts of corruption (Example: prohibited by the rules of law) and selfish motivation of their action;

III. The structure of acts of corruption includes not only the structure of acts of corruption includes not only crimes of corruption but also other types of offences (such as the structure of acts of corruption

includes not only crimes of corruption but also offences (administrative, disciplinary, civil law), which contributes to the structure of acts of corruption includes not only crimes of corruption, but also offences (administrative, disciplinary, civil and legal) that facilitate criminal law's implementation of the maximum criminalization of In a preventive sense, to form an effective system of anti-corruption policy an effective system of anti-corruption policy of the state;

IV. The above-mentioned international legal documents refer to Corruption is defined in the above-mentioned international legal documents as abuse of authority in connection with the above-mentioned international legal documents refer to corruption as selfish abuse of power in state, municipal and private spheres, different forms of bribery and corruption of public officials who perform managerial functions, as well as illegal actions of such persons in own interests in connection with the exercise of their powers.

Further, the author proposes to study the existing types and forms in which it is manifested, which in turn will make it possible to determine the scale of this phenomenon and to identify the areas most susceptible to corruption

For example, the first mention of corruption in the system of public service, which is reflected in the oldest known monument of statehood - the archives of ancient Babylon - dates back to the second half of the XXIV century BC.e. In the era of the Sumerians and Semites, the King of Lagash, Urukagina (Uruinimgina), reformed the state administration "in order to curb the abuses of his officials and judges judges, reduce the extortions and burdens of temple personnel, protect the temple temple possessions from encroachment by the royal administration, and to reduce and orderly payments for rituals." [3]. King Hammurabi continued the work of King Laghasha (19th century B.C.), whose activities are reflected in the texts of his laws:

"(§ 5). If a judge shall try a court case, render a decision, produce a deed of seal, and then change his decision, that judge shall be found guilty of change of judgment, and he shall pay the amount of the suit brought in that court case case, 12 times the amount of the claim.

(§ 6). If a man steals the property of a god or a palace, that man must and whoever takes from his hands what is stolen shall be put to death[4].

Similar references to corruption can be found in other ancient Oriental the same references to corruption can be found in other ancient Eastern texts: the Edict of Narmaba (Egypt, 10th century B.C.), the treatise Arthashastra Kautilya (Ancient India, 4th century B.C.), etc (Ancient India, 4th century B.C.), etc. These acts justify the statement that "theoretically the emergence and existence of corruption become possible with the isolation of management functions in the social and economic activity"[5]. In the future, along with the complication of social structures, forms of corrupt relations develop.

Since the end of the XIX century, the role of the state in the regulation of all social processes and, accordingly, increasing power of officials. Simultaneously . the big capital, whose clans, vying for great economic benefits, The big capital, fighting for large economic benefits, moved away from the system of occasional bribes to some state officials to the schemes of the elite politicians and top bureaucrats, putting them in the service of their interests. At this time begins the second stage in the history of research phenomenon of corruption. It is characterised by the growing interest of social and human sciences in the problem of corruption and the fight against it. There is a differentiation of knowledge of knowledge about this phenomenon. Sociology, political science, economics and law sciences are developing their methodological approaches describing in their own way the mechanism of corrupt behaviour of civil servants. Let us consider them in detail.

In sociology, corruption is understood as a dysfunctional phenomenon, a pathology society, generating in it ugly forms of relations between people. "Corruption is a special social structure, that is, a set of stable and fairly universal (they are adapted to exist in different spheres of society) norms and principles of human relations.

What is meant here is not individual cases or persons, but social groups that maintain this structure as the main or inalienable condition (source) of their existence.

Here corruption appears as an informal the main reason for this is that corruption is an unofficial subsystem of social regulation that exists in parallel with the official the "parallel system of regulation" is

caused by ineffective activities of the state authorities. This "parallel system" of regulation is generated by the ineffective activities of public authorities. According to this approach, corrupt behavior of public officials is defined as "informal, deviant (deviant) behavior of ruling elite, manifested in its illegitimate use of social benefits".

Such sociological understanding of the phenomenon of corruption is based on M. Weber's theory of rational bureaucracy, the structural-functional approach and the theory of social anomie by T. Parsons and R. Merton.

Weber, based on his three types of legitimate domination, argues that the modern state exercises domination over its citizens through bureaucracy. Therefore, a necessary condition for the normal functioning of state power is the work of a bureaucracy based on formal rationality.

Such rationality presupposes "development and transformation of modern bureaucracy into an aggregate of workers, highly qualified specialists of spiritual labor. The modern bureaucracy is based on formal rationality, which presupposes "the development of the modern bureaucracy into a body of highly qualified specialists of spiritual labor, professionally trained for many years, with a highly developed social honor that guarantees its integrity, without which there would be a fatal danger of monstrous corruption and low bourgeoisie.". Thus, according to Weber's conception of Weber, the spread of corruption among civil servants is associated with the irrational organization of their activities.

There are so many works written on this topic that it is difficult to identify any definite "recipes" against corruption, especially since the package of measures to combat this phenomenon depends primarily on the specifics of the country (remember the model of corruption given in Chapter 2) - its level of economic well-being, institutional, historical, geographic, and cultural factors. The author considers it advisable to give examples of successful anti-corruption strategies - and to learn some lessons from them.

I. Singapore strategy. After gaining independence in 1965, Singapore had one of the highest levels of corruption in the world. The following steps have been taken to combat corruption:

Strict regulation of officials' actions, simplification of bureaucratic procedures, severe oversight of high ethical standards

An autonomous (!) Corruption Investigation Bureau (CPIB) was created. Its main functions are:

1. receive and investigate complaints containing allegations of corruption in the public and private spheres;
2. investigate cases of negligence and carelessness committed by public servants;
3. to examine the activities and operations carried out by civil servants in order to minimize the possibility of corrupt practices.

Legislation has been tightened, the independence of the judiciary has been increased (with high salaries and the privileged status of judges), economic sanctions have been introduced for paying bribes or refusing to participate in anti-corruption investigations, and harsh actions have been taken, up to and including the layoff of customs and other civil servants.

Deregulation of the economy Raising of officials' salaries and training of qualified administrative staff.

Structural functionalism reveals the mechanism of reproduction of this phenomenon. According to this approach, during the period of social stability the degree of corruption is stable and approximately at the same level as in a given society.

The situation is different when the social system undergoes rapid changes and its structure is unstable. At that point, corruption is widespread. To describe this situation, we should refer to the concept of "social anomie". According to Merton, social anomie results from "a discrepancy between culturally prescribed aspirations and socially constructed ways of realizing these aspirations.

Anomie produces a situation in society in which its members are unable to achieve their goals through legitimate or socially approved means approved by society, and ignore them, trying to achieve their goals by unconventional means. As a consequence, situations of anomie lead to a decline in the authority of legal and moral norms and generates demand for deviant, deviant forms of behavior, including corrupt practices.

Thus, within the framework of structural functionalism corruption can be regarded as a specific type of deviant behavior of officials, arising within the framework of individual substructures of the social organism and generated by violations of the functioning of the social structure.

It would be appropriate to include in this form such a form of bribe as a kickback, which, in fact, represents the same illegal payment in the form of a certain percentage of the transaction, the execution of which was facilitated by an interested official. At It should be noted that the main difference between a kickback and a bribe is that The main difference between a kickback and a bribe is that the kickback does not result in an interest in solving a particular issue in the course of a transaction, for example, but in its full successful implementation.

Despite the fact that corruption is often compared to the hydra, there are quite effective methods of combating this phenomenon, as successfully evidenced by world practice. Not to fight corruption is to support it, and given the devastating consequences of such inaction in all spheres of society, the problem of countering this "internal enemy" is in any state. That is why it is so important to study the causes of corruption - after all, it is necessary to fight not only the weed itself, but also its seeds. By understanding what corruption is, by studying the phenomenon and the experience of other countries in resisting it, we gain knowledge, and knowledge, as you know, is power. The main thing is that this power must be used, and not only political will is needed for that, but also the support of the whole society. Otherwise, the battle against corruption will be lost.

Bribery should be understood as any actions of the subject of a corruption offence, the subject of which is a bribe. It would be advisable to include in this form It would be appropriate to refer to this form of bribery as a kickback, which, in fact, represents the same illegal payment in the form of a certain percentage of the transaction.

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Specialized Training of Wrestlers at the Stage of Initial Sports Training

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Annotation: In this work, we studied the effectiveness of the use of non-traditional training methods for young sambists from the initial training period.

Keywords: physical training, technical training, tactical training, methodology, training process.

Technical readiness is the degree of mastering by the athlete of the system of movements corresponding to the characteristics of this sport and aimed at achieving high sports results. Technical preparedness cannot be considered in isolation, but should be presented as a component of a single whole, in which technical decisions are closely interrelated with the physical, mental, tactical capabilities of the athlete, as well as the specific conditions of the external environment in which the sports action is performed. It is quite natural that the more to the athlete. The greater the number of techniques and actions is possessed by the athlete, the more he is prepared to solve complex tactful tasks that arise in the process of competitive struggle, the more effectively he can resist the attacking actions of the copier and at the same time provoke him to make inadequate situational decisions. Development of sports tactics, changing the rules with jealousies, sports equipment, etc. significantly affect the content of the technical preparedness of athletes. For example, in wrestling, reducing the time of fights, increasing the demands of judges to actively conduct wrestling, etc. significantly affected the nature and ratio of motor actions of qualified athletes.

A system of specialized training of the stage of initial sports specialization in martial arts in connection with the formation of actual coordination abilities has been developed and experimentally substantiated, including the structural and logical scheme of the pedagogical process, specific principles, methods, methodological techniques, the main organizational and methodological forms of conducting exercises in group and individual training, the leading pedagogical tasks of the process, the composition and direction specialized means, the optimal sequence of mastering the reception (action).

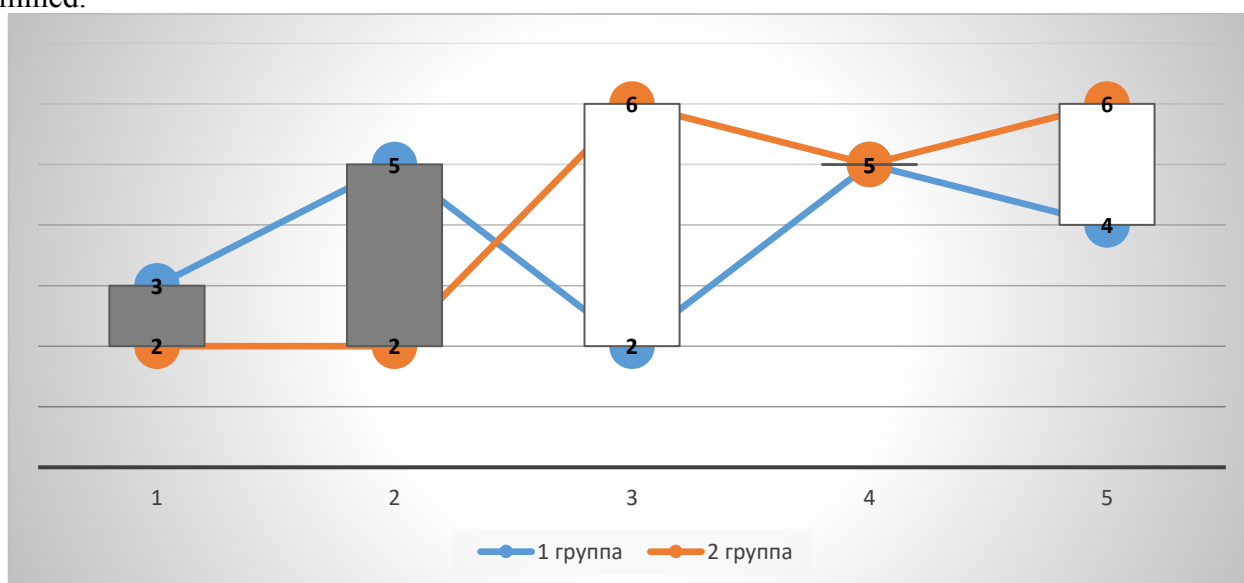
The optimal structure of the level system of actual coordination abilities has been experimentally determined to the greatest extent reflecting the specific features of mastering sports and technical skills, trends in the pedagogical process at the stage of initial sports specialization:

- abilities associated with the skills of an athlete to construct specific complexes of movement systems when solving problems of varying verbal complexity and adequate to the arsenal of means of fighting this type of martial arts; the composition of a specific system of movements when solving problems of varying verbal complexity, adequate to the features of the competitive activity of the martial arts;
- abilities (complex) associated with the achievement of specified properties of the procedural accuracy of movements, adequate to the parameters of motor activity when interacting with a partner, including indirect interactions; final accuracy in specific situations of interactions in the conditions of spatio-temporal limitations of the attack zone; procedural and final accuracy of movements in the conditions of spatio-temporal limitations of the offensive zone when interacting with the opponent;
- abilities (super-complex) associated with the achievement of the specified properties of procedural and final accuracy in specific movements under the conditions of spatio-temporal restrictions of the attack zone and associated with the factor of surprise and time deficit; in simulated combat interactions in conditions of deliberate, deliberately impromptu and impromptu choice of movement systems adequate to the remote and moment parameters of emerging situations.

The principles, means and methods of constructing training influences that provide modeling in the pedagogical process of conditions adequate to competitive ones, both in terms of the mode of activity and in the total intensity of the motor and vegetative functions of the athlete, and, at the same time, contribute to the formation of a level system of actual coordination abilities, have been substantiated; non-traditional

instrumental diagnostic methods for martial arts, which allow to objectively assess the effectiveness of the pedagogical process (reliability of methods $g = 0.80-0.88$, $P < 0.05$); methods of dosing training and competitive loads. It has been established that the ratio of indicators of the starting phases of symmetrical movements, electromyographic indicators of the working muscular ensemble act as objective criteria for the specialized preparedness achieved by the athlete.

The interdependence of the formation of a level system of actual coordination abilities and optimal intermuscular coordination of movements, which form the basis of the technique of martial arts in the process of specialized training, which significantly affects the effectiveness of the competitive activity of the athlete and the growth of sports and technical skills, is shown. In particular, statistically significant differences were found ($P < 0.01$) in the functioning of muscle ensembles in the implementation of typical technical elements in the types of modern martial arts performed by athletes of various qualifications in deliberate, deliberately impromptu and impromptu situations. Qualitatively different mechanisms for adapting the functional control system of the motor analyzer of athletes with the complication of the conditions for the implementation of specific and non-specific local movements, manifested in structural changes in the muscular ensemble, various differentiating possibilities of perception of muscle efforts in situations of active counteraction, have been determined.



1-diagram. Results in 5 SAMBO competitions.

In the **conclusion** of natural experiments, the 2-group confirmed the expediency of specialized training at the stage of initial sports specialization in martial arts, focused on the conjugate solution of the problems of automation of motor skills and the formation of a system of actual coordination abilities. It is shown that the highest efficiency of the pedagogical process is achieved with the implementation of a justified specific principle of sequential approximations in the conditions of modeling situations and influences that ensure the formation of optimal intermuscular coordination of movements, which form the basis of the technique of a particular type. Data reflecting the dynamics of coordination abilities in connection with the growth of sports and technical skills of the subjects were obtained.

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Methods of Preparing Sambists for Difficult Situations During Competitions

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Annotation: This article is a scientific study on how to prepare sambists for difficult situations in the competitive process.

Keywords: physical training, technical training, tactical training, methodology, training process.

Under the sports technique of SAMBO wrestling (SAMBO technique) should be understood as a set of techniques and actions that provide the most effective solution of motor tasks due to the specifics of a particular sport, its discipline, type of competition. Specialized positions and movements of athletes that are distinguished by a characteristic motor structure, but taken outside the competitive situation, are called techniques. A technique or several techniques used to solve a certain tactical task are an action. The concepts of "sports equipment" and "technical equipment" (preparedness) of an athlete should not be considered adequate, as is sometimes done when it is proposed to introduce two meanings of the term "sports equipment": 1) the technique of a sport, 2) the technique of a particular athlete, characterized by the degree of mastery of the system of movements that make up the arsenal of this sport. It is quite natural that any motor action, no matter how it is organized, has its own technique of execution, even if this technique does not meet the requirements of the sport. However, it would be wrong to identify the primitive motor actions of a novice athlete or the erroneous motor actions of qualified athletes with the concept of "sports equipment". The concepts of "technique of a sport" or "sports equipment" are not at all the same as the concepts of "technique of performing a motor action" or "technical readiness".

The effectiveness of the technique is determined by its compliance with the tasks to be solved and the high final result; The level of physical, technical, psychological and other types of preparation. The stability of the technique is associated with its noise resistance, independence from the conditions of competition, the functional state of the athlete. It should be taken into account that modern training and especially competitive activity is characterized by a large number of "knocking down" factors. These include active opposition of rivals, progressive fatigue, unaccustomed manner of refereeing, unaccustomed place of competition, equipment, unfriendly behavior of fans, etc. The ability of an athlete to perform effective techniques and actions in difficult conditions is the main indicator of the stability of the technique and largely determines the level of technical preparedness as a whole. The variability of technique is determined by the spopo the ability of the athlete to the surgical correction of motor actions, depending on the conditions of competitive struggle. Experience shows that the desire of athletes to preserve the temporal, dynamic and spatial characteristics of movements in any conditions of competitive struggle does not lead to success. For example, in cyclic types of sport, the attempt to maintain the stable characteristics of movements in the second half of the distance leads to a significant decrease in speed. At the same time, compensatory changes Sports techniques caused by progressive fatigue allow athletes to retain or even slightly increase their speed in the second half of the distance.

Table 1 Resource requirements by component

The effectiveness of the technical efforts of sambists of the experimental and control groups and comparative data of average values up to the experiment

№	technical actions	Experimental group in the beginning		Control group in the beginning	
		$\bar{X}$	σ	$\bar{X}$	σ
1	methods of causing pain by stretching the arms and legs (effectiveness %)	45,9	1,8	47,1	1,9

2	methods of squeezing the arms and legs (efficiency %)	36,8	1,6	37,2	1,5
3	methods of anesthesia by twisting the arms and legs (effectiveness %)	39,6	1,3	42,1	1,4

Table 2 Resource requirements by component

The effectiveness of the technical efforts of sambists of the experimental and control groups and comparative data of the average values after the experiment

№	technical actions	Experimental group in the beginning		Control group in the beginning	
		$\bar{X}$	σ	$\bar{X}$	σ
1	methods of causing pain by stretching the arms and legs (effectiveness %)	50,5	1,5	49,4	1,6
2	methods of squeezing the arms and legs (efficiency %)	42,6	1,4	40,2	1,7
3	methods of anesthesia by twisting the arms and legs (effectiveness %)	46,7	1,1	43,3	1,3

Conclusions.

A review of the scientific and methodological literature showed that at present the literature contains a lot of information about the educational and training processes of training in SAMBO wrestling. However, to date, there are insufficient targeted methodological recommendations for improving the training process that contribute to effectively planning training loads.

As a result of the study, we found that by the end of the pedagogical experiment, the level of technical, tactical, physical and psychological fitness had increased in the control and experimental groups. However, the experimental group training, according to the developed program of training sessions, showed the highest results. The results of the studies reveal the effectiveness of the developed program of technical and tactical preparedness as a sambo wrestler.

Using the developed plan of the training cycle, contributed to good results, and also had a positive effect on the competitive activities of sambists.

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Methods of Development of Improvement of Special Physical Training of Sambists

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Annotation: This article presents scientific research on ways to improve the general and special physical training of sambists in the training process.

Keywords: physical training, technical training, tactical training, methodology, training process.

Under the speed abilities of the athlete should be understood a complex of functional properties that ensure the performance of motor actions in the minimum time. There are elementary and complex forms of manifestation of speed abilities. Elementary forms are manifested in the latent time of simple and complex motor reactions, the speed of performing a single movement with insignificant external resistance, the frequency of movements. It should be borne in mind that speed abilities in all elementary forms of their manifestation are mainly determined by two factors: the efficiency of the neuromotor mechanism and the ability to quickly mobilize the composition of motor action. The first factor is largely genetically determined and is improved to a very small extent. Thus, the time of a simple reaction in persons who are not involved in sports usually ranges from 0.2-0.3 s, in qualified athletes - 0.1-0.2 s. Thus, in the process of training, the reaction time usually cannot be increased by more than 0.1 s. The second factor is amenable to training and represents the main reserve in the development of elementary forms of speed. Therefore, the speed of a particular motor action is ensured mainly by adapting the motor apparatus to the given conditions for solving the motor problem and mastering rational muscular coordination, contributing to the full use of the individual capabilities of the nervous muscular system inherent in this person.

Flexibility is understood as the morphofunctional properties of the apparatus of movement and support, which determine the amplitude of the athlete's movements. The term "flexibility" is more acceptable for assessing total mobility in the joints of the whole body. When it comes to individual joints, it is more correct to talk about their mobility (mobility in the ankle joints, mobility in the shoulder joints, etc.). Flexibility largely determines the level of sportsmanship in various sports. With insufficient flexibility, the process of mastering motor skills becomes more complicated and slows down, the level of manifestation of strength, speed and coordination abilities is limited, intramuscular and intermuscular coordination deteriorates, the efficiency of work decreases, the likelihood of damage to muscles, tendons, ligaments and joints increases. Insufficient level of flexibility is also the reason for the decrease in the effectiveness of training aimed at developing other motor qualities. It is known that insufficient mobility in the joints does not allow to properly use the elastic properties of pre-stretched muscles to increase the effectiveness of strength training, limits the possibilities of training methods aimed at improving the efficiency of work, increasing the power of working movements, improving coordination abilities. Different sports have specific requirements for flexibility, which is primarily due to the biomechanical structure of the competitive exercise.

Human strength should be understood as its ability to overcome resistance or counteract it through muscle activity. Strength can manifest itself in the isometric (static) mode of muscle operation, when they do not change their length under tension, and in the isotonic (dynamic) mode, when tension is associated with a change in muscle length. In the isotonic mode, two options are distinguished: concentric (overcoming), in which resistance is overcome by muscle tension with a decrease in their length, and eccentric (yielding), when resistance is counteracted with simultaneous stretching, increasing muscle length. There are such basic types of power qualities: maximum strength, speed force and power endurance. Maximum strength should be understood as the highest capabilities that an athlete is able to show with the maximum voluntary muscle contraction. The level of maximum strength is manifested in the magnitude of external resistances that the athlete overcomes or neutralizes with a complete voluntary mobilization of the capabilities of the neuromuscular system. The maximum strength of a person should not be identified with absolute strength,

which reflects the reserve capabilities of the neuromuscular system. As studies show, these possibilities cannot fully manifest themselves even with extreme volitional stimulation, but can be detected only in conditions of special external influences (electrical stimulation of muscles, forced stretching of extremely reduced muscles). Maximum strength largely determines the sports result in such sports as weightlifting, athletic throwing, jumping and sprinting, various types of wrestling, gymnastics.

The purpose of the study was to develop recommendations for the development of physical qualities of sambists 11-12 years old.

Based on the objectives of the study, the following **tasks** were chosen:

- to study ways to develop the quality of flexibility in young people;
- techniques with and without objects in the development of the amplitude of exercises;
- to study ways to improve the quality of endurance;
- To study ways to improve the quality of speed in young men;
- To study ways to improve the quality of strength in young people.

Table 1 Resource requirements by component

Dynamics of the results of the implementation of technical techniques of the experimental and control groups (at the beginning)

№	Throw over the back		Throw over the shoulder		Throw over the shoulders	
	Eth Group	K-th group	Eth Group	K-th group	Eth Group	K-th group
1	15,2	15,2	15,9	15	15,2	15,2
2	15,9	15	15,8	15	15,6	15,6
3	15	15	15,8	15,8	15,7	15,7
4	15,8	15	15,2	15,2	15,9	15
5	15,2	15,2	15,9	15	15,2	15,2
6	15,9	15	15,8	15,8	15,8	15
7	15,4	15,4	15,6	15,6	15,1	15,1
8	15,9	15	15,8	15	15,6	15,6
9	15,8	15,8	15	15	15,6	15,6
10	15,6	15,6	15,8	15	15,2	15,2
	155,7	152,2	156,6	152,4	154,9	153,2
$\bar{X}$	15,57	15,22	15,66	15,24	15,49	15,32
σ	0,33	0,27	0,309	0,34	0,288	0,27

Based on the results, an experimental group was organized to perform the anaerobic exercises we selected on a regular basis during each workout.

In the preparatory part of the exercise, anaerobic exercises were chosen, which were used in the preparatory part.

1. Short-distance running.
2. Moximon run (5 meters).
3. Bend your arms 5 times in 10 seconds and sit down.
4. From the standing position in front of the partner, the hands are transferred to the support position, and the arms are bent and unbent once, and the method is performed once standing (repeat after 15 seconds).
5. Swim 20 meters in the pool. (one day a week)
6. Running exercises, holding the opponent by the pelvis, holding him by the shoulders and arms (pushing and pulling up).

Table 2 Resource requirements by component
Dynamics of the results of the implementation of technical techniques of the experimental and control groups (in skate)

№	Throw over the back		Throw over the shoulder		Throw over the shoulders	
	Eth Group	K-th group	Eth Group	Eth Group	K-th group	Eth Group
1	14,2	15,2	14,2	15,9	14	15,2
2	14,2	15,9	14,1	15,8	14,2	15,6
3	14,6	15	14,5	15,8	14,5	15,7
4	14,4	15,8	14,4	15,2	14,4	15,9
5	14,5	15,2	14,6	15,9	14,6	15,2
6	14,5	15,9	14,4	15,8	14,4	15,8
7	14,6	15,4	14,4	15,6	14,4	15,1
8	14,2	15,9	14,1	15,8	14,2	15,6
9	14,1	15,8	14,2	15	14,2	15,6
10	14,2	15,6	14	15,8	14	15,2
	143,5	155,7	142,9	156,6	142,9	154,9
$\bar{X}$	14,35	15,57	14,29	15,6	14,29	15,4
σ	0,17	0,343	0,19	0,30	0,20	0,28
t_{ct}	11	2,5	12,4	3	10,9	1,41
P	P<0,001	P>0,01	P<0,001	P>0,01	P<0,001	P>0,1

Conclusion:

For a complex effect on the strength abilities of the participants and increase the excitement of training, it is necessary to use such exercises, pair and group exercises with resistance, the struggle "fight for the ball", acrobatics, gymnastic exercises on projectiles, etc.

If the main task for middle-aged adolescents is the development of muscles in general, without focusing on this, it is necessary to focus on the development of muscle groups that are crucial in such a chosen sport, then in the training of older adolescents more attention should be paid to the development of this muscle group. At the same time, it is necessary to take into account the "structural compatibility" of strength exercises with the main (competitive) exercises. The first step is to choose the right tools. An appropriate physical activity similar to the main exercise program should be developed.

Studies have shown that the correct systematization of the levels of physical fitness of young athletes is important for mastering their technique. The development of special physical qualities in the development of technical techniques is a vivid proof of this in the competitive process

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Food safety management

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Annotation: The lack of single international requirements for the system of Product Safety and Quality Management in food enterprises ISO 22000 series "Food Safety Management System. The need to develop requirements for all of the supply chain" came out, and it was introduced from September 2005.

Key words: HACCP, market relations, ISO 9001:2000, GMP, ISO 22000, "DSt ISO 22000:2010",

Explaining the food safety management system that combines the ISO 22000 HACCP and ISO 9001:2000 standard, at the same time GMP (Good Manufacturing experience) combines the dastlabi requirements program and interprets its concepts. The main emphasis in this standard is on ensuring customer satisfaction through the effective management of food hazards, risk management and modernization of system processes. At the moment, the structure of the documentation makes it possible to conveniently integrate this system into quality management and environmental protection systems. Their latest research shows that the ISO 22000 series standard has become very popular, and in the last 2 years, enterprises that have been certified by this standard have increased by 3 times [1-2-4].

Currently, the system of Food Safety Management "DSt ISO 22000:2010" establishes requirements for quality management system in Uzbekistan. Adopted and implemented the standard" requirements for organizations participating in the chain of creation of food products" [5].

Thus, at present, the HACCP system is a universally developed system on the scale of the khalaro, which ensures the best quality and safety of food products at all stages of its life cycle. It was developed in the US and expressed in itself a model of risk management in food enterprises, currently distributed in many countries around the world and Europe.

The adoption of the law "on technical regulation" in the Republic of Uzbekistan was another impetus for the development of national legislation in the field of ensuring the safety of food products. The development and adoption of acts in the food sector has made an important contribution to the status of the existing technical regulations and participation in the process of universal European integration of Uzbekistan, harmonization and convergence of legislative norms.

In many European countries, the HACCP system is regarded as a component of the overall system of food hygiene measures. In the UK, the Food Safety Act 1990 and the Food Safety Regulation No. 1763 were adopted in 1995. These documents manifest themselves in the legislation, which indicates the requirements for all stages of the production chain [5-6].

In Germany, the decision of the Federal Government on hygiene of food products on the basis of the law on food products from 1997 Year 5 August 1974 year 15 August was adopted and is valid. In this decision V etom postanovlenii ukazivaetsya, chto tot, kto proizvodit produkti pitaniya, podvergaet IX pererabotke II transportiruet, installation of Om xavfli dangerous by conducting the inspection, it is necessary to identify and guarantee the critical points for each of the processes that are taken safety measures davriy verification. For their identification, the principles of HACCP serve.

On May 26, 1997, the legal decree №155 was adopted, which included the principles of the HACCP and ten applications of general and special measures in Article 3 of the decree. The enactment of the decree laid the groundwork for The Binding of the principles of HACCP for Food Network institutions [4].

Article 3 of the Legislative Decree No. 67/98 of 18 March 1998 on self-control of Portugal consists of the contents of the principles of the HACCP. In France, acts of a number of ministries implementing the HACCP system were issued in the mid-90s with the aim of implementing the norms of Chapter I of the law of the Consumer Code Book II. All these acts demonstrate vertical legislation, in which hygienic requirements are specified for individual categories of food products.

World experience shows that the legal management of the HACCP system is carried out not only by introducing the principles of the HACCP into the Acts governing the general hygiene of food products, but

also by introducing separate special acts dedicated to the use of the principles of the HACCP. In Europe, for example, in the Netherlands, in 1998, the second edition of the national document with the name "critical evaluation of the current HACCP system" was adopted. In Russia since July 1, 2001 the system "GOST R 51705.1-2001" kachestva. Upravlenie kachestvom pitshevix produktov na osnove printsipov HACCP. Obtschie trebovaniya " standard is adhered to. Initially, the system was developed in the 70-ies of the XX century and was used in the aerospace industry (with its help, quality and safety of food products for astronauts were controlled). In the mid-80s, the American Academy of Sciences offered it to serve all consumers. Mandatory compliance of food industry enterprises with HACCP requirements Europe [5].

HACCP-concept refers to the systematic identification, management and evaluation of hazardous omillarni, which seriously affects the safety of products. He first appeared in the US at the beginning of 1990 year. Work on the introduction of Nasr began in the countries of the European Union (EU) in 1993 year after the adoption of directives on hygiene of food products (93/43). In order to ensure the safety of products produced by enterprises of the Bunda food industry and to conduct monitoring of technological processes at the identified points, it was required to conduct a critical, risk-based analysis, which was determined by the parameters of technological processes.

The system of risk analysis and critical control points is a science-based system that allows to guarantee the safe production of the product through the control and identification of risk factors. The HACCP system is considered to be the only system that ensures the safety of food products, adopted by international organizations, which have proved its effectiveness. The use of the HACCP system allows the transition from testing of the final product to the development of prevention methods in ensuring the safety of food products.

The HACCP system should be based on a solid foundation.

This is the same in accordance with the production of the foundation:

- * Conscience production methods (GMP).
- Sanitary control methods (SNU).

GMP and SNU affect production conditions and therefore should be in accordance with the initial programs before the introduction of the HACCP system.

For the development and implementation of the HACCP system, it is necessary to apply seven principles that determine the procedure for the application, creation and implementation of the HACCP plan in the working state, for the production of this or that production.

- 1- Principle conduct an analysis of risks (risk factors).
- 2-principle. Determination of critical control points (CCP)
- 3-principle. Setting critical boundaries
- 4-principle. Development of monitoring system for CCP inspection
- 5- Principle Control standing CCP identify corrective actions applied in cases where he or she testifies to the monitoring results on these performances.
- 6- principle. Development of verification (verification) procedure confirming the factual operation of the HACCP system.
- 7-principle. Confirm all procedures and records related to these principles and apply them.

The principles of HACCP can be applied at all stages of food production, as well as in agricultural production, in the initial processing and processing of food products, in the stages of transportation and delivery to the customer, as well as in the systems of consumer consumption and sales [4-5].

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General Geographical Description of Piskent District

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Annotation: This article describes Piskent district. The geographical potential, development and specificity of the district are analyzed.

Keywords: Geography, Piskent, Tashkent, nature, district.

Introduction

Piskent district is a district of Tashkent region. It was founded on September 29, 1926. It is bordered on the north and northeast by Ahangaron and Middle Chirchik, on the west by Akkurgan, on the southwest by Boka district, and on the south by the Sughd region of the Republic of Tajikistan. The area is 0.79 thousand km². The population is 86.3 thousand people (2003). Piskent district has 1 city (Piskent), 6 rural communities (Dongkurgan, Kerovchi, Muratali, Koriz, Oktepa, Sayd).

Results And Discussion

The district center is Piskent. The district is located at the foot of the Qurama mountain range and on the left bank of the Ahangaron River, at the beginning of the Chirchik-Ahangaron valley. The surface slopes from east to west. The average height is 300–2500 m. The eastern part is occupied by the Qurama Mountains, hills, deserts and pastures. The terrain is somewhat low-lying, fragmented by old ravines, ravines and ravines. In the western part of the district there are irrigated lands. The soils are mainly typical gray soils, lowland meadows, swamp-meadows, alluvial soils. In the far eastern part of the district, dark gray soils and brown soils are distributed, which are used as pastures. The Ahangaron River flows from the Kurama Mountains, and the Kyzota, Kovuldi, Almaliksay, Parganda, and Karakiyosay rivers flow through the mountain streams. Anhar, Boka, Sho'r, Ortaariq, Borjar. canals, Shim. There is a Tashkent channel. Shim. The Tashkent Reservoir ("Tashkent Sea") is located along the border. The climate is temperate hot and dry. The average annual temperature is 13.5 °; The average temperature in July is 27 °, the highest temperature is 41 ° C, the average temperature in January is 1.0 ° C, and the lowest temperature is 27.2 ° C. Vegetation period is 210-220 days. Annual precipitation is 350 mm. Wild plants include reeds in the plains, wormwood in the steppes, shrubs in the foothills, spruce, hawthorn, maple, cherry, apple, chestnut (ryabina) and others in the valleys of rivers and streams. Among the wild animals on the banks of the river live wolves, wolverines, hawks, hares, wild cats, ducks, geese, pheasants, sparrows in the mountains, quails, magpies, lizards, muskrats, muskrats. In the eastern part of the district, minerals such as copper, lead, zinc, gold, molybdenum and other rare metal ores, fluorite, limestone, gravel, sand and various other building materials are extracted.

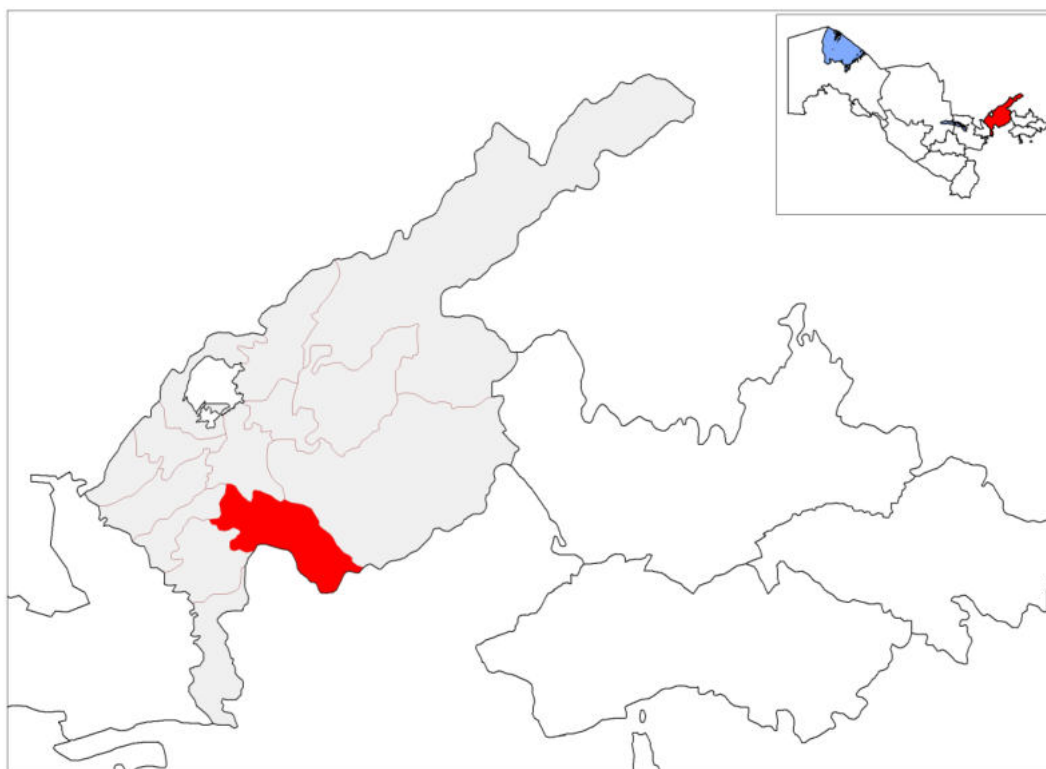


Fig.1 Piskent district

The population is predominantly Uzbek, but also includes Tajiks, Tatars, Russians, and others. The average population density is 109.2 people per km².

The farm specializes in agricultural production. There are industrial, transport, communications, construction enterprises. Shir-kat and dehkan farms are engaged in cotton growing, grain growing, gardening and animal husbandry. There are 66 state, 1243 non-state enterprises, 1 joint venture, 10 joint-stock companies, 2 communities, 8 dairy farms, 970 farms in the district. (2020).

The irrigated area of the district is 20.7 thousand hectares, including 10 thousand hectares of cotton, 8.4 thousand hectares of grain, 420 hectares of melons and vegetables (2020). About 20.2 thousand students study in 43 secondary schools in Piskent district. There is an auxiliary boarding school, a vocational college, 8 clubs, 22 libraries, a park of culture and recreation, 8 stadiums.

There are 7 named mountains in Piskent Tumani. Uchkatli is the highest point. The most prominent mountain is Abdulakam.

Uchkatli (1 846m/6 056ft a.s.l.) is a mountain in the Tian Shan in Uzbekistan. The prominence is 67m/220ft.

Abdulakam (1 729m/5 673ft a.s.l.) is a mountain in the Tian Shan on the border of Uzbekistan, Tajikistan. The prominence is 96m/315ft.



Fig.2 Piskent district nature

The history of the Tashkent oasis goes back to ancient times. Traces of Stone age settlements, remains of Bronze age settlements, rock carvings, numerous mounds and ruins of ancient fortresses have been found here.

However, this region attracts not only for its ancient history, but also for its rich nature in the foothills. Here you can sunbathe on the bank of the Charvak reservoir, which has everything you need for a good rest, go on an adventure tour of the Ugam-Chatkal nature park, where you can discover mysterious gorges, mountain waterfalls and high-altitude crystal lakes, as well as go rafting on the fast – flowing rivers of the region -Ugam, Chatkal and Pskem.

In the winter period in the area you can relax on one of the ski resorts – Amirsoy, Chimgan, Beldersay or Yangiabad. The peak of ski tourism is from November to March. The relatively mild climate, almost complete absence of wind, a large selection of trails for skiing and downhill will create excellent conditions for skiing.

Tashkent, in the Turkic language, means "stone," while kand, qand, kent, kad, kath, and kud are derived from the Sogdian word kanda, which means "town" or "city." In medieval times, the town and the province were known as "Chach." Later, the town came to be known as Chachkand/Chashkand, meaning "Chach City." After the sixteenth century, the name was changed to Tashkand, which, as "stone city," was more meaningful. The modern spelling of Tashkent reflects Russian orthography.

Tashkent is located on a well-watered plain to the west of the Altai Mountains on the road between Shymkent and Samarkand, at an elevation 1475 to 1575 feet (450 to 480 meters). It sits at the confluence of the Chirchik river and several of its tributaries and is built on deep alluvial deposits (up to 15 meters).

Tashkent has a typically continental climate with mild wet winters and hot dry summers. The average maximum daytime temperature in January is 37.4°F (3°C), rising to an average maximum of around 92°F (33°C) in July. Mean annual precipitation is 14.7 inches (375 mm).

It is a lively tectonic area suffering large numbers of tremors and some earthquakes.

Decades of environmental neglect during the Soviet era combined with skewed economic policies created an extensive environmental problem in the area. Aging factories pump unfiltered emissions into the atmosphere and contaminated waste into the water supply.

Mountains of Uzbekistan refer to the mountain systems of the Western Tien Shan and Southern Tien Shan (Gissar-Alay, including Turkestan, Zaravshan, Gissar, Karategin, Alay ridges).

The high of the mountains on the territory of Uzbekistan reaches more than 4000 m., but all peaks of 4000 m, high are situated in the boundary regions. For example, Khazrat-Sultan Peak – the highest point in

Uzbekistan (4643 m.) in Gissar ridge, located in Surhandarya region borders on Tajikistan. Adelung Pick (4301 m.) is the highest point in Pskem ridge and borders on Kyrgyzstan, as well as Beshtor Pick (4299 m.).

The huge and compound mountain system of Central Asia belongs to the highest mountain systems of Europe and Asia mountain ranges. The range crosses the whole Eurasian continent from West to East. The Tian Shan and the Pamir-Alay mountain systems are included to its central and highest part, so called “High Asia” and compose its northwestern edge. Uzbekistan mountains cover an area of 96 thousand sq.km., that is 21,3 % of the territory of the Republic.

Uzbekistan Mountains is a very popular place for resting. **Chimgan** is a unique and nice corner not only of Uzbekistan, but the whole Western Tian Shan. The word “Chimgan” (Chim en) itself is translated as “Green soft grass”.

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Strengthening the Integrated Steam of Technologies in the Environment of Information Technologies and Computer Programs

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Annotation This article reveals the aspects of strengthening integrated learning in the content of STEAM learning technology by means of information technology and computer programs. The author submits the idea of earlier teaching computer science, teaching children, together with their parents, programming in the Scratch program and in the Python programming language based on different methods, divided by age and intellectual characteristics of children, i.e. here we are talking about the training program for preschoolers, school students and finally graduate students, who will teach computer science and information technology in the future. Preference will also be given to additional education, circle lessons aimed at teaching and learning subjects in the style of STEAM technologies in continuous areas of education.

And this is based on the fact that after graduating from school or university, graduates should be able to continue working in a production facility equipped with new equipment and technologies and be able to apply their knowledge in information technology and programming, in using a finished software product. Future specialists should be able to build a smart home, smart apartment, Smart technologies in the future. To be able not only to build and plan, but also to calculate information technology, create a program and insert it into the right place. Ator points out that there is a problem of education and training of specialists who are ready in all areas of education, covered by many subjects and their secrets.

Key words: STEAM education; STEAM training; Smart House; Smart apartment; Smart technologies; improved Froebel technique; Seguin boards; Montessori; Scratch program; Tincercad; Electrical Engineering at TinkerCad Circuits; Programming Scratch and C + ;, Mechanics in Algodoo; 3D-modeling: Tincercad; onShape; TRIK studio-simulation of robotics.

Introduction. At the present time, when it becomes a requirement of the century to improve the living conditions of a person, the task is to make his life and even the conditions of his working environment comfortable, easy, so that a person can live happily and beautifully. To create such conditions in the workplace, in everyday life and in life, specialists are needed who could build smart houses, apartments, technologies. One of the tasks of fulfilling such a problem is to train specialists who are trained in various fields: mathematics, physics, computer science, engineering, technology, information technology, programming, robotics.

And we are faced with the problem of training future specialists in the field of these sciences and technologies. And for training in this direction, we will use STEAM education, use its methods, develop its directions, or, if I can say its consisting, science and technology, education and mathematics, robotics and programming at the level of art and skill, and applying the art itself separately too. It is possible, for example, to teach future specialists the art of programming, assembly of machine parts, equipment, information systems, and robot parts.

In order to improve the life of people or humanity in general, it is necessary to build smart houses, smart apartments, Smart technologies, modern robots, which have already begun to be used in education, in services

and in everyday life. It is necessary to train highly qualified specialists who are proficient in several areas at once. Currently, not all school graduates become students, nor can everyone enter universities. But on the other hand, they will be able to work and this is where they will need the knowledge that they received by studying the STEAM method, in various areas of science and technology, education and mathematics, physics and computer science, programming and robotics, in order to continue their work in highly specialized enterprises or high-tech corporations with modern equipment and instrumentation. For the construction of smart houses, apartments and technologies, robots, knowledge is needed in the integration of basic and related sciences, as well as the strengthening of integrated learning and STEAM education. The latest information technologies and computer programs will help us in this. We need to strengthen the components of STEAM education, the fields of sciences and related sciences, and this process we mean to strengthen and increase its efficiency, improve the use of information technologies and computer programs created by us, as well as created or more improved teaching methods in this area.

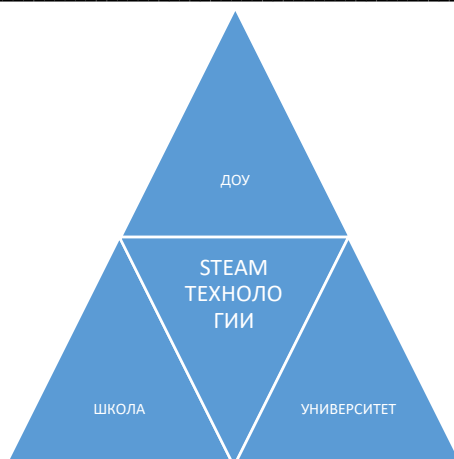
Who can teach computer science along with physics, study robot parts, as well as engineering, instrumentation, machine assembly. This requires knowledge of technology, robotics and programming at the level of modernity, the requirements of the century and at the level of using skills and art, as well as art separately for creative creativity and the use of good results. The problem of personnel training has always been an important policy of every state. And the training of highly qualified versatile trained small specialists and highly professional specialists with higher education is one of the most urgent tasks. Every person, no matter what education he would have, general secondary or higher, should be in demand at high-tech enterprises, corporations and should be easily versed in science and technology, technology, production, detailing and engineering, invention, should be a highly demanded specialist. Here the task of training such specialists arises, as well as the preparation of materials and the development of training methods for such comprehensively trained specialists. This issue is considered one of the most relevant in pedagogy and the scientific novelty is that an improved methodology for training future specialists has been created, through partial use of teaching computer science or programming children from an early age, in the form of a game, conversation, design. We got good results, where the indicators of the assimilation of materials by children, pupils and students reached their climax. The results of the study proved our hypothesis of improving the level of assimilation of sciences in an integrated form in the STEAM learning environment, the level of assimilation of integrated learning depends on the strengthening of the learning of its components, its sciences and subjects, as well as related sciences.

And this is precisely where information technologies and computer programs created by us, and our improved methodology helped us. We had to explain the structure, the content of training in order to receive, in the end result, highly qualified and in-demand specialists. Methods and methodology.

In our research, we used the methods of comparison and analysis of traditional teaching methods, conducted experiments on the correctness of our hypothesis of enhancing the learning of STEAM education components, subjects related to them, as well as related sciences on which these subjects are based. When conducting an experiment on the reliability of the hypotheses identified by us for strengthening the components of STEAM education, as well as improving the assimilation of these materials with the help of information technologies and computer programs created by us. We conducted an experiment on the reliability of our methodology and hypotheses using the Chi-square method, as an experiment, we conducted master classes in children's educational institutions (preschool educational institution № 5 in Namangan), general educational schools (school № 7, "№. 49, № 1, № 7, № 31 of the city of Namangan, schools № 23, №24 of the Namangan region of the Namangan region), among the educated and students, trainees were selected for the control and experimental group.

After teaching by the traditional method and our methodology, a survey, questionnaires, testing were organized, knowledge on the topics of the master classes held according to the traditional methodology and according to the new methodology of teaching children, pupils and students improved by us, i.e. STEAM training using information technology, online resources, platforms and computer programs created by us in the areas of continuing education (DOE + SCHOOL + UNIVERSITY). Figure 1. The STEAM Learning Connection Triangle is used in continuing education sections. Picture 1.:

Picture 1. STEAM learning communication triangle



We taught the children and thus reviewed the traditional method of using the teaching of children under the "Ilk kadam" - "Initial Step" program in preschool educational institution # 5 in Namangan. Then we held a master class on the use of the proposed methodology for teaching children, using the Froebel methodology with the use of computer programs for Froebel exercises, exercises on Seguin boards, on Montessori boards and other computer programs:

Exercises with multi-colored balls of woolen threads suspended from an iron rail, in multi-colored colors of the rainbow, a clear example of the movement of these balls on their threads, backward, forward, left and right;

- Exercises to familiarize children with various spatial figures: a cube, a parallelepiped, a ball suspended from a rail on a string, their movement backward, forward, left and right, up and down, observation exercises;
- Using an intellectual computer game of the Seguin board, an electronic method of using this technique;
- Using the mathematical game of the Montessori board, an electronic version of this technique;
- The first simple constructions in the Scratch program, mini programs, fairy tales, cartoons in the form of a game, outlining the implementation of each block structure, performing exercises with a mentor;
- Elements of modeling in the Tincercad program, work together with a trainer-mentor;
- Elements of programming in Python.

When conducting experiments for schoolchildren in schools in Namangan city № 31, № 7 and in schools № 23, № 24 of the Namangan region, in universities, we added material to the upper teaching methodology that should be taught to schoolchildren and students in order to become the most trained small and highly skilled professionals, integrating science and knowledge in multiple subjects, including simulation, robotics and programming: Electrical Engineering at TinkerCad Circuits;

- Programming Scratch and C + ,;
- Mechanics in Algodoo;
- 3D modeling: Tincercad;
- onShape;
- TRIK studio-simulation of robotics;

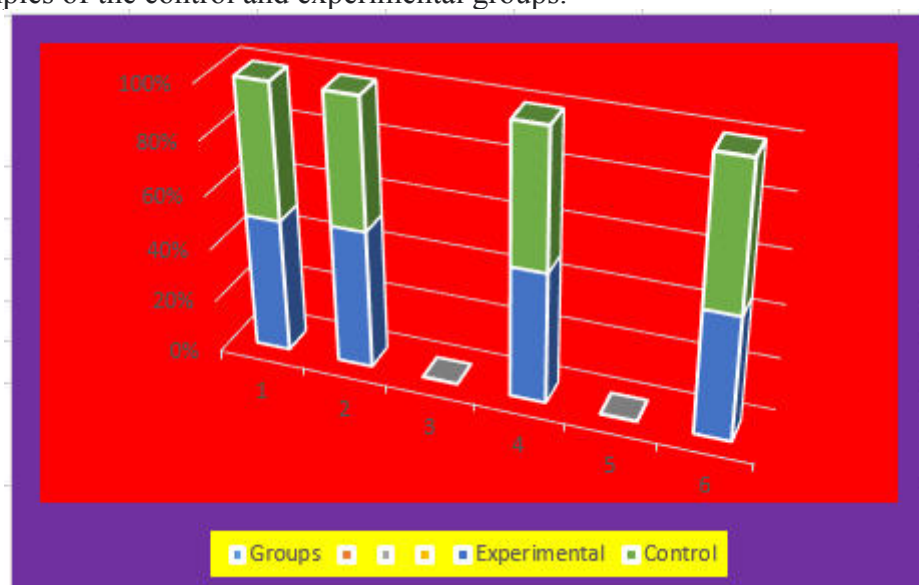
Experiments were carried out and the results were calculated by the methods of mathematical statistics Chi-cavadrat [6].

Consider the data obtained after conducting experiments in our study, use the methods of mathematical statistics Chi-square, look at the table of experimental data, and then apply the calculation formula and draw a diagram of the experimental data processing.

The level of knowledge of children when teaching children according to the traditional method according to the program "Ilk kadam" - "Initial step".

Table №1				
Groups	Number of pupils in children's educational institutions	The level of assimilation of knowledge on the integration of several subjects		
		Short	Medium	High
Experimental	100	56	24	20
Control	100	52	25	23

Let's look at the following diagram, which clearly shows the dependence of children's knowledge on the criteria in the samples of the control and experimental groups.

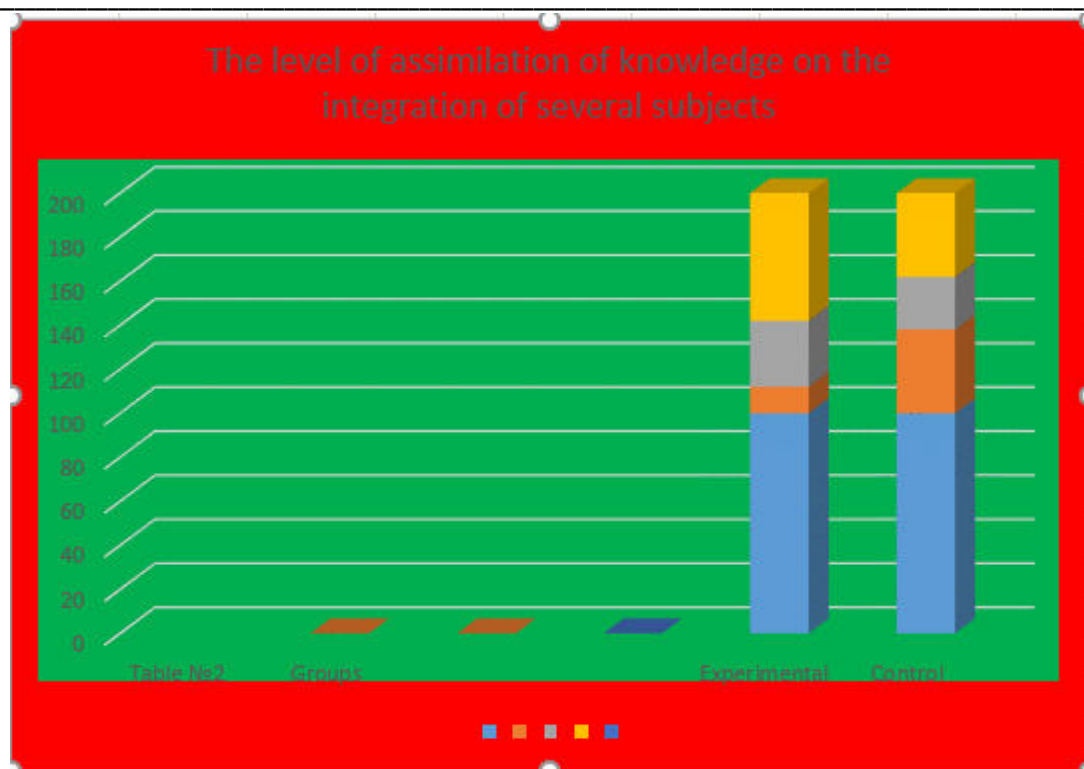


Calculations are performed according to the following formula:

$$T_{\text{кuz}} = 1 / n_1 * n_2 * \sum_{i=1}^c \frac{(n_1 * Q_{2i} - n_2 * Q_{1i})^2}{Q_{1i} + Q_{2i}} = 0,5 \text{ where } T_{\text{кuz}} \text{ is the observed value (Table$$

№2).

Table №2				
Groups	Number of pupils in children's educational institutions	The level of assimilation of knowledge on the integration of several subjects		
		Short	Medium	High
Experimental	100	12	30	58
Control	100	38	24	38



The following diagram clearly shows the higher level of learning when applying our proposed teaching methodology.

According to this table and diagrams, it is possible to establish an increase in the assimilation of knowledge, which proves the effectiveness of the application of our methodology:

If according to the table from the source [6] we will compare with the value in the first method $T_{observed} < T_{critical}$, $T_{nab.} = 0.5$, $T_{cr.} = 5.991$. $5.991 > 0.5$. In the carried out method according to the second method, $T_{observed} = 18.3$, it can be seen that this value is about 3.5 times greater than the critical value.

From these conclusions, we can conclude that with the strengthening of the components of STEAM training and the use of information technologies and computer programs, the result of mastering the material is much higher, and the activity of children turned out to be high. We conducted an experiment and used the method of statistical data processing according to the Chi-square test.

With this method, we conducted an experiment, teaching pupils of school №31, № 7, as well as university students and obtained similar results, which proved the reliability of our hypothesis of strengthening the learning of the components of STEAM education, which will lead us to the final goal of improving the efficiency of assimilation of knowledge in the integration of subjects and even more effective assimilation of materials using information technology and computer programs.

Literature review

Making a review of existing sources and books, educational resources and Internet resources on computer science and methods of teaching it, of course, we note the main works of major scientists who have made a huge contribution to the development of computer science and the methodology of its teaching both in our country and in foreign countries, in Russia, one cannot but mention the works [1,2,3, 10,11, 15,16,19,20,21]: Abdukodirov A.A., Aripov M.M., Yuldashev U.Yu., Zakirova F.M., Ershova, A.P., Belova G.V., Pervin Yu.A., Khusanov K.O., in the field of programming, I would like to mention the works [7,8,11,12,16,17]: Gaddis T, Dawson M., Lutz M. and many others. Among them, I would like to separately emphasize the work of methodologists involved in the early teaching of computer science or programming [3,4,5,7,11,14,16,20], [21-25, 26], Bokuchava TP, Belova G.V., Velikovich L., Tsvetkova M., Goryachev A.V., Volkova T.O., Gorina T.I., Pervin Yu.A., work in the field of web applications of educational materials, as well as an educational platform for teaching children, as well as work on the early education of computer science: Khusanov K.O., Yudina A., Yunusova G.N., on working with schoolchildren in the field of computer science and on teaching programming in elementary school [27,28]: Yashuev R.N. Yakhovsky N.G.

Analyzing the materials and articles of modern scientists [16], we determined that some of them “consider the problems of developing and using web applications of educational materials”, [16, p. 17]. To the question for what technologies are needed, the answer is the following: “it is advisable to use technologies for expansion, enrichment, implementation, individualization, etc. etc. “, [16, p. 17], means they are needed for a more convenient and flexible organization of improvement of materials, individual assimilation or learning with everyone in a group.

Being engaged in the methodology of STEAM technologies, its improvement, thinking about the secrets of integrated education, we came to the conclusion that continuous and at the same time non-intrusive teaching of children in this direction from childhood was necessary, we worked on a method of teaching children the necessary knowledge in preparation for school [22-25], and further with the help of additional education or training in existing circles, the necessary knowledge in the formation of a small specialist, because it is no secret to anyone that after graduation, not everyone will become a university student.

And in order to get a profitable job in an enterprise with high-tech equipment or in a corporation with highly qualified personnel, knowledge is needed in the integration of science and technology, production and mechanical engineering, in technology and programming, in modeling and robotics, even if this is necessary for the needs of artificial intelligence too.

And so that the graduate in the future does not face such a problem and does not look for special courses in the development of all sciences and innovations, it is necessary to organize such training from a young age, in a preschool educational institution with mentors, at home with parents, keeping in mind the age and mental characteristics of children.

This idea is presented in papers [22,23,24,25].

The work [25] reveals the effective ways of using “computers and computer games for preschool children using the latest technologies and methods in order to”, [25, p.8] to increase their level of knowledge. It is here that the idea of “development of memory and logical thinking of children from an early age” is presented with the use of computer programs, [25, p.8], which can be continued with children at the next stages of their development, using Scratch, Python programming, since it is by working in these programs that children can further develop their logical thinking.

Discussion

You are probably wondering how we conducted and continue to conduct our training in an integrated environment, starting with children and continuing through the whole life of a specialist, learning in an integrated environment of subjects, science and technology, information technology and programming. In early childhood, we offer games with lego-construction, developing the logic of children, developing their intelligence and knowledge in understanding colors, paints, in solving some problems for assembling puzzles, for building houses from cubes.

Further, these exercises gradually become more complicated and at some period reach the performance of exercises with Seguin boards, i.e. we can select the smartest children and work with them separately, and separately developing and lagging behind, so that they reach the level of more active and purposeful. Even in early childhood, we propose to use Froebel's method to develop the mental abilities of children, i.e. we strive to influence his thinking through his senses: sight, touch, we show them seven identical seven-colored glomeruli suspended from an iron rail, suspended from threads of the same color.

And we start demoing them by moving them to the right, left, up and down. You can throw them up, while organizing the observation of children what happens to the hanging ball, then there is a discussion of this demonstration, each child can be asked what he saw, all the answers are carefully listened to. Then you can use a computer program or video resource with a demonstration of this exercise and the children's responses to what they observed. After completing these exercises, at the next stage of their learning, children are shown three types of objects: a ball, a cylinder and a cube, you can also enter a parallelepiped here.

Showing the child the sides of the edges of the parallelepiped, count with them, show that the ball is round and ask what it looks like, show other objects that are in the form of a ball, cube and parallelepiped. Then you can use an electronic resource with a demonstration of this exercise. Or use a computer program for this exercise.

After that, together with the children, discuss the exercises and draw conclusions together. Further, after the children got acquainted with the colors, they have a clear definition of the difference between colors, they understand what dark blue and light blue are, etc. You can move on to exercises teaching numbers, a certain amount of time is also given to this process until the children achieve the necessary knowledge and skills, then we move on to teaching mathematics, its basics, addition, subtraction operations, using the Montessori technique and boards.

Children must take this course at a specific time until they learn to count quickly. Further, using the programs created by us, you can teach children the alphabet of three languages: Uzbek, Russian and English, or even the alphabet of five languages: Uzbek, Russian, English German, French or 7 languages: Uzbek, Russian, English, French, German, Chinese, Japanese and Korean ... But we offer the last 2 methods to the most advanced children, because I would not like to overload the child either, so everything is used here in a playful way, with the help of computer programs

At this stage, you can use the computer program "Computer + Memory + Logical Thinking" to improve the logical thinking of children, to develop their logic, analysis and comparison, as well as the ability to draw conclusions and conclusions. During this period and a little earlier, a child with his parents can learn to work in the Scratch program, you can create some kind of stories and cartoons, choosing different characters, except for the Cat-Scratch, write together with them block constructions of a story or cartoon and discuss with them and explain the action of each construction, also, parents can show ready-made programs for outputting pictures in Python, and then explain how pictures or a very beautiful pattern came out on the screen, i.e. at the level of skill and art, to give children the first basics of programming. You can use computer programs to take the first steps, performing the first writing exercises, displaying letters of the alphabet in a computer program. And so is the preparation of the child for school.

In the first grade, the child fully adapts to the school, to the environment, finds new friends and adapts to his teacher, to the requirements of the school. Learn to write, count, teach the alphabet, i.e. he repeats the knowledge that was already given to him in the preschool period. In the first grade, children who have studied the alphabet of their native language during the preschool period will find it easy to learn it and improve their knowledge.

After graduating from the first grade, parents can give their children the basics of 3D modeling, teaching them to work in the Tincercad program, they can easily study the geometric figures of the plane and in volume, i.e. in three-dimensional space. In the second grade, it will be much easier for these children to learn the material related to teaching the alphabets of Russian and foreign languages. Here we offer as an additional assignment to engage with children to continue learning how to work on the Scratch program. And to repeat to look at patterns, drawings, displayed in the Python program. Start taking your first steps. With the explanation of each line of code by his parents or mentors, while the child does not have to write the code himself. He starts writing his block constructs in Scratch. And this process does not last long. Let's go back to this teaching in grade 4. We will teach children to program with block constructions, working on their logical thinking. It will be easier for children in the 5th grade to understand construction in Scratch, because they already know her, they know her. And they will be happy to complete the tasks of the textbook with their computer science teacher

At this age, it is proposed to teach children to complete various math problems in Python so that children can represent linear constructs, smoothly moving to branching and looping programs. You can take these children in grades 6-8 in centers for additional education or in additional lessons or circles in computer science. In the 9th grade, a child at a higher level can start learning on his own, programming deeper in the Python environment. And until he finishes high school, he should have a background in programming in this programming language.

In a higher educational institution of computer science, they study C ++, C #. This is where they will need their knowledge of Scratch and Python, because Scratch supports Python and C ++. But for a deeper study of everything there is to know, we offer additional education for school graduates and students in TinkerCad programs and master courses: Electrical Engineering in TinkerCad Circuits; Programming Scratch and C +,; Mechanics in Algodoo; 3D-modeling: Tincercad; onShape; TRIK studio-simulation of robotics.

Results

As a result of our classes and lessons, as a result of our teaching for several years, we managed to raise more advanced children, using the example of students who easily work in computer programs, using them themselves in teaching alphabets, in studying modeling, due to systemic learning according to our methodology, the knowledge of our pupils has increased, their level of knowledge, preparedness for the most difficult tasks and exercises has risen, as a result of such classes, children have become much prepared for school.

Experiments carried out among preschoolers, schoolchildren and students gave good results in using the proposed methodology, but the best result is given by the teaching methodology under the "Ilk Kadam" program in the Republic of Uzbekistan, applying together the proposed methodology. As a result, I would like to say that the combined method gave the best result.

Conclusions

Based on our conclusions, we can draw a number of significant conclusions in the field of the use of integrated learning, the use of STEAM education in continuous areas of education:

- STEAM education gives good results for its application in all areas of continuous education: preschool educational institution, school, university;
- Strengthening the components or modules, as well as the use of information technology, computer programs enhances the process of assimilation of the integrated material;
- STEAM education requires knowledge of physics, biology, programming, engineering and technology, information technology, modeling and programming;
- STEAM technologies require knowledge of innovations in science and technology, programming, knowledge of assembling parts, machines, robots, as well as the ability to use ready-made programs and slowly teach how to create your own computer programs for in-depth training of certain aspects of application in production, robotics, programming your knowledge.

Conclusion

In the near future, high-tech enterprises, highly equipped production will need specialists knowledgeable in various areas of science and technology, technology and mechanical engineering, in the creation of robots, machines, various SMART technologies, information systems used in the management of modern houses, apartments, SMART cities, in building them and launching information systems to control a smart home or apartment, its ability to open and close blinds, watering flowers, spying on the house, and protecting security. The application of the above proposed methodology in lifelong education, starting from childhood and continuing this training and further throughout a person's life and continuing his whole life, will serve as a solution to the training of such highly qualified specialists and comprehensively trained, well-versed personnel.

Acknowledgments

During the period of our research, we conducted master classes and training seminars at preschool educational institutions for children and their parents, students at schools, students at universities. It was interesting for children and pupils to participate in the lessons, they worked with interest in computer programs. And we found that the effectiveness of integrated learning, STEAM education can be even more enhanced by the use of information technology and computer programs.

We received letters of commendation and gratitude for conducting master classes and training seminars with children of preschool educational institutions and schools with the participation of methodologists and educators, as well as parents of the educated and students. We received approval and gratitude from educators, methodologists and trained parents.

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Modern Corporate Governance Technologies are the Basis for the Development of the Organization's Economy

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Annotation: In this article, modern corporate governance, its importance aspects and economic by stimulating management information on ways to achieve efficiency

Keywords; corporate governance, technology, efficiency, investment, international financial reporting audit.

Digital technologies play a vital role in the development of the economy. Modern corporate governance technology, on the other hand, demonstrates an incompatible relationship with the digital economy. Research has shown that by 2002, a quarter of global YIM will be in the digital sphere. According to statistics provided by our President Sh. Mirziyoyev at an event dedicated to the development of information technology on February 13, 2020, the share of the digital economy in the United States is 10.9 percent, in India It will not exceed 5.5 percent and no more than 2 percent in the country. [1] So, The concept of corporate governance is a widely used concept. The broad application of the concept of the corporation currently leads to the term being applied to various economic events. The approach to defining corporate governance as integrated union management is most important. About this, Khrabrova I.A. corporate governance, he believes, is the management, optimization, organizational structures, inter-firm of the company for the purposes adopted building relationships. S. Karnauxov defines corporate governance as the management of a certain set of synergistic effects. On the other hand, it is based on the consequences of the oldest and most frequently used corporate form of business: the proprietorship institute and the institute of managers separation. It involves protecting interests in a particular range. Corporate relationships from the ineffective activities of managers are participants (investors). Corporate governance is governed by applicable law, which reflects the interests of corporate governance bodies, corporate entities, interested parties, and takes into account international standards Accordingly, it is a system of cooperation aimed at obtaining maximum profit from all types of activities of the enterprise. The key to corporate governance is a mechanism aimed at ensuring equitable, responsible, transparent corporate behavior and accountability. This company is at a high level in the management system and provides management for the benefit of its shareholders. The main divisions may be social functions, corporate social responsibility and business ethics.

The introduction of the most modern technologies in corporate governance means the introduction of investments in the world's most prosperous and prestigious countries in the economy of our skills and their specific, strategic development of plans.

Today, in cooperation with the European School of Management and Technology (Germany) at the Scientific and Educational Center in Tashkent, innovative methods of corporate governance for managers of corporations and companies dedicated joint training courses are being held regularly. This is a thorough analysis of international expertise and thereby the introduction of modern corporate governance styles, manufacturing, investment, material technology, financial and to improve the efficiency of the use of labor resources. Establishment of joint stock companies with the participation of foreign capital, creation of favorable conditions for widespread attraction of current investments in joint stock companies old divisions and positions fundamentally reconstructing the management structure of joint stock companies, introducing new divisions and positions that meet the

requirements of modern international standards and a market economy the focus is on organizing. The commission to improve the efficiency of manufacturing activities and improve the corporate governance system, in cooperation with other relevant agencies and agencies, Germany and many In 2015, the KOrporative Governance Code was developed based on successful developments in developed countries. Establishing advanced styles of corporate governance, internal control systems and mechanisms for effective interaction with shareholders and investors of the executive branch have been identified All joint stock companies for 2015-2018 publish annual financial statements and adopt international audit standards and international financial reporting standards The processes of conducting external audits accordingly have been expanded today. In cooperation with the Ministry of Justice, other relevant agencies and agencies, the State Committee for Privatization, Monopoly Extraction and Competition Development is developing many effective methods and recommendations and significant results are being shown in practice. Taking into account the requirements of the modern corporate governance system in Uzbekistan, a new classification of positions and professions has been developed. In the first quarter of 2022, corporate governance was appointed young professionals with knowledge and the ability to implement innovative management and marketing methods. The Governing Body of Jehovah's Witnesses adopted charters and other internal corporate documents in accordance with the requirements of modern corporate governance. [2] Cooperation with the European School of Management and Technology plays an important role in this regard. Corporate, established in 2015 as a result of active cooperation with the school To assist individuals desiring to benefit the worldwide work of Jehovah's Witnesses through some form of charitable giving, a brochure entitled Charitable Planning to Benefit Kingdom Service Worldwide has been prepared. sending. To assist individuals desiring to benefit the worldwide work of Jehovah's Witnesses through some form of charitable giving, a brochure entitled Charitable Planning to Benefit Kingdom Service Worldwide has been prepared. Upgrades, the study and implementation of international practices in this regard, the exchange of experience, and the preparation of professional managers are an important factor. Radically changing the principles and approaches of the corporate governance system in our country, introducing modern standards of corporate governance in manufacturing, external economic relations and investment processes highly effective work is being done. [3] Accelerating the privatization of the introduction of modern corporate governance technologies in acting societies, widespread attracting foreign investment, stimulating public activities, work ensuring the openness of the process has proved that it is the basis for the development of the industry.

As modern technologies, you can illustrate the corporate system of countries such as Germany, Austria, the Netherlands, India, the United Kingdom, and the United Kingdom. With a thorough study and widespread introduction of their successful methods, positive results will be achieved in the economy.

Instead, to illustrate such concepts as the Governing Body, management, audit committee, risk management committee, and ethics code that meet international standards can be brought in.

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Research Of Operational Reliability Of Automatic Transmissions

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Abstract. This article is devoted to the review of existing designs of automatic gearbox (AG). Based on the analysis, three types of AG systems are identified, which are installed in modern designs of cars and trucks, as well as in buses. The article presents the main advantages and disadvantages of various types of AG. The regularities of the distribution of the failure density depending on the mileage of city buses are shown. Based on the analytical review, it was found that the failure densities of various types of AG are in good agreement with the logarithmic-normal distribution and the Weibull-Gnedenko distribution law.

Key words: Automatic, manual transmission, reliability, torque converter, hydromechanical transmission, viscosity, oil oxidation, friction force, additives, boundary layer.

Introduction.

Most new cars of different brands are equipped with an automatic transmission. They are the most popular, or even the basic version of the transmission on many models of cars, both passenger cars and trucks. Due to the widespread use of automatic transmissions of various types, the issue of their operational reliability is becoming more and more urgent.

The automatic transmission assumes the capabilities of the engine and selects the transmission depending on a set of input data, such as the number of revolutions of the crankshaft, speed and throttle position, to maintain the best application of torque.

The actions usually performed by the clutch and manual transmission are performed automatically, using a torque converter, which allows very small, controlled slippage between the engine and the transmission of the car. Hydraulic valves control the activation of various gears at the request of the driver (the position of the gas pedal), or operating with preset responses to the current operating conditions of the engine and the speed of the car.

There are three main types of modern automatic transmissions: hydro-mechanical planetary-type automatic transmission, variator transmission and robotic gearbox. When the load on the driving wheels increases, the lock is automatically turned off.

Each type of automatic transmissions has advantages and disadvantages that affect their operational reliability. There is no clear answer to the question of which type of automatic transmission is more reliable in operation. Currently, researchers [1-3] have collected a sufficient amount of information about failures of such transmissions, on the basis of which statistical reliability indicators can be justified.

A planetary-type hydromechanical automatic transmission consists of the following main components: a torque converter, a planetary series, a control and control system. The box of front-wheel drive cars additionally contains a main gear and a differential inside the case.

Research analysis.

The absence of rigid coupling in the torque converter has its advantages and disadvantages. Advantages: the torque changes smoothly and continuously, torsional vibrations and jerks transmitted from the engine to the transmission are damped. Disadvantages: low efficiency, since part of the energy is lost when mixing the oil (working fluid) and is spent on the drive of the automatic transmission pump, which ultimately leads to an increase in fuel consumption. To eliminate this drawback, a lock mode is used in the torque converter. When the driving mode is steady on higher gears, the mechanical locking of the pump and turbine wheels of the torque converter is automatically activated. That is, it begins to perform the function of a normal "dry" clutch. At the same time, a rigid connection of the engine with the driving wheels is

provided, as in a mechanical transmission. On some automatic transmissions, the activation of the lock mode is also provided for lower gears. Movement with blocking is the most economical automatic transmission mode in terms of fuel consumption.

Due to the turbulent movement of the working fluid, it is significantly heated. Therefore, the design of the automatic transmission provides a cooling system with a radiator, which is either built into the radiator of the engine, or installed separately.

The planetary gear is a mechanical gearbox consisting of several satellite gears rotating around a central gear. Gear shifting is carried out by the control system, which on early models was completely hydraulic, and on modern ones, electronics came to the aid of hydraulics.

A feature of the variator transmission is that there are infinitely many possible modes when driving a car. Therefore, the optimal operation of the engine can be ensured if the number of stages in the gearbox is infinite. The CVT is the only type of transmission that exists today that allows you to continuously change the gear ratio between the engine and transmission. Due to the constant operation of the engine in the zone of optimal rotation frequencies, high efficiency is achieved, reduced exhaust gas toxicity and better acceleration dynamics of cars with variators.

The variators are light in weight, simple in design and reliable enough. The main disadvantage of variators is that they are frictional, work due to friction, not gearing, and therefore can transmit a limited torque of 350-400n • m. When the torque is exceeded, the working surfaces begin to slip and wear out intensively. Therefore, they cannot be used in conjunction with powerful engines.

The robotic gearbox occupies an intermediate position between the automatic transmission and the manual transmission. The robotic box is an ordinary manual transmission controlled by an electronic control unit using servos. The clutch is controlled by the same automation. The main problem of robotic control units has become the high complexity of the control mechanisms, as well as the double clutch of DSG boxes and, as a result, their relatively low operational reliability. Also, it is necessary to note the low maintainability of DSG transmissions, where, in case of failure, the elements or the entire gearbox are replaced.

Thus, taking into account the technical features and design complexity of various types of automatic transmissions of cars, reliability becomes one of the most important issues of their technical operation.

To analyze the reliability of transmissions, data on failures of automatic transmissions of different types of passenger cars were collected [1].

All processes occurring in the interfaces of mechanisms, in machines (car), are random. This is due to the fact that the external conditions in which the cars operate: temperature, dynamic loads, etc., change randomly, and for the car, the irregularities on the surface of the road on which the car is moving alternate randomly, randomly repeated interference in the way of movement.

In addition, the strength characteristics of the material itself: the ultimate strength, yield strength, hardness of which the machine parts are made of are not constant values, but change randomly. Thus, when studying any process on a car, we are dealing with random variables, processes [3].

The results of operational tests of various types of automatic transmission of passenger cars under operating conditions, obtained by the researchers of the work [4].

№	Name of performance test indicators	Hydro-mechanical automatic transmission of planetary type	Variator automatic transmission	Robotic transmission
1.	Sample size N, units	80	52	63
2.	Number of intervals "n"	5	5	5
3.	Interval step h, thousand km	82,8	41,4	56,8
4.	Minimum mileage before failure	36,0	46,0	16,0
5.	Lmin, thousand km	450,0	253,0	190,0
6.	The average value of the mileage to failure L, thousand	148,815	144,723	108,330

	km			
7.	The standard deviation to failure σ , thousand km	76,05	44,95	61,255
8.	Variance D, thousand km ²	5783,545	2020,749	3852,161
9.	Coefficient of variation V	0,51	0,31	0,565
10.	Scale parameter "a"	-	160,358	121,97
11.	Shape parameter "b"	-	3,6	1,85
12.	Laws of distribution of random variables that obey the failures of test objects	Logarithmically normal distribution law	The law of distribution of the Weibull-Gnedenko Research Institute	The law of distribution of the Weibull-Gnedenko Research Institute
13.	Hypothesis testing criteria	Pearson	Pearson	Pearson
14.	Number of failures in intervals:			
	the first interval	33	7	16
	second interval	31	10	24
	third interval	11	20	13
	fourth interval	4	12	8
	fifth interval	1	3	2

When analyzing random processes with an increase in the number of experiments, the accuracy of the test results increases when the number of experiments tends to infinity, the parameters of the experimental data coincide with the true parameters of the process being studied. However, with an increase in the volume of tests (sample size), the material, labor costs and duration of tests increase. In this regard, it is necessary to determine the minimum amount of tests, being set by the error of test results acceptable for practice.

In order to obtain objective information about the operational reliability of the automatic transmission, the authors of the work [4] conducted operational tests. Hydro-mechanical planetary-type automatic transmissions (80 units), variator automatic transmissions (52 units) and robotic gearboxes (63 units) were subjected to the experiment. The samples were formed on the basis of primary documents reflecting the appeals of car owners with automatic transmission failures to the service center. The peculiarity of the primary information was that it was collected directly from operation. The collected information was processed using methods of mathematical statistics and hypothesis testing according to the Pearson criterion.

The table data show the following main calculation parameters for the above three types of automatic transmission (respectively):

interval step h -82.8 (1st type), 41.4 (2nd type) and 56.8 (3rd type) thousand km; minimum mileage to failure L_{min} -36.0; 46.0; 16.0 thousand.km; maximum mileage before failure L_{max} -450,0; 253,0; 190.0 thousand km; average mileage before failure L -148,81; 144,72; 108,33 thousand km; standard deviation σ -76.05; 44.95; 61.25 thousand km;

the coefficient of variation V is 0.51; 0.31; 0.565.

The results obtained indicate the laws of distribution of random variables (failures):

- for a planetary-type hydro-mechanical automatic transmission, a logarithmically normal distribution law ($V=0.51$) took place;
- for variator automatic transmission-the distribution of failures obeyed Weibull's law ($V=0.31$);
- for a robotic gearbox, the distribution of failures also obeyed the Weibull distribution law ($V=0.565$).

Knowledge of the laws of the distribution of failures and average mileage values allow you to calculate the required number of spare parts of the automatic transmission for the future period. In addition, it is possible to determine the gamma-percent resource and the optimal frequency of maintenance of the automatic transmission, to plot the probability curves of uptime and failures.

As a result of the tests and processing of primary information, the following expressions were obtained for the theoretical determination of the failure density depending on mileage [4].

- hydro-mechanical automatic transmission of planetary type

$$f(L) = \frac{1}{L \cdot 190.63} \times \exp \left[-\frac{(\ln L - 148.815)^2}{11567.205} \right];$$

- variator transmission (variator)

$$f(L) = 0.023 \times \left(\frac{L}{160.358} \right)^{2.6} \times \exp \left[-\left(\frac{L}{160.358} \right)^{1.6} \right];$$

- robotic transmission

$$f(L) = 0.015 \times \left(\frac{L}{121.97} \right)^{0.85} \times \exp \left[-\left(\frac{L}{121.97} \right)^{1.85} \right]$$

The resulting equations describe with sufficient accuracy the density of the distribution of failures depending on the mileage of the car. Thus, automatic transmission failures of various types were subject to certain laws of mathematical statistics.

Conclusions.

Based on the performed analytical review, the following conclusions can be drawn:

- currently, hydro-mechanical planetary-type automatic transmissions have a relatively large average resource, the value of which is $\bar{L}=148,815$ thousand km, with a variation range of values from $L_{\min}=36,0$ thousand km to $L_{\max}=450,0$ thousand km;
- the minimum average resource has robotic gearboxes $\bar{L}=108,33$ thousand km, with a variation range of values from $L_{\min}=16,0$ thousand km to $L_{\max}=190,0$ thousand km;
- variator automatic transmissions have a relatively average resource of $\bar{L}=144,723$ thousand km, with a variation range of values from $L_{\min}=46,0$ thousand km to $L_{\max}=253,0$ thousand km. It should be noted that variator automatic transmissions cannot transmit large torques, i.e. no more than 400 n·m;
- knowledge of the laws of the distribution of failures and average mileage values allows you to calculate the required number of spare parts of the automatic transmission for the future period of operation;
- based on the established distribution law, it is possible to determine the gamma percent resource, which is necessary to determine the warranty mileage of the automatic transmission, by the manufacturer;
- having the laws of failure distribution of automatic transmission systems, it is possible to determine the optimal frequency of their maintenance, and it is also possible to construct curves of uptime and failure probabilities (both experimental and theoretical curves).

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Mathematical Model Of Textile Enterprise Sales Prevention

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Annotation: Dedicated to the development of models for the construction of logistics management system of production resources of the textile enterprise, in this chapter the algorithmic model of information-analytical support of the process of management of production resources of the enterprise and the mathematical model of forecasting sales of textile enterprises construction, solving the main problems of organizational design of the production system, modeling on the basis of a logistical approach.

Keywords: Textile, mathematical model, production, management, forecasting.

The situation of a modern textile enterprise, which does not have sufficient and modern production capacity at the time of rapid development of modern manufacturing enterprises, requires balancing the range of products produced.

A comprehensive approach to determining the balance of the range of products of a textile enterprise should be based not only on structural terms, but also on the following factors:

- goals and objectives of production;
- The composition and structure of the range;
- Dynamics of product range changes;
- The relationship between market demand and product consumption.

All this is done using modern mathematical models.

We will consider the process of building a mathematical model of sales forecasting for textile enterprises based on the algorithm presented in [15].

The objective function is expressed as the square of the difference between the empirical and theoretical values (f_i or n_i) of the current consumption of the product. In turn, the theoretical value is given by the basic equation of the non-uniform effect model, expressed as a function of the relative consumption of the current relative consumption accumulated at the beginning of the year under consideration. In the final form, the search function for the optimal parameters of the model is represented as follows:

$$S^2 = \sum_{i=1}^T (f_i - (p + qF_i^b) * (1 - F_i))^2 \rightarrow \min,$$

where i is the number of the period, T is the number of the last period, f and F are the variables of the actual curve of the life cycle of the product under consideration, taken as known quantities, and the coefficients q , p and b are the parameters sought. The purpose of solving the optimization problem is to find the extreme values of the objective function when the parameters q , p and b are limited in the form $0 \leq q \leq 1$, $0 \leq p \leq 1$, $0 \leq b \leq 1$.

We solve the problem of nonlinear optimization, defined by the objective function and constraints. To do this, we use the method of constructing base vectors from the category of correctly distributed universal neural networks. As a result, we find the sought parameters of the model equation that optimally approximates the curve describing the product life cycle. Mathematical model of meeting the demand for a product in a textile enterprise is represented by:

$$Z = \min \left\{ \sum_{(i)} (n_i - x_i)^2 \right\};$$

The model of maximizing the value of the demand for textile products, the actual volume of sales of the i-th product x_i , the selling price of this product, taking into account the volume of sales C_i (amount) The market size of the i-th product is determined by the maximum value of the sum of the ratios of d to:

$$Z = \max \left\{ \sum_{(i)} \frac{C_i * X_i}{d_i} \right\}$$

The model of maximization of the integral indicator classifying the prospects of the product produced by the textile enterprise is expressed as the maximum value of the product of the volume of production of each product multiplied by the perspective coefficient K_{peri} calculated by the expert method for this type of product :

$$Z = \max \left\{ \sum_{(i)} K_i^{exp} * n_i \right\}$$

The target criteria of the optimization models under consideration in the production program can also be applied to dynamic optimization models. It is accepted to divide these criteria into two groups: status variables and management variables. The state variable S_i is a p-dimensional vector of the state of the system in the i-th stage of the controlled process, which consists of n steps. It can be expressed as follows:

$$\overline{S_i} = [s_{i1}; s_{i2}; \dots s_{ij} \dots s_{ip}]$$

where s_{ij} is the state of the j-th component of the system in the i-th stage of the controlled process.

The control variable X_i is the m-dimensional vector of the control action in the first stage of the process. It can also be provided in more detail:

$$\overline{X_i} = [x_{i1}; x_{i2}; \dots x_{ij} \dots x_{im}]$$

where x_{ij} is the j-th direction of the control effect (movement) in the i-th stage of the controlled process. In cases where it is possible to occur in real processes, that is, when the ratio of state and control vectors occurs, ie $m = p$, this value is assigned to the j-part (component) of the system in the i-th stage of the process. can be defined as a management effect (action).

The relationship between status and management variables is expressed in the following recurrent relationship:

$$\overline{S_i} = f(\overline{S_{i-1}}; \overline{X_{i-1}})$$

In mathematics, a recurrent relation is a relationship that allows the n th term of a sequence to be calculated using its known $n-1$ st term.

The dynamic programming model can be limited in the following ways:

$$\overline{X_i} \in X$$

where X is a set given in n -dimensional space, k is a set of options for mathematical relations between the limiting parts (more, less, equal, unequal, large or equal, whole, etc.).

An integral condition for the formation of a dynamic programming problem is the definition of a specific efficiency (goal) function in the following form:

$$W = \max \{ \varphi(\overline{S_1}; \overline{X_1}) + \sum_{i=1}^n \varphi_1(\overline{S_i}; \overline{X_i}) \}$$

Given the above recurrent relationship, this objective function can take the following form:

$$W = \max \{ \varphi_2(\overline{S_1}; \overline{X_1}; \overline{X_2} \dots \overline{X_i} \dots \overline{X_n}) \}$$

The above (built) models differ from the existing ones in that they provide information about the current status and prospects of each component of the product range. That is, these models allow you to calculate the following indicators: the forecast of sales for the current period, as well as an assessment of

their future dynamics. As a result, these models allow the decision to assign each product to a particular group in terms of expected dynamics.

Models and algorithms aimed at balancing the range of products produced in the conditions of scarcity of production resources will ensure the competitive development of the textile industry.

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Selection and Training of Flight Instructors

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Annotation: This article discusses the features of improving the skills of selection and training of flight instructors, as well as the features of preparing future pilot-engineers for the profession of a pilot, shortcomings and ways to overcome them in practical flights.

Keywords: instructor, pilot, flight, life activity, formations, aviation, culture, cadets, crew.

The selection of instructor personnel occupies an important place in the organization of methodological work. In order to successfully train pilot cadets, it is necessary to have a vocation for instructor work. The instructor must be politically developed and prepared to train and educate a Soviet pilot - a patriot of his Motherland, capable of completing any task.

The second condition for an instructor is excellent piloting technique.

An instructor who can fly exemplarily usually has the ability for very subtle sensations and very precise actions. It is these qualities that he needs, especially when he flies the aircraft together with a cadet, in order to timely feel the mistake and provide assistance to the cadet accurately and at the right time. The same qualities are needed to be able to determine what is missing in the actions of a cadet when he independently controls the aircraft.

The third condition in the selection of instructors is the ability to analyze. In the process of flying with a cadet, the instructor must constantly answer the question: "Why?" Why did the cadet do this and not otherwise? Why does he have an error? Why doesn't he follow instructions? Answers to these questions must follow immediately, and there are extremely many questions, and only individual, especially difficult ones can be postponed until post-flight analysis.

The instructor must have the ability for psychological analysis. Without this, he will not be able to identify the individual qualities and characteristics of the cadets.

The fourth, no less important, condition is the culture of speech. When learning to fly, a clear and correct expression of thoughts and accuracy of formulations play an exceptional role. The slightest misunderstanding by a cadet of an instructor can lead to grave consequences. In the air, the instructor often uses an intercom; if he does not know how to speak concisely and clearly, he will have to refuse to communicate with the cadet in flight, or he will interfere with the cadet with his verbosity. However, the conditions listed above do not exhaust the entire scope of requirements for an instructor. The instructor must have sufficient theoretical training: to know the basics of aerodynamics, air navigation, operation of the materiel. The instructor must be a good athlete to show the cadets an example of physical conditioning. An instructor, of course, cannot but be a social activist, an organizer.

In the presence of the above personal qualities, the instructor, before proceeding with the training of cadets, must receive the appropriate methodological training, i.e. acquire knowledge of teaching methods.

The minimum methodological training of the instructor is to study the Training Course and improve personal piloting techniques.

Studying the Course of training of cadets is obligatory for the instructor. Before starting to teach cadets, the instructor must have a clear idea of the entire process of the upcoming training from beginning to end: when and what element of flight he will teach the cadet, when, in what sequence and under what conditions he will instill in them the necessary new skills and what ground exercises should precede the development of these skills in flight.

Instructors improve their personal piloting technique under the control of the flight commander. Such improvement has the main goal of developing uniformity in the performance of flight elements by all

instructors and each instructor individually, no matter how many times they have to repeat this flight element.

In addition, instructors must have an excellent knowledge of the course standards for each element of the flight. The commander who prepares instructors for training cadets must check the knowledge of flight techniques by instructors not only by oral answers, but sometimes also require written answers.

The latter is useful in cases where the instructor overestimates his knowledge. This will be revealed in a written response, and the commander will always be able to eliminate the shortcomings in a timely manner.

Flight-methodical practice instructors pass when performing special methodical flights with the flight commander, who flies in the role of a cadet, and the instructor - in his role. These flights give a very big effect.

A higher level of methodological training of instructors is training of flight instructors. Gatherings are held according to specially developed programs aimed at preparing instructors for the upcoming training of cadets according to established programs, taking into account the time, means and conditions available to the educational organization) for the collection.

And, finally, the highest form of training for instructors will be a special school or retraining courses. The curriculum of the school or course should include theoretical and practical training.

From theoretical disciplines, students study the basics of pedagogy and psychology, aerodynamics (in relation to flight technology), flight training methods and flight training courses. Practical training is carried out along the line of further improvement of piloting technique and flight-methodical skills.

When teaching the methodology of flight training, the main attention should be directed to the development and development of the correct approach for teaching instructors to Ecadets, to strive to develop their independent methodological thinking, warning them against the use of ready-made recipes.

Of great importance for the methodological training of instructors is the generalization and dissemination of methodological experience.

In the work of almost every instructor there is enough material that can be the subject of generalization and dissemination. Collecting and processing materials of methodological experience can be done in different ways. The best way to do this is by organizing and studying the training documentation.

First of all, you need to use the following documents: a cadet's flight diary, a cadet's workbook, protocols of methodological meetings. In addition, special reports, reports of instructors on the progress of cadets, or just notes in a wall newspaper can be used to disseminate methodological experience.

The subject of statistical processing can be teaching methods used by instructors, analysis of the activity and behavior of a cadet, analysis of aircraft operation, and various interdependence of these issues among themselves.

The subject of a special study should be the mistakes of cadets and methods for their elimination. One of the forms of this work may be the maintenance of a special detachment journal, in which the instructor writes down the most interesting mistakes of the cadets, and the methods by which these mistakes were eliminated.

Cases where errors were not corrected and the cadet was expelled must be recorded in the journal, giving detailed comments on them. A big topic for research and at the same time rationalization work is the development of issues of ground training and the design of ground simulators.

Finally, the piloting technique itself is subject to research. Even about such a seemingly thoroughly researched element of the flight as landing, one cannot say that everything has been done. Instructors should, as a matter of self-reflection, continue to study the pilot's bodily activity during the landing.

In the system of methodical work with instructors, methodical meetings or councils play an important role, at which the methods of flight training, programs and organizational issues, as well as the individual progress of cadets are discussed. In all matters, the teaching methodology is central. Program and organizational issues can be discussed at higher methodological meetings, issues of individual performance at lower ones, in particular, at link meetings.

Link methodological meetings are best held once every one to two weeks. Each instructor should report to the meeting on the progress of their cadets, dwelling in detail on noticeable positive changes and on cases of lagging behind. The instructor reports briefly about cadets whose progress has not changed over the past week, noting only the general assessment of progress.

As for cases of noticeable success, the instructor reports this in detail, indicating exactly what caused the success, and in cases of lagging behind, he reports in detail the nature of the lagging behind, the situation and the alleged reasons for the lagging behind. The conclusions on the reports are given by the flight commander. Link methodological meetings with the specified content and form of work are a very flexible tool that combines the exchange of experience with summing up the results of progress and the results of methodological activities.

In the system of educational and methodical work, the central place "belongs to the flight commander. Compared to an instructor, a flight commander has more experience both in piloting technique and especially in teaching methods.

Methodological guidance in the training of cadets is the main and main function of the flight commander; for this work, at one time, the institute of flight commanders was created, at that time they were also called senior instructors. as pilot training. The main task of the flight commander is to ensure the high quality of pilot training in the shortest possible time and at the lowest cost. At every stage of training and every hour during the day, his work is clearly defined by this task.

During the training of the instructor staff for classes with cadets, the flight commander himself acts as an instructor. He should polish the piloting technique of each instructor and instill in him the ability and skills to teach cadets on the ground and in the air, or check the instructor in this regard if the latter already has sufficient training experience.

In the field of piloting technique, the flight commander works out a high level of technique from the instructor, achieving classy piloting and stable uniformity in the performance of each element of the flight. The instructor must be able to repeat the flight any number of times in exactly the same way without the slightest change, regardless of the situation and flight conditions (weather, etc.).

After the control and verification flights, the flight commander proceeds to methodical flights with instructors, in which he acts as a cadet, and the instructor - in his role. In these flights, the instructor must show how he will practically train cadets, i.e. apply the knowledge that was presented to him according to the teaching methodology. In a methodical flight, the flight commander must imitate the flight of a cadet to the smallest detail. This task alone shows how experienced the flight commander must be.

During the ground training of young instructors, the flight commander practically shows how to perform with the cadets those ground exercises that are completed according to the program. Here the flight commander acts as an instructor. Before the start of flight exercises according to the program, the flight commander faces a big task - to fly around all the aircraft of his flight and ensure that their adjustment is the same and ensures ease and convenience of control.

In addition to adjusting the aircraft in flight, all instruments must be verified, and the instruments of the cadet and instructor cockpits must give the same readings. When organizing out-of-flight training of cadets, the flight commander is responsible for linking the theory of aviation with the flight technique. In those flight training organizations where the course of aviation theory is taught by special teachers, the flight commander is obliged to attend classes in the classroom as an assistant and supplement the instructor's explanations on issues related to flight practice. Where there are no special teachers in aviation theory, the flight commander personally conducts this course.

In ground training sessions before training flights, the flight commander organizes all the work on the red line. He oversees the preparation of training aids: start miniatures, aircraft silhouettes, models, etc., and then, moving from group to group, he oversees the progress of the classes, assisting the instructor in cases where he notices insufficient effectiveness of the classes.

During the period of working out the export program, when the instructor is constantly in the air, and the cadets, except for the flying one, are at the start, the role of the flight commander becomes especially responsible.

At the start, before training flights, the flight commander must check several cadets daily to see how they are ready to fly with an instructor.

The cadet must before the flight:

a) recall the content of the flight exercise and the technique for performing the flight elements included in the task;

- b) review in your workbook the results of previous flights, the instructions of the instructor and think them over again;
- c) assess the weather situation;
- d) evaluate the direction of the launch - its compliance with the direction of the wind;
- e) prepare uniforms and equipment.

The significance of these actions is very important, and poor preparation for any of them can negate the productivity of the flight.

At the end of the flight, the cadet must write down the instructions of the instructor in his workbook. Those questions that cannot be postponed until the group analysis, or those that the instructor did not note, but which are of interest to the cadet, the latter must report to the flight commander, and the command flight - to sort them out. For post-flight analysis of certain issues of work with cadets, the flight commander must plan at least one third of his time. The flight commander must make control flights with the cadets. As already mentioned, this control can be twofold: in the order of test exercises, the control and methodological Flight Commander not only finds out the correctness of training methods, but also helps the instructor correct shortcomings in the training methodology.

When the cadets begin to fly independently, the flight commander is responsible for preparing them for flights. Having received a flight assignment from the instructor, the cadet must come to the flight commander and report on the task received, and the flight commander, by means of control questions, ascertains that the cadet is prepared for this flight and allows the flight or dismisses him.

Throughout the training, the flight commander conducts link methodological meetings, at which instructors report on the progress of cadets' training. The daily methodical work of the flight commander is planned as follows.

The flight commander makes the first flight with one of the instructors to test his piloting technique, mainly those elements that the instructor will teach cadets in the near future. This work should be well planned, as it often happens that the flight commander does not have time to check all instructors during instructor flights and uses training flights for this.

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Greco-Roman Wrestling Techniques, Classification, Systematics and Their Terminology General Rules.

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Abstract: The following points provide information and suggestions on Greco-Roman wrestling techniques, classification, systematics and terminology, and general rules.

Keywords: Sports, health, wrestling, types of struggle, Greek-Roman wrestling, classification, terminology, general rules, Olympics, Universiade, 'Burcham Generation'.

Introduction.

Physical education and sports and all kinds of sports serve as an important tool for maintaining and strengthening human health. The importance of physical culture and sports in the multifaceted process of educating a person, developing his physical qualities, strengthening his health, improving his ability to work, creating the necessary mental environment in athletes is high. takes place. In particular, wrestling has a place in the system of physical education. Different types of wrestling play an important role in the system of physical education, which helps to educate healthy people. Including Greco-Roman wrestling has its place in the system of physical education.

The main part.

The reason for the controversy among many experts in Uzbekistan today is that the Greco-Roman wrestling is mistakenly called the Greek wrestling. If we pay attention to the words "Rome" and "Rum", in the historical and literary literature there were Olympic Games in ancient Greece (776 BC), in which wrestling competitions were also held (708 BC). During the '0' urban period, competitions were held according to different rules, with each village or town having its own rules. In one of these rules, the fact that all the technical movements and grips are from the top of the body to the waist, created a type of competition in the Greeks. Due to the relationship between ancient Greece and Rome, physical training facilities also came to Rome. In the 2nd century BC, some Roman activists tried to apply the types and methods of the Greek system of physical education. After Greece was invaded by Rome in the 1980s, Ambassador Sulla tried to move the Greek Olympic Games to Rome. By his order, the 175th Olympic Games were to be held in Rome. Wrestling is one of the most popular forms of entertainment in Rome because of its interest in the Romans. The city of Rome, the capital of the ancient Roman Empire, has not lost its name to this day. Some experts say that the word "Rome" comes after the word "Greek" and should be called "Greek" in the Uzbek transcription. But in ancient times, the territory of Uzbekistan was called the Roman Empire or the city of Rome - the Roman Empire and the city of Rome. So, it would be more appropriate to call this type of wrestling Greco-Roman wrestling, not Greco-Roman wrestling.

In Greco-Roman wrestling, the athlete differs from other sports due to the large number and variety of technical movements. The classification, system, and terminology of wrestling techniques have been developed to regulate the technical movements of Greco-Roman wrestlers and to facilitate communication between experts in the field. Classification is a system of interdependent concepts (classes, objects, events) in a particular field of knowledge. The classification is based on the common features of the objects and the legal relationship between them. Classification helps to navigate the various objects correctly and is a source of knowledge about them.

The following tasks are set in the development of a single classification and system of basic methods of Greco-Roman wrestling techniques:

- reflecting the essence of the struggle, revealing the diversity and complexity of the interrelationships between the technical movements;
- Reflection on the carpet without comparing the type of wrestling; - help to identify commonalities for all types of wrestling;
- to preserve the peculiarities of each type of wrestling;
- to allow each type of wrestling to learn the best techniques from other types (including national wrestling);
- Classification of basic techniques in "school performance" - to develop technical concepts and definitions common to all types of wrestling and to help create a terminology based on common principles for each type. The main feature of the unique classification and systematics of Greco-Roman wrestling is that all its levels are a step-by-step expression of the technique of each type of wrestling (including national) and help to regulate a large number of elements.

Conclusion.

All conditions have been created for the development of Greco-Roman wrestling in our country, and this type of wrestling is included in the program of sports competitions in three stages - "Umid Nihollari", "Barkamol Avlod", "Universiade". In the further development of Greco-Roman wrestling, the current growing number of teenagers and young adults is recognized with high results in the Asian and World arenas, because our athletes are always in the spotlight and respected in our country.

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Study of Physics Using Mental Experiments

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Annotation. The article discusses the forms of development of students' thinking skills, types of intellectual experimental-theoretical thinking, external illustrative mental experiments, the ability to more visually describe the conclusions of physical theory, the degree of study of the studied process or physical phenomenon in a mental experiment.

Keywords: experiment, thinking ability, experience, material technical problem, real experiment, analysis and synthesis, object, process, event, researcher, logical thinking.

One of the forms of developing the thinking ability of pupils and students is to engage in an intellectual experiment. An intellectual experiment is different from a traditional practical-empirical experiment in that it is a stage in the level of theoretical knowledge of a science. In other words, an intellectual experiment is a special type of theoretical thinking.

For example, what results are obtained when a student measures the weight of an object on a spring scale at the poles of the Earth and at the equator? When asked, he can immediately imagine the experience and find a clear answer. So, in an intellectual experiment, he develops his skills and abilities in the "virtual world" without doing a real experiment. This method allows not only to increase the student's theoretical thinking ability, but also to solve the material and technical problems required for a real experiment.

Analysis and synthesis are among the most important aspects of thinking in theoretical thinking, and they are closely interrelated. Together, they allow us to fully imagine reality.

Analysis (analysis) is the division of an object, process or event into separate parts or the separation of its individual properties, characteristics and attributes.

Synthesis is the mental connection of parts of the object under consideration or the combination of their properties and properties. With these methods, for example, the thermal expansion of a solid is explained on the basis of the motion and interaction of its constituent particles.

In an intellectual experiment, based on the researcher's logical thinking and creative imagination, only experimental and theoretical materials can move forward in the research together and solve unresolved scientific problems. Therefore, every researcher first applies a mental experiment.

Thought experiments are not a creed. It is an intellectual "operation" developed on the basis of requirements and principles tested in scientific theory. Each of these "operations" is subject to rules arising from the objective laws of science. This ensures that the results of the intellectual experiment are at a high scientific level.

Intellectual experimentation plays a major role in physics education. This is because it is a process of knowing an object or event based on an ideal physical model, having the structure of a real physical experiment, and their operation subject to the laws of physics and logic.

As noted above, mental experiments are used in practice to study physical processes that are problematic to learn in practice. From the "famous" intellectual experiments in the history of physics, we can cite the following:

- 1) Archimedes' experiments - the discovery of the swimming condition of an object;
- 2) Model of ideal heat engine (Carnot cycle);
- 3) Maxwell's "Demon" - the idea of creating the second type of perpetual motion;
- 4) Boltzman's "Demon" - as opposed to Maxwell's demon, proving that the second law of thermodynamics is random in nature;
- 5) "Paradox of twins" - the difference in time intervals in different number systems;

- 6) Einstein's elevator is an intellectual experiment of Einstein's free-falling elevator, which describes the equivalence of gravitational and inert masses and establishes the theory of relativity;
- 7) Schrödinger's "cat" - an intellectual experiment that shows that quantum mechanics is not a pamphlet;
- 8) Heisenberg's gamma microscope is an intellectual experiment that confirms the uncertainty principle.

There are also illustrative mental experiments. Their purpose is to provide a more visual illustration of the conclusions of physical theory. In the early stages of the study of physics, such is the case - illustrative mental experiments play a major role. Because physics studies nature, natural phenomena and processes on the basis of abstract ideal models, and mathematical apparatus is used to characterize it. Students receive information mainly in the form of emotions.

Therefore, in physics education, information should be presented in the form of symbols, symbols, models, schematics that affect the feelings of students. This is why an intellectual experiment is useful here in bringing abstract physical reality to a view that can be demonstrated in the eyes of the reader. In the process of studying physics, in an intellectual experiment, a visual connection is formed between images conducted with ideal physical models and real processes based on images and symbolism. The intellectual experiment allows the passage of the abstract ideal in the real case, but the real case is explained on the basis of the result obtained.

- In the process of intellectual experimentation, in our opinion, the following cognitive problems are solved:

- create ideal models that describe the process, event or object, its real state;
- on the basis of the developed, simulated model the separate aspects of a physical phenomenon or process are studied, its physical meaning is explained and conditions of application of the model are defined;
- formation of simple, vital concepts and ideas on the basis of information collected about real physical objects, processes, their properties and characteristics;
- to describe and express the first physical laws and principles based on the results of observations, the results of real experiments;
- deeper understanding of the physical meaning of the fundamental conclusions of important physical theories;
- to give instructions on the preparation and conduct of a real experiment and to develop the skills and abilities to theoretically substantiate it;
- research on methods of studying this or that physical phenomenon, process.

The level and depth of the study of a process or physical phenomenon under study in a mental experiment may vary, but a positive result in its study will come first.

The method of intellectual experiment is a method of theoretical study of the physical problem under consideration. This method was founded during the formation of physics (Archimedes, G. Galileo, I. Newton) and has not lost its relevance today!

In the process of development of physics education, the following technologies of intellectual experiment were formed:

- a) replacement of a real physical process, event or object with a model that has its basic and necessary physical properties;
- b) the use of "idealized" tools and equipment in the ideal model according to the rules of idealization;
- c) study of one or more objects in the model of a physical object without taking into account other properties;
- g) variational change of the quantitative and qualitative characteristics of the physical object in the model, taking into account the environment in which it is located, its impact on it;
- d) predict how the physical object under consideration will change under the new conditions of the model, taking into account its properties and characteristics;
- e) the application of the results and new knowledge obtained in the ideal model as a result of an intellectual experiment to the real object in analog form or to a similar object, process

Hence, intellectual experimentation is the most powerful tool of the cognitive process. It allows you to gain new knowledge in the study of physical phenomena and processes in the ideal model instead of the

real model, as well as to study the most important properties of the real object. The intellectual experiment, its structure, application and "abandonment" (when not justified) operate in the ideal model in ideal conditions, and this characterizes the life and creative activity of the learner.

An intellectual experiment is an operation of studying its properties and properties by placing this ideal model in real different experimental situations. The behavior of a model under given physical conditions is predicted based on the laws and rules that were previously imposed on its properties.

Possible methods of intellectual experimentation are as follows:

- body or system, the process is divided into individual parts, and then they are combined into a whole system (body). For example, the process of thermal expansion of solids is explained by imaginary dividing the body into individual particles and increasing the distances between them;

- Create an imaginary model of the universe and explain the events in it.

The laws of motion of the planets, their properties, the magnitudes of the acceleration of free fall in them, the oscillating motion of the mathematical pendulum and the laws of gravitation of the whole universe are explained;

- changes in the properties of the system as a result of changes in the state of aggregation of one of the objects in the system under study. For example, when a certain part of water freezes, Pascal's law changes in it, the motion of the liquid changes;

- Conduct a mental experiment under boundary conditions. The suitability of a model for real conditions or events is checked by gradually increasing one of the characteristics (parameters) of its mathematical model for the considered physical system, event or process to the maximum threshold value or decreasing it to the minimum threshold values.

The examination of mathematical models developed in intellectual experiments on the basis of computer technology, that is, on the basis of computer modeling, remains of great importance. Taking into account the unique capabilities of computer technology, in a short time the model is determined as "Suitable" or "Unsuitable".

1. At the current stage of development of physics education, modeling is approached in two ways:

2. Create models that consist of material elements and work on the basis of real natural laws. They are used to describe the nature and occurrence of physical processes in the restoration of the structure of an object (system) (for example, the operating model of an electric motor, the model of an aircraft wing, the spatial structure of crystals, the formation of fluctuations in water and gas flow, etc.): An ideally ideal model is created. It can be "Fixed" based on pictures, schematic view, animation, selected characters and symbols.

Computer modeling allows you to observe the recommended model on a monitor screen. We can see on the screen what happens to the ideal object in almost real conditions. Interactive computer models are part of the electronic textbook, which differs in its unparalleled level of knowledge and scientific concentration and effectiveness. Therefore, they are widely used in the teaching of physics to implement short-term processes and events, as well as the teaching of laboratory work in virtual form.

In physics classes, students are given physical problems that can be solved through a variety of interesting intellectual experiments, such as the speed of a mosquito in a room floating in the sea, the movement of water in particles, the diameter of a thin wire using a ruler, the reflection of light from a dim surface, the color of its appearance, the color image of objects taken in infrared light at night, etc., develop students' theoretical thinking skills.

Thus, the role of intellectual experiments, intellectual and virtual models in the independent study of physics is great. It provided an opportunity for a deeper and faster study of the physical nature of physical phenomena and processes.

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Photostimulated Tension Effects in TlInSe₂ Crystals

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Abstract: The paper presents the results of a study of photostimulated strain effects in TlInSe₂ single crystals. It was found that the absolute value of the photocurrent in positively (compression) deformed samples increases, and in negatively (stretching) deformed samples – decreases in comparison with the undeformed sample. At the same time, the maximum of the photocurrent does not change, which indicates that the width of the direct transitions of TlInSe₂ crystals remains unchanged under various types of deformation.

Keywords: photostimulated strain effects, the absolute value of the photocurrent, positively deformed, negatively deformed, and the width of direct transitions of crystals.

Introduction.

Currently, researchers and practitioners in the world pay great attention to the study of various semiconductor converters, including strain gauges, the main advantage of which is high sensitivity and small size. However, the requirements of modern science and technology are steadily growing, which leads to the search for materials with a variety of properties that meet these requirements.

Therefore, at present, along with the improvement of the properties of existing materials, the search for new semiconductor materials, including ternary and more complex compounds and their solid solutions, and the study of their various characteristics are among the most important tasks of modern condensed matter physics. Of particular value is the creation of new semiconductor materials, if it is possible to obtain them in the form of perfect large single crystals. Among the multicomponent semiconductor compounds of the A^{III}B^{III}C₂^{VI} type, semiconductor compounds TlInSe₂ are of particular interest, the regularities of many physical phenomena in which have not received sufficient coverage in the special literature. According to the above, the purpose of our research is to study the tensor resistive characteristics of TlInSe₂ single crystals and create highly sensitive strain gauges for electronic technology based on them.

Samples for research and experimental technique:

For this purpose, we used crystals synthesized by melting the component in accordance with the stoichiometry in evacuated (~10⁻⁴ mm rt.st) and sealed quartz ampoules. Highly pure elements of thallium (Tl - 000), indium (In - 000) and selenium (Se - OSCH-17-4) were used as initial components for the synthesis. Single crystals were grown by the improved Bridgman method, the crystallization front velocity was varied from 0.5 to 0.9 mm/hour.

Identical crystals required for research are obtained from an ingot by the simplest pressing of a sharp knife, blade thickness ≤ 0.01 mm, onto the loose end of a thin, but wide and long single crystal plate at an angle of 45°.

Thus obtained "acicular" crystals - blanks with mirror edges - without any additional processing are ready for welding contacts and installing them on the base of the substrate.

When soldering "antennae", i.e. creating mechanically reliable ohmic contacts on these workpieces, two methods were used:

a) Fusion of indium in an inert gas flow followed by soldering of copper (or nickel) wires (ø = 0.01 mm).

b) Direct spot welding of the corresponding wires by a capacitor discharge to the ends of a billet heated in an inert gas flow. The second method turned out to be more efficient and reliable (especially for moderate temperatures).

Plates made of steel 45 with a thickness of 0.5–1.0 mm and a length of 20 mm to 80 mm served as calibration beams for the glued sensors. The surface of the substrate in terms of processing class was not lower than class 7.

Research results and discussion:

We found that, as in the case of the study of the photoconductivity of TlInSe_2 crystals in [1 - 6], the absolute value of the photocurrent in positively deformed (compression) samples increases, and in negatively deformed (tension) it decreases compared to an undeformed sample. In this case, the photocurrent maximum does not change, which indicates the invariance of the gap of direct transitions of TlInSe_2 crystals for various types of deformation. Figure 1 shows the photocurrent spectra normalized to the maximum in the spectral region 0.8–3.2 eV in undeformed (curve 1), negatively deformed (curve 2), and positively deformed (curve 3) samples of pure p- TlInSe_2 single crystal in the [001] direction.].

As can be seen from the figure, the photocurrent maxima of all the studied crystals are at 1.20 eV. Under compressive and tensile strains, changes in the spectral distribution of the photocurrent are observed not only in the long-wavelength, but also in the short-wavelength region of the spectrum compared to the photocurrent maximum. This result indicates that there are indirect band transitions in TlInSe_2 crystals not only in the low-energy region compared to the photocurrent maximum, as was shown in [7], but also in the high-energy region of the spectrum

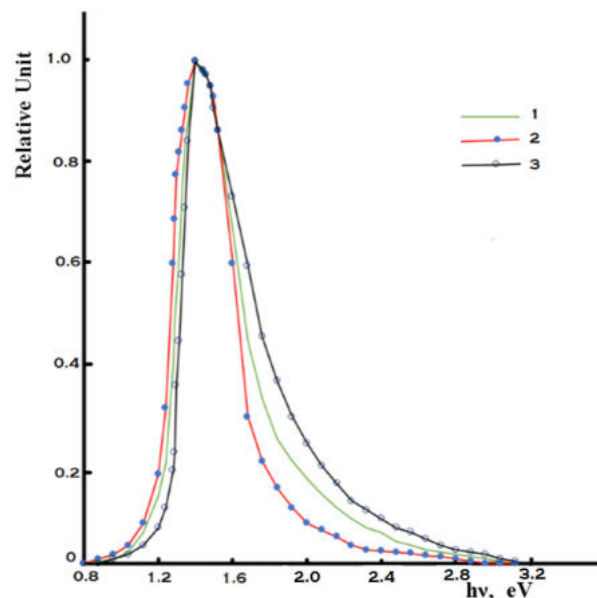


Fig.1. Spectral distribution of photocurrent in undeformed (1), positively deformed (2), and negatively deformed (3) p- TlInSe_2 samples [1].

Figure 2 shows the spectral distributions of the strain sensitivity of differently deformed crystals illuminated with light in the spectral region 0.8 - 3.2 eV. With a positive deformation (compression) of the crystal, the most intense peak is observed with a maximum at 1.20 eV, a slightly less intense peak with a maximum at 2.10 eV, and some structure in the regions of 1.6 - 1.70 eV. The maximum of the intense peak corresponds to the maximum of the crystal photocurrent (see Fig. 2a). With negative deformation (stretching) of the crystal, the maximum of the intense peak at 1.20 eV remains unchanged. The peak with a maximum at 2.10 eV disappears and a peak with a maximum at 1.70 eV appears clearly (see Fig. 2, b).

It should be noted that in [8], the X-ray photoelectron spectra of TlInSe_2 crystals were studied, and theoretically, using the unrestricted Hartree-Fock method (NMHF), the levels of energy states of crystals were calculated, which are in satisfactory agreement with each other.

The results of calculation of the main levels of the valence band (VB) and conduction band (CB) obtained by the authors of [8] are shown in Table 1. In this table, the values of the energy levels are given relative to the Fermi level, where the energy states of the VB have a negative value relative to the Fermi level, and the energies of the CB levels have positive values. Therefore, to determine the energy gap

between the levels of the CB and VB, it is necessary to add the energy values given in the table. Taking this into account, the width of the energy gap between the top of the air intake (-0.5 eV) and the bottom of the WP (+0.7 eV) is 1.2 eV, which is in good agreement with maximum of the intrinsic photocurrent and the first, most intense maximum in the strain-sensitivity spectrum due to direct band transitions in TlInSe₂.

The energy gap between the next VB level (-0.7 eV) and the bottom of the CB (+0.7 eV) is 1.4 eV, which corresponds to the minimum in the strain-sensitivity spectrum of the crystal (see Fig. 3.), located in the high-energy region relative to maximum direct optical transitions.

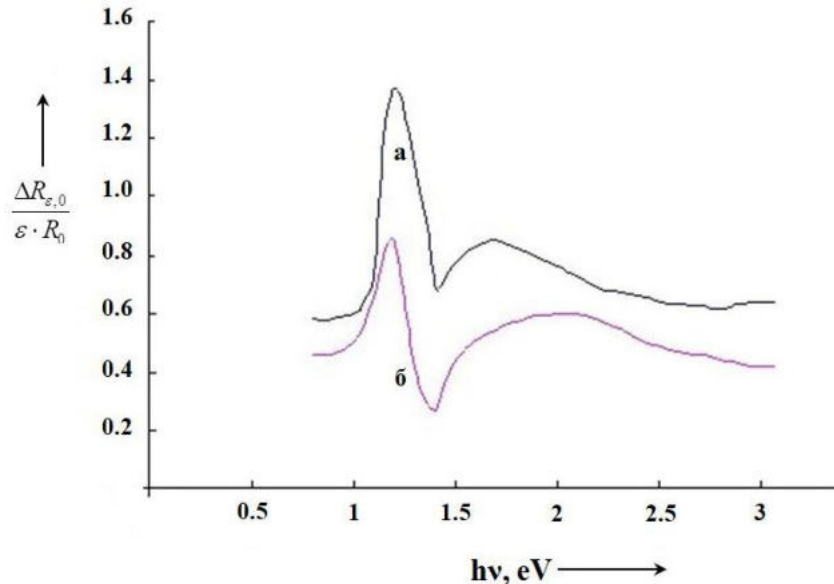


Fig.2. Spectral distribution of strain sensitivity is positive (a) and negative (b) of the deformed p-TlInSe₂ crystal [1].

The gap between the next level of the air gap VB (1.1 eV) and the bottom of the CB (+ 0.7 eV) is 1.8 eV. If we take into account the fact that the NMHF in the calculations gives a 10% overestimation of the calculated values compared to the experiment [9], then this value coincides well with the maximum of the observed second peak in the strain sensitivity spectrum of the negatively deformed sample.

The gap between the next level VB (-1.4 eV) and the bottom CB is 2.1 eV, which is in good agreement with the maximum of the second peak in the strain-sensitivity spectrum of the positively deformed sample. Thus, the maxima and minima of the spectral distribution of the strain sensitivity of the deformed TlInSe₂ crystals under illumination with light of various energies, determined by us, are in good agreement with the values of the band states determined in [8] in the TlIn₄Se₁₆ cluster (see Table 2).

A comparison of the spectral distribution of positively and negatively deformed specimens shows (see Figures 3a and 3b) that with positive deformation, strain-sensitivity bands with a maximum of 2.2 eV appear and increase in intensity, and with negative deformation this peak disappears and is observed only peak at 1.7 eV, i.e. when the sign of the deformation changes, the redistribution of the intensities of the individual strain sensitivity peaks occurs. If we take into account that the maximum of the photostimulated strain sensitivity at 1.20 eV is due to direct

Table1. Theoretical calculated population values (in %) of the levels of the valence band (VB) in the $\text{TlIn}_4\text{Se}_{16}$ cluster. Se_b and Se_s are bulk and surface atoms. The binding energies of the VB are negative, while the conduction bands (CBs) are positive [8].

ε_i [eV]		MO_i	Tl	In	Se_b	Se_s
CB (p)	0,9	417	4	6	19	71
	0,7	414	0	4	5	91
VB (sp)	0,5	411	1	7	71	21
	0,7	409	0	6	73	21
	1,1	404	0	4	90	6
	1,4	401	1	6	83	10
	1,6	397	2	16	74	8
	1,8	394	7	7	72	14
	2,2	391	0	25	58	17
	2,5	386	0	14	3	83
	2,5	385	27	5	65	3
	2,7	381	0	3	2	95
	2,9	377	0	6	4	90
	3,4	373	0	34	14	52
VB (s)	6,0	369	0	8	91	1
	6,4	365	0	7	89	4
	7,0	361	0	4	0	96
	7,7	357	1	5	5	89

interband transitions, then it can be argued that all other peaks of strain sensitivity observed in experiments are associated with indirect interband transitions caused from different points of the Brillouin zone.

Table 2. Theoretically calculated in the $\text{TlIn}_4\text{Se}_{16}$ cluster (according to [8]) and experimentally determined in TlInSe_2 crystals, the band - band electronic transitions.

Theoretically calculated in the $\text{TlIn}_4\text{Se}_{16}$ cluster	-	1,2	1,4	1,8	2,1	2,3	2,5	2,9
Experimentally determined in the TlInSe_2 crystal	1,08	1,2	1,43	1,7	2,13	2,3	2,5	2,8

Such changes are more clearly manifested in the difference between the normalized spectral distributions of the strain sensitivity coefficients of positively and negatively deformed crystals (see Fig. 3). It can be seen from the figure that with negative deformation of crystals, i.e., in samples subjected to compression, the proportion of transitions with an energy of 1.4 eV is dominant, however, the proportion of strain sensitivity during illumination in the region of all other transitions decreases significantly. In contrast, at positive strain (in stretched specimens), the fraction of transitions with an energy of 1.4 eV is the smallest, while the fraction of strain sensitivity increases noticeably for all other transitions. Based on this, we can conclude that the mechanism of strain-sensitivity of TlInSe_2 crystals is indeed due to the flow of charges from one valley to another due to a change in the energy positions of the valleys during deformation.

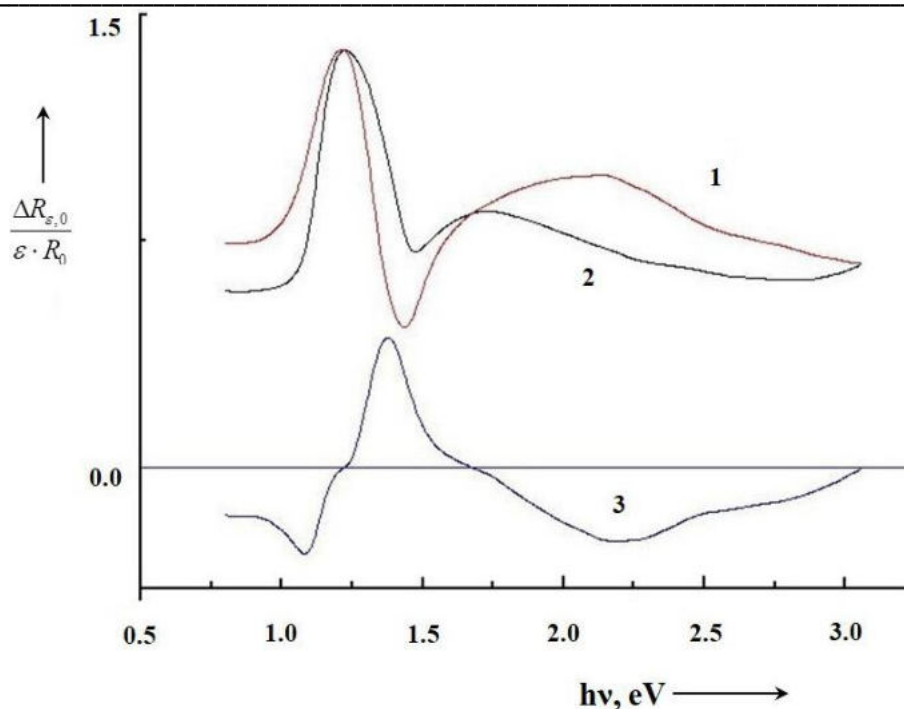


Fig. 3. Spectral distribution of the strain sensitivity of a negatively deformed (1), positively deformed (2) TlInSe₂ crystal and the difference between 1 and 2 (3).

Conclusion: Under uniaxial compression of TlInSe₂ crystals along the [001] direction, their band gap decreases. As a result, the Fermi level shifts and the concentration of electrons at r centers increases, which leads to the expansion of the linear sections of the LAH.

It is shown that under compressive and tensile deformations in the [001] direction, a change in the spectral distribution of the photocurrent is observed not only in the long-wavelength, but also in the short-wavelength (compared to the photocurrent maximum) region of the spectrum. This result indicates that there are indirect band transitions in TlInSe₂ crystals not only in the low-energy, in comparison with the direct band transition, but also in the high-energy region of the spectrum. It has been established that the band gap decreases under uniaxial compression, and increases under tension.

With positive and negative deformations, the maxima in the spectral distribution of the strain-sensitivity coefficient of TlInSe₂ crystals, due to electronic transitions from different valleys, are redistributed, which indicates that the mechanism of strain-sensitivity of TlInSe₂ crystals is due to the flow of charges from one valley to another due to a change in the energy positions of the valleys during deformation.

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Efficiency of Modeling Methods in Sports Training of Greco-Roman Wrestlers

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Abstract: The relevance of the work lies in the fact that physical culture and sports serve as an important means of preserving and strengthening human health. The importance of physical culture and sports in the multifaceted process of educating a person, developing his physical qualities, strengthening health, and increasing efficiency is undeniable

Keywords: modeling method, sports training, efficiency, research

The relevance of the work lies in the fact that physical culture and sports serve as an important means of preserving and strengthening human health. The importance of physical culture and sports in the multifaceted process of educating a person, developing his physical qualities, strengthening health, and increasing efficiency is undeniable. Various types of wrestling play an important role in the system of physical education, which contributes to the upbringing of a healthy generation. [1] There are enough studies aimed at studying ways to improve physical education and sports training. So V.M. Koretsky, in the course of research, developed a three-block model for physical education specialists. Model includes:

- the first block - the personality block (functions of morality, ideology, spirituality and other qualities, mind, level of spiritual development).
 - the second block - the block of professional activity, (the totality of all types of labor and the main work of a specialist and the tasks to be solved.
 - the third block - a block of knowledge, skills, knowledge, skills in performing certain tasks of the profession.
- Other researchers suggested (V.I. Kozlovsky et al., 1978) proposed a block model of athlete training, consisting of three levels.
- the first level - the result of the athlete's actions during attacking or defensive technical actions
 - the second level - improvement of technical and tactical training, special physical and psychological training
 - the third level - characteristics of functional training, morphological features, sports experience [1,5,8]. Thus, having studied the possible methods of modeling in sports training, we assumed that the use of the modeling method would be effective in the preparation of Greco-Roman wrestlers.

The purpose of the study: to determine the effectiveness and applicability of the modeling method in the sports training of Greco-Roman wrestlers

Research objectives:

- To analyze the scientific and methodological literature on the application of the modeling method in sports training.
- To study the role and effectiveness of modeling methods in the training of Greco-Roman style wrestlers in technical actions.

It is known that the modeling method is used in many sciences, especially in cybernetics, biology, medicine, pedagogy, sports. All models are divided into categories depending on their formation. The materialistic conceptual model is reflected as a tool in organizing the division into categories, focusing on further knowledge in the reconstruction of an event [1,2,3].

The following types of models are also proposed, taking into account the nature of the developed aspect

- 1) meaningful;
- 2) structural;
- 3) functional;
- 4) mixed;

A.N. Kochergin divides modeling into 3 types:

- 1) functional - imitation of symbolic behavior;
- 2) informational, embodying the processes occurring in the image only in informational aspects;
- 3) substrate - structural, taking into account not only the behavior of the system, but also its material basis. [1,6,8].

In the scientific literature, there are several more types of modeling and prototyping.

Although there is a big difference between these types of models, and it is advisable to determine the scope of their application in modeling and reliability in sports activities [1,4,7].

A survey was conducted to study the level of knowledge of current trainers about the modeling method and their attitude towards it. The test questionnaire was developed on the basis of conversations between coaches who have been working in the field of wrestling for many years.

In the course of a survey of trainers participating in the study (a total of 84 people), the following was revealed:

- trainers familiar with the modeling method - 70%.

Of them:

- used the modeling method - 30%

- do not know about this method - 58%

- read in books and scientific articles - 10%

- heard about the modeling method at scientific conferences and lectures - 2%. The opinions of coaches on the need to use simulation in sports training were divided as follows:

1 modeling method is "necessary" - 88%

2 Coaches who consider the modeling method "unnecessary" - 2%

3 Coaches who consider modeling "uninteresting" - 10%

Judging by the difference in the results of the above survey, it can be seen that modeling in the field of sports occupies an important place. Although some research has been carried out in this area, foreign scientists have deepened their knowledge of modeling methods for the development of their sport.

Conclusion:

After analyzing the research of scientists and the experience of specialists, we can conclude that the modeling method can be used with high efficiency in various sports training schemes, while observing all the principles of its application. As a practical recommendation, when using the modeling method in the training of young athletes, it is necessary to carefully study the object taken as a model and take into account its shortcomings.

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Development of Tactical Training of Wrestlers

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Abstract: The article substantiates the methods of teaching the technical and tactical actions of wrestlers by using means from other types of wrestling.

Key words: physical development, technical and tactical training, complex attacking actions.

Presidential decrees and resolutions of the Cabinet of Ministers adopted in order to develop physical culture and sports in our country, frequent holding of many international competitions in our country, high results of Uzbek athletes at the Olympic Games and other major competitions glorify our independent republic. Taking into account the role of physical culture and sports in the healthy education of a harmoniously developed generation, targeted measures are being developed and implemented at the state level to further improve sports, increase the material and technical bases to modern standards. (1). But in order to achieve high sports results, it is still necessary to constantly search for ways to improve all aspects of sports training - physical, functional, psychological, technical and tactical. At the same time, technical and tactical skill is understood as the basic laws and principles of performing actions characteristic of various wrestlers of the highest category (2,3).

The purpose of the study: to develop a methodology for improving the tactical training of wrestlers, taking into account the indicators of competitive activity during the annual cycle of sports training.

Object of research: the educational and training process of wrestlers and the structure of their competitive activities.

Subject of research: Greco-Roman wrestlers aged 15-16 years.

Organization and materials of the study. To determine the level of tactical training of wrestlers, a number of pedagogical experiments were conducted. The number of hours allotted to wrestlers to study, perform and consolidate tactical techniques in the process of training was increased to 45%, and the features of competitive activity were also determined. The study participants were divided into two groups: control and experimental (n - 10). In September 2019, the occupying groups were tested using control test exercises and continued to participate in training from the first day of observation. For 2 months (from September 15, 2019 to November 30, 2019), the research group used targeted means to form tactical training. Exercises in the preparatory part of the training (in combination with special ones) Wrestler exercises): running, ORU (standing and walking), SRU (walking and running in the bridge position, stretching the legs and warming up the shoulders). During the study, we taught the experimental group 2 techniques from other types of wrestling, such as grips, arm and leg movements (4).

Table 1 Resource requirements by component

Test results obtained at the beginning of the study in the control and experimental groups

№	Test exercise	Control group			t _{cr}	P	Experimental group			t _{cr}	P
		$\bar{X}$	S	In%			$\bar{X}$	s	In%		
1	4x10 m. shuttle running	10,1	0,2	1,98 %	1,33	≤0,2	9,9	0,5	5,05 %	3,5	<0,001
2	body lift (10 sec).	5,8	0,8	13,70 %	1,5	>0,1	6,6	0,8	12,1 %	5,5	<0,001
3	push-ups (10 sec).	5,8	0,8	13,79 %	1,5	>0,1	6,6	0,8	12,1 %	4	<0,001
4	npulling (once)	14,6	0,5	3,42 %	10	<0,001	15,2	1,2	7,89 %	8,8	<0,001

During the competitions of wrestlers of the Uzbek State University of Physical Culture and Sports, after the pedagogical experiment, there were no changes in the representatives of the control group, but in some cases, representatives of the experimental group used painful techniques on the hands, which were taught during the experiment.

Thus, representatives of the experimental group used elements of SAMBO techniques in the attack, that is, they formed the tactical movement created by them with the help of these elements.

The results of the study and their discussion. According to the results of the study, which lasted 2 months, there were no significant changes in the level of tactical readiness of the control group. In the experimental group, in the sequence of techniques, some elements of sambo wrestling techniques were observed, which kept the opponent in competitive fights and caused him inconvenience. If the level of tactical readiness in the control group increased from 2.5% to 3.5%, then in the research group this figure increased from 2.5% to 5.8%. These percentages were based on tactical attacks used by wrestlers during competitions (Table 2)

Table 2 Resource requirements by component
Test results obtained in the skate of the study in the control and experimental groups

№	Test exercise	Control group			t_{CT}	P	Experimental group			t_{CT}	P
		$\bar{X}$	S	In%			$\bar{X}$	s	In%		
1	4x10 m. shuttle running	10,1	0,2	1,98 %	1,33	$\leq 0,2$	9,9	0,5	5,05 %	3,5	$< 0,001$
2	body lift (10 sec).	5,8	0,8	13,70 %	1,5	$> 0,1$	6,6	0,8	12,1 %	5,5	$< 0,001$
3	push-ups (10 sec).	5,8	0,8	13,79 %	1,5	$> 0,1$	6,6	0,8	12,1 %	4	$< 0,001$
4	pull-up (once)	14,6	0,5	3,42 %	10	$< 0,001$	15,2	1,2	7,89 %	8,8	$< 0,001$

Conclusion.

Athletes engaged in two different types of wrestling have been found to use certain techniques and elements in the second kind of wrestling to create tactical maneuvers for the main form of wrestling, which further enhances the tactical attack. Martial arts athletes are more likely to develop tactical attacks by applying technical elements of a different kind. Fight. According to the results of the experiment, it was found that training in the techniques of other types of wrestling also enhances their tactical training. At the same time, along with the strength and agility of the wrestlers, the level of physical fitness was also improved.

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The Geometry Drawing

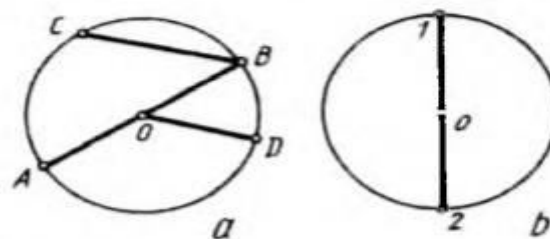
Sardorbek Abdurahmonov

Abstract: The Geometry Drawing provides details and information on, The Geometry Drawing definition, that is how to emerged and the factors and theories on its The Geometry Drawing and we can learn better and we know mor staffs.

Keywords: Diameters and The Geometry Drawing, Drawing definition.

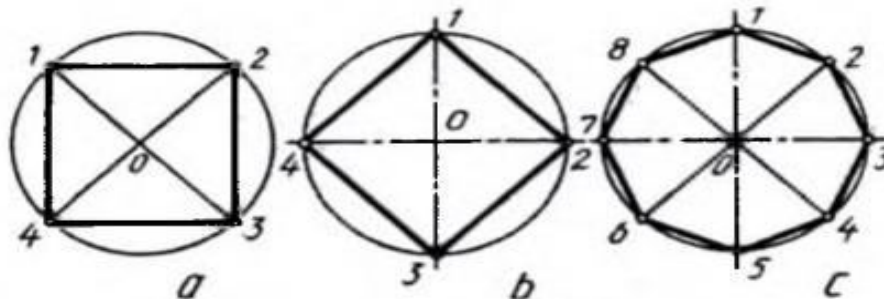
Divide the circle into equal' whites' and make regular squares. The center of the circle is called the AB-circular diameter that crosses O, the radius of the OD circle, the BC-vatar that does not cross O, and the BC path is called the path (1.8.21 - drawing,

(a) The diameter of 12 such circles is equal to that of a circle (figure1.8.21 b).



1.8.21 – chizma

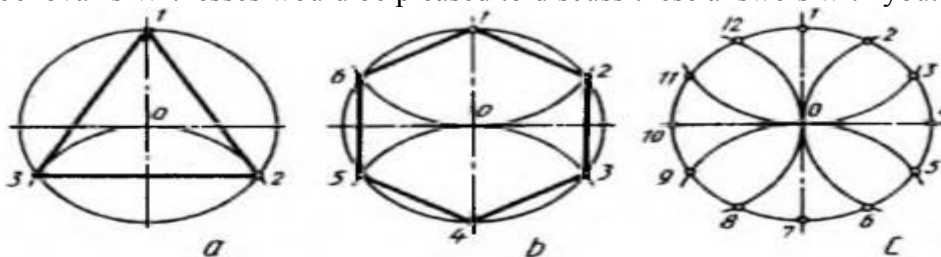
The two perpendicular diameters of the circle divide it into four (1.8.22 – ch marking, a,b), the angles are 45 degrees Fahrenheit [-45°C], and the four diameters are eight (1.8.22 – drawing ,c).



1.8.22 – chizma

1

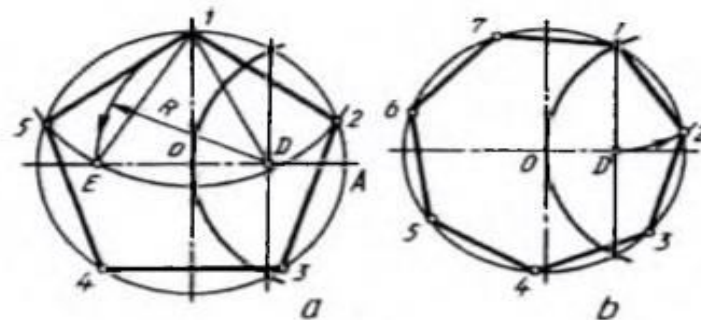
If the circle is cut through point 1 with a path equal to its radius, it is divided into three equal parts (1.8.23 - drawing, a). If the circle is cut through points 1 and 4 with a path equal to its radius, it is divided into six equal parts (1.8.23 - drawing, b). If the circle is cut through paths equal to the circular radius through points 1.7.4.10 I ntterspersed with perpendicular diameter, it will be divided into twelve parts (1.8.23 –drawing e). (Figure 1.8.23) Jehovah's Witnesses would be pleased to discuss these answers with you.



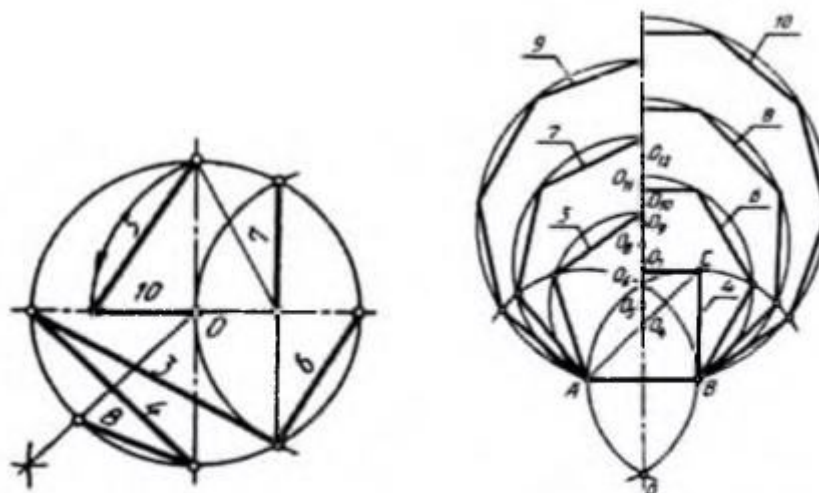
1.8.23 –chizma

To divide the circle into five and seven pieces, the OA radius is divided into two equals. When dividing into five parts, a pa this drawn in a D1 radius from point D. Then an IE intersection is formed, dividing the circle into five equals. The IE intersection is measured from 1 point a long a circle path. The identified points will be sequentially attached (1.8.24-line a, a).

(1.8.24- drawing, b) Jehovah's Witnesses would be pleased to discuss these answers with you. The given intersections (figure 1,8.25) can be used to divide circles into' equal parts. Here the numbers 3,4,5,6,7,8,10 are the numbers used to divide the circle into equal pieces.



1.8.24 –chizma



1.8.25 –chizma

1.8.26 – chizma

If an AB cutis given, it specifies a scheme for making various regular polygons (figure 1.8.26). The paths drawn from points A and A with the AB radius are intersected at points O and O, and if they are attached, the symmetry arrow of the circles drawn to make all the squares will began. To make a square, a perpendicular drawing from B is drawn and point C is determined. Interspersed with the AC diagonal symmetry arrow, the center of the square circle forms O 4. If O 4 and O 6 are divided into two equals, the center of the regular five-squared (circle) will be found O 5. If a circle passing through point O 5 to A is drawn, the AB is intersected with a radius path. In the same order, a circle made of O to 6 to six rectangles is drawn, etc. To determine the centers of the rest of the circles, an interval of O 4 to O 4, O 5 will be measured. Then OS, O 6; O 12 centers are designated.

All elements of geometric engraving are the simplest geometric doubts derived from a combination of straight and curved or tetraedral or semicircular chokes. The main elements of the geometric thread are dihedral, triangular dagger-shaped intersections of different widths, depths, configurations, tetrahedral grooves and brackets of different shapes curved grooves. All embroidered compositions are performed

² X a lim o in M o h i K a r im o width Drawing (geometric and production drawing) Tashkent -2013
 43-bet

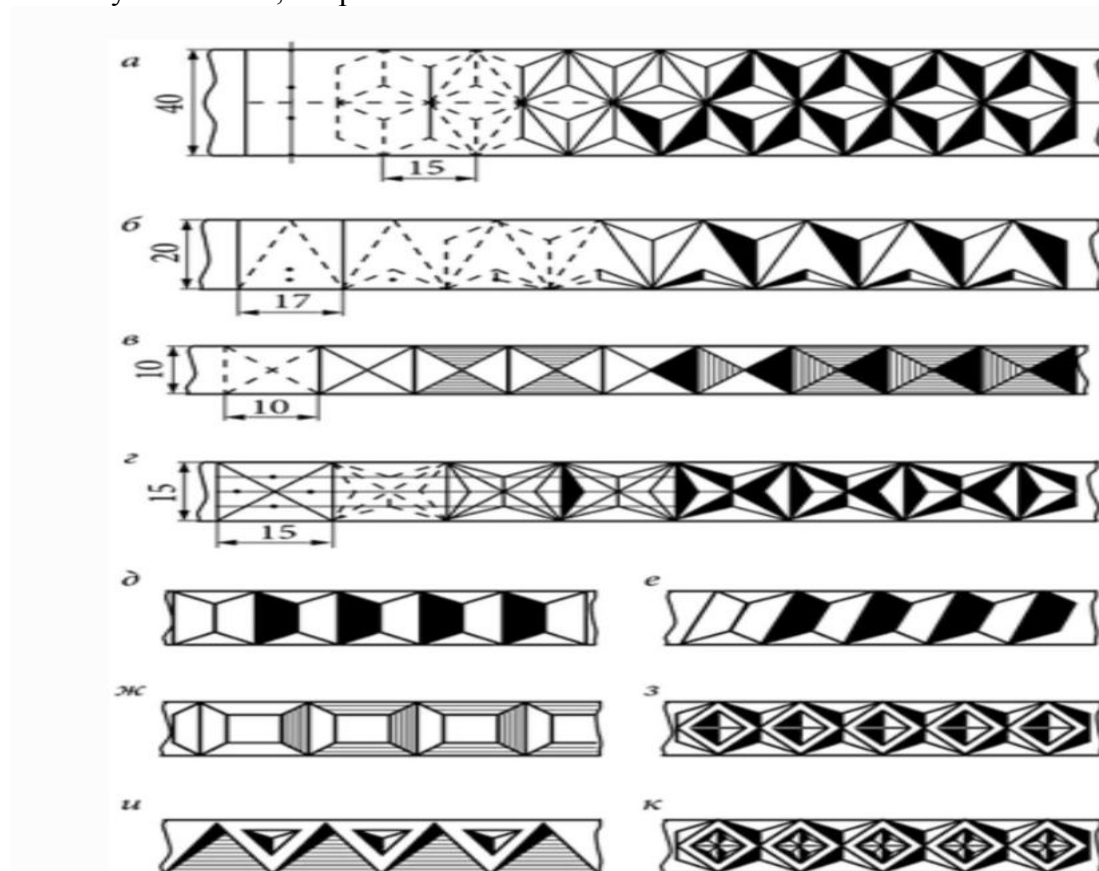
by reproducing these elements and creating some geometric figure. The most common triangle in geometric engraving is triangles, which differ in shape and size, so they are often called triangular threads. This type of carpentry consists of a combination of triangles, rombs, wavy linen discs, spirals, squares, sectors, segments, and so on.

Marking begins with hard pencil lines that restrict decoration - parallel to the edges of the part to be processed and perpendicular, as well as in different angles. When boundary lines are drawn, the inner space is divided into geometric patterns. Division into smaller elements is carried out with an eye.

The geometric thread is to be done with a knife or a cutting edge from start to finish. The knife can be wide or narrow, depending on the size of the embroidery elements.

The triangular thread and the knife are held in the same way as the contour. It is made up of three triangles connected by three triangles. When the three-triangle is to be cut at an angle of 45 degrees Fahrenheit [- 45 ° C], Pull the barrier. Triangles carved above.

Implementation of geometric engraving elements and patterns; determining a-triangles; b- its state during a stabbing; v-cutting triangles; performing g-chips; d-romb embroidery; e the shape of a chain; the embroidery off-viteics; the patterns of snakes.



To make a "blast" written on Romb, draw the romb first, the parties are divided into AB,BC,CD, and DA into any equal parts, and the division points are connected to the center. First, cut the vertical and horizontal lines and make them deep, and you should make three cuts at the corner of the cutting edge of the triangle. When finishing the line, bring the bead to one end of the corner and bend and trim the edges. Each triangle has three edges. The same is true of an explosion written with a rectangular {square}.

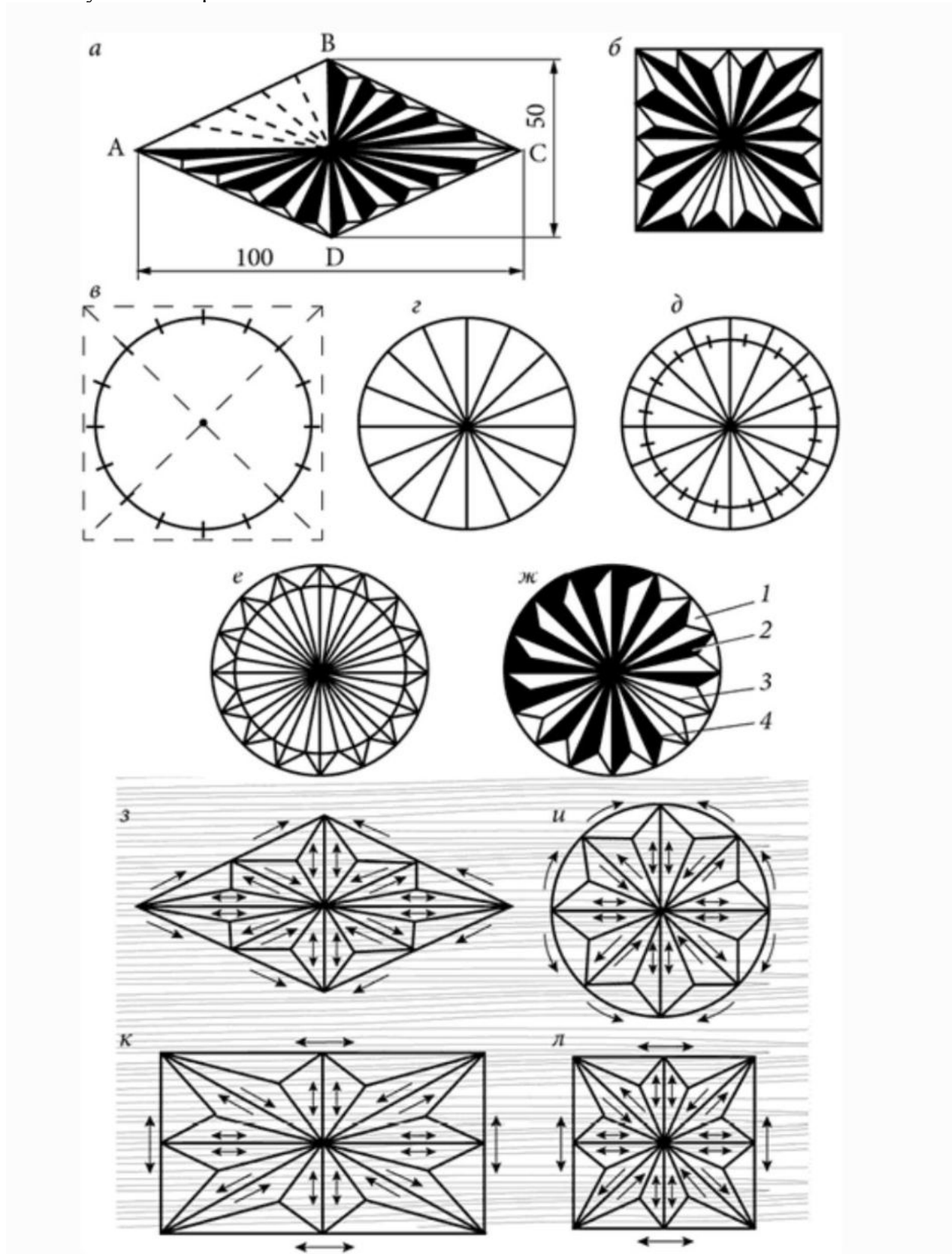
The most famous is the "explosion" written in a circle, a badge that usually represents the center of the entire carved composition.

When determining the output processes, the part to be processed is first divided into squares. Diagonals are drawn from the corners of the square. Using a compass from the center of the square, we draw two concentrated circles, and the radius of the outer circle should be 3-5mm larger than the radius of the inner circle {depending on the size of the badge}. The outer circle is divided into 16 sectors and

32 internal parts. The intervening and outer circles are connected by straight lines at the ends of the radius.

With the help of a vertically placed knife, it is ponctioned at a depth of 2-3mm and begins to cut and cut off the edges stretching from the middle of the rays. In the last place the pieces will be cut.

When cutting "brightness," the angle of the cutting edge should be sharper than the other patterns. The direction of the knife's movement is shown on the board, where the horizontal fibers are placed, in the embroidery of the explosion.



Embroidery of "Brightness": "Shine" written on a-romb; b- written in square "shine"; c,d,e,f- Marking the embroidery in the edition" written in a circle ": in the edition "written in a circle f-circle ": f-"glow" is the shape where the embroidered badge ends {1-cut; 2nd triangular light; uncut collar of the surface of the 3rd product; 4th dagger-shaped cut} s,i,k,l-the direction of the knife's movement when cutting the " glow" pattern written in different geometric shapes {background The direction of the wooden grain will be displayed}

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Tautomeric Equilibrium Among the Derivatives of Benzoyl Vinegar Aldehydes

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Annotation: In this work, using modern physicochemical research methods, the interaction of various amino acid solutions with the Cu(II) ion, the structure and properties of the resulting complex compounds were studied. The influence of the environment on the formation of pure and mixed ligand complexes from various obtained amino acids and the constants of stability and instability were determined.

Keywords: amino acid, 2-aminobutanedicarboxylic acid, thermal analysis, thermal stability, thermolysis, infrared spectroscopy, Miossbauer spectroscopy, frequency of symmetric and asymmetric vibrations, stretching vibrations.

Introduction

The synthesis of derivatives of ketoaldehydes with nucleophilic reagents, the presence in solution and solid state of ring-chain tautomer forms in the form of hydrazone, jenhydrazine and ring oxypyrazole, the formation of complex compounds with various metals is of great interest to scientists. Because these substances are widely used as biocatalysts, drugs in medicine, as biologically active substances in agriculture.

The results of the study show that a series of different equilibria can be found among the acylhydrazones of β -ketoaldehydes (Table 1), which are: double-ring-chain between the ring (B) and hydrazone (A) or hydhydrazine (B) forms. equilibrium, tertiary ring-chain equilibrium, tautomeric equilibrium between linear (A) and (B) forms, Z, E-configuration equilibrium within the hydhydrazine form, conformational equilibrium relative to the amide bond in the hydrazone form, and so on. In solutions of some compounds, up to 5 interlocking structures can be found. Such equilibria were made in the presence of only one substitute and in the presence of only three solvents.

Material and Methods

According to previous studies, the condensation products of ketoaldehydes with aromatic acid hydrazides exhibit a ring-chain equilibrium in which the ring 5-hydroxypyrazoline form is present in addition to the hydrazone or hydhydrazine forms. In contrast to the products of condensation of benzoyl acetaldehyde with aliphatic acid acylhydrazones, solutions of condensation products of benzoyl acetaldehyde with interchangeable aroilhydrazides ($H_2L^1-H_2L^4$) are also linear: E-hydrazone (EZ-hydrazone and AE)) forms predominate. This is evidenced by the parameters of the spectra YaMR- ^1H (Table 1).

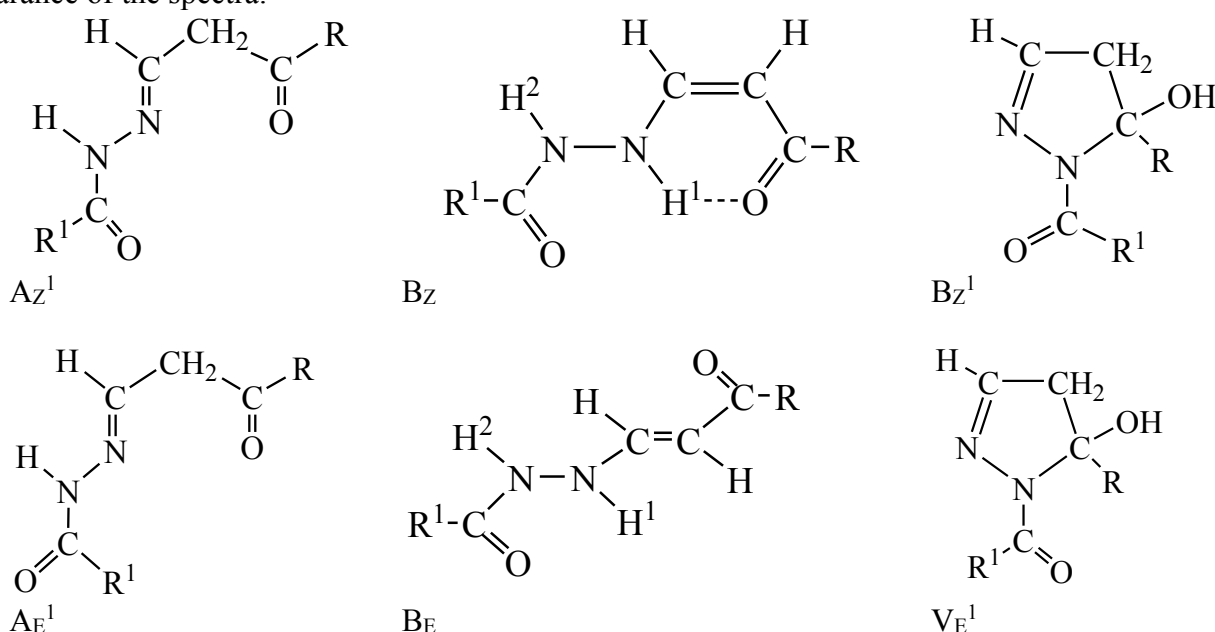
Table 1

Room temperature of benzoyl acetaldehyde ($H_2L^1 - H_2L^4$) aroilhydrazones and YaMR- ^1H spectrum obtained in $CCl_4 + DMSO-d_6$ solution

Comp ounds	R	NH ¹	NH ²	HC-N	HC-C	C ₆ H ₅	R protons	
							X	C ₆ H ₄
H ₂ L ¹	C ₆ H ₅	10,03	9,41	5,72	6,04	7,42; 7,52;7,81	7,03; 7,33; 7,93	
H ₂ L ²	<i>p</i> -CH ₃ C ₆ H ₄	10,12	9,45	5,82	6,11	7,34; 7,67;8,03	2,44	7,09; 7,52
H ₂ L ³	-CH ₃ OC ₆ H ₄	11,14	9,41	5,76	6,01	7,23; 7,76;7,91	3,08	6,92; 7,36;

H ₂ L ⁴	HOC ₆ H ₄	10,13	9,47	5,72	6,04	7,24; 7,59; 7,90	12,65	7,24; 8,07
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For example, the H₂L¹ ligand is present in the form of a BE-configured nebula. The enhydrazine form of these compounds is in the strong field region of the NMR-¹H spectra (d 6.04 m.h., SSTK J = 12-12.5 Gs) and in the relatively weak field region (d = 5.72 m.h., SSTK J = 7.0-8.0 Gs) is characterized by two doublet signals, which indicate the presence of the form Z- enhydrazine (BZ) along with the BE-configuration. For H₂L² and H₂L⁴ compounds, the appearance of the YaMR-¹H spectra is slightly different from that of the H₂L¹ spectrum, as the signal of the para-CH₃- and meta-CH₃O substituent protons in the phenyl ring of the hydrazide part is observed. The signal of the protons of these two substituents differs in that the protons of the CH₃-group in the benzene ring of the hydrazide part of the H₂L² ligand molecule are d = 2.44 mH, and the protons of the CH₃O-group in the meta-state of the benzene ring of the H₂L³ ligand are d = 3.08. gives a signal in m.h. because it is bound to an oxygen atom. It should be noted that in the ketoaldehyde fragment of H₂L¹ – H₂L⁴ compounds, the signals of the terminal phenol substituent protons are obscured by the signals of the protons of the aryl fragment of the hydrazide part of the molecule in all three spectra of YaMR-¹H, complicating the appearance of the spectra.



R = C₆H₅ (H₂L¹), *p*-CH₃C₆H₄ (H₂L²), *m*-CH₃OC₆H₄ (H₂L³), *o*-OHC₆H₄ (H₂L⁴).

Conclusion

Thus, the spectral data show that by changing the structure of the ketoaldehyde part of the molecule, the nature of the solvent, it is possible to achieve different tautomeric equilibria along with the β-ketoaldehydes acylhydrazones. Some of them are complex and can store 5, sometimes 6 tautomeric, configurational and conformational forms that rotate with each other.

Regardless of the equilibrium type, the ring (B) form does not exist at all for the H₂L¹ – H₂L³ derivatives of the exchanged aroilhydrazones and is not recorded in the YaMR-¹H spectra; in solids and solutions, they are mainly present in the form of Z, E-hydhydrazine tautomer (BZ and BE).

To confirm the IR spectroscopic conclusions about the linear structure of the obtained ligands, C₁₇H₁₆N₂O₄ single crystals have been recrystallized by recrystallization of the H₂L₂ ligand and the structure of the crystal was determined by the RSA method. The crystals of the ligand belong to the triclin syngonium and have the following parameters of the elemental cell: a = 15.6942 (13), b = 12.1515 (11), c = 8.0046 (10), α = 90, β = 99.853 (9), γ = 90°, V = 1504.0 (3) Å³, Z = 4, pr.gr. R21 / s. X-ray diffraction analysis was performed on an Xcalibur, Oxford Diffraction automatic diffractometer (λ = 1.5418 Å, CuKα radiation, graphite monochromator, θ-scan, θ_{max} = 75.8°, θ_{min} = 4.6°). The structure of the association was discovered directly by the SHELXS-97 program, and the MNC was determined using the SHELXL-97 program.

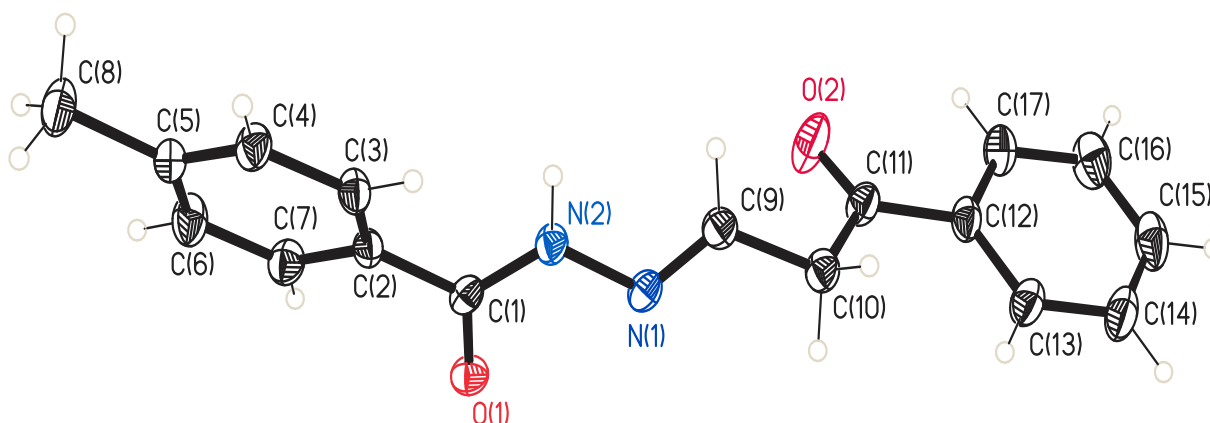


Figure 1. Crystal structure and appearance of hydrogen bonds of 3-phenyl-3-oxopropion aldehyde p-methylbenzene hydrazone (H_2L^8)

O (1) - C (1) (1,230 Å), O (2) - C (11) (1,207 Å), H (1) - C (9) (1,249 Å) depend on the length of the bonds, although they N (2) - C (1) (1,354 Å) are twins, although the length of the bond differs from the rest. This difference in the value of the double bond is explained in our view by the fact that the p-bond in the C = O aldehyde fragment enters the π - π -bond bond with the single π -orbital of the aromatic ring. The C (1) atom has a flat-trigonal configuration (sp^2 -hybrid case), which results in the coplanar arrangement of atoms in space. N (1) N (2) C with values of 173.4 (4)°, -4.3 (6)°, 179.8 (4)°, 177.9 (5)°, respectively. (1) C (2), N (1) N (2) C (1) O (1), C (1) C (2) C (3) -C (4), C (8) C (5) C (6) C (7) The magnitudes of the torsional angles also testify. A similar localized coupling system is formed around the flat-trigonal C (9) atom, which provides the coplanar arrangement of the atoms bound to it in the β -ketoether part of the molecule. Figure 1 shows that the H_2L^2 ligand molecule actually exists in the form of a linear hydrazone (AE). The location of the structural units in the H_2L^2 crystal is shown in Figure 1.

Thus, IR spectroscopy and RSA studies revealed that the ligands are present in the solid state in the form of hydrazone (AE).

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Analysis of Physical Status Indicators of Primary School Students

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Annotation: This article analyzes the indicators of physical development and physical fitness of primary school students. Indicators of physical development and physical fitness of students were also developed by innovative methods.

Keywords: Physical status, indicators of physical development and physical fitness, innovations, methods, chest width, lung capacity.

The future of our country depends on the ability and formation of young people born today and brought up from an early age.

It is important to pay attention to the physical development of children from an early age. For this reason, we have taken tests to study the physical development of primary school students in the 1st secondary school in the city of Fergana. The test involved 52 elementary school readers. The obtained physical degradation indices are given in Fig. 1.

Physical development of primary school students was determined by the following anthropometric indicators. The average body length is 123-121 cm in 1st grade boys and girls, 127-123 cm in 2nd grade boys and girls, and 131-128 cm in 3rd grade boys and girls. not formed.

Body weight 1- sync boy and 22.1-21.2 kg, 2-synch boy and 23.4-22.0 kg, 3-synch boy 27.2-26.1 kg. we're not going to be here.

"I'm not going to be a great boy," he said. 2-synch boy wa, 12.1-10.2 kg, left 10.9-9.9 kg, 3-synch boy wa, 14.5-12.5 kg, left 13.6-11.8 kg. we've got a lot of work to do.

The width of the thorax at rest is 60.1-58.0 cm in 1st grade boys and girls, 62.3-60.6 cm in 2nd grade boys and girls, 64.0-63.0 cm in 3rd grade boys and girls. when breathing, 64.0-62.1 cm in 1st grade boys and girls, 66.1-63.3 cm in 2nd grade boys and girls, 68.2-67.0 cm in 3rd grade boys and girls. when exhaling 60.0-59.2 cm in 1st grade boys and girls, 61.3-60.4 cm in 2nd grade boys and girls, 63.4-62.1 cm in 3rd grade boys and girls. formed.

1-capacity 1-synch son 1512-1423 ml, 2-synch son 1589-1516 ml, 3-synch son 1731-1576 ml. we've got a lot of work to do.

From the collected materials, it was found that the height of boys was 4 cm between grades 1-2, 4 cm between grades 2-3, the height of girls was 2 cm between students in grades 1-2, and 5 cm between students in grades 2-3. differences were identified.

"I'm a weight boy not going to let you down," Henderson said.

He was 1-2 boys 1.7kg, 2-3 boys 2.4kg, 1-2 classes 0.5kg. 2.3 kg in 2-3 classes, 0.6 kg in left 1-2-synch boys, 2.7 kg in 2-3 synch boys, 0.6 kg in 1-2 classes, 1.9 kg in 2-3 classes. we've had a good time.

Chest width at rest is 2.2 cm for boys in grades 1-2, 2.0 cm for girls, 1.7 cm for boys in grades 2-3, 3.0 cm for girls, 2.1 cm for boys in grades 1-2, 1.2 cm for girls when breathing, 2-3 The differences were 2.1 cm in boys, 3.7 cm in girls, 1.3 cm in boys and girls, 1.2 cm in girls, 2.1 cm in boys and girls, 1.7 cm in girls.

It is known that 1-2 sync capacity boys 77 ml, 2-3 sync boys 142 ml, 60 ml headlights.

Table 1
 Indicators of physical development of students of I-III grades

№	Anthropometrics of Kʻyratkichlar		Жинси	I синф		II синф		III синф	
				<i>n</i>	<i>x±m</i>	<i>n</i>	<i>x±m</i>	<i>n</i>	<i>x±m</i>
1	Gavda Uzunligi (cm)		Ў	6	123±0,45	8	127±0,48	12	131±0,56
			Қ	6	121±0,57	8	123±0,59	12	128±0,67
2	Gavda oғирлиғи (kg)		Ў	6	22,1±0,28	8	23,4±0,34	12	27,2±0,41
			Қ	6	21,2±0,28	8	22,0±0,38	12	26,1±0,38
3	Kʻyl heaps (kg)	ЎНГ	Ў	6	10,4±0,18	8	12,1±0,20	12	14,5±0,28
			Қ	6	9,7±0,18	8	10,2±0,20	12	12,5±0,29
		chap	Ў	6	10,3±0,19	8	10,9±0,17	12	13,6±0,25
			Қ	6	9,3±0,19	8	9,9±0,16	12	11,8±0,24
4	Kʻykrak kafasi kengligi (cm)	тинч ҳолатда	Ў	6	60,1±0,20	8	62,3±0,22	12	64,0±0,21
			Қ	6	58,0±0,66	8	60,0±0,17	12	63,0±0,24
		nafas olganda	Ў	6	64,0±0,19	8	66,1±0,21	12	68,2±0,20
			Қ	6	62,1±0,21	8	63,3±0,19	12	67,0±0,24
		nafas chihuahua	Ў	6	60,0±0,22	8	61,3±0,20	12	63,4±0,20
			Қ	6	59,2±0,20	8	60,4±0,59	12	62,1±0,25
5	Ўpkaning thyiriklik sigimi (ml)		Ў	6	1512±15,64	8	1589±15,89	12	1731±21,08
			Қ	6	1423±15,28	8	1516±15,40	12	1576±14,50

The results of tests conducted to determine the physical development of boys and girls in grades 1-2-3 show that the state of natural biological development of primary school students living in different parts of the country is different.

The physical fitness of children who are the heirs of our future is important.

We have developed tests to study the state of physical preparation of elementary synth students. Through these tests, the physical condition of students in the 1st comprehensive school of Fergana city was determined. In the experimental study, 52 boys and girls participated. The obtained zhysmonny readiness indicators are shown in Table 2

shown. The physical fitness of primary school students was determined through the following tests.

According to the data, 4x10m.ha mokkisimon running 1st grade boys and girls 13.9-14.3 seconds, 2nd grade boys and girls 12.8-13.2 seconds, 3rd grade boys and girls 12.5-13.0 seconds tege.

30 m. yes running 1st grade boys and girls 6.5-6.9 seconds, 2nd grade boys and girls 6.2-6.5 seconds, 3rd grade boys and girls 5.9-6.3 seconds.

1600 m. yes running 1st synth boys and girls 10,22-10,53, 2nd grade boys and girls 10,12-10,23, 3rd grade boys and girls 9,26-10,08 minutes and sonia results.

Long jump 1st grade boys and girls 114-103 cm. ni, 2nd grade boys and girls 133-113 cm. ni, 3rd grade boys and girls 142-129 cm. formed.

Shooting tennis ball 1st grade boys and girls 18.95-12.70 m, 2nd grade boys and girls 21.02-16.39 m, 3rd grade boys and girls 23.94-16.99 m. natizha showed.

Gavdani on March 20-17, on March 20-17, on March 20-17, on March 2, on March 23-21, on March 25-20, on March 25-20, on March 25-20.

Hands forward without bending the knees 1st grade boys and girls 2.0-2.3 cm, 2nd grade boys and girls 2.3-2.9 cm, 3rd grade boys and girls 2.7-3.1 cm. the results were recorded.

Turnicle traction for boys (Martha), lifting the body hanging on a horizontal bar, for girls (seconds), 1st grade boys and girls march 1-9 and seconds, 2nd grade boys and girls march 2-13 and sonya, 3rd grade boys and daughters march 2-16 and numbered.

From the obtained materials it was found that 4x10m.ha mokkisimon running, the difference in boys of 1-2 classes is 1.1 seconds, in boys of 2-3 classes 0.3 seconds, in boys of 1-2 classes 1.1 seconds; Showed 0.2 seconds in Grade 2-3 girls.

30 m. is pushed by 1-2 synphylls. The presence of 0.2 sonar, 2-3 synths, 0.3 sonar, 0.2 sonic farms, 0.2 sonic farms annies.

The 1,600-yard field goal gave him a 1-2 innings. 30 sonia, 2-3-synths, 46 sonar, 15 sonic farms were known to exist.

19 cm in boys and 10 cm in girls in the long jump from place to place; Grades 2-3 differed by 9 cm in boys and 16 cm in girls.

Table 2
 Indicators of physical fitness of students of I-III grades

№	Тестлар	Жинси	I синф		II синф		III синф	
			n	x±m	n	x±m	n	x±m
1	4x10 м. моккисимон югуриш (сония)	Ў	6	13,9±0,09	8	12,8±0,07	12	12,5±0,12
		Қ	6	14,3±0,11	8	13,2±0,07	12	13,0±0,13
2	30 м. masofaga yuguris (sonja)	Ў	6	6,5±0,06	8	6,2±0,04	12	5,9±0,05
		Қ	6	6,9±0,06	8	6,5±0,04	12	6,3±0,05
3	1600 м. masofaga yugurish (daqika, sonya)	Ў	6	10,22±0,06	8	10,12±0,03	12	9,26±0,07
		Қ	6	10,53±0,07	8	10,23±0,05	12	10,08±0,04
4	Turgan joyidan uzunlikka sakrash (see)	Ў	6	114±0,01	8	133±0,01	12	142±0,01
		Қ	6	103±0,01	8	113±0,01	12	129±0,01
5	Tennis coptogyni otish (m)	Ў	6	18,35±0,41	8	21,02±0,49	12	23,94±0,46
		Қ	6	12,70±0,34	8	16,39±0,32	12	16,99±0,37
6	Tirgan xolda gavdani egish va yozish (1 daqika davomida, March)	Ў	6	20±0,45	8	23±0,56	12	25±0,56
		Қ	6	17±0,56	8	21±0,56	12	20±0,42
7	Oyoklarni uzatib ytirgan xolatda tizzalarni bukmasdan aldinga engashish (cm)	Ў	6	2,0±0,47	8	2,3±0,38	12	2,7±0,46
		Қ	6	2,3±0,47	8	2,9±0,40	12	3,1±0,40
8	Turnicle tortilish (March)	Ў	6	1±0,06	8	2±0,21	12	2±0,13
9	Turnicle osilib turish (kizlar, sonya)	Қ	6	9±0,36	8	13±0,54	12	16±0,55

Throwing a tennis ball 2 m in 1-2 grade boys. 7 cm, 3 m in daughters. 69 cm, 2 m in 2-3 grade boys. 92 cm, 60 cm in shorts. differences were identified.

It was found that boys in grades 1-2 performed better on March 3, girls performed better on March 4, girls in grades 2-3 performed better on March 2, and girls performed better on March 1.

Hands without bending the knees were found to be 0.3 cm ha for boys in grades 1-2, 0.6 cm ha for girls, 0.4 cm ha for boys in grades 2-3, and 0.2 cm ha for girls.

Turnicle pull was no different on March 1 in 1-2 grade boys, 4 seconds in horizontal bar hanging pockets, no difference in 2-3 grade boys because they were pulled from March 2, 3 seconds difference in pole pulls.

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Features of the Development of Physical Qualities of Young Football Players at the Stage of Initial Training

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Annotation: Based on the monitoring analysis of development-related physical qualities, the article outlines an accentuated methodology aimed at educating the necessary motor qualities in young football players. A staged methodology of sports specialization has been developed and experimentally tested, and its effective ways of development have been determined.

Keywords: Physical qualities, accentuated methodology, initial training, dexterity of football players, stage of sports specialization.

At the initial stage, versatile training is most effective. Excessive enthusiasm for highly specialized exercises often leads to a delay in the growth of skill in the next stages.

In children 8-10 years old, the most favorable opportunities for the development of agility, flexibility and speed are observed.

Of great importance in the initial training phase is the development of agility, which provides the basis for the successful mastery of coordinately complex actions. Moreover, the education of agility at this stage should go, first of all, along the path of forming its general base, as a result of which the special dexterity of the football player will be brought up at further stages of training. At this stage, football players are taught a wide range of various motor actions. The most common method of cultivating agility at this stage will be playful. When cultivating agility as the ability to master new movements, the exercises used must constantly include elements of novelty. As the skill is automated, the importance of this exercise in terms of dexterity education decreases.

In order to develop agility, outdoor games, relay races with a complex of different movements (running, jumping, turning, throwing and catching balls), acrobatic exercises (somersaults back and forth, somersaults after jumps, a combination of somersaults with turns), jumping exercises (long jumps, height, triple, five-fold, with a turn of 90°, 180°, in a squat, etc.), running exercises (running along the "eight", in an arc to the right and left, cross-footed and attached step, running on tags, etc.).

Exercises aimed at developing agility quickly lead to fatigue. Therefore, it is advisable to carry them out at the beginning of training sessions, as well as after rest intervals.

The stage of initial training is most favorable for the development of flexibility, since the body of children at this age is more plastic than in subsequent periods of development, when, as the cartilage tissues ossify, mobility in the joints decreases. When nurturing flexibility, it is important to ensure a broad and harmonious development of mobility in all joints. At the same time, more attention should be paid to those links of the musculoskeletal system, which mainly carry a load in the activities of football players.

The main means for cultivating flexibility are stretching exercises. For this age, it is especially useful to apply exercises in an active dynamic mode. These are, as a rule, exercises from basic or auxiliary gymnastics (ORU), selectively affecting certain muscle groups, ligaments (swings and rotational movements of the trunk, rotational movements in the ankle and hip joints). Active exercises differ in the nature of execution: single-phase and springy; flywheel and fixed; with weights and without weights.

The main method of developing flexibility is the repeated performance of exercises with an ever-increasing and possibly complete amplitude of movements. The pace of flexibility exercises is set depending on their nature and purpose, as well as on the level of preparedness of the participants.

With the development of speed, first of all, attention is paid to its following components: the speed of motor reaction, the speed of individual movements, the ability to increase the pace of movements in a short time. Preference is given to the game method, in which natural forms of movements and non-stereotypical ways of performing them are manifested; exercises performed in the form of relays for pre-determined signals

(sound, visual), for football players of this age, the distance run in one repetition should not exceed 15-20 m. It is important that each repeated performance does not occur during the under-recovery phase.

At this stage, it is advisable to develop running speed with the help of a game of football and exercises with the implementation of technical elements. Game exercises and various relay races (short-distance jerks, with a change of direction, in combination with jumps, etc.) allow you to maintain the interest of children in their implementation.

Purposeful classes for the education of speed-power qualities, general and speed endurance at the stage of initial training, as a rule, are not carried out. The education of these qualities takes place mainly in classes with a complex focus.

Stage of sports specialization

The stage of sports specialization is characterized by a good base of general physical fitness (state of health, posture, coordination and functional capabilities). The main focus of physical training at this stage is the education of the qualities of speed and general endurance, special agility and flexibility of football players, the formation of a base of speed and power capabilities.

The agility of football players is brought up both by non-specific and exercises used at the stage of initial training (mobile and sports games, relay races, jumping and running), and specific (exercises with balls). Moreover, the volume of exercises of a non-specific nature gradually decreases, and their complexity and novelty increase.

When performing exercises, you need to strive for consistency of movements (for example, consistency in the transition from running to jumping, somersaults, running back to front, attached step). At the same time, the ability to master coordination complex actions is formed.

The main means of developing flexibility are general preparatory and specially prepared stretching exercises performed with a large amplitude. These exercises are divided into active, passive (with the help of a partner) and combined. The method of fostering flexibility is repeated. On average, the number of repetitions of the exercise should reach 10-15 times.

Dynamic stretching exercises are performed, gradually increasing the amplitude to a maximum. The signal to stop repetitions is a reduction in the amplitude of movements.

Football players, as a rule, use exercises for the lower extremities (swinging the legs, circular movements in the hip, ankle joints).

To educate speed, competitive repeated and game methods are used. Moreover, relays include the implementation of elementary techniques (for example, hitting the ball, passing the ball). It is advisable to start in relays from different starting positions. At this stage, when educating speed, the method of dynamic effort is also used. These are exercises in jumping, in alternating jumps with jerks.

When educating running speed using the repeated method, the following characteristics must be observed:

1. The intensity of the exercise should be maximum to resist the "stabilization" of speed, You can use a number of methodological techniques (running in facilitated conditions - downhill; alternating jerks in difficult conditions - uphill with jerks, downhill, etc.).

2. The duration of the jerk depends on the length of the distance traveled (10-20 m - starting speed and 30-40 m - remote speed).

3. The duration of rest pauses depends on the length of the distance. In running at 15-20 m, it should be 45-60 s, and in running at 30-40 m - 75-90 s. Reducing the duration of rest intervals helps to improve speed endurance.

4. The nature of rest pauses - light jogging, walking, juggling. In this case, the heart rate before the subsequent repetition should be in the range of 120-130 beats / min.

Exercises are advisable to perform in series of 10 repetitions (depending on the length of the segments) in each. The number of episodes is from 2 to 4. The exercises must be well mastered and simple enough in technical and tactical terms so that the player can develop maximum speed at the distance.

The education of speed-power qualities takes place with the help of the method of dynamic efforts. Moreover, it is inextricably linked with the education of the speed of movement. The main means are jumping exercises (jumping on one, two legs; from foot to foot; jumping up after a short jerk with an imitation of a

head blow; jumping on one, two legs with the advancement and lifting of the hip up; various combinations of jerks and jumps).

No less effective method of educating speed-power capabilities is the shock method, which stimulates the muscles with shock stretching, which precedes the active effort. This method involves performing jumps to the depth from a height of 30 to 50 cm (depending on the age of young football players) followed by an instant jump up or up to the side.

The most effective methods of educating general endurance are a uniform method, variants of variable and playful. The main characteristics of the uniform method are intensity and duration. The intensity of the exercise should be at the level of 70-85% of the maximum aerobic capacity (MPC) of the football player. At the same time, the heart rate during the exercise should be in the range from 150 to 160-175 beats / min. The duration of the exercise depends on its intensity and ranges from 10 to 30-40 min. Other sports (swimming, cross-country skiing, hockey, etc.), various outdoor games, as well as special game and technical-tactical exercises (football on reduced grounds with a reduced number of players; shots on goal after leading the ball, strokes of the racks; passing the ball in motion in pairs, triples; games in the "square" - 4x2, 5x3, 5x2 on an area of different sizes).

Speed endurance is nurtured on the basis of good overall endurance and running speed. In this regard, the stage of sports specialization is most effective for its education. The main methods of educating speed endurance are repeated and interval. The main characteristics of the repeated method correspond to those used in the Education of speed capabilities. The difference is only in the duration and nature of rest pauses between repetitions. The criterion for the correct choice of the duration and nature of rest pauses can serve as a heart rate before subsequent repetition, equal to 140 ± 10 beats / min.

The characteristics of the interval method exercises should meet the following requirements:

1. The intensity of work, determined by the speed of movement, should be close to the limit (from 95% to the maximum, heart rate within 180-190 beats / min).
2. The length of the segments is selected so that the operating time lasts from 20-30 seconds to 1.5-2 minutes.
3. The duration of rest intervals between subsequent repetitions is reduced (from 5-8 minutes between the first and second repetition to 2-3 minutes between the third and fourth).
4. The nature of the pause of rest between repetitions is low-intensity work (juggling the ball, passing and stopping the ball on the spot, hitting the goal without markets and runs).
5. In each series of exercises there should not be more than 3-4 repetitions.
6. The rest time between series should be sufficient to eliminate a significant part of the lactate debt (at least 15-20 minutes, in the intervals between series you can use low-intensity exercises on football technique).
7. Number of episodes - from 2 to 3 in one lesson.

Examples of exercises performed using the interval method and aimed at educating and improving speed endurance can be the following:

|| Shots on goal. A defender, running around the rack, counteracts a striker trying to score a goal after a coach's pass;

|| Two strikers produce a series of markets without rest pauses. At the same time, the winger, after driving the ball at maximum speed, makes a pass to the penalty area, from where the central striker makes a shot at the goal;

|| One-on-one combat of a defender and a striker. The task of the striker is to score all the balls in the goal with a feint, deceiving the defender, who must prevent a shot into the goal. Players are not allowed to cross the penalty area line. The task of the striker is to score as many and as quickly as possible balls into the goal;

|| A group of players alternately send balls to different points in the penalty area on horseback. The defender's job is to try to knock them out of the box with his foot or head in the opposite direction until they touch the ground;

|| A group of players alternately send balls to different points in the penalty area on horseback. The task of the attacker is to score balls into the goal with his foot or head after one or two touches the ball to the ground;

|| Team A has two or three goals and is located on the goal line, and Team B is on the middle line. On cue, the players of team A pass balls to each other. The task of team A is to keep at least one ball as long as possible, and the players of team B must knock these balls out of the field. The team with the longer possession of the ball wins.

Strength in its pure form is to a small extent manifested in the competitive activity of football players. Therefore, when educating strength, the coach should consider it only as a basis for educating and improving speed-power qualities.

The main method of educating the strength of football players is the method of repeated efforts. Its essence lies in the fact that football players perform an exercise (for example, lifting a barbell or squatting with a barbell) with a weight of 60-80% of the maximum possible. Moreover, the number of repetitions of one series should not exceed 10-12, and the number of episodes should not exceed two or three. The last repetitions are most effective. This method allows you to selectively influence the development of the strength of various muscle groups.

Sports Improvement Phase

The stage of sports improvement is characterized by a high level of development of most physical qualities, which reach 80-100% of the corresponding level of adult football players. Based on this, we can only talk about the further improvement of the qualities of speed, agility and flexibility, as well as speed-strength qualities in the process of year-round training. When improving these qualities, the methods and means that were used at the stage of in-depth sports training are mainly used.

For the further development of overall endurance, along with uniform and variable methods, the game method is used. Games, game and technical-tactical exercises are widely used, the intensity of which reaches 75-85% of the BMD, the heart rate is in the zone of 165-175 beats / min.

In addition to this method, an interval method with dosed phases of load and rest is used to educate general endurance. In this method, the intensity of work is maintained in the submaximal power zone (intensity of about 90%, heart rate reaches 170-180 beats / min; the duration of the working phase is within 1-2 minutes (a signal to the end of rest can be a decrease in heart rate to 120-140 beats / min); the number of repetitions is determined by the ability to maintain the specified parameters during the exercise without significantly lengthening the rest intervals.

The main methods of educating speed endurance at this stage of training are repeated and interval. Compared to the stage of in-depth training in the exercises conducted according to the interval method, the volume of high-speed work increases in each series. At the same time, the duration of pauses between repetitions and series is reduced. The magnitude of the load can also vary due to the different ratio of work and rest time.

The education of strength at this stage is done mainly through the method of repeated efforts. In training sessions, to a greater extent, one should take into account the "structural correspondence" of strength exercises to the specifics of the game. At the same time, work on strengthening the muscles of the whole body should not stop.

In order to more comprehensively influence the power abilities of football players, to create conditions close to football, to increase the emotionality of classes, it is necessary to use both paired (for example, fighting for a ball) and group game exercises (for example, playing football with riders). Moreover, it is necessary to clearly dose the load in terms of time and weight.

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Methods of increasing physical faiths during the training of football players

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Annotation: The article explains the further development of the physical capabilities of football players by increasing the volume and intensity of loads in the annual training cycle during training.

Keywords: Increase in physical capacity, the annual training cycle, the period of preparation, the period of competitions.

The volume and intensity of football players' loads in the annual training cycle varies unevenly, not the constant amount. The curve of changing the volume of sports loads in football players is observed depending on the number of exercises and facilities, their duration, and the curve of the intensity of sports loads is observed by the amount of loads (large, medium, small). Analysis of this information allows players to draw up principled schemes for distributing loads in the annual cylinder of the players' training. At the beginning of the annual cycle (preparation period, January - March), the volume of loads increases gradually, and then accelerates (April-July), after which it decreases gradually. This case lasts until the beginning of the transition period. The intensity of the initial loads increases continuously, and this continues for almost the entire year, reducing sharply only during the closing phase of the competition. With the start of the second half of the competition period (August-September), the intensity of training reaches its peak. Next, taking into account the increasing fatigue of players, the intensity of training is gradually reduced. At the same time, it is very important to give football players time-to-time loads (reducing the intensity of exercise). Competitions and their number will be planned in accordance with the fortified plan of the competitions, taking into account the duration and difficulty of their holding. Match matches are scheduled as follows, depending on the level of difficulty:

during the preparation period – taking into account the gradual increase in the essence of competitions;

During competitions - depending on the quality of the players' exercise (training): taking into account the gradual decrease in the duration of the competitions during the transition period. All competitions are distributed by months on an annual skew. Rest, on the other hand, is planned based on the number and difficulty of competitions, the volume and intensity of training, and the level of preparation of football players. To determine changes in the physical technical and tactical preparations of football players, you need to conduct cannon tests (tests) and medical examinations. After the competition and weekends, the date of the canned tests (tests) and medical examinations are scheduled, the remaining days are distributed for classes that last differently and take place at different intensities. Depending on the intensity, classes are divided into classes with large, medium and small loads. Loads on the exercise performance should be extremely individual. The exercise speed should be 80-85% of the maximum speed, while the vein rate should be about 175-180 per minute when the exercise is completed. Intervals should be at least 45-90 seconds, mostly 3-4 minutes.

Small load exercises include exercises that can reach a vein rate of 130-150 times per minute during their performance. The performance that evening was an entity used by Jehovah's Witnesses in your country. You can include simple running around the circle, walking in different situations, carrying balls in a hurry, a variety of gymnastics exercises, kicking at the gate from where you stand, transferring balls from where you stand, teaching new technical methods, and so on. Moderate load exercises include exercises that when performing them at 70-85% of the maximum speed, the vein rate reaches 150-165 per minute. For example, running differently from different start situations, running at different speeds (20-30 m) and speed (15-20), jumping from standing to length, hopping to height, currently pulling the numbers into the chest while jumping to height, as well as transferring after carrying the ball, carrying the ball in a limited area. Conducting various aesthetics with the ball, carrying the ball quickly, conducting different aesthetics with the ball, etc.

Large-load exercises include exercises that can reach a vein rate of 170-190 times per minute. For example, a race-style "mokisimon" run, playing "chase" in a limited area, Jumping (thrown) while sitting down, kicking a ball at the target after a fierce run of 8 to 10 m with an opponent, a special assignment (maintaining a high rate, playing with reducing the number of players in the team, playing in restricted areas (2x3, 3x3, 4x4, 6x6, 8x8).

When transferring exercises to a level of intensity, the following are: (a) the character (pace, difficulty, etc.) and duration of the exercises; b) the duration of the intervals between exercises and its character (passive, active); c) the duration of previous training and post-competition training and rest; g) the personal characteristics of football players; D) tevarak - the surrounding mucous membranes; (j) How long the recovery process lasts after the exercise is completed will be followed. When planning downloads, it is important to remember that its volume is determined not by the duration of the exercise, but by the intensity. For example, a 70-minute task that kicks a ball with YUQS 165-180 times a minute is a large load, and for so long, kicking the ball with YUQS 130-150 times a minute is a small load exercise. Sports loads gradually increase the total amount of work, the intensity of training, and their duration. At the same time: (a) to engage slowly in the conduct of each training and competition; b) to engage slowly after rest, illness, injuries and other interruptions in the exercise (not exercising for a certain period of time); (c) It is important to consider gradually increasing and reducing sports loads during certain parts, stages, and periods of annual cycles. Before each training and competition, the chicken writing is held. Its content, on the other hand, is changed depending on the condition of the players and their individual characteristics and environmental conditions.

In the cylinders between the training cylinders and games, the competitions and weekends are followed, the ability to gradually switch from the average loaded exercise to the workout with a large load, and vice versa from a large loaded workout to the average and low-load. Large-load exercises do not produce a reaction that is clearly expressed as much as they are observed when competing in a competition. At the same time, it is enough to say that after an average loaded exercise, football players lose 1 kg of weight, after a large loaded exercise - about 2 kg, and after the competition- 3kg. According to the vascular pulse chastatasi, blood pressure, breathing speed, dynamometry, electrical sensitivity of the eyes, and other indicators, approximately such physiological changes can be observed. The effect of physical loads on certain functions, as well as restorative reactions, is determined by the types of exercises used, the intensity and duration of their performance, how many recurrences of exercises, and the abundance of rest between them. Loads are used for the following, depending on the specific requirements for the physical training of football players; i.e. for speed-power training; to increase overall durability; to increase speed resistance; It also uses specific exercises (technical and technological exercises), nonspecific (ballless) exercises.

After various sports loads, it is very important to know the laws of the restoration processes in the body of football players. How recovery processes occur is studied by a number of symptoms (blood pressure, electrocardiogram indicators, weight, muscle strength measurement of the hand, stroke of blood vessels, heart contraction chastata, electrical sensitivity of the eye: effects on additional loads, and so on). Recovery, compliance with hygienic requirements and exercise in more fresh air are of great importance in strengthening the health of football players. The observance of such actions by football players ensures that fluid conversion in the body improves, the baseline movement apparatus, muscle, nervous systems are strong and healthy.

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Methods of Controlling the Physical Loads of Players

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Annotation: In order to further develop mass and professional football in Uzbekistan, to strengthen its material and technical base, to train and educate a new generation of players, to increase the international prestige of football in our country, the president of the Republic personally and to the Makhkam of Ministers Sh.Great attention is being paid by Mirziyoyev, relevant decisions, decrees and laws are being developed and implemented in life, which is the basis for the development of sports.

Key words: technical and tactical readiness, control, training, movement

According to the results of the last major international football competitions, one of the factors ensuring the victory of the team is the effective implementation of sharp, fast, unexpected actions.

Planning and control are important conditions for the development of the training system. A number of sports experts acknowledge that with the help of planning, future workouts can be organized and carried out. Training planning should be based on information about the athlete's physical condition, technical and tactical training, the loads he performs. Information on the condition of the players is provided on the basis of complex indicators. The coach should try to purposefully change these metrics at the expense of managing training loads.

M.A. Godik emphasizes that during the practical work, the coach should train the athlete, taking into account the following conditions: fast, constant, current.

Permanent condition - can be maintained for a relatively long time, and this period can last from a few weeks to several months. Indicators that reflect the status quo can be the basis for future training planning.

A current condition is a condition in which an athlete's condition is reflected in the effect of one or more workouts. It is known that each workout leaves a certain mark on the athlete's body, and it can last for several days. The nature of such traces indicates the current situation, and it can provide a basis for planning future training.

Rapid condition is a condition in which an athlete has a "trace" that remains in his body after a workout or after performing a certain exercise. The operational situation is very short-lived, but it is important to monitor it, because it is this type of control that determines the effectiveness of the training.

In order to evaluate all three cases, three different views of the type of control are used in practice. These are: phased, current, and rapid control types.

Rapid control is designed to control the training load, the exercise series, and the training as a whole. One of the key features of rapid control is to determine the ratio of exercise, series of exercises, and physical and physiological parameters of the exercise.

In the current control, however, the recording of the loads on the microcycles is calculated, and its duration varies from 5 to 14 days in different sports. On the basis of such control, the results of rapid control in each daily session serve. After that, the results are summarized, divided with information about the microcycle and evaluated. One of the main tasks in this control is to determine the optimal ratios of the load characteristics to the zones. To do this, it is based on the laws of the effectiveness of missed training.

Step-by-step control is a type of control that is carried out in certain stages, the duration of which can range from 2-5 microcycles to several months.

The main task of this stage is to put into practice relatively effective tools that have the power to develop.

This can be achieved by using specific tests to assess the condition of the players, or by performing certain exercises.

The test is a standard form of task that can be used for mental development, determination of volitional qualities, assessment of motor skills, and a number of other personality traits.

What tests should be chosen in order to know the human condition? How many tests should be used to know the human condition? questions are important in practice.

Control in sports is, first of all, knowledge of the physical condition, technical and tactical skills, the state of the training load.

It is known that a person's physical condition is characterized by the state of his body structure, state of health and development of motor functions. Assessment of the level of body structure is carried out by assessing various anthropometric indicators. Tests to determine the level of body composition are performed only in stepwise controls.

The degree of development of motor functions can be manifested externally by the degree of motor qualities and can be determined by competition exercises. The level of physical fitness can be determined through control exercises, i.e., tests. The main requirement is that the tests have a very simple technical appearance.

The following tests are commonly used in football practice and have high levels of reliability:

1. Running for 15 meters from the start - the starting speed.
2. Running 15 meters - "clean" speed.
3. Jumping from a standing position on both feet - jumping lik.
4. Long jump from standing position - speed-power quality.
5. Cooper test, 12-minute run - endurance.
6. Running 500 meters, speed-endurance.

Special tests are used to assess the agility of the players. According to RI Nurimov, the quality of agility is more complex than other qualities, and its assessment and determination should be carried out in several ways. At the same time, the selection and application of self-tests is difficult.

Assessing a player's technical skills can be done in several ways. The simplest method is a method of visual assessment of gaming equipment.

From the point of view of managing the process of physical training, it should be noted that by assessing the level of development of physical qualities, it is possible to assess whether the athlete's fitness to date meets the requirements or vice versa.

Second, the change in the state of physical fitness also allows us to assess the general condition of his body.

Therefore, it is worth noting that a number of football experts use such indicators in vain.

In conclusion, it can be said that in modern sports life, having a lot of information is of great importance. Pedagogical supervision is the information needed to carry out a coach's planned activities.

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Life and Activity of Muhammad Shaybaniykh

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Abstract: Abu al-Fath Muhammad Shaybani bin Shah Badaq bin Abu al-Khairkhan, born in 1451 and descended from Genghis Khan. It was called "The King's Wealth" in his youth, and over time his nickname changed to Shaybek, a nickname he chose as an adult. His father and grandfather died when he was still young, and he spent the beginning of his life chasing one of the enemies of his brother and grandfather, Abu al-Khairkhan. And they were going with a group of knights defending themselves. During this test, he learned how to live in the darkest conditions, which made him a great leader. The scene of these events is the Kabjak Plateau, which was once the kingdom of Chaghataykhan, a descendant of Genghis Khan. He united many Uzbek tribes and laid the foundation for their rise in M. Manaron and the establishment of the Bukhara Khanate.

Keywords: Uzbek Nation, Shibog, Mir Arab, Hazaras, Khan's Council, Iskandarnoma.

Muhammad Shaybani Khan (Uzbek: Muhammad Shayboniy[1], also known as Abul-Fath Shaybani Khan or Shayabak Khan or Shahi Beg Khan, originally named "Shibāgh", which means "wormwood" or "obsidian") (c. 1451 – 2 December 1510), was an Uzbek leader who consolidated various Uzbek tribes and laid the foundations for their ascendance in Transoxiana and the establishment of the Khanate of Bukhara. He was a Shaybanid or descendant of Shiban (or Shayban), the fifth son of Jochi, Genghis Khan's eldest son. He was the son of Shah-Budag, thus a grandson of the Uzbek conqueror Abu'l-Khayr Khan.[2]

Biography

The ruler of the Uzbek ulus Abu'l-Khayr Khan (1428-1468) had eleven sons, one of whom was Budaq Sultan, the father of Shaybani Khan. Shaybani Khan's mother's name was Aq Quzi Begum. Through his mother, Muhammad Shaybani was therefore the cousin of Janibek's son Kasym Khan, the latter of whom ultimately conquered most of Shaybani's territory to expand the Kazakh Khanate. [3]

According to the historian Kamal ad-Din Binai, Budaq Sultan named his eldest son as Sultan Muhammad Shaybani, and gave him a nickname - "Shibag".[4]

According to sources, the genealogy of Shaybani Khan is as follows: Abu'l-Fath Muhammad Khan Shaybani, known under the name of Shakhbek Khan, son of Sultan Budaq, son of Abu'l-Khayr Khan, son of Daulat Shaikh-oglan, son of Ibrahim-oglan, son of Fulad-oglan, son of Munk Timur Khan, son of Abdal-oglan, son of Jochi-Buk Khan, son of Yis-Buk, son of Baniyal-Bahadur, son of Shayban, son of Jochi Khan, son of Genghis Khan.[5]

It is interesting that in "Tavarikh-i guzida-yi nusrat-namah" (Chagatai: تواریخ گزیده نصرتنامه, "Selected stories from the Book of Victories"), it is noted that the wife of the ancestor of Shaybani Khan, Munk Timur was the daughter of Jandibek, who was a descendant of Ismail Samani.[6]

Shaybani's father Budaq Sultan was an educated person, on whose order extensive translations of Persian works into the Turkic languages were accomplished.[7]

Rise to power.

Shaybani was initially an Uzbek warrior leading a contingent of 3,000 men in the army of the Timurid ruler of Samarkand, Sultan Ahmed Mirza under the Amir, Abdul Ali Tarkhan. However, when Ahmed Mirza

went to war against Sultan Mahmud Khan, the Khan of Moghulistan, to reclaim Tashkent from him, Shaybani secretly met the Moghul Khan and agreed to betray and plunder Ahmed's army. This happened in the Battle of the Chirciq River in 1488 CE, resulting in a decisive victory for Moghulistan. Sultan Mahmud Khan gave Turkistan[8] to Shaybani as a reward. Here, however, Shaybani oppressed the local Kazakhs, resulting in a war between Moghulistan and the Kazakh Khanate. Moghulistan was defeated in this war, but Shaybani gained power among the Uzbeks. He decided to conquer Samarkand and Bukhara from Ahmed Mirza. Sultan Mahmud's subordinate emirs convinced him to aid Shaybani in doing so, and together they marched on Samarkand.[9]

Foundation of Shaybanid Dynasty.

Continuing the policies of his grandfather, Abul-Khayr Khan, Shaybani ousted the Timurids from their capital Samarkand by 1500. He fought successful campaigns against the Timurid leader Babur, founder of the Mughal Empire.[10] In 1501 he recaptured Samarkand and in 1507 also took Herat, the southern capital of the Timurids. Shaybani conquered Bukhara in 1506 and established the Shaybanid Dynasty of the Khanate of Bukhara. In 1508–09, he carried out many raids northward, pillaging the land of the Kazakh Khanate. However he suffered a major defeat from Kazakhs under Kasim Khan in 1510.

One day Shaybani visited Sheikh Mansour and he (Mansour) said to him : "I look at you, Uzbek, and I see that you desire to become a sovereign!". And then he ordered food to be served. When everything was eaten and the tablecloth was removed , Sheikh Mansour said: "As a tablecloth is collected from the edges, so you should start from the periphery of the state (kingdom) ." Shaybani took this very unambiguous advice from his new mentor into account and eventually conquered the Timurid state.

Sultanov T. I., Genghis Khan and genghisids. - Moscow, 2006. p.139

Shaybani Khan maintained ties with Ottoman Empire and China. In 1503, his ambassadors arrived at the court of the Ming Empire Emperor.[11] In Alliance with the Ottoman Sultan Bayezid II (1481-1512), Shaybani Khan opposed the Shia Safavid Shah Ismail I.[12]

Religious policy.

Shaybani Khan did not make any distinction between Iranians and Turks on the basis of ethnicity, but followed the hadith of the Islamic prophet Muhammad: "All Muslims are brothers".[13]

One of the authoritative religious figures, a native of Yemen, Emir Sayyid Shams ad-Din Abdallah al-Arabi al-Yamani al Khadramauti (known as Mir-i Arab), enjoyed the patronage of Shaybani Khan, and constantly took part in the meetings of the diwan (court) and accompanied the Khan in his campaigns.[14]

Shayibani Khan wrote a prose essay called "Risale-yi maarif-i Shayibani" in the Central Asian Turkic - Chagatai language in 1507 shortly after his capture of Khorasan and is dedicated to his son, Muhammad Timur (the manuscript is kept in Istanbul) [15]

The manuscript of his philosophical and religious work: "Bahr ul-Khudo", written in the Central Asian Turkic literary language in 1508 is located in London [16]

Later years

The last years of Shaybani Khan were not easy. In the spring of 1509, his mother died. After her funeral in Samarkand, he went to Qarshi, where he held a meeting with relatives and allowed them to disperse to their uluses (beyliks or small countries). Ubaydulla's nephew went to Bukhara, Muhammad Temur to Samarkand, and Hamza Sultan to Gissar. Shaybani Khan himself with a small detachment went to Merv (Mary, present-day Turkmenistan).[17]

Death

Shah Ismail I was alarmed by Shaybani's success and moved against the Uzbeks.

In 1510, Shaybani Khan was in Herat. At this time, Ismail I, having learned about the failures of Shaybani Khan in the battle against the Hazaras, invaded Western Khorasan and began to rapidly advance towards Herat. Shaybani Khan did not have a strong army at his disposal. During the military campaign against the Hazaras, he lost most of his cavalry.[18] The main army was stationed in Mawarannahr, so he, having consulted with his emirs, hastened to hide behind the walls of Merv. Safavid troops captured Astrabad,

Mashhad, and also Sarakhs. All Shaybani's emirs who were in Khorasan, including Jan Wafa, fled from the Safavid-Qizilbash army and arrived to Merv. Shaybani Khan sent a messenger to Ubaydulla Khan and Muhammad Timur Sultan for help. Meanwhile, Shah Ismail surrounded Merv and besieged the city for a whole month, but to no avail. Therefore, in order to lure the Khan out of the city, he resorted to a feigned retreat.[19]

According to some sources, one of the wives of Muhammad Shaybani Khan, Aisha Sultan Khanum, better known as Moghul Khanum, enjoyed great influence on her husband and his court. The sources say that at the Kengesh (council of the Khan), question arose whether or not to come out of Merv and fight the retreating troops of Shah Ismail. The emirs of Shaybani Khan suggested waiting two or three days until the auxiliary forces arrive from Mawarannahr. But the beloved wife of Muhammad Shaybani, Mogul Khanum, who took part in the military council, said to the Khan: "And you are afraid of the Qizilbash! If you are afraid, I will take the troops myself and lead them. Now is the right moment, there will be no such moment again." After these words of Mogul Khanum, everyone seemed to be ashamed, and the Khan's troops went into battle, which resulted in their complete defeat and the death of Shaybani Khan.[20]

In the Battle of Marv (1510), Muhammad Shaybani was defeated and killed when trying to escape. Shaybani Khan's army was surrounded by Ismail's 17,000-strong army and was defeated after fierce resistance. The remnants of the army ended up dying under enemy arrows.[21][22] At the time of Shaybani's death, the Uzbeks controlled all of Transoxiana, that is, the area between the Syr Darya and Amu Darya rivers. After capturing Samarkand from Babur, Shaybani married Babur's sister, Khanzada Begum. Babur's liberty to leave Samarkand was made contingent upon his assent to this alliance. After Shaybani's death, Ismail I gave liberty to Khanzada Begum with her son and, at Babur's request, sent them to his court. For this reason Shaybani was succeeded not by a son but by an uncle, a cousin and a brother whose descendants would rule Bukhara until 1598 and Khwarizm (later named Khiva) until 1687.

From the accounts of Babur, i.e. the Baburnama, we came to know that the Shah of Persia Ismail beheaded Shaybani and had his skull turned into a bejeweled drinking goblet[23] which was drunk from when entertaining;[10] he later sent the cup to Babur as a goodwill gesture. The rest of Shaybani's body parts were either sent to various areas of the empire for display[10] or put on a spike at the main gate of Samarkand.[24]

Personality

Shaybani Khan was very fond of history in his youth. In 1475, he was specially presented with a book about the life of Alexander the Great — Iskandarnamah, written in the distant Ottoman Empire.[25]

Medieval author Nisari recognized Shaybani Khan as a scholar of the holy Koran.[26]

The manuscript of his philosophical and religious work "Bahru'l-huda", written in the Central Asian Turkic literary language in 1508, is in London.[27] Shaybani Khan used various works on theology when writing his essay. It contains his own views on religious issues. The author presents his own idea of the basics of Islam: repentance for sins, showing mercy, and others. Shaybani Khan shows excellent knowledge of Muslim rituals and daily duties of devout Muslims.[28]

Family Consorts

Shaybani had five consorts:

1. Zuhra Begi Agha (m. 1499-1500), an Uzbek lady and formerly a consort of Sultan Mahmud Mirza;[29]
2. Mihr Nigar Khanum (m. 1500 - div. 1501), daughter of Yunus Khan and Aisan Daulat Begum, former wife of Sultan Ahmed Mirza;[29]
3. Khanzada Begum (m. 1501 - div.), daughter of Umar Shaikh Mirza II and Qutlugh Nigar Khanum, and mother of Khurram Shah;[29]
4. Aisha Sultan Khanum (m. 1503), daughter of Mahmud Khan Chaghatai, and mother of Muhammad Rahim Sultan;[29]
5. Khanzada Khanum (m. 1507), daughter of Ahmad Khan of Haji Tarkhan and Badi-ul-Jamal Begum, and former wife of Muzaffar Husayn Mirza Bayqara;[30]

Sons

He had three sons:

Muhammad Temur Sultan, married firstly to Mihr Sultan Khanum, daughter of Qazaq Khan Burunduq,[31] married secondly in 1500 to Sultanum Begum, daughter of Sultan Ahmed Mirza and Qatak Begum,[29] married thirdly in 1503 to Daulat Sultan Khanum, daughter of Yunus Khan and Shah Begum,[29] married fourthly in 1507 to Ruqaiya Agha, former wife of Badi' al-Zaman Mirza:[32]

Khurram Shah Sultan - with Khanzada Begum:[29]

Muhammad Rahim Sultan - with Aisha Sultan Khanum:[29]

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Formation of Students' Research Skills in the Process of English Lessons

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Annotation. The article addresses current issues in the formation of students' research skills in the English language classroom.

Keywords. Student, ability, language skills, research skills, competence.

In practice, it is known that some students who are well versed in school subjects are not able to apply the knowledge and skills they have learned in solving problems related to non-standard situations encountered in class and in life situations. This is due to the fact that students do not have the appropriate competencies.

The professional potential and level of education of a foreign language teacher, knowledge of modern teaching methods are important in improving the quality of education.

The modular process of education forms an individualized learning direction for learners and creates a process that is entirely research-oriented. The change in this case is not only a change in the norm, depth of knowledge, method of learning, the form of competence, but also an increase in their desire to learn.

Research ability is the ability of students to consciously acquire new knowledge, skills and competencies based on the identification of personal qualities and the ability to acquire them independently.

Research ability refers to the development of a student's thinking process, research activity, i.e., the student's ability to identify a problem and find a solution, ask a question, determine the conditions of a problem, make assumptions about material and spiritual world events, and so on.

Research ability can be seen in the student's ability, activity, so in students it is - goal setting (definition (defining the main goal and activity)); goal achievement (intended) to achieve a defined goal result.

According to the theory of teaching and learning, information acquired by a child becomes real knowledge only if it is integrated (combined) with the child's previous skills. If this information can penetrate not only the thinking ability of the child, but also the heart, affecting his emotional state, this information becomes not only knowledge, but also the competence of a very valuable reader. This efficiency can be achieved through research projects that combine the integration of different disciplines.

The ability to learn a language in the educational process is combined with the basic competencies, that is, the product and effectiveness of education is formed.

We will now look at the development of research skills through project technology in our research at Secondary School No. 49 in Samarkand.

At a time when education is seen as the most important guarantee of giving a child social skills in life, we have chosen the subject of "English" as a child and social life skills. The uniqueness, the attractiveness, the controversy on various topics in this science are reflected in this very science. The child begins to explore what he sees.

The knowledge acquired in the English course is closer to the learner than the concepts in mathematics or native language, and are more quickly absorbed by the learner. In organizing the learning process, we used a system of projects. In this regard, it is advisable to supplement the research elements of students with the sciences of the artistic and aesthetic cycle - music, fine arts and artistic work.

Interesting student projects were achieved during the presentation of "Samples of student research." At School 53, the project has been running for many years.

In the subject "English language" we chose the theme "Nature of Samarkand". In the course of this topic, the students encountered a problem, i.e. it was found that their knowledge of the history of their

homeland was low. In the process of collecting information, another problem was identified, namely the lack of books on the land of Samarkand, including children's books.

Project implementation.

1. We started the project by collecting and analyzing information from various sources based on a previously developed plan.

2. We were engaged in recording, processing, copying the received information. We worked on the pictures for the information.

It should be noted that during the work on the project, students learned to work with information and communication technologies. Created and formatted documents in MS Word, collected, analyzed, systematized information from the Internet, created a presentation, which was done using graphics, animations and MS Power Point, talked about collaboration.

3. We analyzed the obtained materials. We concluded that there is very little information about our native land, its history, so we tried to tell our fairy tales and legends the names of places of our native city through fairy tales and legends.

4. The final knowledge on the research topic was summarized, the results were analyzed.

5. Presentation materials were formed.

6. We had a conversation with a school psychologist before the performance.

The final stage.

1. The project was discussed among the students of the class.

2. The project was examined on the basis of the established criteria.

3. Work process and outcome based on different criteria, i.e. groups and individual successes were discussed.

4. The exit request has been completed.

5. Students gained research skills on the work done. They asked, "What did I learn?", "What did I achieve?", "What did I do?", "What I couldn't do before, can I do now?", "Who did I help?" answered questions such as.

6. Students spoke at open classes, events, and monthly science meetings, answered questions, defended their views, opinions, and ideas, and drew final conclusions.

Undoubtedly, such large-scale projects require strong teacher training and involvement of specialists in various disciplines, but as a result, the student's desire to learn, to study different subjects together, to increase students' knowledge and skills, to form critical thinking in students, to learn to target information. shaping, etc.

The students were so interested in this research that they were not satisfied with the work done and started working on the next project and the next book. On the basis of fairy tales and legends in Samarkand region began a discussion of the life and activities of historical figures, the peculiarities of their traditions. In addition to knowledge of the natural sciences, information on music and information technology was also covered. In the process of studying the history of Samarkand, students collected national songs, tried their hand at ceramics and ceramics. The sciences and skills learned during the research project left a deep mark not only in the minds but also in the hearts of the students, requiring continuous learning, developing students' thinking skills and applying the knowledge gained to life.

Booklets and posters with Uzbek folk proverbs and sayings were published as the subject of the project research.

The study found that:

Parents consider helping each other to be the best human quality. This idea was fully endorsed by the 8th graders. According to grandparents, the best qualities are to be polite, to behave well, and so on, based on our national traditions. The brothers agreed.

- According to teachers, the best quality is to be kind;

- 8th grade students think friendship and love.

Based on a survey on the "worst" habits;

- Sisters and 8th graders - rudeness;

- grandparents - hypocrisy;

- parents - poor reading;

- indifference, ignorance;

- teachers - to offend each other;
- 8th graders mentioned fighting.

At the school meeting, this work was awarded a certificate of honor in the nomination "debut" (first performance).

The conclusion is that while control means that the reader is faced with the task of shaping the country's thinking movement, the thought complex of experiential assistance emerges in managerial injury. A person who is independent, free, creative, does not have a culture of thinking with a scientific basis is a mute. It can become the ashes of the opinion of others. This can be controlled by the example of the Wahhabis, the Hizb ut-Tahrir, the Nurists, the Akromians, and many other enemies of the religion, who have taken root in the correction of ideological divisions, and who have mastered the religion.

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Main Problems of Thread Knurling That Affect Product Quality

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Annotation. The article covers the main factors affecting product quality in thread knurling, the main problems of obtaining a high-quality thread by rolling method are considered.

Keywords: threaded connection, thread rolling, roller, defect, knurled tool, blank, threading die, threading machine.

Threaded connections are one of the most known elements in machine parts. The advantage of such elements is high their reliability and durability. This fastening is responsible for the invariance of the position of the part that makes up the assembly unit of any equipment or machine. In addition, the threaded connection is easy to assemble and disassemble, has a wide range of standard sizes of various threaded parts, and is also easily interchangeable. Despite the fact that the threaded connection is regulated by various regulatory documents and standards, they are trying to modify it and develop a new and improved fastening model.

There are several ways to form a thread:

- injection molding, pressing, stamping (depending on the material: metal, plastic, glass);
- rolling, extrusion (by extrusion of screw protrusions);
- electroerosive;
- cutting machining.

The most commonly used thread knurling methods are knurling and cutting [1].

Thread knurling is the processing of a part without removing chips with a force exceeding the yield strength, which makes the process irreversible. The knurled thread has a number of technical advantages, such as:

- thread profile accuracy
- thread strength
- high quality of the side surface
- high speed and performance.

In addition, knurled thread has disadvantages:

- high demands on the plasticity of the material
- high cost of tools and consumables (rollers)

Therefore, thread knurling is used only in cases of large volumes of mass production.

Let us consider the process of thread knurling with rollers. This process is based on the principles of radial feed [2; 3]. Fig. 1 describes the thread knurling process itself: the movable roller (2) is fed towards the blank (3) and the fixed roller (1). Both rollers are equally involved in the formation of the thread. In this regard, the rollers move to the center of the blank at the required distance, which is equal to the height of the thread stem. However, the following condition must be observed: the diameter of the blank must be equal to the average diameter of the thread. The thread itself is obtained when the turns of the rollers come together and are pressed into the blank forming a thread.

The rollers perform the process of rotation only in one direction with a certain identical speed, and force the blank to perform rotational movements without slipping. In order to form the thread during the rolling process, there must be no slip between the blank and the rollers. The blank is installed by the following method: it is installed on the support ruler (4), while it rests with its end against the stop (5). There is a hard alloy plate on the working part of the ruler. This helps increase its durability. During the knurling process, it is possible for the blank to be pushed out of the rollers upwards. To avoid this, it is necessary to

place the center of the blank higher than the centerline of the roller by about 0.1 - 0.3 mm for screws and 0.2 - 0.9 mm for taps. A ruler helps the blank to be between the rollers during the rolling process. When thread formation is completed, the radial feed stops, but the rollers continue to calibrate the thread in order to increase the surface cleanliness and compaction.

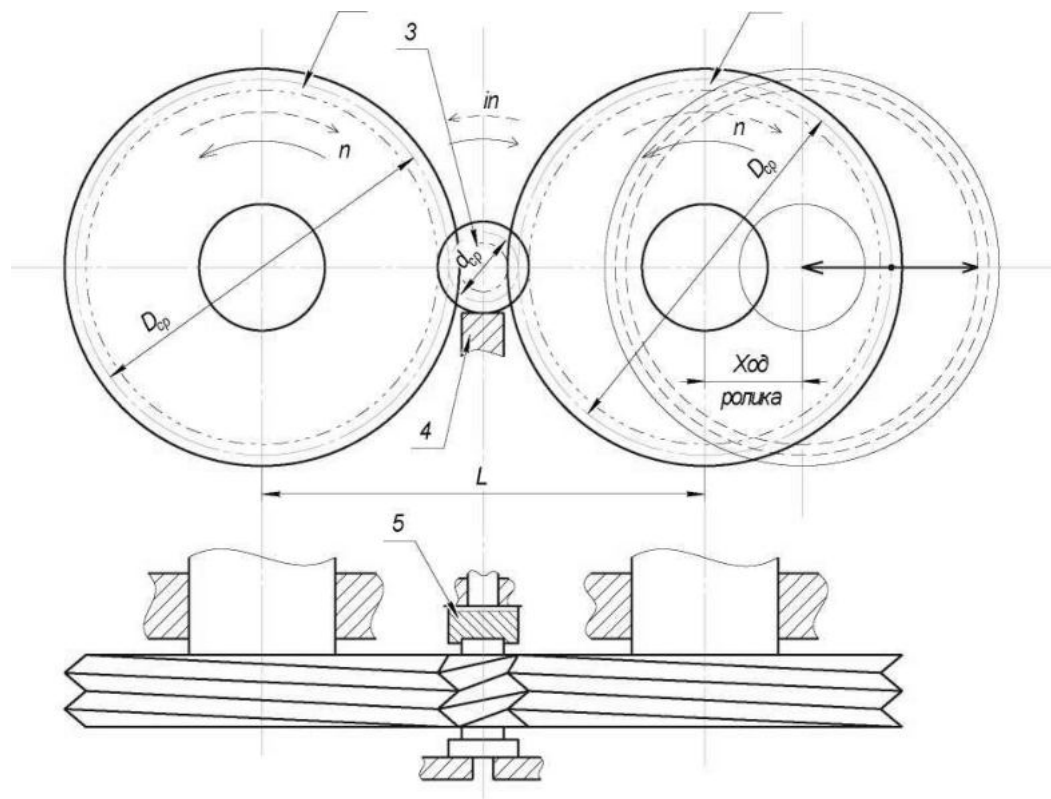


Fig. 1. The process of thread knurling with the roller.

During the rolling process, the movable roller and the blank must be thoroughly cooled with sulfofresol or spindle oil.

Prediction and classification of emerging defects during thread rolling is one of the main elements of modern technology for the production of fasteners, which allows ensuring the required quality.

During the rolling process, a cylindrical blank, which has an equal outer diameter with an average thread diameter, performs rotational movements between the working surfaces of the tool having a given profile. The threaded ridges of the rolling tool are smoothly introduced into the surface layer of the blank, thus forming cavities, and the extruded metal is displaced in the radial direction, forming thread ridges on the blank.

To obtain a threaded profile on fasteners, a variety of thread knurling tools are used: thread-rolling flat dies, roller-roller and roller-segment. The designs of the thread-forming tool are vary and depend on the type and manufacturer of the tool.

In flat dies, as a rule, three working zones are used: the intake zone, which provides capture of the blank and preliminary profiling; a sizing zone that provides the final geometric dimensions of the thread; a reset zone that allows releasing the blank from the threading tool without sticking.

In thread knurling rollers and roller segments, there may be no strict division into working areas.

The defects that are present in practice during thread knurling are associated with mechanical action in this process. During the rolling process, the following defects may occur:

- chipping of metal;
- metal peeling;
- metal flaking;
- tearing out the surface layer of metal;

- cracking of metal;
- the formation of surface defects (laps, folds, layers, burrs, etc.), which can affect the statistical and cyclic strength of the thread connection.

One of the main reasons for the formation of defects during the mechanical knurling process is the conditions for the formation of thread profiles. The thread profile is created by repeatedly and sequentially copying the tool profile (moving and stationary dies, rollers, roller and segment).

The extrusion of the profile is carried out in connection with the redistribution of the elementary volumes of the metal of the blank under study, which are displaced by the working coils of the thread knurling tool. In this case, the surface of the extruded thread is in contact with the working surface of one, and every half a turn with another part of the tool.

It can be assumed that in the process of extrusion of the profile, the appearance of symmetric and asymmetric deformation is possible. The appearance of these deformations depends on the paths of the working turns of the tool along the surface of the thread being rolled. They either match or they don't.

During symmetrical deformation, defects can form at the top of the full thread profile. In addition, defects can appear in various places of the thread profile. It depends on how much the top of the tool profile will be displaced in each deformation cycle of the blank body.

In practice, the violation of the symmetry of the deformation of the metal, during thread rolling, occurs in the following situations:

- due to inaccurate adjustment of the threading tool, that is, the installation of a tool with an incorrect offset along the thread pitch;
- due to the low quality of the thread-knurling tool, both in terms of the thread pitch, and in the shape of the profile and the angle of inclination of the turns;
- because of knurling with complete filling of the profile of the turns of the thread-knurling tool;
- with insufficient accuracy and rigidity of the design of the thread rolling machine.

Inaccurate adjustment of the machine, especially the installation of a thread-knurling tool along the end run out and thread pitch, violates the symmetry of the metal deformation, since the paths of the tool turns do not match [4]. These actions lead to the creation of large defects, such as laps, folds, layers, etc.

Practice has shown that a threading tool, which has an error in the angle of elevation of the working turns or in a step, regardless of the degree of filling of the tool contour, forms surface defects in the form of various folds.

This is because that during each cycle of creating a thread profile, the top of the coil of one threading tool from a pair is displaced relative to the other.

The interruption of the fibers and the appearance of surface defects (e.g. laminations) at the root of the turns are due to the flow of surface layers of metal in the filled axial direction contour during thread rolling. These defects also appear if any other causes that accompany the asymmetric deformation of the metal during the formation of the thread profile are eliminated.

From the foregoing, it can be concluded that the formation of surface defects is affected by the divergence of the paths of the working turns of the tool along the surface of the blank, which violates the symmetry of the deformation of the metal by rolling in the filled contour of the working turns of the tool, leading to axial displacement of the metal layers on the surface [5].

Rolling and wrinkling on the flanks of the thread profile and on the inner diameter of the thread occur in most cases because the setting of the thread rolling tool does not provide the same insertion of the tool parts into the surface of the blank.

This defect occurs both when using flat dies, and when forming a thread using rollers and segment rollers.

As a result, the thread profile previously rolled by one part of the tool is subjected to lateral displacement by the other part of the tool.

In the process of thread rolling, such a defect can be constantly repeated, since the rolling that occurs on the flanks of the thread profile propagates in a spiral manner up to the radius of the base.

The occurrence of such a defect is due to the following reasons:

- inaccurate setting of the thread-forming tool;
- different angles of inclination of the thread on the used thread-forming tool;

- large backlash in the calipers for fastening the thread-forming tool;
- discrepancy between the diameters of the thread-forming rollers working in pairs.

Rolling, in other words, the formation of folds on the sides and based on the thread profile, reduces its fatigue strength. As a result, defects of this kind that occur on threaded connections cannot be normalized only by the tolerance field.

One of the most important conditions for quality assurance in thread knurling is the correct choice of rolling modes: forces, speeds and feed rates. These parameters largely depend on the dimensions of the rolled thread and the mechanical properties of the rolled material.

The quality of the knurled thread and its accuracy depend on the circumferential speed, on the rolling time, and on the radial feed rate of the tool.

With an increased speed and feed rate, peeling is observed, and even detachment of the thread from the body of the part during mechanical tests.

Such defects are formed during external action and are not associated with the mechanical process of plastic deformation during thread knurling, so the causes of their formation can be distinguished into a separate group.

These damages appear during the destruction of the threaded tool turns. Small chips significantly increase the surface roughness of the rolled thread cavities, large ones form critical surface defects.

Minor mechanical damage is also possible. They appear due to the ingress of various solid particles into the contact area of the thread forming tool and the blank. Such particles can be any small chips, abrasives or something else. These materials may be in the cutting fluid or directly on the surface of the blank or tool being machined.

Scratches, nicks and other defects, as a rule, are formed because of the collision of parts when falling at high speed into a technological container.

It should also draw attention to surface defects present on the blank, their appearance will be slightly changed due to metal deformation during the rolling process, but they will inevitably remain on the thread of the finished product.

With significant defects on the surface of the blank, such as stamping cracks, hair crack, laps, etc., high-quality thread production may be impossible.

From the foregoing, we can conclude that the main factors affecting the quality of the product during thread rolling are:

1. The quality of the material used;
2. The quality of the blank for thread knurling;
3. Quality of manufacture of the applied thread-forming tool;
4. The quality of the setting of the thread knurling machine and the quality of the setting of the thread-forming tool (qualification of workers);
5. Selection of optimal thread rolling modes, depending on the parameters of the material used and the quality of the blank;
6. Technical condition of the equipment.

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Modeling the Temperature Field in a Drill Under Influence of High-Frequency Current Hardening

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Annotation. The article presents an analysis of the main structural changes associated with temperature changes under the action of surface hardening by high-frequency currents on the drill surface

Keywords: hardening, heat treatment, model, temperature, drill, depth, heating, high frequency current.

Hardening of metals by high-frequency currents, abbreviated as HFC hardening, is one of the most common methods of surface heat treatment of parts [1]. This method is used for parts made of materials such as steel (carbon and structural), as well as for parts made of cast iron [2]. The main advantage of hardening with high frequency currents is its economy. In addition, when using this method of hardening, we can harden not only all surfaces of the part, but also any of its individual zones, through which the greatest (critical) load will be distributed.

The advantage of this method is that, despite the hardening of the upper layers of the part, the inner layers remain as viscous as before heat treatment. That is, the blank acquires an increased surface hardness, but at the same time does not become brittle, remaining stable and reliable. In addition, for heating not the entire part, but only its surface, the enterprise spends a significantly smaller amount of electrical energy; therefore, it saves variable costs for the production of a particular part.

Hardening by high-frequency currents occurs in three main stages:

- 1) Heating in an induction furnace to the hardening temperature;
- 2) Exposure of the part at such a temperature;
- 3) Fast cooling.

Heating during hardening by high-frequency currents takes place in an induction furnace. There is also a holding of the heated part. Cooling is carried out in a special bath filled with a coolant, which can be water, oil, emulsions [3]. In addition, for cooling, special installations are used that spray coolant onto the blank.

Let us list the main advantages of this heat treatment method. Advantages of high frequency hardening are:

- 1) Preservation of the blank after hardening by high-frequency currents of an unhardened core, which reduces the fragility of the part after such surface heat treatment.
- 2) Heating only surfaces that experience maximum or critical loads saves the variable costs of manufacturing the part by saving electrical energy.
- 3) If the production is not a single, then with the correct setting of process automation, it will automatically perform and maintain the required quality of hardening.
- 4) It is possible to adjust the depth of heating of the blank, which allows understanding the depth of the hardened layer.
- 5) The continuous-sequential hardening method allows using low power equipment.
- 6) A short time of heating and holding at such a high temperature eliminates the possibility of oxidation of the top and the formation of scale on the surface of the blank.
- 7) Rapid heating and cooling does not result in large warp and leach, which can reduce the allowance for finishing or semi-finishing.

Workflow:

The temperature of hardening by high-frequency currents is taken in the range of 700-950 °C.

We import the model geometry from the Compass program (Fig. 1). This geometry is almost the same as the drill from sections 4.2 and 4.3, but with a cut made to be able to track the depth of the blank heating.

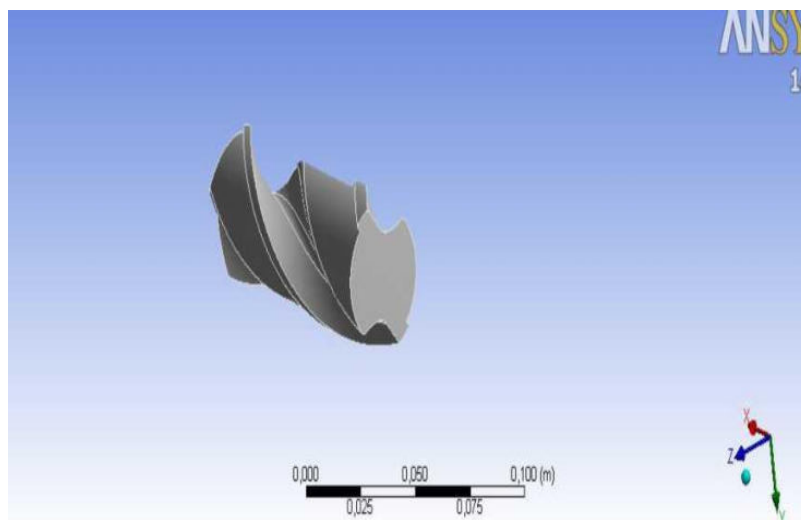


Fig.1 Importing model geometry.

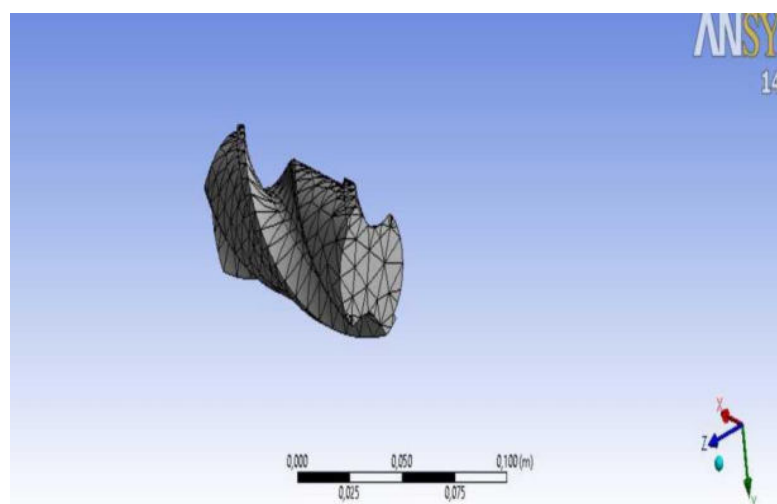


Fig. 2. Finite element mesh.

Let us apply the HFC hardening temperature $T=900^{\circ}\text{C}$ (Fig. 4):

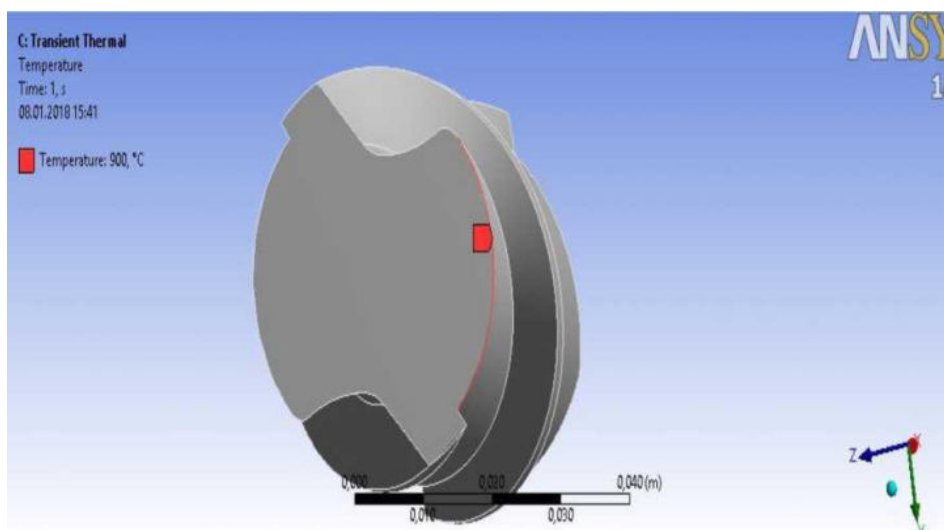


Fig. 3. Temperature calculation.

Let us make a temperature calculation to determine the depth of heating of the drill during hardening of the high frequency current (Fig. 3):

Since it is impossible to measure the heating depth with a ruler in the results of temperature calculations due to the lack of functionality in ANSYS 14.0 [4], we use the ruler and the Paint program (Fig. 5):

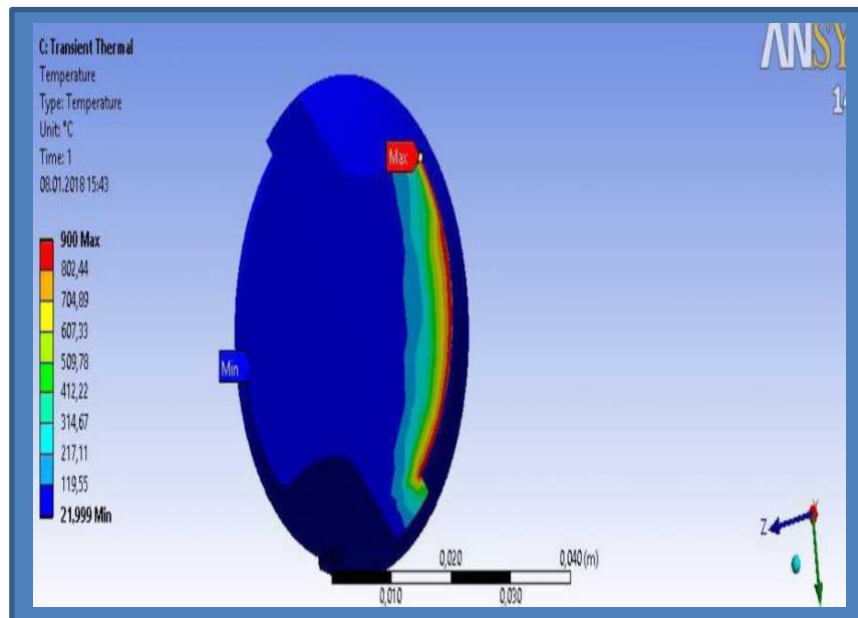


Fig. 4. Temperature application.

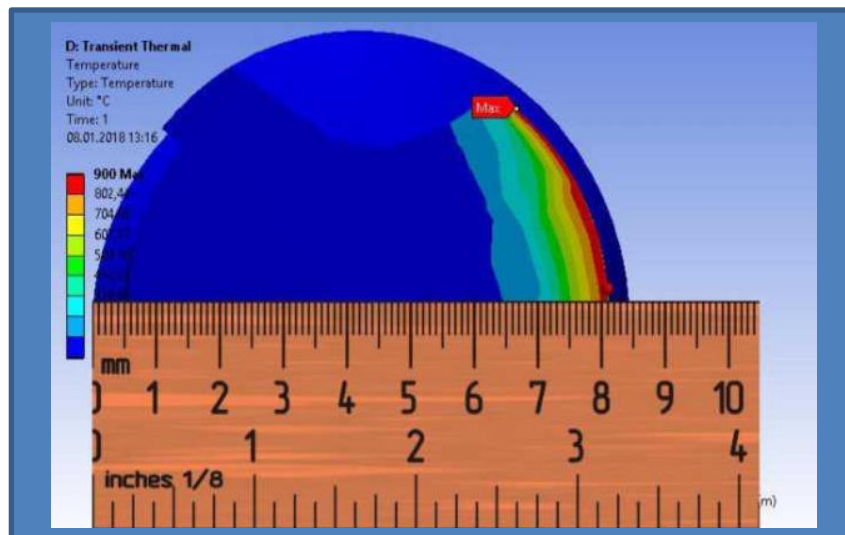


Fig. 5. Temperature calculation with the application of a ruler.

Using Fig. 37 (with a ruler) and knowing the diameter of the drill $D = 40mm$, we can find the heating depth by the ratio:

Heating depth ($T > 700\text{ }^{\circ}\text{C}$):

Heating depth ($T > 500\text{ }^{\circ}\text{C}$):

Conclusion.

The heating depth of the drill during HFC hardening was: $a=3.809\text{ mm}$ ($T>700^{\circ}\text{C}$), and $b=3.809\text{ mm}$ ($T>500^{\circ}\text{C}$). This means that the main structural changes associated with temperature changes under the action of surface hardening with high frequency currents occur exclusively on the surface of the drill. Such a distribution of temperature fields allows, in turn, reducing plastic deformation (because only the surface is hardened) with an increase to the required values of the surface hardness of the cutting tool, in this case, the drill.

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Theoretical and Methodological Foundations of Research of the Process of Implementation of the Norms of International Law Regulating Objects of Intellectual Property into National Legislation and Mechanisms of Implementation

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Annotation. This article discusses the theoretical and methodological foundations of the study of the process of implementation of the norms of international law governing objects of intellectual property in national legislation and implementation mechanisms. It is analyzed the norms of international law in the field of intellectual property from the point of view of further implementation in national legislation.

Key words: implementation methods, legal system, convention, implementation, international law, implementation, patents, intellectual property, utility model, copyright, international treaty, invention.

In the system of international norms of law, an important assistant to any sovereign state is the institution of implementation of international legal norms. Its main purpose for each national legal system, in particular in the field of intellectual property, is to create the necessary legal conditions conducive to the implementation of international obligations assumed. Both in the domestic and foreign policy of the Republic of Uzbekistan, there is a desire to bring the norms and principles of the national system of law in the field of intellectual property to the level of similar international norms and principles. Despite the fact that our republic is a party to thirteen international conventions in the field of intellectual property.

For the first time, the term "implementation" was comprehensively considered in the monograph of the Soviet international lawyer A.S. Gavardevsky, who defined implementation as a purposeful organizational and legal activity of states undertaken individually, collectively or within the framework of an international organization in order to timely and fully implement their obligations in accordance with international law.

As A.N. Morozov, the very concept of "implementation of international treaties" is the activity of the state, represented by its authorized bodies, aimed at implementing the obligations arising from these international treaties.

The concept of implementation was created by the application of the norm of one legal system in another legal system. Many lawyers have the notion that the implementation of norms and principles is only the implementation of international treaties and agreements into the national legislative system. But this is not so, the concept of implementation implies the interchange of norms and principles between national and international legal systems.

Law enforcement practice is a unity of the power activities of the competent authorities, aimed at issuing individual-specific prescriptions, and the legal experience developed in the course of such activities. It is practice that makes it possible to ensure the choice of the legal norm to be applied (to qualify) and to solve certain situations by interpreting the norms of international law and national law on the basis of accumulated experience.

The implementation of legal systems occurs through mutual influence, additions with legal compatibility, regardless of whether it is of a primary nature. The implementation of legal systems is the desire for harmonization and the expression of society's need for the rule of law and a certain level of legal awareness and legal culture.

A.V. Nikolaenko notes the following important details in his study: "The problem of studying the implementation of international law norms in national legal systems is certainly relevant, which is explained by the controversy of theoretical and legislative provisions regarding the mechanism for recognizing generally recognized principles and norms of international law, the norms of international treaties in the

domestic legal system and, as a result, the possibility of their application on the territory of a particular state. The concept of implementation is very meaningful and includes the entire diverse process of implementing the goals of international norms by states. The main components of this process are: the expression of the state's consent to be bound by an international treaty and then the application of the norms of such an treaty within the framework of international or domestic law with its practical implementation in the future. In many cases, the implementation is carried out by the subjects of international law, using the means and methods of foreign policy, namely the international legal norms laid down, for example, in the UN Charter.

According to K. Bel-Velka, there are several main reasons for the unification and harmonization of law, which, in particular, include: 1) the process of further globalization; 2) differences between national law, which lead to additional costs when performing cross-border transactions; 3) insufficiency of national law for effective regulation of cross-border relations; 4) the need of law enforcers for more cross-border rules.

The implementation of the norms of international law in the field of intellectual property is a complex and multidimensional phenomenon that implements the introduction of international obligations into the internal system of law of the state. Thus, the activity of ensuring the implementation of certain prescriptions of a humanitarian nature is associated with the coordination of authorized authorities in the field of intellectual property. The implementation mechanism is associated with the transformation and adaptation of the norms of one legal system to another. The transformation of norms adopted from another legal order of rules has as its consequence: the transition from the international legal system to the national one, first of all, is associated with changes in the content of the legal prescription of norms in the field of intellectual property

In the field of intellectual property, the Republic of Uzbekistan today is a party to the main universal international treaties.

The application of the provisions of international treaties of the Republic of Uzbekistan at the domestic level and the establishment of a hierarchy of international treaties in the system of regulatory legal acts of the Republic of Uzbekistan is done in the Law of the Republic of Uzbekistan dated February 6, 2019 No. ZRU-518 "On international treaties of the Republic of Uzbekistan", as well as a number of other laws Republic of Uzbekistan.

Thus, Article 3 of this Law establishes that international treaties of the Republic of Uzbekistan, along with the generally recognized principles and norms of international law, are an integral part of the legal system of the Republic of Uzbekistan.

Decree of the Cabinet of Ministers of the Republic of Uzbekistan No. 473 "On the procedure for preparing draft international treaties and fulfilling the obligations of the Republic of Uzbekistan under international treaties" dated December 12, 2000 was one of the main by-laws for the implementation of this provision.

In order to include international norms of law into domestic ones, their harmonization, the legislator takes a number of measures. They are very varied. In the legal literature are called: 1) reference; 2) reception; 3) unification; 4) transformation; 5) creation of a special legal regime; 6) cancellation of domestic acts that are contrary to international obligations.

The first and most important step in implementation should be considered the accession of member states to international conventions. Conventions must not only be ratified, but also simultaneously incorporated into national legislation. In this way, their implementation will be ensured.

In legal and scientific practice and theory, there are a number of methods for implementing international legal principles and norms in the national legislative system. As legal studies show, there are 5 of them. These are:

- accession;
- compliance;
- reference;
- usage;
- execution.

Let us note here that in the event that states fail to fulfill their international obligations, the implementation process loses its effectiveness, which immediately devalues the very international legal

regulation. For this reason, there is a timely need to create conditions for the use of various organizational and legal means, which in the future form a specific mechanism for the implementation of the norms of international law in the domestic legal regime of an independent state.

The mechanism for the implementation of the norms of international law governing objects of intellectual property is a set of normative and organizational and legal means that are used by subjects of international law at the international and national levels in order to implement the norms. Organizational and legal means of ensuring the implementation of international law at the international level exist in certain forms that can be classified into three groups: 1) international procedural legal means of implementing international law; 2) international institutional legal means of implementing international law; 3) international legal means of implementing international law, applied by the state individually or jointly with other states-participants of international treaties. The main methods of implementation are incorporation, general or private reference, adaptation, transformation.

The concept of implementation is one of the most common theories of law, mediating a set of measures aimed at recognizing the legal force and organizational support for the implementation of international legal norms within the state. Implementation is the most important component of the effectiveness of international and domestic law.

Considering the above definition in the context of the problem of implementing the norms of international law in the field of intellectual property, it should be noted that it does not cover the norms of the entire spectrum of legal relations arising from the implementation of these norms at the international level. This remark concerns, first of all, the role of the state as a subject of international law in this process.

D. Rauschnig, speaking about the application of the norms of international law in the national legal system, points out that "there are conditions for direct application: 1) the norms of the treaty must be self-executing, 2) they must be the current norms of international law".

One form of implementation that is most commonly used is transformation. It should be noted that the concept and forms of transformation were studied in great detail in the works of two such well-known international lawyers as S.V. Chernichenko, and E.T. Usenko. They both adhere to a single concept regarding the fact that it is within the framework of transformation that all forms of translating international legal norms into national legislation take place. S.V. Chernichenko emphasizes that transformation always takes place when national law is brought into harmony

responsibility with international, in the form of official (legally formalized) and informal (not legally formalized) transformation, as well as the method of implementation, both automatic and non-automatic. Depending on the scale of the process, he distinguishes general, particular and individual transformation. From the point of view of legal technique, he distinguishes incorporation, legitimation and reference.

This form of implementation was considered in great detail by E.T. Usenko, who noted: "For international law to acquire legal force within national law, it must acquire the force of a national legal norm through the adoption of a national legal act." He divides the transformation into two types: general and special. He defines the general transformation as the establishment by the state in its internal law of a general norm that gives international legal norms the force of domestic action. He defines special transformation as the process of giving by the state to specific norms of international law the force of domestic action by reflecting them in the law literally in the form of provisions or by expressing normative consent to their application.

L.P. Anufrieva defines the essence of transformation in that the state, using its powers, ensures the fulfillment of its international legal obligations.

Another form of implementation is incorporation, the essence of which is that the norms of international law become part of domestic law automatically, without requiring the adoption of any regulatory legal acts. S.V. Chernichenko and L.P. Anufriev characterize incorporation as a process in which the norm of international law is literally repeated in national law.

The implementation of the norms of international law should be understood as their implementation in national law. So, part 1 of Art. 25 of the Paris Convention for the Protection of Industrial Property states: "Each country that is a party to this Convention undertakes to take the necessary measures in accordance with its Constitution to ensure the application of this Convention."

Part 1, Article 14 of the WIPO Copyright Treaty emphasizes that "The Contracting Parties undertake

to take, in accordance with their legal systems, the measures necessary to ensure the application of this Treaty". In turn, in part 1 of Art. 23 of the WIPO Performances and Phonograms Treaty "The Contracting Parties undertake to take, in accordance with their legal systems, the measures necessary to ensure the application of this Treaty."

Often, incorporation, ratification, adaptation, transplantation, transformation, implementation, unification, etc. are called as a means of giving force to international legal norms of domestic action.

The domestic implementation mechanism is the final process for the implementation of international legal norms into national legislation. The achievement of the final goal of implementing international legal norms into national legislation depends on an effective domestic mechanism. The effectiveness of the domestic mechanism is also based on the timely use of the organizational and legal means that exist in the national legislation, in the course of which certain legal relations are formed within the framework of the internal legal order. The basis for the emergence of these legal relations are international obligations assumed by the state as a subject of international law.

Due to the lack of clarity in the normative legal documents, there is an active discussion in the scientific literature on the issue of direct action. The doctrine often expresses different, but sometimes comparable opinions on fundamental points. "In order for a norm of international law to be applied as part of the law of a country, it must be suitable for this or, as they say, self-executing. It must be formulated in such a way that it can be applied directly and does not require the issuance of an internal act specifying it.

If we compare the study of the experience of developed democratic countries in the field of fixing the priority of international law norms in the main legislative procedure, it shows that in the constitutions of states it is directly written that the generally recognized principles and norms of international law are part of national law (including constitutional law), and in the case of discrepancies with the norms of national legislation take precedence over him. Article 55 of the French Constitution of 1958 states: "Treaties or agreements, duly ratified or approved, have force exceeding internal laws ...". Similar regulations are known to the legal systems of other states. The Basic Law of Germany recognizes "inviolable and inalienable human rights as the basis of every human community, peace and justice in the world" (Article 1.2). Moreover, according to Art. 25 of the Basic Law of Germany: "General rules for international law are an integral part of the law of the Federation. They have advantages over laws and directly give rise to rights and obligations for the inhabitants of the federal territory.

The interaction of two normative formations, national and international, loses its functional character with the actual penetration of international law into the national legal system. This phenomenon occurs due to the fact that the result of any international legal act is the achievement of a certain degree of regulation of any relations that arise between certain subjects of the intrastate structure of one or more republics (international legal regulation of human rights issues, the procedure for concluding and executing foreign economic transactions, protection of intellectual property rights, etc.).

At the same time, in accordance with the theory of implementation, the point is not to transfer the norms of international law into the norms of the national legal order, but to apply the former within a given state with the sanction of the latter. In cases where domestic law authorizes the application of the rules of international treaties within the country, the problem of so-called self-executing and non-self-executing treaties arises.

Public relations that are not regulated by specific norms, if necessary, turn to the norms of self-executing contracts for concretization. This is all thanks to their detailed workmanship and completeness.

The status of international treaties in the Constitutions of some states is placed on a par with national legislation, and sometimes even has a significant priority over it. These states include France, USA, Germany, Spain and others. The practice of the aforementioned countries can show that the agreement in force in the sphere of regulation of relations between national legal entities of different state affiliation, as usual, is self-executing.

The application of the rules of such an agreement, as is customary, is authorized by the state for internal purposes, for the full and not reproachful execution of which an act of national legislation is required, which will disclose in detail the contents of the above norms. These are the internal acts that are mentioned in the Civil Code of the Republic of Uzbekistan and the Law of the Republic of Uzbekistan "On International Treaties of the Republic of Uzbekistan". This need can be substantiated by the fact that non-

self-executing international treaties, most often, are of a single nature, define generally accepted restrictions, the scope of behavior within which states determine the rights and obligations of subjects of national law. The above agreements are usually legalized in order to achieve a certain settlement of relations within the country (for example, in the field of ensuring and observing human rights and freedoms).

As we know, the two main theories, these are: the theory of implementation and the theory of transformation, have a similar basis, this basis is the postulate of the independence and independence of the systems of international and domestic law from each other. This case is extraordinary, since the process of contacts between these normative formations described above is defined differently. One of the main ones, that is, the theory of implementation, characterizes it as a set of law-making and organizational and executive measures designed to implement the provisions of international legal norms in practice and different depending on the subject and final goal of international legal regulation, and not as a combination of several means of legal techniques, the purpose of which is to transfer the norms of international law into the norms of national law.

Of course, the peculiarity of the right to the results of intellectual activity is manifested in their territorial nature. According to Art. 7 of the Civil Code of the Republic of Uzbekistan, if an international treaty or agreement establishes completely different rules than those provided for by civil law, the rules of the international treaty or agreement are applied).

The way of adopting an internal act is the most common way of implementing the norms of international treaties on the protection of intellectual property, chosen by the legislative power of the Republic of Uzbekistan. The procedure for the transformation, that is, for the transfer, of the obligations assumed by Uzbekistan mainly takes place through the institution of implementation. Studying the legislative practice of Uzbekistan, we came to the conclusion that there are no norms in it obliging to implement the provisions of ratified international treaties, with the exception of those rules that recognize the priority of international treaties.

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Transport Logistics Main Advantages and Disadvantages of Different Types of Transport

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Annotation: This article provides information on transport logistics, features, main purpose, its functions, tasks, organizational principles of transportation and types of transport.

Keywords: transport, transport logistics, rail, road, water, air, pipeline, speed of cargo, carrying capacity, reliability, frequency of transportation, availability of vehicles.

Introduction. Transport is the third leading sector of material production, which forms the material basis, influences the location of production, promotes the development of specialization and cooperation, as well as the development of integration processes.

All means of communication, transport enterprises and vehicles together form the global transport system. affected all types of transport: increased speed, increased load-carrying capacity, increased rolling stock. Containers, the emergence of underwater tunnels has significantly expanded the carrying capacity of various cargoes.[1-3]

The proportion of modes of transport varies in the transport systems of regions and individual worlds. Thus, the transport system has an industrially complex structure and is represented by all types of transport, including electronic. France, the United Kingdom and others are characterized by a high level of transport development. About 85% of the world's domestic freight traffic is accounted for by developed countries (excluding urban long-distance navigation). And in Western countries. In Europe, 25% of freight traffic is by rail, 40% by road, and the remaining 35% by inland waterways, sea (short) cabotage and pipelines.

Transport logistics is a functional subsystem of integrated logistics that addresses the organization and management of freight.

Transport is the process of moving material flow in space.

The following features are used to describe transport:

- speed of cargo movement;
- load carrying capacity;
- reliability;
- frequency of traffic;
- vehicle availability.

The main goal of transport logistics is to deliver the right quality and the right amount of the right product to the right customer at the right time, at the lowest cost. [1-8]

Transport logistics functions:

1. at the macro level:

1.1. movement of goods;

1.2. storage of goods ... This is done due to the deliberate choice of a slower method of transporting goods with limited space storage areas, as well as at the expense of direct short-term storage of goods in transport to avoid loading and unloading operations.

2. micro level:

2.1. development of transport logistics channels within the established conditions and taking into account other logistics costs;

2.2. market research and analysis of transport services (if a third party carrier);

2.3. at the cost of tariff rates for transportation under the conditions established on the basis of optimal values calculated based on the selection of the carrier and negotiations, taking into account the remaining logistics costs (if there is a third party carrier);

2.4. planning the terms of delivery or transportation of the rolling stock (if there is a third party carrier);

2.5. tracking and directing the delivery of goods;

2.6. audit of transport operations and litigation.

Transport logistics functions:

- determination of mode of transport;
- Determining the type of vehicle;
- selection of transport service provider;
- joint planning of transport and warehousing processes;
- coordination of transport and loading operations;
- determination of optimal directions of delivery of goods;
- Determining the total cost of transportation of goods. [5-10]

Organizational principles of transportation:

1. Savings due to the volume of freight. The increase is achieved by reducing transportation costs per unit of freight. The larger the consignment, the lower the unit cost of the cargo. This is especially true for rail and water transport. This effect occurs when a constant component of transportation costs is distributed over the entire load;

2. Savings due to the duration of the route ... This is achieved by reducing the cost of transporting goods per unit of distance. The reasons are similar to the previous case.

Transport is the department of transporting people and goods of material production. In the structure of social production implies the production of transport material services.

Logistics operations, which are an important part of transport, are carried out by various means of transport on the way from the main source of raw materials to the final consumption. The cost of these operations is up to 50% of the total logistics cost.

According to the purpose, there are two main groups of transport: Public transport is a network that meets all the needs of the economy and the population's needs for freight and passenger transportation. Public transport serves the circulation and the population. It is often referred to as a backbone (in some systems, the backbone is the main, main line in the communication line system). The concept of public transport includes rail transport, water transport (sea and river), road, air transport and pipeline transport.

Non-state transport - intra-industrial transport, as well as all types of vehicles belonging to non-transport organizations.

The organization of transportation in non-state transport is the subject of study production logistics. The task of selecting distribution channels is solved in the field of distribution logistics. [18-24]

Thus, there are the following main types of transport:

- railway
- Inland waterway river
- machine
- air
- Pipeline

Each type of transport has its own characteristics in terms of logistics management, advantages and disadvantages that determine the possibility of its use in the logistics system. Different types of transport make up the transport complex. The transport complex of Russia is formed by legal entities and individuals - entrepreneurs engaged in transport and forwarding activities for the design, construction, repair and maintenance of all types of transport, railways; works related to the maintenance of roads and their structures, pipelines, shipping hydraulic structures, water and airways, research and training, enterprises producing vehicles included in the transport system, as well as organizations that carry out other work. transportation process work. Russia's TC is more than 160,000 km of main railways and access roads, 750,000 km of paved roads, 1.0 million km of sea transport lines, 101,000 km of inland waterways, and 800,000 km of airlines. These communications alone transport about 4.7 million tons of freight (as of 2000) on public transport every

day, employ more than 4 million people, and account for about 9 percent of the country's GDP. . Thus, transport is the most important part of the infrastructure of the country's economy and the entire socio-industrial potential. [20-24]

The result. There are five main types of transportation: rail, road, water, air, and pipeline. The relative importance of each of them can be assessed by the length of roads, traffic volume, profitability and the content of traffic flows (composition of transported goods). Below, we review each transport type in detail based on these parameters.

To understand the role of each mode of transport, it will be useful to compare their revenue and traffic volume.

Tonnomil is a standard indicator of cargo turnover, which includes information on the volume of cargo flows (in tons) and the distance traveled (in national). The value of this indicator is obtained by multiplying the weight of the load on each trip by the length of the route. The figures show an increase in traffic in each mode and a relative increase in air and road transportation revenue per tonne of miles.

Railway network. Historically, the bulk of freight traffic on the continental United States has been by rail. In the United States, an extensive network of railroads connecting almost all towns and villages in the country emerged early; This explains why by the end of World War II, railroads were ahead of other modes of transportation in terms of ton-miles of intercity freight. This is because the railways provided economical transportation of large loads, offering a number of additional services, as a result of which they gained an almost monopoly position in the transport market. However, after the war, the rapid development of road transport, which was in serious competition with the railways, began, and the relative share of the latter in total transport revenues and total freight turnover began to decline.

In 1990, railways accounted for 37.4% of all intercity freight traffic, expressed in tons of miles. According to forecasts, in the 2000s, this type of transport should have entered with approximately the same market share. Such stabilization of the relative market share is an important achievement compared to the situation in 1947-1970, when railway transport declined sharply: in 1947 the share of rail freight turnover per ton-mile was 54.0%, in 1958. - already 39.2%, in 1980 - 36.4% and in 1992 - 37.0%. The decline in income was even more dramatic: from almost 40% in 1950 to 20.9% in 1982.

Railroads were once the longest transportation network in the United States, but they were replaced by highways that were widely built after World War II. In 1982, the country's railroads were 165,000 miles, but by 1989, after the Staggers Railroad Act was passed, 148,000 miles had been reduced as a result of the liberalization of rail termination rules.

The importance of railways is still determined by their ability to transport large volumes of cargo over long distances efficiently and relatively cheaply. Rail transport is characterized by high fixed costs due to the high cost of railways, rolling stock, marshals, and depots. However, the variable portion of operating costs on railways is small. Switching from diesel to diesel locomotives has reduced variable costs per mile, and the introduction of electric locomotives will save even more. The new contracts with the unions allowed for a reduction in the number of employees, leading to an additional reduction in variable costs. [10-24]

Relatively recently, there has been a trend to specialize in railway transport. The bulk of freight turnover is provided to the railways by the export of mineral raw materials (coal, ore, etc.) from sources far from waterways. The ratio of fixed and variable costs in rail transport is such that intercity transportation is still profitable for it.

Over the past 50 years, U.S. railroads have lost market share to automobiles, water, and other types of freight. To counter this trend, some railways, such as Union Pacific (UP), have taken a number of initiatives to simplify management, improve operations, improve service quality, and reduce costs. UP, the second largest railroad company in the United States, began rebuilding in 1987 with the introduction of general quality management programs aimed at meeting customer needs, using resources efficiently, increasing profitability, and accelerating growth.

The company has been successful in adopting advanced technologies. An example is the merger of 160 regional customer service offices into a single national customer service center in St. Louis. The center processes 20,000 inquiries of various profiles every day - from ordering to product inquiries.

Another example of the company's innovation is the establishment of a new centralized dispatch center in Omaha. Located in 100-year-old warehouses, the center is equipped with the latest technology and

integrates the activities of ten regional dispatch centers. Each wall of the dispatch center is equipped with a number of video screens the same length as the length of the football field, which allows you to monitor all stages of the work carried out in the area controlled by the dispatcher. Brightly colored displays provide information on the condition of trains and railways, the location of freight and repair crews. Computers and mobile phones are used to communicate between trains and the dispatch center. The dispatch center communicates directly with each driver, which allows the center's staff to be constantly informed of all issues and to manage traffic efficiently.[18-24]

Conclusion: Transport is the third most important sector of the world economy. All vehicles, businesses and communications make up the global transportation system. Land transport includes: road, rail, pipeline, as well as horse and pack types. Road transport is a leader in passenger and cargo transportation.

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The Use of Geoinformation Systems in the Study of the Land Fund of Household and Dekhkan Farms

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Annotation: The article presents an overview of the geoinformation system that will help the student to better understand modern works on territorial planning, land management, cadastre, and assessment of the state of the natural environment.

Keywords: Geoinformation, GIS, cadastre, land formation, plan, territorial, management systems, housing, peasant farms.

Introduction. The problem of land management in rural settlements and, first of all, the household land fund has always been relevant. The increase in economic entities on the land due to the growth in the population of the household land fund initiated the expansion of the circle of participants in land relations. Modern work on territorial planning, land management, cadastre, assessment of the state of the natural environment certainly involves the use of geographic information systems (GIS), which allow to make fundamental changes in the industry of information support for managerial decision-making. [1-5]

The object of my research is the lands of household and dekhkan farms in the Fergana region, which is an ideal testing ground for developing a system of information support for land management using GIS based on land inventory for prompt management decisions.

To create a land management system for household and dekhkan farms using GIS technologies, the method of systematic analysis of the rationality of land use and the allocation of territories for irrational use of land, use for other purposes, field observation methods: by yard bypass, geodetic survey on inventory areas, methods organizing data by creating a geodatabase, methods of spatial-logical modeling.[6-10]

For a fragment of lands of household and dekhkan farms, an automated cartographic system (ACS) has been developed and tested, which is the core of the GIS for managing land resources of household and dekhkan farms, and is a set of software tools that provide the creation and direct use of maps.

It is advisable to create a full-fledged GIS for managing the territories of household and dekhkan farms in 2 stages: preparatory and production.

Results and discussion. The preparatory stage includes: collection, analysis and systematization of archival land and cadastral data, planning and cartographic materials, land management documentation for land plots (allocation materials, land inventory materials, land records), as well as data on the composition and population.

In order to clarify and update the planning and cartographic material, as well as to speed up and reduce the cost of work, you can use remote sensing data refined during the production stage during geodetic survey.[6-10]

In addition to geodetic surveys and door-to-door walks, land management and land cadastral work is carried out at the production stage, during which the drawing and adjustment (clarification) of the border, the boundaries of the territories of household and dekhkan farms, the boundaries of individual land masses and plots are carried out.

As a result, digital maps of the area are formed, and a geodatabase (GDB) is compiled.[6-10]

Land plots are formed using topological rules, which eliminates incorrect data, such as overlapping land plots or vice versa gaps between them.

A geodatabase is a spatial logical model that can be used to:

- inventory of lands of household and dekhkan farms;
- monitoring the state of utility networks;

- support, updating and development of the general plan of a rural settlement, the creation of detailed planning projects;
- information support for the selection of a site for the construction of storage facilities, storage facilities for commercial facilities (for example, procurement organizations) that require a preliminary detailed spatial analysis of the territory;

- information services and consultations for potential users of land and real estate: spatial information on the normative and market value of land plots, cartographic services for real estate databases. [11: 309-311 b]

A large amount of accumulated information and the integration of geographic information systems (GIS) allow you to quickly and fully satisfy a wide variety of information needs, both in content and in form - in the form of reports, thematic maps, analytical results in electronic and paper form for information support for the adoption management decisions. [10:312-314 b]

Approbation of the results of the study, which was carried out on the example of lands of household and dekhkan farms in the Surkhandarya region, showed that GIS is an effective tool for managing land resources in rural areas, for example:

- in the sphere of economy - determination of the current state of land use, identification of opportunities for optimizing and improving the use of lands of household and dekhkan farms in the region by changing the territorial and sectoral structure of land, analyzing its state and development trends.

- in the field of ecology - identifying the features of the ecological state of lands and preventing the development of negative processes.

Reliable and complete information on land resources contributes to an increase in revenues to the budgets of all levels from payments for land, the organization of its rational use and protection, the operational regulation of land relations and the introduction of a regulated land market. [7: 93-97b]

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Methods of Improving Physical and Mechanical Properties of Light Concrete on the Basis of Chemical Additives

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Annotation: The rapid development of the global construction industry and rising prices for fuel and energy carriers lead to the need to create and implement resource and energy-saving technologies in the production of building materials and products. In this regard, the use of new types of environmentally friendly materials in the field of building materials, the effective use of energy-saving technologies, the improvement of new building materials and their existing technology, thereby improving the physico-mechanical and physicochemical properties of concrete and concrete mix takes over.

Keywords: masonry, material drying, vermiculite concrete, concrete,

Introduction

The rapid development of the global construction industry and rising prices for fuel and energy carriers lead to the need to create and implement resource and energy-saving technologies in the production of building materials and products. In this regard, the use of new types of environmentally friendly materials in the field of building materials, the effective use of energy-saving technologies, the improvement of new building materials and their existing technology, thereby improving the physico-mechanical and physicochemical properties of concrete and concrete mix takes over. In this regard, special attention is paid to the development of chemical additives of concrete and concrete mixes based on local raw materials and energy-saving technologies for their production. It is known that the wall brick industry is one of the most heat-intensive industries. The heat consumed is a large part of the cost. In this case, the heat is mainly used for drying and baking the material. Although vermiculite concrete is used instead of this building brick, it can be used in the construction of houses and buildings, which allows you to save on fuel and heat consumption in the heating of rooms. On the other hand, the importance of improving the physical and mechanical properties of vermiculite concrete products further increases the relevance of the chosen topic. Extraction of vermiculite concrete from the mold in the technological system of autoclave production leads to the maximum achievement of product durability in the short term, which in turn leads to increased production productivity. One way to achieve this is to use chemical additives in production [1,2,3]. Types of attachments.

All additives (natural or artificial chemicals) are divided into 4 classes according to the mechanism of their action:

Appendices 1, which alter the solubility of mineral binders and do not chemically react with them;

2 - additives, reacting with binders and forming difficult-to-dissolve or sparingly soluble complex compounds;

3 - additives, forming the ready center of crystallization;

4- Organic surfactants (SFM) have the ability to adsorb the solid phase on the surface.

Chemical additives for concrete are divided into the following types depending on their use in accordance with GOST24211-2008 (according to the main effect): Various additives are added to binders and concrete mixes to improve their properties. They are divided into six classes that affect chemical, physicochemical processes:

Class 1: regulators of rheological properties of compounds, which are divided into three groups: I - softener - SSB-sulfite - alcohol, SDB - sulfite - yeast liquid, water-soluble polymers. They are added in the amount of 0.15-0.3% by weight of the binder. Class 2: water-retaining additives: active mineral additives (ACM) - trepel, diatomite, opoka, sour ash, as well as airborne substances. They are added in the amount of 0.01-0.05% by weight of the binder. Class 3: diluents (without water separation) - these include micro-foaming

agents - milonaft, acidol and other water reducers, as well as reducing the consumption of binders and are added in the amount of 0.01-0.2%. Class 2 includes additives that control the retention and solidification of binders, and they are divided into several groups:

1. Retention retardants (gypsum, milonaft, SSB, etc.).
2. Hardening retarders (SSB, SDB).
3. Retention accelerators, (NaF, CaSO₄, K₂SO₄, etc.).
4. Accelerators of solidification (NaSO₃, NaSO₄, FeSO₄), calcium, sodium-nitrate and others.
5. Anti-cold additives (NaSO₃, NaSO₄, NaNO₂).
6. Activators of solidification of homogeneous clinker-free binders (NaOH, Na₂SO₃, K₂SO₃, NaNO₂, etc.).

Class 3 additives are divided into eight groups, and their common feature is the control and modification of the structure of hardening binders, increasing their density. Class 4 additives include corrosion inhibitors for steel fittings. Class 5 includes aggregates used to reduce the consumption of cement and increase the density of concrete, such as aggregates, lime, gravel, sand, clay, blast furnace and some types of fuel slag, etc. Class 6 includes substances that give concrete and binders special properties, such as anti-radiation. The use of these additives helps to save cement, increase its strength, and their amount is determined experimentally.

Complex add-ons:

- a) complex chemical additives;
- b) organomineral supplements.

The correct choice of the type and amount of chemical additives in the technological system, the optimization of the process, in turn, leads to an increase in the efficiency of machinery and equipment.

Demand for energy-efficient and environmentally friendly building materials is growing worldwide.

To meet these requirements, the material should be as light as possible and at the same time strong.

Of course, in today's world of automation can be a daunting task.

Let's compare modern wall thermal insulation, which can be used in Uzbekistan, with energy-saving materials. [4,5].

The heat balance given by 20 cm thick vermiculite concrete

230 cm brick wall

Gives a 50 cm wooden beam.

450 cm simple concrete wall

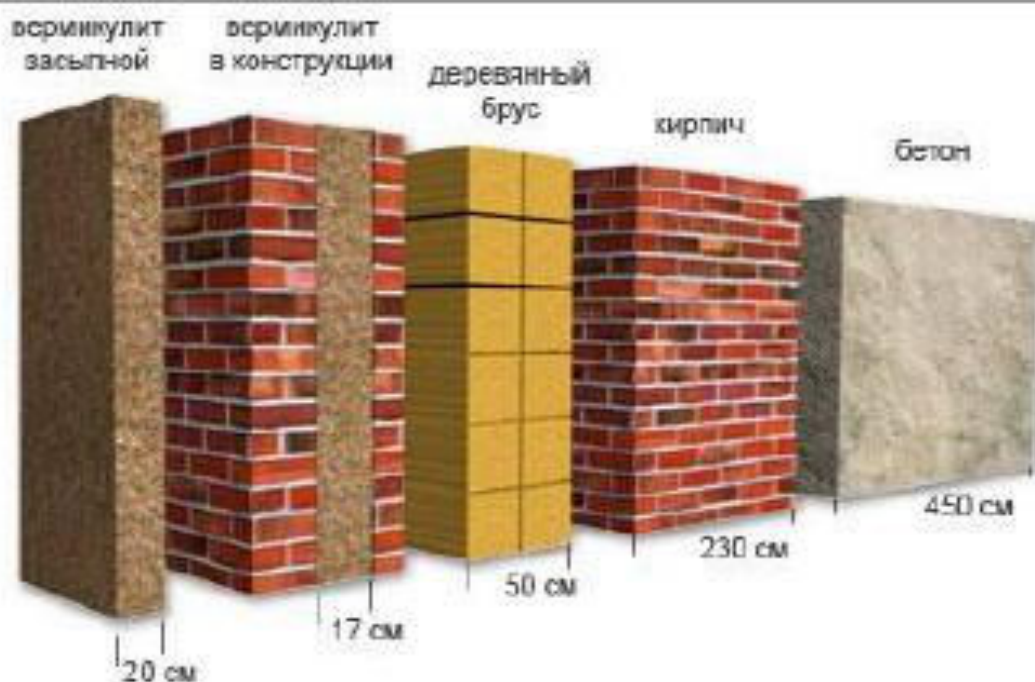


Fig.1. Graph comparing the thermal insulation properties of different wall materials

However, it should be noted that there is a shortage of timber in Uzbekistan. Therefore, there are some restrictions on its use as a building material. Vermiculite concrete, on the other hand, has advantages due to the ease of production technology and the diversity of its production raw materials. In hindsight, we are

looking for an answer to the question of where the heat in the building comes from. 15% is lost from foundations and floors, 10% from doors and windows, 25% from the top of the building, i.e. the roof, and 35% from the walls. So, one of the main measures to ensure the heat balance of the building is to cover its walls with thermal insulation materials.

Conclusion. Many private vermiculite concrete production shops are being set up in the country. The production of vermiculite concrete is also relevant today to speed up the construction process and prevent construction losses.

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Modern Corporate Management Technologies Are the Basis of Organizational Economy Development

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Annotation: This article provides information on modern corporate governance, its important aspects and ways to achieve economic efficiency through management incentives.

Keywords: corporate governance, technology, efficiency, investment, international financial reporting, audit.

The role of digital technologies in the development of the economy is invaluable. Modern corporate governance technology is now inextricably linked with the digital economy. According to the study, by 2002, a quarter of global GDP will be in the digital sector. President Sh. Mirziyoyev on February 13, 2020 According to statistics presented at the event dedicated to the development of information technology, the share of the digital economy in GDP in the United States does not exceed 10.9%, in India - 5.5%, and in Uzbekistan - no more than 2%. [1] So,

The concept of corporate governance is a widely used concept. The widespread use of the concept of corporation now leads to the use of the term in relation to various economic phenomena. The most important approach is to define corporate governance as integrated management management. About this Khrabrova I.A. According to him, corporate governance is the management of organizational and legal registration of business, optimization, organizational structures, building the company's inter-firm relations in accordance with the adopted goals. S. Karnaukhov defines corporate governance as the management of a certain set of synergistic effects. Another aspect is based on the consequences of the nature of the oldest and most commonly used, corporate form of business: the separation of the institution of ownership and the institution of managers. To a certain extent, it is about protecting interests. From the ineffective activities of managers, corporate relationships are participants (investors). Corporate governance is a system of cooperation that reflects the interests of the company's governing bodies, shareholders, stakeholders and aims to maximize the benefits of all types of enterprise activities in accordance with applicable law, taking into account international standards. The key to corporate governance are mechanisms to ensure fair, accountable, transparent corporate conduct and accountability. It is at a high level in the management system of the enterprise and provides management in the interests of its shareholders. The main divisions are social functions, corporate social responsibility and business ethics.

The introduction of the latest technologies in corporate governance means the introduction of investments in the economy of our country from the developed and influential countries of the world and the development of their clear, strategic plans.

Today, the Research and Education Center in Tashkent in cooperation with the European School of Management and Technology (Germany) regularly holds joint training courses for managers of joint-stock companies and companies on modern methods of corporate governance. This will contribute to an in-depth analysis of international experience and, on this basis, the introduction of modern corporate governance methods, increase the efficiency of production, investment, logistics, financial and labor resources. Establishment of joint-stock companies with foreign capital, creation of favorable conditions for attracting current investments in joint-stock companies, radical abolition of old divisions and positions, introduction of new divisions and positions in accordance with modern international standards and market economy attention is being paid to reorganization. The Commission for Improving the Efficiency of Production and Improving the Corporate Governance System, in cooperation with other interested ministries and agencies, Based on its successful experience, the Corporate Governance Code was developed in 2015. The

introduction of advanced methods of corporate governance, internal control systems and mechanisms for effective interaction of the executive body with shareholders and investors have been identified. The process of publishing the annual financial statements of all joint-stock companies for 2015-2018 and conducting external audits in accordance with international auditing standards and International Financial Reporting Standards is now widely established. The State Committee for Privatization, Demonopolization and Development of Competition, in cooperation with the Ministry of Justice and other relevant ministries and agencies, is developing a number of effective methods and recommendations, as well as significant results in practice. A new classifier of positions and professions has been developed in Uzbekistan, taking into account the requirements of the modern corporate governance system. This paved the way for the appointment of young professionals to management positions with a thorough knowledge and ability to apply modern management and marketing methods. In the first quarter of 2022, the Corporate Governance Code was approved. Charters and other internal corporate documents were adopted by 224 joint-stock companies in accordance with the requirements of modern corporate governance. [2] Cooperation with the European School of Management and Technology plays an important role in this regard. The students of the Corporate Governance Research and Education Center, established in 2015 as a result of active cooperation with the school, are sent for training to economic management bodies, joint-stock companies and business entities, foreign companies and educational institutions. The center plays an important role in the widespread introduction of modern methods of corporate governance in joint stock companies, improving the skills of specialists in improving their efficiency, studying and implementing international practices in this area, exchange experiences, training professional managers. It should be noted that in our country highly effective work is being done to radically change the principles and approaches to corporate governance, the introduction of modern standards of corporate management in production, foreign economic relations and investment processes. [3] The introduction of modern corporate governance technologies in joint-stock companies has proved to be the basis for accelerating privatization, attracting foreign investment, stimulating public activity, ensuring the transparency of business processes, the development of the industry. Examples of modern technologies are the corporate systems of Germany, Austria, the Netherlands, India, the United States and the United Kingdom. With the in-depth study and widespread introduction of their successful methods, positive results will be achieved in the economy.

In conclusion, there are a number of concepts that meet international standards, such as the Supervisory Board, Management, Audit Committee, Risk Management Committee and Code of Ethics.

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Application of Stylistic Devices in Literature as an Example of Works by Ernest Hemingway

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Annotation: Stylistics applies modern linguistic theory to the description of and analysis into varieties of language and their stylistic features. Moreover, stylistics is the mostly used issue in the literary studies. For this reason, this study aims to explore the usage and application of stylistic devices in literature sphere. In addition, in this work we try to provide information on the notion of the basic stylistic theory, stylistics and its types. It aims at identifying the linguistic patterns of usage and meanings of literary works and demonstrating the formal aspects as well as their functional importance in the texts. As for the further examples, the present study is concerned with a stylistic analysis of Hemingway's short stories.

Keywords: stylistics, style, teaching, linguistic study, expressions, critic.

“Style is the costume of thinking”

G. Leech & M. Short

Stylistics is a branch of linguistics, and is also a comprehensive interdisciplinary subject in the study of characteristics, essence, and rules of text genre between linguistics, literary theory, aesthetics, psychology, and other disciplines. The term style is defined by various critics and normally used without understanding its meanings. Stylistics is used in literature to create the sprightliness in any piece of literature, writer uses different techniques to make it stylish and attractive for this reason its called stylistics. Stylistics is a furcated of applied linguistics, originated as a way of applying linguistic models to literary content.

According to Lazar, stylistics is the overall performance of method and expression style that on purpose selected in the definite communicational situation. It is formed in history, and accepted by the complete society as a whole system¹. Besides that, stylistics as a science used to explore and discuss the system of a language. Another critic, Widdowson sees stylistics as the study of literary discourse from a linguistic orientation. He also defines stylistics as having no autonomous domain of its own, but as a unit of both linguistic and literary criticism. While David Crystal says, stylistics is a part of linguistics which studies numerous aspects of language deviation. Thus, in this way the purpose of this science is to explore and explain the different choices made by the author in the variety of words and sentence formation. Critics Leech and Short explains style as the way to transmit the message of the writer to the reader².

The pieces of literary texts are analyzed by stylistics analysis. Stylistic analysis is a method, which is used to analyze the given piece of literature. Stylistic analysis is further categorized such as various figures of speech, some stylistic features as grammatical and lexical categories. Simile, Hyperbole, Prolepsis, Rationative Question, Rhetorical Question, Metaphors, Allusion, Personification, Metonymy and Irony are commonly used stylistic devices in literature.

Ernest Hemingway was very famous with his unique writing style. He used a great number stylistic devices in his works. Now we analyze some of them as for the proof of our article. Ernest Hemingway is a very direct, intentional writer. He is very subtle in his intentions and allusions, however it is not quite right to most American people.

His novel “The old man and The Sea” consists of different choice of words as there are words about natural indication, fishing, religion and employment of foreign words as well. The author very correctly chose his words. For example, “All my life and the early sun has hurt my eyes”, here he uses the personification

¹ Lazar, G. Literature and language teaching: A guide for teachers and trainers. Cambridge: Cambridge University Press. (2005).

² G. Leech, M. Short, “Style in fiction: A linguistic introduction to English fictional prose. London; Longman. (2007)

style by saying that “the sun has hurt my eyes”, in addition, by usage of these words he aims to express the loneliness of the old man. Moreover, in his novella, Hemingway tries to show his religious dimensions. “God help me to have the cramp go” or “Christ, I did not know he was so big”, the motive behind this group of words was to drive reader’s impulse on religion³.

Hemingway mostly uses the style of Repetition. For instance, the words “bird” “remember” and “fish” are commonly used words in his novel “The old man and the Sea”:

“Remember we are in September”

“Remember, he said to himself”

Ernest Hemingway’s writing style is very popular with the usage of complex sentence structures and exceptionally long ones:

“As the shadow of the kingfisher moved up the stream a big trout shot up stream in a long angle, only his shadow making the angle, then lost his shadow as he came through the surface of the water...”⁴

Above given extract is take from Hemingway’s work “Big Two-Hearted River”. A series of the word “and” and commas are used to convey the immediacy and the escalated feelings in the situation. Moreover, as for the literary technique such usage is known as polysyndeton. Since this “Big two- hearted River” is a narrative work, as there is only one character in the story short sentences are used to give basic information and non- descriptively.

Based on F.I. Maxmanazarova’s article, we may easily notice that how the fiction and literary texts impact on students’ learning enthusiasm: “The main material used in the process of teaching a foreign language in order to form socio-cultural competence, is an educational text, which includes fiction texts, regional and thematic orientation, poems, songs, dialogues, interviews, video and audio materials. In this case, it is necessary that the educational the text was authentic, since it is this factor that significantly increases motivation of schoolchildren. When introducing a national-regional component in training English language in schools of the Republic of Uzbekistan opens to teachers broad perspectives. Translations of works of outstanding writers and poets of the Republic of Uzbekistan can be used as literary texts” To conclude, in this study we tackled various perspectives of concepts style and stylistics as pointing to their definitions. This work is recommended for the students to read about Hemingway’s style and his works to learn from. Hemingway’s choice of words was artistically varied as he made them very unique with different styles.

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Factors of an Industrial Design, Types of its Origin and Purpose

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Annotation. Industrial design in the industry appear to be necessary for the artistic, aesthetic, and marketing promotion of products on the market. The demand for professionals with skills and critical evaluation of fact, is the policy priority of the educational system of industrial design.

Keywords: industrial design; design; formation; creative thinking; furniture; aesthetics; marketing; industry; technology; project.

Introduction. Industrial design is a fairly wide range of tasks and responsibilities, it is a holistic perception of the entire design process, from the analysis of potential needs to the disposal of the product. Industrial design aims to create ergonomic products based on current design methods, manufacturing techniques and materials. Industrial design professionals can manage the entire product lifecycle, from user experience to create a human-centric solution, to pre-production and market launch.

The growth of industry in the world and manufactured products in the 19th century accelerated design thought in industrial or industrial design. And by the middle of the 20th century, a breakthrough in industrial design accumulated such areas as marketing. Design became an integral part of art itself, capturing those objects and industries that were not paid attention to before.

For design in general and industrial design in particular, the 20th century became the key to opening the door behind which the world of man and his environment were already ready for aesthetic transformation. The inquisitive, creative thought of the designer gave impetus to the design activity. Already the first draft designs of designers were complex constructive and artistic processes. The very intervention in the industrial environment created special prerequisites for solving the artistic problems of design projects. A dual situation arose in which the designer and designer had to create a logical chain of relationships, even if they did not work together. Almost every item that we have at home, in the car or on the street is an example of one form or another of industrial design.

Design plays an important role in industrial creativity products. The field of industrial design includes household appliances, dishes, furniture, machine tools, vehicles, industrial graphics, clothing, make-up, phytodesign and much more. Designers should participate in the search for the optimal Foma of each element, taking into account how it depends on the working function (purpose) of the product and connections with the person. Many examples can be given showing the need to take into account the proportions of a person, the size of his hand (ergonomic requirements) in the process of designing buttons, control panels, instrument keys, the shape of a cup handle, etc. In the formation of furniture, for example, the use of new materials and designs has recently played a significant role. Tables and chairs that use metal as the main material for construction are more free, spatial organization, the possibility of complex transformations and convenient layout when folded.

Industrial design includes science-intensive and household products, vehicles and interior items. The main task of the designer is to create a functional product oriented to mass production. Serialization is what sets industrial design apart from other areas of design.

Industrial design is closely related to 3D modeling, which has made it possible to simplify the work of creating concepts and prototypes. Visualization of the product helps to look at the industrial product in advance, and the prototype to identify its shortcomings. All industrial design products are subject to a number of technical requirements, including: product ergonomics, high performance, cost-effectiveness, environmental safety and manufacturability. The development of industrial design is inextricably linked with scientific and technological progress. Therefore, products must be developed taking into account the latest developments in the field of development, both new equipment and technologies.

Methods. This type of industrial design includes devices used in construction, research, scientific research, etc. Engineering devices should help a person at all stages of project implementation - from planning to operation. A great influence on the development of industrial design of vehicles is pressure from environmentalists. This affects the choice of materials and shapes when creating vehicles. The industrial design of transport is being developed, which has a minimal negative impact on the environment (for example, bicycles). By the way, in the Netherlands, a frame for a bicycle was printed using a 3D printer - such a vehicle can withstand heavy loads, and the design is characterized by increased strength.

Recently, the industrial design of automobiles has been closely associated with the development of electric motors. This affects both the interior of the car and its appearance. In addition, changes in the use of energy are leading to a rethinking of the very attitude towards vehicles. Industrial designers should also consider this.

A large direction in industrial design is formed by devices for the care of clothes (washing machine), home (vacuum cleaner), appearance (hair dryer) and for regulating the microclimate (heater). Together they make up a significant group of devices for high-volume production. A high degree of differentiation of devices with the same functionality for different target groups plays a significant role here.

Results. The directions of creating smart household robots are actively developing: for cleaning the house and swimming pools, washing windows, agricultural purposes (sheep shearing, weeding, harvesting).

Industrial interior design should provide high ergonomics for office and home furniture. Also, design solutions must be energy efficient. Since interior items surround a person most of the time, industrial designers must choose materials that are safe for humans. In higher education institutions and in educational courses, future industrial designers are taught how to create things that are more convenient, beautiful, practical and safe. Most often, these specialists choose for themselves one or more similar areas, although you can work with different subjects if you have the time and desire to learn. Direct industrial modeling consists of several stages:

- discussion of the project with the customer;
- careful study of existing products and all available information about them (3D models, technical documentation, drawings);
- development of the concept and its transfer to the sketch format;
- after that, the specialist must select the necessary materials and technologies to create the product;
- creation of a 3D model;
- if the customer approves the model, then the process of prototyping and testing begins;
- in the absence of problems, refinement, re-testing and launch of the improved product / service into production are carried out. During these processes, the industrial designer works closely with the engineers, marketers, chemists, biologists, and other professionals who are involved in the project.

The main goal of the work is to create an improved product that will enjoy consumer interest. It must also be functional, safe and cost-effective.

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Automation of Management of Energy Efficient Ventilation Systems

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Abstract: Ventilation with air recirculation is a system where part of the air taken from the room is mixed with cold outside air, heated to the required temperature and then fed into the room. This system can be used only if the air coming from the room does not contain harmful substances and toxic impurities. Whereas the volume of outdoor air in this mixture must comply with all sanitary and hygienic standards, and must not be less than the value of the sanitary standard provided for this type of room.

Key words: Automation, ventilation, air conditioning, ventilation, systems, industry.

Main part

The system with air recirculation makes it possible to reduce energy consumption for heating the air, since the thermal power of the heater is mainly spent on changing the temperature of only that part of the air that is taken from the street [1].

However, as the analysis showed, when regulating such systems, it is impossible to be limited only by the temperature obtained at the outlet of the channel. Therefore, to solve this problem, it is proposed to use two-stage regulation. The first control stage is the temperature limits in the supply duct, which are maintained by recirculation dampers. The second cascade is the average values of temperature sensors installed in the warehouse itself, and which are regulated by changing the fan performance.

Thus, due to the two-stage regulation, the required temperature regime will be achieved and the electric energy spent on the operation of the electric heater will be partially saved.

A supply and exhaust system with recirculation and an electric heater is also known, which is organized when additional air heating is required in winter at very low outside temperatures, when the control valve is 100% open, but the dampers do not have enough heat output. In this case, you can heat the air with a heater. The disadvantage in this case may be condensation of moisture or frost in the mixing chamber, freezing of non-insulated elements of the system (valves). In addition, there is also the problem of high-quality air mixing. Consider a system where recirculated air enters the mixing chamber, for example from the top. In this case, the recirculated air presses the cold supply air downwards. As a result, the temperature varies over a very wide range. Thus, air with different temperatures enters different parts of the heater. Automation, using a control valve on the heat carrier, sets the heat output of the heater so that the average air temperature at the outlet of the system corresponds to the desired one. But directly behind the air heater, the air temperature profile remains strongly inhomogeneous as before.

Therefore, when choosing the design of mixing chambers in cold climates with temperatures below -20 C, systems with a small longitudinal length should be avoided. The best option is to mix the air in some way in advance, at a sufficient distance from the heater.

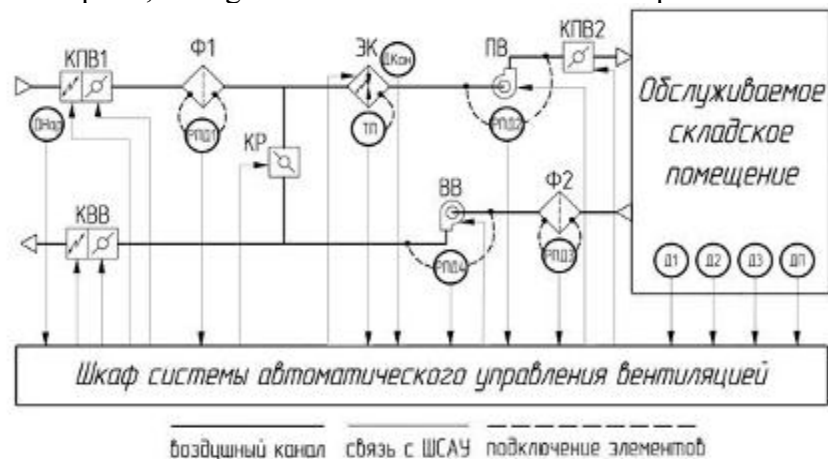
The level of recirculation depends on the temperature at the outlet of the supply duct. The recirculation valve in the cold season operates in antiphase with the main supply valve. For example, if the recirculation valve is 20% open, the main supply air valve will be 80% open. Accordingly, when the unit is in standby mode, the main valve is closed and the recirculation valve is fully open.

If the recirculation level is maximum and the inflow temperature is insufficient, then the electric heater is switched on.

The scheme of operation of the unit is shown in Figure 1. The outdoor temperature sensor is required for automatic switching between the operating modes of the system in the warm and cold periods of the year. According to the readings of the duct temperature sensor, the percentage of opening of the recirculation valve is regulated. Differential pressure switches are used to detect the operation of fans, as well as to detect clogged filters. A fire sensor is required to automatically turn off the ventilation unit in the event of a fire in the room.

Based on the parameters of the room, a typical solution for the proposed task will be a supply and exhaust unit with an air recirculation system. The recirculation system includes recirculation dampers and an electric heater (electric heater).

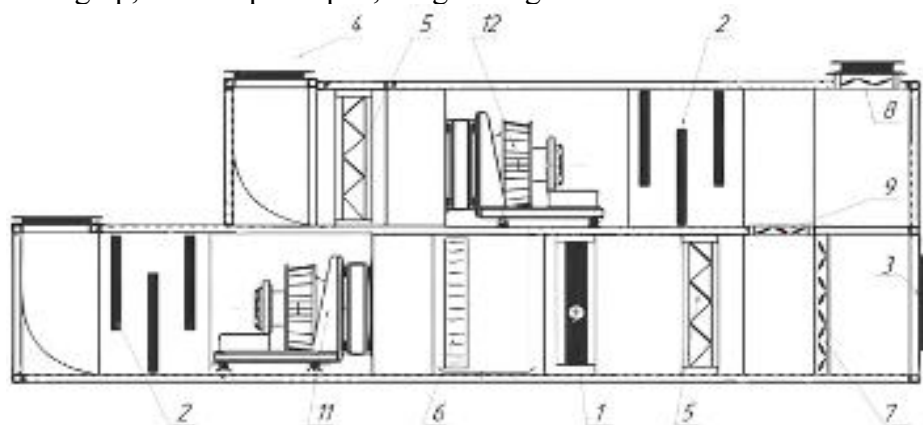
A diagram of such an installation is shown below in the figure. An algorithm for the operation of such an installation has been compiled, taking into account the multifactorial specifics of ventilation operation.



Scheme of operation of the supply and exhaust ventilation unit.

КПВ1 и КПВ2 – supply ventilation valves;
КР – recirculation valve; F1 and F2 - filters;
ЭК – electric heater; PV - supply fan;
ВВ – exhaust fan; Dnar - outdoor temperature sensor;
ДКан – channel temperature sensor;
Д1, Д2 и Д3 – room temperature sensors; ДП - fire sensor;
ТП – electric heater overheating thermostat;
РПД1, РПД2, РПД3, РПД4 – differential pressure switch.

When the “Start” signal is given to the controller, the necessary elements of the system are prepared and launched. According to the readings of the outdoor sensor, the controller determines that the system should work in the "Winter" mode. The pre-heating of the dampers is started to protect against breakage in case of freezing. After warming up, the dampers open, a signal is given to start the fan.



Scheme of the ventilation unit:

1 - electric heater; 2 - silencer;
 3 - entry into the room; 4 - exhaust channel;
 5 - air filter; 6 - drop catcher;
 7 - inflow valve; 8 - exhaust valve;
 9 - recirculation valve; 11–12 - fan.

When the temperature in the duct differs from the temperature of the installation, the recirculation valves change their opening level. At the same time, the temperature in the room itself is also regulated by the fan speed (if it is necessary to heat the air, the fan slows down, if it is cooled, it speeds up). When the temperature in the supply duct and in the room is insufficient, the air recirculation is set to 100% and the fan is set to minimum. If after a certain time the temperature in the inflow duct and the room does not rise, then the electric heater will turn on, which will heat the air. The principle of turning on the electric heater is pulse-width modulation. When the heating element of the heat exchanger overheats, it turns off and is blown by the fan to the working state.

When the outside air temperature is higher than the set temperature, the system switches to "Summer" mode. In this mode, recirculation and electric heater do not work.

When the "Stop" signal is given, all necessary elements of the system are turned off. At the same time, if the unit was operating in winter mode before shutdown, then the electric heater is first turned off, the fan and dampers continue to operate in order to cool the electric heater and prevent possible overheating or even burnout of its elements.

In addition to recirculation, recuperation is often used in ventilation systems. Heat recovery in heat exchangers is based on the transfer of part of the heat from the exhaust air to the supply air. Devices for recovery are called recuperators and are classified according to their device [2].

The risk of frostbite is always present during the cold period of the year when the ventilation system is operating with a heat exchanger, so the need is for sensors to control the operation of the heat exchanger.

At the moment, there are two main principles for controlling a plate heat exchanger: pressure drop control and temperature control [7].

Pressure control. As described above, when a large amount of condensate falls out or when it crystallizes on the surface of the heat exchanger, an obstacle is created for the flow of exhaust air. Measuring the pressure drop before and after the heat exchanger in the exhaust duct is a solution to the problem of controlling heat exchanger frostbite. When a pressure drop signal appears, the bypass channel of the heat exchanger opens or the performance of the supply fan decreases to change the mass ratio of the air flows. This principle of operation is the simplest and does not require large expenditures. Although this method is the most popular in Russia, it has a number of disadvantages.

1. When using a differential pressure switch, it is difficult to adjust the sensor, because, at the stage of commissioning, the simulation of heat exchanger frostbite is extremely unlikely, and the theoretical calculation is complicated due to the influence of many factors.

2. The use of a relay does not give a full guarantee of a timely signal of heat exchanger frostbite, because the pressure created by the ventilation system is influenced by several factors, such as the dustiness of the filters, the performance of the fan, the contamination and tightness of the air ducts.

Temperature control. The principle of temperature control is based on determining the efficiency of supply air heating, this is carried out by measuring the temperature in the supply duct before and after the heat exchanger. In the cold period of the year, after commissioning and turning on the ventilation system in normal mode, it is possible to determine the average heating on the heat exchanger corresponding to normal operation. When the efficiency of the heat exchanger decreases, it is possible to protect the heat exchanger by changing the degree of opening of the bypass channel or the performance of the supply fan. The disadvantage of this method is the high cost compared to the pressure drop control method and the indirectness of temperature determination. The main cause of heat exchanger frostbite is a decrease in the temperature of the exhaust air after the heat exchanger, so measuring the supply air temperature may not provide all the necessary information about the state of the system [5].

The heat exchanger will save a significant part of the heat (up to 90%), but its correct operation is possible only under certain conditions. To do this, the authors proposed a scheme in which air is heated before and after the heat exchanger.

The heater in front of the heat exchanger is required to heat the air at the inlet to the heat exchanger, which will reduce the risk of freezing of the heat exchanger. Also, the heater can be used for heating low temperatures (below -30°C) and reaching the calculated temperatures for the heater after the heat exchanger.

The heater after the heat exchanger allows maintaining the required temperature at the duct outlet by heating the air after the heat exchanger. There is a need for this heater, since the heat exchanger is a passive

heater, and its operation cannot accurately maintain the desired temperature, the heat exchanger also has the risk of frostbite, due to which its efficiency may drop sharply and the outlet temperature may be low.

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How to draw students' attention

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Abstract: Ventilation with air recirculation is a system where part of the air taken from the room is mixed with cold outside air, heated to the required temperature and then fed into the room. This system can be used only if the air coming from the room does not contain harmful substances and toxic impurities. Whereas the volume of outdoor air in this mixture must comply with all sanitary and hygienic standards, and must not be less than the value of the sanitary standard provided for this type of room.

Key words: Automation, ventilation, air conditioning, ventilation, systems, industry.

One of the biggest challenges teachers face is getting and maintaining the attention of their students. Effective teaching requires this skill but it takes time and practice to learn. Whether you are just starting out or have been teaching for decades it is hard to keep students focused on task especially young learners get easily distracted and it can be challenging to come up with ways of keeping them engaged. Moreover young learners have relatively short attention spans. Since the students have various interests and levels of knowledge it is impossible to have the whole class fully –engaged in something for a long period of time, so it is highly recommended to work out a number of activities beforehand for per lesson as well.

From my own experience it is difficult to grab young learners' attentiveness, in order to get engaged students teachers need to be knowledgeable, encourageable, flexible and full of energy. I have been teaching young students for 20 years and I strongly believe that exercises for kids should be entertaining instead of "working out" think of it, as "exercise play" and also ESL warm-up activities are essential in English classroom. Students may be tired or have distracted minds and diving straight into a textbook or grammar explanation can be quite jarring. With a good warmer you can put your students into English mode: attentive, interested, and ready to participate. A warmer can also serve to review language of a previous lesson or set the class for a new topic. Verbal, visual, and palpable cues from you can refocus your students while helping you maintain control and holding your young learners' awareness. It is highly suggestible to use best ways to grab your students' attention while teaching them according to these cues: Firstly, Reach out rather calling to a child across the room, stop what you are doing and go to the child. Position your body at the child's level and ask him to look at you before you begin your discussion, speak in a firm but nonthreatening voice. Secondly, use attention grabbers appealing to children's senses with motivational devices that have varied colors, textures, shapes, movements, smells, or sounds to help them focus. It is a good idea to use warm, soft colors and provide an orderly environment for children who may become overly stimulated. Thirdly, it is highly recommended to be playful as well. Obtaining children's awareness with a dramatic voice by putting on a sensational hat, or playing a clapping game. Also it is accomplishable to try holding up a secret hand sign for children to duplicate or rolling a ball to different children to keep them alert.

Another practicable approach is to be welcoming by using children's names to get their attention easily or engaging children with facial expressions such smiling and making eye contact. It is easy to use your body language to convey warmth and acceptance. You can also get their attention by describing what you see by labeling objects or activities and pointing out similarities and differences and asking them question to get them to look at item and focus on activities. It is also substantial to be clear and specific as children are more likely to hear your requests and pay attention when it is clear what you want them to do by keeping directions short and simple. Giving timely tips are also considered essential and workable allowing children to process your request for their attention and follow the direction given. One should consider that afternoons are low energy times for many children and it may take longer to process attention – getting techniques. Being aware of temperament is one of the main features to evaluate while teaching because some children can be easily distracted and exhibit impulsive behavior when this is the case, speak

calmly ,use one-step directions and give them gentle touches.Other children are more reflective and may need a five minute warning before they can attend to the next project.One should look at learning styles being alert to which attention –getting signals work best for children’s learning patterns.It is suggested for visual learners to try blinking the lights or raising your hand while singing a song to begin cleanup for auditory children,in addition it is a good proposition to squeeze a child’s hand or pass a stuffed animal around the circle especially for tactile students.

One of the promising motion is to keep groups as possible as small which provides you an opportunity obtaining students’ concentration . If you have difficulty gaining children’s focus ,try working with a small group or one- one giving a child your undivided consciousness lets him know you care and that he is saying is important

When planning a lesson you should consistently consider the material and aids needed and whether they are appropriate for the classes and ages you are teaching ,remember lessons should be educational but also entertaining and compelling to keep students focus whilst making it an enjoyable experience for both students and teachers alike and the following should be considered for the lesson planning; know who your students are; know ability levels, background, interest levels; attention span; ability to work together in groups ;prior knowledge and learning experiences; special needs or accommodations; learning preferences.

One of the most effective way drawing young learners’ concentration is using 20 fun call-and-responses while having a lesson with them:

- 1.One,two.Eyes on you.
- 2.Eyes.Open.Ears.Listening.
- 3.Flat tire!Shhh
- 4.Hear ye,hear ye! All eyes on the crier!
- 5.Give me five(Students raise their hands)
- 6.Tomato(tuh-may-toe),tomato (tuh-may-toe) Potato(puh-tay-toe)
- 7.Peanut butter(Students say their favorite kind of jelly or jam)
- 8.Ready to rock? Ready to roll!!
- 9.Are you listening? Yes we are.
- 10.Marco.Polo.Let’s go. Slow mo (Students move in slow motion,perhaps towards the carpet)
- 11.One fish,two fish .Red fish,blue fish.
- 12.Break it down (Students dance around)
- 13.Hocus pocus.Time to focus.
- 14.Macaroni and cheese! Everybody freeze!
- 15.Salami (Stop and Look at me immediately)
- 16.All set? You bet?
- 17.Hands on top .That means stop(students place hands on head)
- 18.Chicka chicka.Boom boom.
- 19.If you can hear my voice,clap once/twice/(students clap)
- 20.Guitar solo (Students mime playing the guitar)

Experienced and knowledgeable teachers invariably practice attention signals .Clearly explain how students are supposed to respond to each one and allow plenty of opportunities to try them out ,then find out which ones they most enjoy and stick with those.You should also practice nonverbal strategies with your students so they learn to pay attention to visual cues as well

I strongly believe that expecting students to sit quietly and listen to you for several hours out of every day is not fair.If you find that they desperately need to refocus before you try to engage them wiggle it out.Often it is more productive to allow students some time to be wild than try prevent them from feeling fidgety or restless

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The market and policy development of EV industry on a global level and in Uzbekistan - Review

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Abstract: This paper reviews the historical and recent growth of the global EV industry and examines the importance of green vehicles in sustainable development. Notably, the study describes the situation in the leading EV markets in terms of the market situation, legislative aspects, and infrastructural development. The paper finally examines the EV market in Uzbekistan and the local government's official position on adopting electric vehicles.

The study found that the EV industry in Uzbekistan is at the infant stage, and a great deal remains to be done in legal and infrastructural improvements to reach the market level of other leading countries. The paper also showed the implication of EVs' adoption in parallel with other favorable reforms in Uzbekistan.

Further research into the EV industry of Uzbekistan is recommended to accurately assess the needed level of monetary incentives through the analysis of the current and future market capacity and administrative budget.

Key words: BEV (Battery Electric Vehicles); PHEV (Plug-in Hybrid Electric Vehicle); EV (Electric Vehicle); NEV (New Energy Vehicle); ICE (Internal Combustion Engine);

1.Introduction

The contraction of global greenhouse emissions and ecological improvement are significantly important in the sustainable development of the world and the prosperity of its population. In this context, electric vehicles have long been recognized as an essential part of the comprehensive program to curb greenhouse gases and maintain ecologic protection. The substantial resource capacity of developed countries helped them penetrate this emerging market considerably in the last decade and form the benchmarked practices for other nations. However, every country should be accountable for environmental protection, and Uzbekistan has an indispensable role in the global ecosystem. Therefore, understanding best practices and market tendencies in the EV industry may help developing economies like Uzbekistan predict the optimal approach for adopting alternative-energy vehicles.

After repeated attempts to produce green vehicles at the turn of the 20th century, the second decade of the 20th century was the dawn of EVs because of a combination of factors. In particular, the success of Ford's "Model T" with a gasoline engine, petroleum price reduction, discoveries of new oil reserves, and the global problem with the electricity supplies have delayed the development of EVs until the start of the 21st century (U.S. Department of Energy, 2014).

Many positive transformations increased the sales volume of EVs from nearly 130'000 units in 2010 to 6.6 million in 2021 (GreenCarReports, 2021). Within a short period of time, the price of the electric vehicles' major components like the battery pack has also decreased extensively and stimulated EV sales. Economies of scale¹, growing production capacity, and technological innovation contributed to a steady decrease in battery prices. Particularly, in 2010, the price of the average battery pack was \$1191 per kWh, which decreased by 89% to reach \$137 per kWh in 2020 (*see* Figure 1). The future of the battery packs is also quite optimistic,

¹ "Economies of scale" refers to the cost advantages that are reached by increasing the level of output and production efficiency.

with the forecasted average price of \$45/kWh by 2035 (Bloomberg NEF, 2021). All these factors open new opportunities in the global automobile business and facilitate EVs to be an indivisible part of future life.

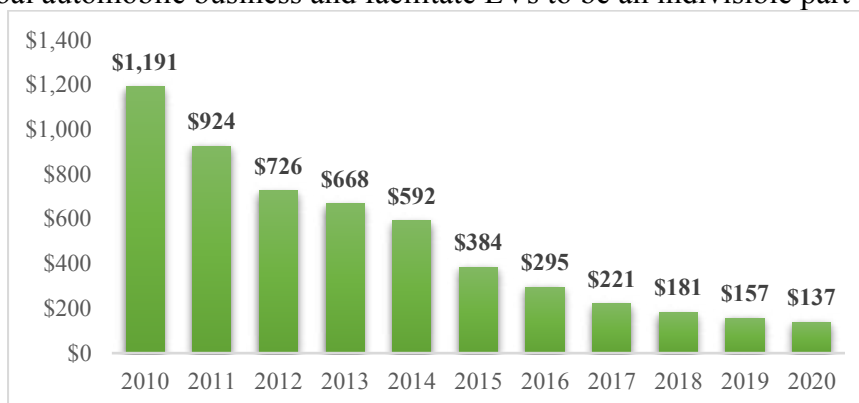


Figure 1: The reduction in battery price between 2010 and 2020

Source: BloombergNEF, 2021

Moreover, the situation related to global warming emphasizes the significance of electric vehicles' adaptation. In particular, since the pre-industrial period, the average global temperature has increased by roughly 1.0°C, while human-induced global warming is lifting the temperature by 0.2°C per decade (C2ES, 2022). Therefore, there are two potential outcomes of global environmental development for this century. The first and most favorable scenario is reaching Earth's temperature of 1.4°C, and the second is the global warming of 4.4°C by 2100 (World Resources Institute, 2021). The latter is the perilous high carbon pathway that can damage the ecosystem and the future of all nations worldwide, whereas the first scenario is optimistic environmental development requiring a 45% cut of CO₂ emissions by 2030 and achieving net-zero emissions by 2050 through using all possible measures, including electric mobility (UNDP, 2015).

Different international policies and acts have been adopted to follow the promising scenario of environmental stability, including sustainable development goals (SDGs) formulated by the United Nations in 2015. The use of EVs is primarily aligned with the 7th global goal of "Affordable Clean Energy" and the 13th global goal of "Climate Action" because road transportation produces a substantial 12,5% of the global greenhouse emissions worldwide (ClimateWatch, 2018). In addition, many countries have recognized the importance of zero-emission achievement for a better tomorrow and accepted various essential legislations, targets, ambitions and proposals to deploy EVs. (IEA,2021).

The automotive industry is strongly responsive to governmental measures (Kearney.com, 2020), thus regulatory advancement and governmental forward-thinking are crucial aspects of the overall growth of the emerging industry of EVs. Government incentives address the financial concerns of the EV buyers and reduce the practical and psychological barriers to adopting EVs and show that the authority is helping them overcome those difficulties (Kearney.com, 2020). Therefore, the significant development of the EV industry in the last decade is mainly attributed to the generous governmental support in the leading economies. Between 2013 and 2020, thirteen developed countries invested \$43 billion in consumer incentives to support the EV market and contributed to a 40% increase in this industry during the given period (Worldbank, 2021). As such, it is important to understand the governmental approach of those leading countries in terms of EV deployment and analyze the steps that the Uzbek government is taking towards the popularization of electric automobiles.

Today, Uzbekistan has the 37th position in the global CO₂ emitters ranking (Global Carbon Atlas, 2022), and in 2021, the country was ranked disappointingly low (12th out of 118 countries) in the list of places with the worst air quality in the world. Such a situation can be partly attributed to the overutilization of low emission standard vehicles in the country. The footprint calculation of gasoline vehicles based on approximately 17'000 km annually reveals that the favored vehicle of the Uzbek market Chevrolet "Lacetti" produces 6,8 tons of carbon dioxide per year. Meanwhile, the main electric alternative in this segment, Volkswagen "e-Bora" can reduce this carbon emission to over three times and produce only 1,9 tons per year². This calculation was applied only for one model in the Uzbek market, yet the significant annual sales of

² Myclimate.org

conventional vehicles in the local market (nearly 200'000 units) underscore the importance of EVs' adoption in Uzbekistan.

2. Global EV market

The landscape of the global EV market has transformed dramatically over the last three years. In particular, the proportion of electric cars in the global vehicle market has increased from 2.5% in 2019 to 8.6% in 2021 (see Table 1) (IEA, 2022). The number of newly registered electric vehicles tripled from 2.2 million to 6.7 million in 2019 and 2021, respectively (IEA, 2022).

Period	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
% of EVs	0,01 %	0,07 %	0,17 %	0,27 %	0,41 %	0,67 %	0,89 %	1,36 %	2,30 %	2,49 %	4,11 %	8,57 %

Table 1. The global proportion of EVs in the automobile market (2010-2021)

Source: International Energy Agency, 2022

Ever-increasing mass interest in EVs made their sales resilient to different macroeconomic factors and COVID-19 related problems and helped them reach accumulated sales of 16 million electric cars (IEA, 2021). The major regions that attained the largest EV sales were China, European countries, and the USA. In 2021, China was an incredibly dominant market with sales of 3.4 million units of EVs, followed by Europe, which hit 2.3 million units, and the United States with 0,7 million units. Other countries in total accounted for only 300 thousand new electric cars in that period (IEA, 2022).

Considering that the battery pack of EVs is continuously driving the prices of vehicles down, it is projected that by 2030, regions like the USA, China, Europe, and developed Asian countries will reach the price parity of EVs with ICE vehicles in most automobile segments (BloombergNEF, 2021).

In 2021, Tesla, VW Group, BYD, and General Motors were the four most prominent companies in the global EV market with the largest sales proportion (see Table 2) (IEA, 2022).

Manufacturers	World	Europe	China	USA	Others
Tesla	936	170	321	352	93
VW Group	763	549	154	44	15
BYD	598	1	595	0	2
GM	517	0	486	25	6

Table 2. The sales of global leading manufacturers of EVs (in thousand units)

Source: International Energy Agency, 2021

In 2021, *Model 3* and *Model Y* were the two popular models in Tesla's product line, and Volkswagen buyers ordered more *ID.3* and *ID.4* models, while models like *BYD Qin Plus DM (PHEV)* and *BYD Han EV* were the most sought-after in BYD's case (InsideEvs.com,2022). Given models helped these companies to become the world's top three brands in the e-vehicles market in 2021.

At the same time, other brands are striving to achieve some portion of the global EV market. Stellantis with its compact EV (Stellantis.com,2021) or Ford with the newly introduced Mustang "MachE" or electric pickup "F-150" (Ford.com, 2021).

Nowadays, automobile manufacturers consider EV production as part of their long-term strategy rather than simple compliance with environmental regulations. The automobile giants' increased R&D and capital expenditures on EVs and digital technologies can prove this motive (see Figure 2).

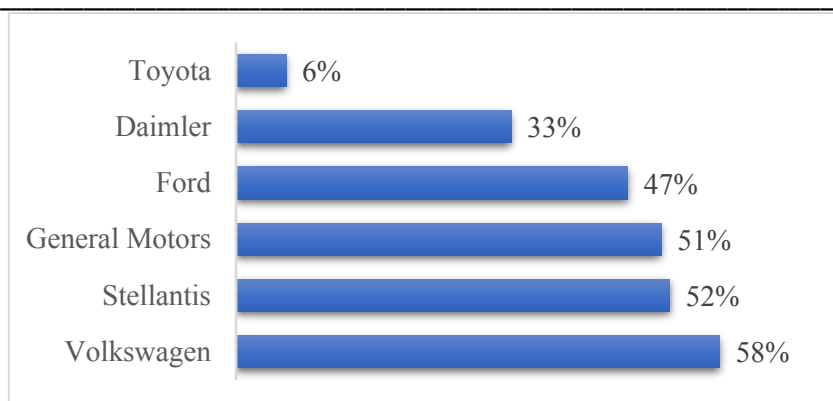


Figure 2: The allocation of R&D and capital expenditure to EVs of automobile producers
Source: BloombergNEF, 2021

With such an approach and corporate vision, it is projected that the sales of EVs will make up a significant two-thirds of the global automobile market by 2040 (BloombergNEF, 2021).

3. Green policies in leading EV markets

In the 2000s, China started its early policy attempt to popularize EVs. Nevertheless, the administrative road map between 2004 and 2008 was the theoretic framework describing energy-science-technology planning of EVs rather than a practical instrument (Zhang et al., 2016). Mainly this period was memorized for the active procurement of New Energy Vehicles (NEVs)³ by the government during the period of the Olympic Games when 500 units of homemade EVs were presented (ICCT, 2021).

In 2009, the Chinese government started landmark reform of the so-called "Ten Cities, Thousand Vehicles" program to speed up the adaptation and commercialization of (NEVs). Initially, the program was focused on reaching at least 1000 units of EVs in each of the ten cities in China that was further extended to include 25 cities (Ch. Marquis, et al. 2013). The subsidies were also introduced during this period when the Chinese government supported the EV producers, depending on their petrol reduction level. These subsidies were substantial for 100% electric automobiles, up to \$8 700 for BEVs, and \$7 250 for PHEVs, covering 40-60% of the vehicle's price (NBR, 2017). Although the government provided substantial subsidies to the participating cities, it was a decentralized exploring program when each city, like Shenzhen, Hefei, Beijing, Hangzhou, and more, used its tailored strategy and improvement models to reach the goal of 1000 units and achieve state subsidy targets. For example, Beijing heavily relied on preferential methods to create EV production infrastructure, Hangzhou used renting techniques to boost the sales of NEVs, and Shenzhen promoted cooperation between producers and financial institutions, e.g., the partnership between battery producers, vehicle manufacturers, and leasing organizations (Ch. Marquis, et al. 2013).

In 2011, the "Airpocalypse"⁴ in China stressed the importance of green transportation. Beijing started quoting the registration of new conventional cars to decrease the gridlock and increasingly allowed to register more NEVs (Independent.com, 2011.). In 2017, the regulation legally required 40% of new automobile owners in Beijing to have green alternatives, and this practice is globally recognized as an effective instrument to popularize EVs (ICCT, 2021). Restriction to drive ICE vehicles in the central parts of the city, driving conventional cars on particular days, favorable handling of green license plates increased the number of EV drivers by 2017, when 60% of 60'000 vehicles belonged to private households (ICCT, 2021). In 2014, Beijing provided local subsidies besides the central one and enabled to reduce the price of the NEVs by up to 60%.

Other local governments were actively using such incentives as free parking and fee waivers for license plates, the auction price of which even could reach \$14 500 (NBR, 2017). The central government was also active in the procurement process. At the state level, the minimum required proportion of governmental EV purchases increased from 30% in 2014 to 50% in 2016 (NBR, 2017). The governmental support also accelerated the creation of charging infrastructure in China. For example, the country has over 1,1 million

³ NEVs – is the term used by the Chinese government to designate PHEVs, EVs, and Hybrid vehicles.

⁴ The period when people living in China, especially in Beijing, were exposed to the harmful smog that occasionally exceeded recommended levels by WHO.

public charging stations (InsideEvs.com,2011), and the total Chinese share in the global EV charging network surpassed 50% (ICCT,2021).

China has progressed through five phase-out stages, and since 2020, the country has reached its sixth phase. At this stage, the Chinese government has narrowed the threshold of the electric range from 250 km to 300 km and set a qualifying maximum pre-subsidy price at \$43 000 (ICCT,2020). In 2021, the base subsidy for the BEVs was between \$1 999 and \$2 768, depending on the range that notably decreased from the previous level of subsidies (LMC,2022) (see Table 3). The Chinese government announced the plan to eliminate the subsidization system by the end of 2022 by gradually cutting financial support by 10%, 20%, and 30% from 2020 to 2022, respectively (Reuters,2022).

Year	BEV electric range (ER, km)	
	300 km ≤ R < 400 km	R ≥ 400 km
2019	\$2 610	\$3 620
2020	\$2 350	\$3 260
2021	\$1 999	\$2 768
2022	\$1 399	\$1 937

Table 3: The amount of subsidy for BEVs in China (2019-2020)

Source: ICCT,2021 and LMC Automotive,2022

Even though the country has the largest network of public charging stations of over 1 million points (Bloomberg,2021), the infrastructure still needs development because 70% of them are located in affluent cities like Shanghai and Guangdong, and many drivers have limited access to the public charging network (State Council of the PRC,2022). Therefore, the Chinese government is working on this issue and plans to develop additional charging stations to cover the needs of 20 million EVs by 2025 (Protocol.com,2022).

In 2020, for the first in the history of EVs, Europe had outpaced China in registering new vehicles with 1,4 million units against 1,2 million units in China (IEA, 2021). Even though the numbers nowadays look significant, in 2010, EV sales were marginal in the EU market, with 700 annual units (European Environmental Agency,2021). In the last decade, there was a severe shift toward the adaptation of EVs on the European continent, backed by governmental incentives and centralized policies of the European Union.

Europe aims to become the first region globally that reaches net-zero emissions by 2050 (Financialtimes,2021). This was set in one prominent environmental road map presented in 2019, the so-called "European Green Deal" (M.Kaup et al.,2021). The fundamental problem in electric mobility between different parts of Europe remains the charging infrastructure. Therefore, the "European Green Deal" proposed an ambitious plan to develop 1 million charging stations by 2025 over the European continent (M.Kaup et al.,2021). For comparison, the EU's current number of public charging stations is composed of 285'500 places (ICCT,2021).

Europe has increased its global battery production by three times in the last three years but still lags behind the Chinese lithium-ion cell manufacturing capacity (BloombergNEF,2021). To tackle Chinese dominance in battery production, Europe has also launched its factory in Sweden with the "Northvolt" battery group that can provide 60 gigawatt-hours of power annually (GWh) (Euronews,2022). Apart from private investments from companies like Volkswagen or BMW, European Investment Bank allocated \$400 million in loans (European Commission, 2020).

It should be noted that some European countries lead the ranking of electric mobility with the highest sales proportion of EVs in the world. Particularly, Nordic countries like Norway, Iceland, and Sweden have a leading position globally with EVs' sales allocation in their automobile market, accounting for 74,8%, 45%, and 32,2%, respectively (World Economic Forum,2020).

Apart from the central support and incentives from the European Union, each country in Europe is working on a local strategy to popularize EV sales in its region. Special mention deserves the government incentives of Norway. As one of the developed countries in the world, Norway has put hefty taxes on the purchase of conventional vehicles while significantly exempting them for EVs owners. For example, governmental incentives include the exemption of 25% VAT for purchasing and leasing EVs, access to bus lanes with at least one passenger, no purchasing and importing taxes, and more (Norsk-Elbilforening,2022). One of the well-known supportive instruments of the country, "the 50% rule" was introduced in 2011. This

rule prohibits local authorities from charging EV drivers over 50% of the fees paid by drivers of ICE vehicles for public parking, road tolls, and ferry rates (TheGuardian,2020). The Norwegian Parliament aims to have all new vehicles zero-emission by 2025 with all these instruments and additional government support (Reuters,2018).

In 2020, Germany, France, and the UK were the leaders in the EU market in registering new EVs with 395'000, 185'000, and 176'000 units, respectively (IEA, 2021). There were several reasons for the record-breaking year of 2020, including upgraded facilities and expertise of the producers, the drivers' green enthusiasm, the reduction in battery prices, and governmental support.

The so-called "diesel crisis" in Germany vastly stimulated the adoption of EVs in the region. In 2017, Germany launched the €1 billion program-"Immediate Action Plan Clean Air 2017-2020" to cover up to 75-90% of expenses for the government procurement of EVs and refund the purchases of up to 60% of EVs for commercial purposes (CMS,2018). Germany additionally offered a vehicle tax exemption for up to ten years for EV owners (Volkswagen.com, 2019). After the COVID-19 outbreak, Germany revised most of its support policies. For example, the country has increased its purchase subsidy for EVs to €9 000 (for BEVs) and €6 750 (PHEV) from the previous €6 000 (BEV) and €4 500 (PHEV), respectively for vehicles costing less than €40 000. This enhanced subsidy was valid until the end of 2021, with a steady phase-out until 2025.

France uses an environmental bonus-malus system that was introduced in 2008 and repeatedly changed over time (RenaultGroup,2021). Currently, private EV drivers can apply for a €6 000 bonus (€5 000 for corporate purchases) with a price tag up to €45 000, while corporate and private drivers can opt for €2 000 for the EVs with a price between €45 000 to €60 000. The French government also offers a scrapping premium where the buyers can receive up to €5 000 when buying EVs by scrapping old diesel or petrol cars (Electrive.com,2021).

The UK offers the maximum grant of £2 500 in 2021 (with a minimum price cap of £35 000), which was initially £5 000 in 2011(TheGuardian, 2021). In 2021, the UK also enacted innovative laws requiring new construction of homes and buildings or those going through renovation to have EV charging points. The government expects that this move will help develop an additional 145 000 private charging points annually (BBC,2021). These and other policies are directed to ban diesel and petrol vehicles in the UK by 2030 as part of the country's "Road to Zero Strategy" (WEFORUM,2021).

The USA is one of the significant regions actively restoring the automobile volumes to the previous considerable size after the economic crisis of COVID-19 (Forbes, 2021). For example, the sales of EVs in the USA nearly doubled in 2021, reaching over 600'000 units compared to 295'000 units in 2020 (IEA,2021).

Even though the current share of the USA in the EV market is only one-third of the Chinese one, America has a unique role in the electrification process of the global auto industry. Nowadays, America's EVs sales account for only 4% of the total market, which is 11% lower than the Chinese figures (Protocol.com,2022). Nevertheless, US companies outpace Chinese manufacturers of only EVs by market value. For example, the top-3 companies by market capitalization in the EV industry, such as Tesla (1 trillion), Lucid Motors (36.45 billion), and Rivian (35,8 billion), are all American-based EV producers. Altogether, six US companies are among the top-10 most expensive EV producers globally, while Chinese companies represent only three EV manufacturers on this list (Companiesmarketcap.com, 2022).

To support the EV market, the US government mainly relied on federal tax credits started during the period of President Obama (Obamawhitehouse,2008). Fiscal incentives included up to \$7 500 tax rebates to the EV manufacturer for each unit sold until the individual production volume hits 200'000 units (InsideEvs.com, 2020). However, large manufacturers in the local market, represented by Tesla and Chevrolet, have already reached that limit and could not rely on this particular government support. Optimistically, the new US administration again started to support green initiatives in the automobile market and aims to catch up with other leading countries in the EV market.

The current US government announced the so-called "Steps to drive American Leadership Forward on Clean Cars and Trucks" and the "Biden-Harris Electric Vehicle Charging Action Plan". Biden's administration is an active driver of the auto industry's green developments. With these programs, the US administration aims to have 50% of US car sales share electrified and reduce greenhouse gases by over 60% in 2030 (Whitehouse,2021). To achieve these goals, the government is addressing the following points:

-Establishing an initial nationwide network of EV charging stations by establishing 500'000 public charging stations and allocating \$5 billion in government funding to develop the charging infrastructure available and convenient for every American. It is crucial because current charging stations of only 47 000 chargers lack uniformity with different payment and charging systems and are insufficient for increased regional demand (AFDC,2022).

-Supporting the modernization and expansion of the national manufacturing ecosystem. It primarily addresses the subject of local battery production by creating a national production capacity and mining system of crucial battery components, such as lithium or cobalt. China is dominant in this market, with 70% of the global EV battery production (IEA,2021). To catch up with the leader, the US government announced a \$17 billion loan program to support domestic battery production and \$7 billion to stimulate battery materials production and recycling mechanism (Whitehouse, 2021). At the same time, the US Transport and Energy Departments are helping the administration of each state plan and construct EV chargers along the highways (PWC, 2022).

-Innovating green technologies to maintain the competitive edge by distributing \$2,5 billion of governmental grants.

-Launching consumer incentives to drive domestic production and job creation in the domestic EV market.

While the administrative progress toward electrification of the auto market had recently intensified, some local authorities had already outpaced the country-level shifts. During Trump's presidency in 2020, California was brave enough to enact the regulation that all new vehicles in its state should have zero-emission by 2035. Local administration even agreed on this concept with five large auto manufacturers: Volvo, Honda, BMW, Volkswagen, and Ford (Forbes,2020).

The current government and Congress members are also working to increase tax rebates up to \$12 500 and remove the existing market cap. If the bill wins sufficient votes, the tax incentive will rise by \$5 000, and the proposed regulation will remove the market ceiling of 200'000 units for EV producers (PWC, 2022).

4. EV market and green policies in Uzbekistan

The number of EV imports in Uzbekistan is constantly rising from a tiny 18 units in 2018 to 809 units in 2021 (see Figure 3) (Stat.uz,2022). The sales of EVs is steadily rising every year in Uzbekistan, for example in the first quarter of 2022, the accumulated EV imports accounted for 455 units (Stat.uz,2022), and annual EV sales in 2022 are projected to surpass the milestone of 1'000 and reach nearly 2'000 units, and additional stimulation can exponentially increase this number to the new level.

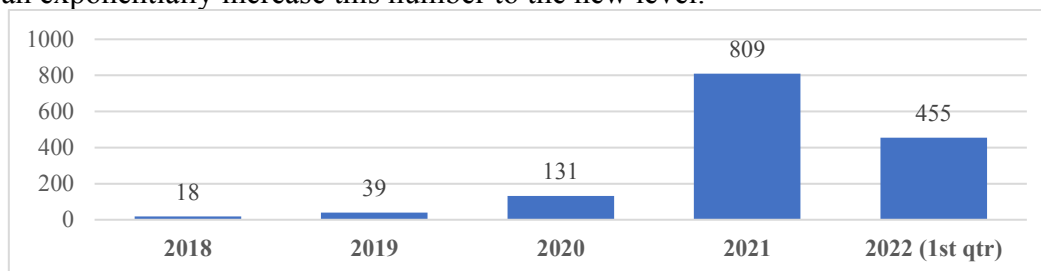


Figure 3: The import of EVs in Uzbekistan (2018-2022 1st qtr)

Source: Stat.uz, 2022

Uzbekistan has strategically started the electrification process in the auto industry in 2019. In June 2019, the Uzbek government enacted the presidential decree - regarding the exemption of excise tax and customs duty for EVs that could cost up to half the price of conventional cars (Lex.uz,2019). By 2021, EVs were also exempted from the car registration tax of 3%, which is included in the retail price of traditional vehicles (Spot.uz,2020).

In 2019, the government adopted another presidential decree - on the strategic transition to the “green economy” between 2019 and 2030 (Lex.uz,2019). According to this decree, any transporting means below the Euro-4 standard are prohibited from being sold in Uzbekistan since 2022 (Mintrans,2020).

It is also important to mention about governmental policy that was recently developed and brought to the open discussion until the first decade of April-2022 (Regulation.gov.uz,2022). Although this regulation is

not finally adopted, it has essential items for developing EVs and their infrastructure. In particular, as one of the priority directions, the government aims to electrify the automobile segment of Uzbekistan by 15% in 2030 by developing the whole ecosystem that starts from the production plant and ends with the after-sales system. The official adoption of this complex decree can lead to significant changes in the EV industry of Uzbekistan.

The preliminary decree proposes excluding the scrapping fee for the local EV producers and the imported EVs between 2024 and 2027. With the latest amount of “*Base Rate*”⁵ the utilization fees for the light passenger EVs (up to 3 years old) accounts for \$720 (Norma.uz,2020). Other examples of the practical proposals in this decree include the following:

- An exemption from the land tax for any owners of the building with at least two charging stations and parking space;

- Customs duty exemption for the technical equipment of charging stations and for the spare parts of locally produced EVs;

- The coverage of the total cost of electric supply by the government subsidies for the enterprises providing charging services;

- The governmental subsidy of \$10 000 to help a local entrepreneur purchase and install the Mode-4 charging stations with an electric supply of at least 60 kW/hour;

- Obligating developers to build new residential complexes with EV chargers and the owners of fuel stations in Tashkent to create at least two fast chargers in each location;

- Obligating each governmental institution to have at least 10% of EVs from the overall motor pool by 2025 and 100% by 2030. At the same time, it is required that 20% of new vehicle purchases should be electric from 2022;

- Obligating “Uzavtosanoat” SC⁶ to create a joint venture with the foreign producers of EVs and set up domestic production from 2027.

The governmental budget for these measures is planned to be formed by directing different fees to the “Green Economic Development” foundation. Such fees include the portion of registration fees for conventional automobiles, i.e., 0,2% for new vehicles and 0,5% for old ones, fuel duties, or fees for entering special ecological zones with ICE vehicles (Regulation.gov.uz,2022).

In 2021, the Uzbek government activated its actions toward sustainable development and EV popularization. For instance, in November 2021, the government announced a non-monetary policy of using green plates for private and governmental electric vehicles with a minimum speed requirement of 40km/hour (Lex.uz, 2021). It could lead to the next logical step of adopting the package of non-fiscal incentives, like free parking zones or road tax exemption. According to the World Bank Group research, the “green plate” system increased EV sales in China by nearly 18% (Sh. Li et al., 2020). The research suggests that the psychological effect of the environmentally friendly color and multiple benefits associated with this plate can substantially contribute to the EVs’ popularization. Therefore, with further additional incentives, Uzbek consumers might be more inclined to purchase EVs.

The procurement of EVs on the governmental scale is also intensifying. For example, in 2022, the Ecological committee of Uzbekistan announced the renewal of its motor pool with ten EVs (Gazeta.uz,2022), and the Ministry of Energy of Uzbekistan also has purchased twenty EVs for the needs of their new project solar energy (Spot.uz, 2022).

Recently, the authority of Uzbekistan enacted the so-called strategy of “New Uzbekistan” for the period of 2022-2024 (Strategy.uz, 2022). This strategy includes 100 objectives to develop Uzbekistan’s social and economic landscape. The 24th objective of this strategy is concerned with the green advancement of the country regarding renewable sources of energy like solar panels, the reduction of greenhouse gases by 10%, and the production of EVs with the local capacity (Strategy.uz, 2022). Regarding the last one, in February 2022, the governing company in the automobile industry of Uzbekistan– “Uzavtosanoat” SC has signed a memorandum of agreement with one of the largest producers of EVs in the world, Chinese automobile producer “BYD” (Uzavtosanoat.uz, 2022).

⁵ Base rate - is an indicator that is used in determining the amount of taxes, fees, duties, fines, and payments for public services in Uzbekistan.

⁶ “Uzavtosanoat” SC - Organization regulating the auto industry of Uzbekistan.

The government is also working on revising the local transportation system, especially in such big cities like Tashkent. For example, according to the adopted presidential decree №111 dd. 02.02.2022 and its road map, the Ministry of Transport needs to develop a system of motivating private taxi enterprises to purchase EVs in 2022 (Lex.uz,2022). This particular decree also requires the government to develop the charging infrastructure for the public buses by the mid of 2023.

Moreover, according to this decree, the Ministry of Transport was given the right to purchase 20 units of “Yutong” electric buses for the needs of Tashkent city, equivalent to the amount of approximately \$5.7 mln US dollars. The purchase is wholly exempted from 15% VAT (Lex.uz,2022). Within this decree, the Ministry of Transport, in cooperation with the Tashkent city council and other governmental institutions, must purchase electric buses between 2022 and 2025. For example, the annual planned purchase of electric buses for 2025 accounts for 200 units, while the accumulated governmental procurement of E-buses will make up 673 units by the end of 2025. At the same time, the government is attempting to stop the purchases of buses with natural gas and diesel engines from 2023 and increase the share of electric buses in the public transport segment up to 49% in 2025 (Lex.uz,2022). The same decree obliges “Uzavtosanoat” SC to develop the action plan until mid-2022 concerning the local production of electric buses in Uzbekistan.

While the government is developing the action plans for the public charging system, private enterprises like “TOKBOR” are already implementing the first charging station network in Uzbekistan. “TOKBOR” offers a turnkey project to provide all equipment and installation service, guarantee package, technical support, call-center support, integration to the local payment system, and marketing promotion to the investor (Tokbor.uz,2022). The investor must only invest in charging infrastructure and electricity supply. Today, the company has fruitful cooperation with a supermarket chain, “Makro” which has already created charging stations in its 14 locations (Themag.uz,2021). Large real-estate company - “NRG”, premium sports complex - “BeFit”, national petrol station chain - “UNG Petro” and several hotels have already started their cooperation in creating charging stations with “TOKBOR”. The company is simultaneously partnering with private EV dealers to provide discount charging services for potential EV buyers (Tokbor.uz,2022). Overall, “TOKBOR” has already developed 23 charging points and is continuously working on expanding its chain.

In parallel, one of the significant private sellers of electric vehicles – “Megawatt Motors” within the program of public-private partnership, started the cooperation with the Ecological Committee of Uzbekistan and committed to building 68 fast-charging stations in Uzbekistan between the period of 2022-2023 (Kapital.uz, 2022).

The Ministry of Energy in Uzbekistan is also developing a unique network of charging stations based on solar energy. Each charging station of this type can annually economize 19.8 tons of air pollutants and charge up to 950 vehicles per year (Minenergy.uz,2022). It should be noted that only 45 public charging stations are available in Uzbekistan at the moment⁷.

The positive environmental outcome of electric vehicles also depends on the country's energy mix⁸. The value of electric vehicles can be twice efficient in curtailing greenhouse emissions if the power supply for the vehicles can be sourced from renewable energy. Therefore, it is essential to develop a policy for green energy generation for the effective implementation of SDGs. Particularly, Uzbekistan generates 85% of power-burning natural gas, and only 10.2% of the country's energy distribution belongs to renewable sources, mainly gained by hydropower, while other renewable energies like solar or wind are negligible (IEA,2020). Nevertheless, in recent years, Uzbekistan has been attempting to reduce its greenhouse emissions by decreasing its reliance on fossil fuels and adopting appropriate government policies concerning green technologies, mobility, and infrastructure. For example, in 2021, the Ministry of Energy of Uzbekistan and "Masdar Clean Energy" (UAE) jointly launched the first significant solar energy plant with a 100 megawatts capacity. This project plans to eliminate the production of 80 million cubic meters of natural gas per year and prevent 160,000 tons of greenhouse gases. Uzbekistan has other joint projects in the renewable energy sector with a total electric capacity of 1,497 megawatts, waiving 2.4 mln tons of greenhouse emissions in the atmosphere (Ministry of Energy Uzbekistan, 2022). In 2018, the president also signed a decree regarding

⁷ Plugshare.com

⁸ Energy mix - the range of primary energy sources used to satisfy the needs of a given geographical region.

measures to develop nuclear energy in Uzbekistan. This decree establishes the state program for developing nuclear energy between 2019 and 2029 (Lex.uz⁹, 2018).

5. Discussion and Recommendation

According to the Center for Sustainable Energy (CSE), a primary problem with the widespread adoption of EVs is the deficiency of charging stations in the region (CSE, 2021). CSE proposes five-stage methods to develop an EV charging infrastructure, and the first vital stage is understanding the market gap and needs.

At the moment, there is a big infrastructural gap in the adoption of EVs in Uzbekistan. Since 2018, the cumulative import of EVs has accounted for 1452 units (Stat.uz), and the number is rising exponentially every year. European Union proposes the ratio of 1 charging station per 10 vehicles (IEA,2021) for the comfortable use of EVs, and Uzbekistan is far from reaching this indicative benchmark with the available chain of public charging stations. Except for top locations with the most registered passenger vehicles like Tashkent city and Ferghana region, the remaining administrative areas significantly need to build up charging points to adopt EVs in Uzbekistan (*see* Table 4).

No	Locations	EV charging stations ¹⁰	Cumulative number of passenger vehicles ¹¹
1	Tashkent city	24	467 176
2	Samarkand region	2	323 586
3	Ferghana region	9	276 558
4	Tashkent region	3	262 741
5	Kashkadarya region	1	223 733
6	Andijan region	1	192 944
7	Khorezm region	n/a	187 457
8	Bukhara region	n/a	180 478
9	Namangan region	4	180 367
10	Surkhandarya region	n/a	150 574
11	Republic of Karakalpakstan	n/a	113 140
12	Navoi region	1	75 039
13	Jizzakh region	n/a	72 530
14	Sirdarya region	n/a	60 803
	Total	45	2 767 126

Table 4: The number of public charging stations in Uzbekistan in administrative locations
Source: Plugshare.com, 2022 / Gazeta.uz, 2021

The paper shows that the government of Uzbekistan has no working program for EV charging network expansion, and the market primarily relies on private entities in the expansion process. However, the research of the World Bank suggests that the government's spending on the charging infrastructure is more effective than the subsidy on consumer purchases in EV popularization (Shanjun Li, 2021). In particular, to achieve one additional sale of EV, the government can either spend \$10,872 through consumer subsidies per car or only ration \$1,587 per car for installing a new public charger (Shanjun Li, 2021). Considering the present infrastructural situation and the viability of subsidizing the charging network, Uzbekistan should concentrate its efforts on this topic as the main starting point.

Kick-starting the market of EVs incorporates different subsidies, incentives, and government funding that are considered effective but expensive (BloombergNEF,2021). However, recent macroeconomic factors and the unstable situation in the world have forced the government of Uzbekistan to decrease the anticipated expenditures on different governmental projects by nearly \$880 million in 2022 (Gazeta.uz). In a tight budget condition, the government should be more flexible in organizing investment funding, and the foreign

⁹ National Legislation Base

¹⁰ Plugshare.com

¹¹ <https://www.gazeta.uz/ru/2021/03/17/cars-summary/>

experience can be helpful. For example, the local authority has not yet employed the so-called “cap and trade” auction system that is popular in developed countries like the USA or China. This instrument forces industrial enterprises to reduce their emission by a certain level and allows the government to trade allowances through auctions (EDF,2022). Additionally, the public-private partnership is also a great tool for diversifying the budget allocation (CSE,2021) and the preliminary project of offering \$10’000 for the local entrepreneurs to share the cost of charging network development is a wise approach.

The involvement of local oil and gas companies in EVs’ infrastructural development can also lead to practical results in electric mobility. Nowadays, once reluctant companies in oil industries such as BP, Shell, Enel, and EDF are actively developing a global public charging network (BloombergNEF,2021). For example, BP has recently changed its trajectory and expects selling electricity to be more profitable in the future (Reuters,2021), and plans to create 500’000 chargers globally by 2025 (BloombergNEF,2021). Therefore, EV infrastructural expansion is not only ecologically relevant but also potentially profitable for every oil and gas company like JSC “Uzbekneftgaz”. The company is recommended to be involved in the development process of EV charging stations through its network of over hundreds of “UNG Petro” branded petrol and gas fuel stations (Ungpetro.uz, 2022) and through other greenfield projects.

Manufacturers’ and consumers’ incentivization system is also very effective tool for popularizing alternative-energy vehicles. However, Uzbekistan needs to have a regulatory body to track the subsidy allocation and avoid subsidy misuse. China was generous in subsidizing EVs in different segments, yet the country also suffered significantly because of fraudulent actions from the manufacturers. For example, in 2016, the Chinese government fined five electric bus producers for the subsidy falsification and accused them of defrauding \$150 million of the government funds (WSJ,2016). The fraudulent schemes took many forms, including falsified client registration, using bribery to receive the licenses, or falsified battery sizes to increase the amount of subsidy (ICCT,2017). Therefore, it is essential to create an independent regulatory body in Uzbekistan. Currently, the local auto industry is mainly represented by “Uzavtosanoat” SC, yet this institution mainly acts as the founder of almost all government vehicle producers directly or through affiliated companies (Uzavtosanoat.uz,2022). Creating a third regulatory body that will provide, track, and validate all subsidies in the EV industry is crucial to producing transparency and equal opportunity for private and public manufacturers and avoiding conflict of interest. The regulatory bodies and policies can eliminate consumer concerns and motivate vehicle or battery producers to improve constantly their technological process and the industry itself (X.F. Liu and L.Wang, 2021). As such, tightened technical requirement, random checks, severe punishment for illegal practices and anti-fraud measures of verified proof of sales should be an essential part of regulatory policy in the country (ICCT,2017).

Finally, it is also essential to enrich the non-financial rewards in Uzbekistan by using the practices of developed countries. Uzbekistan can use parking incentives with its planned reforms in the city infrastructure. In March 2022, it was announced that the parking in the capital city of Tashkent is planned to be chargeable per hour (Gazeta.uz,2022). Therefore, the government can simultaneously adopt a free parking mechanism for EV owners to stimulate the purchase of these vehicles. The administration can also propose a discount for the license plates sold at auctions, where prices can even reach \$44’500 during the bidding process (Uznews.uz,2021). EV buyers can be discounted while purchasing those auctioned license plates. In 2022, the authority also announced transportation reforms that included creating separate bus lanes for the quick movement of the buses in the city (Podrobno.uz,2022). The logical incentive of the bus lane access for the EV drivers could be an additional demand booster for alternative-energy vehicles

6. Conclusion

The development of the EV market is imperative to maintain the global ecological balance. Since its early beginning, the landscape of the EV industry has changed optimistically and delivered extensive experience and practices in forming this market. There has been a visible shift in the world of EVs since 2020, and the volume increased in parallel with new consumers’ willingness to purchase those vehicles. The government’s optimism is also rising exponentially to use new energy vehicles as part of the comprehensive strategy to tackle global warming.

Today, activism in the matter of green projects is actively done and prompted by developed countries, and Uzbekistan can hugely learn from their experience. Particularly, innovative practice and the benchmark

of those developed nations will be advantageous for developing countries like Uzbekistan, and this concept matches with the main idea of UN Global Goals that advocate that experience, technology, and creativity are necessary to be shared among different nations to achieve all sustainable targets, as well as that the sub-target of 7th Global Goals regarding the development of sustainable infrastructure by especially helping the least developed countries which are geographically land-locked¹² (UNDP, 2015).

Governmental support is essential to have a flying start in the early markets, and thus, accurate administrative backing is required in the case of Uzbekistan. Conspicuous enthusiasm and preliminary legal projects illustrate that the Uzbek EV market is on the right pathway, yet much remains to be done and adapting the best practices of the leaders in the EV industry is important.

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¹² Uzbekistan is one of the few landlocked countries in the world.

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The Notion of Ecology and its Description in the Educational Process

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Annotation. The article deals with the notion of ecology and its description. Within this article it is described ecological terms, scientific descriptions, branches, types of ecology, global contents, human – animal bonds and their interrelations in nature.

Key words. ecology, environment, humans, animals, nature, earth, water, mountains, deserts, bogs, branch, biology, organisms, relationship, biosphere, concept, pets, horses, community, habitat....

Ecology. As the branch of biology that deals with the relations of organisms to one another and to their physical surroundings. Ecology is the study of the relationships between living organisms, including humans, and their physical environment. Ecology considers organisms at the existing world and interrelations of different habitats which live on the Mother Earth.

Definitions of ecology. The scientific study of the processes influencing to the distribution and abundance of organisms, the interactions among organisms, and the interactions between habitats on the nature.

While giving the different results of scientific investigations and ecological phenomena in the study, it is very important to give a short description about the contents, notions, and understandings of the existence of the natural world on the Mother Earth.

It is known that any scientific investigation gives results which are very important to make clear or to understand this or that phenomenon in the definite field of science.

Ecology. Definitions and Meaning – Merriam-Webster. Definition of ecology. 1. a branch of science concerned with the interrelationship of organisms and their environments. 2. the totality or pattern of relations between organisms and their environment. 3. HUMAN ECOLOGY. 4. Environment, Climate// the moral ecology. also: an often delicate or intricate system or complex // the ecology of language.

Components of ecosystem at least should be described as follows- human, animal, land, (mountains, hills, deserts, bogs), water (canal, river, sea, ocean), birds, insects, creatures, worm, etc.

What is concept of ecology? Biosphere/ecosphere is the part of the earth and atmosphere inhabited by living organisms.

The habitat is a specific locality with a particular set of conditions where organisms live. Habitats are categorized into Terrestrial (land) and aquatic (water). **An ecological niche** is the position that animal occupies in a habitat. It includes physical space where the organism is found and its role in that habitat in terms of feeding relationships and offer interactions with other species.

Population refers to all members of a given species in a particular habitat, at a particular time.

Community refers to all organisms belonging to different species that interact in the same habitat. A community therefore is made up populations.

An ecosystem is a natural unit composed of abiotic and biotic factors whose interactions lead **to self-sustaining** system e.g. a small bond or a large ecosystem such as per unit area e.g. total weight of maize crop per hectare.

Carrying Capacity is the maximum number of organisms an area can comfortable support without depletion of the available resources.

While studying zoo-ecology one must be more attentive in describing the term itself. “zoo” includes the animal world. It is very wide issue. And in order to describe environment of the animal world, first of all we have to distinguish the division or the types of the animal world. We know there are two types of animals in nature. They are:

1. Wild animal world;

2. Domestic animal world. Like humans environment, animals also have their own environment. Environment may be different. For example, natural, social, national, governmental, tribal, historical, traditional, local, and family environments. They all differ from each other in content and in meaning.

This article deals with the zoo-ecology and its meaning and content. A lot of scientific investigations have been carried out in this field of science. Practically, zoo-ecological education has its own ways of investigation.

Zoo-ecology is a branch of ecology dealing with the relation of animals to their environment and to other animals.

In nature animal relationships with human go back to far history. According to the Human –Animal Bond research Institute (HARBI) the human –animal bond is a mutually beneficial and dynamic relationship between people and animals that is influenced by behaviors that are essential to the health and wellbeing of both. The emotional, psychological, and physical connections people have with the animal world.

Humans have always exhibited a fascination with animals. Ancient cave art in Borneo depicting bovine –type creatures and domestication of animals illustrate how animals have played a significant role in human civilization for thousands of years. While human relationships with animals continue to evolve, there is a wealth of knowledge gathered from the historical and scientific aspects of the human-animal bond. Acknowledging these aspects increases the strength of the human-animal bond and improves the ability of the veterinary team to provide the highest quality of patient care.

What is the Human-Animal Bond? - According to the Human-Animal Bond Research the emotional, psychological, and physical connections people have with animals and the environment are also incorporated into the definition of the human-animal bond. Relationships between human and animals vary, ranging from non-pet animals used in production and service to the most doted upon family pets, with the majority of animals' owners in the middle of this range. Therefore, relationships and attachments can vary among people and the animals in their lives. These relationships are also situational and conditional, depending on how humans view the animal. For example, a dedicated dog owner may enjoy a medium-rare steak, but balk at the thought of eating horse meat. The historical and scientific context behind the human-animal bond provides a deeper, understanding of the relationships between humans and animals, offers insight into how fulfilling this bond can be, and helps the veterinary team better integrate the bond into clinical culture.

Why animals? – Human's desire secure connections and will seek attachment from inanimate objects and / or living organisms. Although human attraction toward living entities may vary, people are still interested in learning more about animals. One explanation of this interest and attraction is the biophilia hypothesis introduced by American ecologist E.O. Wilson in 1984.

Biophilia is defined as the human inclination to dicate on various aspects of natural life, combining emotional tendencies for living beings and nature.

The Human-Animal Bond is a mutually beneficial and dynamic relationship between people and animals that is influenced by behaviors essential to the health and wellbeing to both. This includes, among other things, emotional, psychological, and physical interactions of people, animals, and the environment. The veterinarian's role in the human-animal bond is to maximize the potentials of this relationship between people and animals.

The AVMA recognizes: (1) the existence of the human-animal bond and its importance to client and community health, (2) that the human-animal bond has existed for thousands of years, and (3) that the human-animal bond has major significance for veterinary medicine service society, it fulfills both human and animal needs.

Issues related to the human-animal bond are considered by the Steering Community of Human-Animal Interactions (SCHAI) with staff support from the Animal Welfare Division. The American Veterinary Medical Association has adopted a range of policies that relate to the human-animal bond.

Mental- Health Benefits of the Human Animal- Bond. The human –animal bond is often used to describe the relationship shared between people and animals. Pet owners know it is so much more than a relationship and anyone who has ever loved a companion animal felt the strength of the human-animal bond.

Our unique relationships with our pets can influence physical, social, emotional, psychological, and mental well-being for us and for them.

Maybe our pets can't tell us how they feel but research can tell us our companions feel the impact of the human-animal bond too. The human-animal bond also benefits our furry companions. Oxytocin is a hormone found in humans, cats and dogs. It is often referred to as "the love hormone" and plays a significant role in human bonding and might help explain how our pets feel about us. Studies have showed an increase in oxytocin levels in dogs after gazing into their owner's eyes and an increase in oxytocin levels in cats playing with their owners.

The emotional strength of the human-animal bond may be difficult to describe to someone who has never shared a relationship with a pet but almost every pet owner recognizes unconditional love as a key component of the bond. Our pets offer friendship and love without judgment; they keep our secrets and listen to our fears, they are quick to forgive us when we make a mistake; and they don't hold it against us (although something I think my cat might hold it against me when I feed him later than usual). The bond we have with our pets can also provide us comfort and a sense of security.

The psychological benefits- The psychological benefits of the human – animal bond have been indirectly recognized for many years. Even Sigmund Freud reportedly had his Chow - Chow, Lofi attend some of his sessions with clients.

Today, the psychological benefits of the human-animal bond are well-known, acknowledged, and actively studied. There are many therapeutic providers that offer animal assisted therapy sessions and many hospitals have a team of therapy dogs that can visit patients in the hospital. Teams of handlers and therapy dogs are often found comforting victims after a major natural disaster and a regular team of therapy dogs could be found on Boylston Street Boston after the traumatic Boston Marathon in 2013.

Although the benefits of the human-animal bond are becoming more recognized.

By society, it's important to acknowledge that everyone's relationship with their pet is unique and special.

Improvement in Mental Health-The human-animal bond has also been known to improve our mental health. Pets can improve symptoms to depression, anxiety PTSD, They can decrease feelings of loneliness. Pets can also improve our physical health. According to the Center for Disease Control (CDC), pet ownership can lower blood pressure and can positively influence our rate of physical activity. Our Compositions help us cope with stress which can improve cardiovascular health, For older adults, the human-animal bond has been directly linked to healthy aging. Pets can decrease isolation and improve social wellbeing among older adults. In settings where pet ownership may not be ideal, visitation from therapy animals can also have a significant impact on wellbeing. Therapy animals can improve quality of life for both the handler and the patients that are visited.

Although the benefits of the human-animal bond are becoming more recognized by society, it's important to acknowledge that everyone's relationship with their pet is unique and special. Some people may consider their pet to be their best friend, a family member or like a child. Others may rely on their companion

as a source of emotional support, a connection to the past, or even hope for the future. Anyone who has ever loved an animal understands the unspoken strength of the human-animal bond.

A few words can be written about other animals-horses. Horses may not love each other in the same capacity of a human loving another human. Certainly feel and-give affection. It is about that any relationship of a horse and human being.

Subsequently, the love you feel for your horse may not be exactly reciprocated. But a horse can certainly feel-and give-affection. It's about trust. Like any relationship, don't rush things. Your horse has to trust you in order to let you get close. It is not easy for a horse. As prey animals by nature, their instincts are to be on guard. Take your time and build up trust between you and your horse.

Longtime horseman Franklin Levinson from "Way of the Horse" writes that "love, respect and trust are basically the same thing for a horse". These things must be earned. His advice to his readers is that horses respect leadership and this can be done by a directing movement on the ground before attempting to ride. "Unfortunately, it is always the first thing done with horses" he writes, "when it should be the last. Gaining knowledge of horses should always be the first thing taught".

Resources

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Issues of Attracting Private Capital to the Banking System of the Republic of Uzbekistan

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Annatation. The article examines the increase in capital of commercial banks and the factors influencing it on the basis of theoretical and practical data. Also, based on the study of foreign experience, it is argued that the increase in asset quality in banks will directly improve the quality of credit services provided by banks, reduce problem loans and the use of credit scoring system. A number of specific aspects of the use of credit scoring system in improving the quality of assets of commercial banks have been studied in detail on the basis of theoretical and practical data, scientific proposals and practical recommendations have been developed on the basis of author's approaches.

Key words: capital of banks, authorized capital of a bank, capitalization of commercial banks, innovation, digital technologies, commercial banks, banking innovations, assets of banks, liabilities of banks, banking operations, deposit

1. Introduction.

In order to ensure the financial stability of banks and protect the interests of depositors and creditors, it is necessary to comply with prudential standards set by the Central Bank, and one of these prudential standards is the liquidity ratio, which determines the need to establish a reliable liquidity system in banks [1].

One of the main risks for banks in the Republic of Uzbekistan is to improve the quality of credit portfolio and risk management, pursue a moderate growth of lending, pursue a balanced macroeconomic policy, ensure technological stability of the banking system through the implementation of technological solutions for assessing financial risks liquidity risks will need to be identified and managed early [2].

It is known from international banking practice that the primary means of ensuring the solvency and liquidity of commercial banks is to strengthen their capital base. In turn, the strengthening of the capital base of commercial banks will be achieved by improving the system of effective capital management. At present, there are a number of issues that need to be addressed to ensure the stability of the capital of commercial banks of the country. In particular, the problem of effective management of the authorized capital of commercial banks and the efficiency of the use of bank assets.

We know that devaluation reserves on the balance sheet of a commercial bank are formed when the exchange rate of the national currency against a foreign currency decrease. Devaluation reserves are included in the fixed capital of commercial banks and are not a relatively stable source of financing for banking activities. As Chris Barltrop, an expert with the World Bank for Reconstruction and Development, puts it: “Bank capital is a reliable and relatively expensive form of financing banking activities” [3]. Therefore, it is expedient to include the amount formed on the balance sheet of a commercial bank at the expense of devaluation reserves in the additional capital structure.

2. Literature review.

Theoretical, methodological and practical issues of increasing capitalization, managing assets and liabilities of commercial banks were studied in the scientific works of foreign scientists, economists such as E. Gill, T. Koch, E. Reed, X. Grüning, E. Dollan, L. Roger, A. Simanovsky, O. Lavrushin, V. Usoskin, G. Panova, J. Sinki, R. Kotter, W. Soto, Moiseev, E. Zhukova, G. Beloglazova, N. Valentseva, A. Gavrilenko, V. Kolesnikov, G. Korobova, L. Batrakova, A. Litvinova, O. Ovchinnikova, G. Panova, V. Rodionova, I. Rykov, G. Tosunyan and others [4].

Scientific approaches to increasing capitalization, managing assets and liabilities of commercial banks have found practical implementation in the works of local scientists, economists and specialists such

as: Sh. Abdullaeva, T. Bobakulov, B. Berdiyarov, T. Karaliev, F. Mullazhanov, A. Omonov, N. Kholmurodov, R. Tajiev, R. Shomurodov, N. Karimov, I. Taimukhamedov, M. Nurmuratov, Z. Kholmakhmadov and many others.

Capitalization is largely determined by economic growth and the global competitiveness of the national economy, while capital is a relatively constant value. That is why the Basel II and Basel III standards made an attempt to bring the technique of implementing the concept of regulatory capital to a qualitatively new level: the level of market-oriented assessments, since the Basel I standard proceeded from the concept of regulatory capital and determined the requirements for capital without taking into account banks real need for it [5].

The analysis of this problem revealed the lack of comprehensive studies on the issue of capitalization of commercial banks in Uzbekistan. There are no clearly developed and used in practice measures on this topic. The very concept of capitalization is still not associated with the market interpretation of this term in relation to domestic credit institutions. Until now, both in the scientific community and the banking community, capitalization is understood only as an increase in the bank's own capital. For example, Peter S. Rose notes that "we often use the term capitalization, meaning by this own funds or equity capital of banks and its sufficiency to cover risks" [6].

According to our local scientist R. Shomurodov, an expert on monetary policy: The results of a study of the financial and banking system of developed and developing countries show that the capitalization of commercial banks directly affects the development and stability of the country's economy. Bank loans also support the development of small and medium-sized businesses, private entrepreneurship and stimulate the development of infrastructure for an innovative and digital economy in the country [7].

Economist V. Usoskin paid special attention to improving the quality of loans and cash assets, which are the main types of assets of commercial banks. In order to improve the quality of the loan portfolio, V. Usoskin proposes to improve the system of assessing the creditworthiness of customers, strict adherence to the principle of diversification in the formation of the loan portfolio [8].

N. Sokolinskaya believes that the main focus in asset management and quality improvement should be on their profitability and liquidity [9].

The research of LG Batrakova, the nature of interest rate risk in the implementation of deposit policy, assessment, management and the process of establishing a system of measures for insurance are studied [10].

3. Research methodology.

The level of capitalization of commercial banks operating in the country was analyzed, and the author made suggestions and recommendations to increase the level of capitalization.

4. Analysis and discussion of results.

The meaning of the capitalization process is to increase the value of capital owned by subjects of all levels of the country's economy, as a result of the growth of their economic potential and efficiency. Thus, capitalization largely determines the rate of economic growth and the global competitiveness of the national economy.

Indeed, for private and state-owned companies and banks, own funds are practically the only sources of increasing capitalization. For companies and banks whose shares are listed on the stock exchange, the market value of capital is decisive in assessing the level of capitalization. In particular, as of January 1, 2020, the market capitalization of all public companies in the world was \$96 trillion, of which \$5.6 trillion is the capitalization of commercial banks. The capitalization of public companies exceeds the volume of global GDP, which in 2019 amounted to 85.91 trillion US dollars [11]

Table 1
Information on assets, loan capital and problem loans of banks of the Republic of Uzbekistan
(Trillion soums) [12]

Nu.	Indicators	2016	2017	2018	2019	2020	2021	January 1, 2022
1.	Assets	84,1	166,6	214,4	272,7	276,9	366,1	444,9
2.	Risk assets	57,4	106,5	155,0	223,0	316,8	376,8	292,2
3.	Loans issued	52,6	110,6	167,4	211,6	276,9	276,9	326,3
4.	Capital	9,0	20,7	26,7	51,0	53,3	51,1	70,9
5.	Problem loans	0,39	1,3	2,1	3,1	2,3	2,1	5,2

The assets of the banking system in 2021 will reach 383.2 trillion soums and increased compared to previous years, an increase of 335.3% compared to 2016. Risky assets also saw credit growth increase accordingly. Although the bank's capital has also increased, it can be seen that its adequacy ratio has decreased. The amount of both non-performing loans, which represent the quality of assets, has increased. Deterioration in asset quality indicates that it is moving into a problem asset.

It is important to study the problem loans of banks, including the constant monitoring of their share in the loan portfolio, assets, the development and implementation of specific measures to reduce it. Problem loans in the Republic of Uzbekistan are growing from year to year, if in 2016 the problem loans amounted to 0.7%, by the end of 2021 it was 2.7%. This can also be seen in the ratio of problem loans to assets and risky assets. It can be seen that the quality of assets in commercial banks is relatively declining.

Table 2
Problem loans of banks of the Republic of Uzbekistan Share in assets, risky assets, loans (at the beginning of the year, in%) [13]

Nu	Indicators	2016	2017	2018	2019	2020	2021
1.	The sum of problem loans share in assets, in%	0,5	0,8	1,0	1,2	1,6	2,3
2.	The total risk of problem loans share in borrowed assets, in%	0,7	1,2	1,4	1,4	1,8	2,1
3.	A total of problem loans are issued share in loans, in%	0,7	1,2	1,3	1,5	2,1	2,7

In the case of overdue loan repayment, the borrower is unable to repay the amount and the bank incurs certain losses. If the reserves are kept to a minimum, in such cases, when problem loans appear, they cover a certain part of it and do not cause much damage to the bank. One of the last measures to reduce problem loans is to collect payments on guarantees and sureties received, to cover them through the sale of mortgaged property. There are a number of specific advantages to using Scoring Analysis based on a new approach using modern methods to prevent the emergence of problem loans in commercial banks. In this regard, it should be noted that the President of the Republic of Uzbekistan on May 12, 2020 N. PF-5992 "Reform of the banking system of the Republic of Uzbekistan for 2020-2025" The Strategy for Reforming the Banking System of the Republic of Uzbekistan for 2020-2025 sets tasks for the introduction of modern information technologies, including automated scoring systems, which will simplify, accelerate the process of bank lending. It was noted that it will serve to increase transparency.

It should be noted that today "macroeconomic and financial conditions for commercial banks can change as quickly as the financial crisis of 2008 and the recent debt crisis in Europe. Therefore, ensuring the quality and profitability of assets in banks in response to the changing environment remains an important issue. The main problem of banks is the need to dynamically optimize the structure of assets and liabilities, ensure the profitability of operations and minimize risks" [14], and therefore banks always take appropriate measures to address these shortcomings.

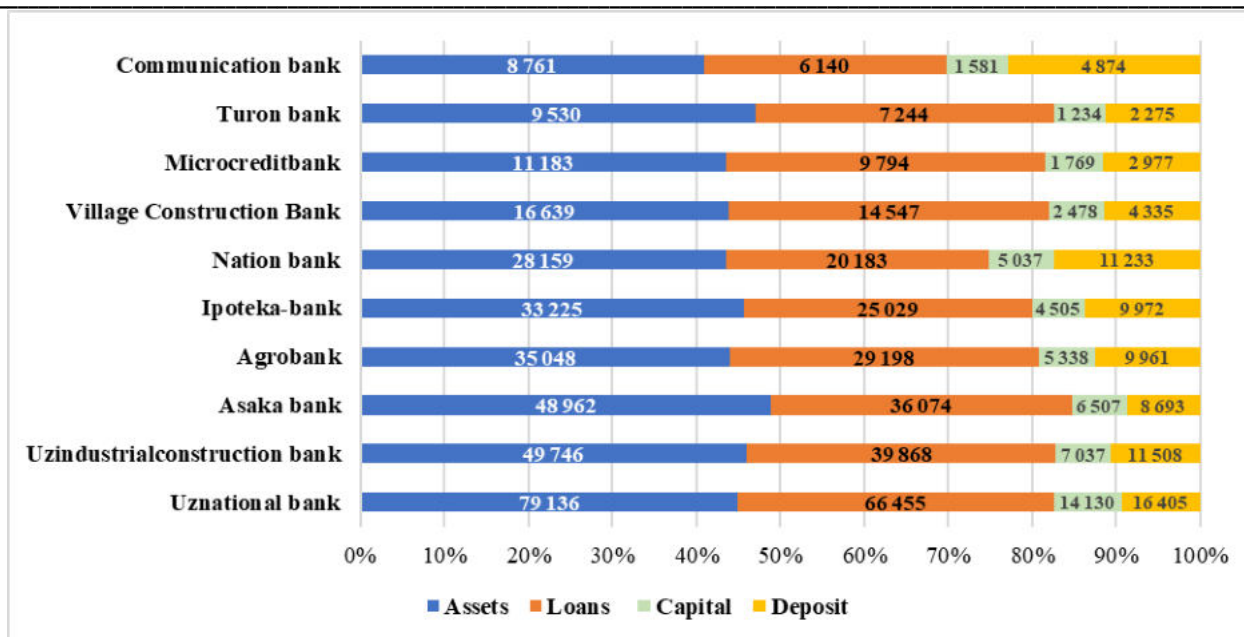


Figure 1. Key indicators of state commercial banks of the Republic of Uzbekistan as of 2021 Top-10 (in billion soums) [15]

The above analysis shows that among the state-owned banks operating in the country, UzNational Bank is ahead in terms of total assets with 79,136 billion soums. In terms of loans, the UzNational Bank ranks first with 66,455 billion soums. In turn, the capitalization of the National Bank is 14,130 billion soums, and the UzNational Bank leads in deposits with 16,405 billion soums.

The lack of issue income in the capital of commercial banks of the country indicates that the secondary market of securities issued by commercial banks is underdeveloped and is not considered as an object of regular trading. However, in the capital of commercial banks in many foreign countries, the amount of issue income occupies a significant share. For example, it is second only to the government in terms of the volume of securities issued by commercial banks in the United States, the United Kingdom and Japan, and their participation in trading in financial markets. Given that one of the most convenient and profitable areas in the process of further deepening the liberalization of the economy is to increase the amount of resources attracted by commercial banks through issuance of shares and certificates of deposit, then regular participation of commercial banks in securities market development its role in making it even more pronounced.

The level of risk exposure of bank assets also plays an important role in ensuring the stability of the capital of commercial banks. The fact that a significant part of the assets of commercial banks of the country consists of cash assets indicates a low level of efficiency in the use of banking resources, including bank capital, which, in turn, indicates the stability of bank capital.

In addition, the use of documented letters of credit, which are the main form of cashless payments in international banking practice and allow commercial banks to earn a high level of income, remains low. The main reason for this is that in the banking practice of the country, mainly secured letters of credit are used, ie our banks use the account No. 22602 "Customer deposits under the letter of credit" when making payments under the letter of credit.

This is a positive situation from the point of view of capital equilibrium. However, the efficiency of commercial banks is assessed as a negative situation from a profit point of view. This is because the relatively small share of high-risk assets in the assets of a commercial bank leads to a relatively high level of total capital adequacy. The higher the risk level of the assets, the higher their rate of return. Therefore, a high level of total capital adequacy may indicate a low level of return on bank assets.

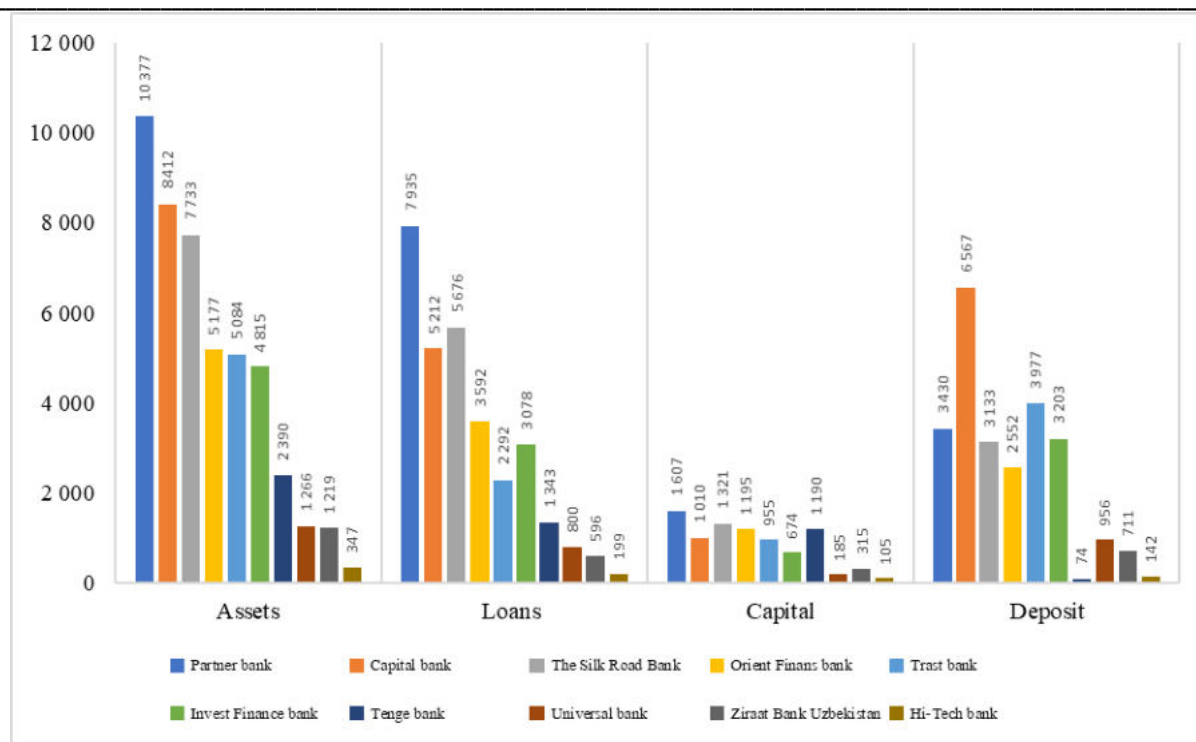


Figure 2. The main indicators of private banks with foreign capital operating in the Republic of Uzbekistan as of 2021 Top-10 (in billion soums) [16]

The picture above shows the main indicators of private banks with foreign capital operating in Uzbekistan, with Partner Bank ahead with total assets of 10,377 billion soums. Capital Bank attracted deposits with 6,667 billion soums.

In short, in order to ensure the stability of the capital of commercial banks, it is expedient to take the devaluation reserve from the fixed capital structure and include it in the additional capital structure, and this year's net profit from the additional capital structure to include the fixed capital structure. At the same time, increasing the participation of commercial banks in the secondary securities market and a relative reduction in the amount of cash assets are also important factors in increasing the stability of bank capital.

This is a positive situation from the point of view of capital equilibrium. However, the efficiency of commercial banks is assessed as a negative situation from a profit point of view.

5. Conclusions and suggestions.

Based on the results of the study of the theoretical foundations for increasing the capitalization of commercial banks in the context of the introduction of innovations, the following scientific conclusions, proposals and recommendations were formulated:

1. In a broad sense, the market capitalization of a company is an assessment of the company's value through the total market valuation of its shares admitted to trading on the stock exchange, the increase in the company's value due to profit, goodwill and market expectations.

2. To increase capitalization and reduce banking risks, the transition to digital technologies in all aspects of banking is rapidly developing.

3. In order to increase capitalization, strengthen liquidity and financial stability of commercial banks of Uzbekistan, it is necessary to attract experienced domestic and international specialists in the field of banking, economic forecasting and analytics, research personnel, as well as higher educational institutions. institutions for the development, testing, and further implementation of modern advanced banking technologies.

4. A study of the banking system of developed and developing countries shows that financial stability is a characteristic of the stable position and further development of the bank as the main element of the banking system. The stability of an individual bank, liquidity, reliability and stability of the banking

system are interdependent indicators, as they are determined by the state of the economic environment within which banking activities are carried out.

5. In their activities, commercial banks have to take into account various nuances. In particular, the nature of the risks is of considerable importance. There are external and internal causes of their occurrence. The category of the first includes those risks that are not directly related to the activities of the bank. These are losses incurred as a result of some serious events.

6. Market capitalization, as an objective process, is determined by two types of factors: A) external globalizing environment or external (global) factors; B) the internal state of the national economy or internal (national) factors.

7. Own capital is formed from the contributions of the founders, profit and funds formed from it. It is a combination of different purpose, fully paid elements that ensure the independence, stability and stability of the bank.

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Development of Artificial Intelligence: Characteristics of Research Directions

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Annotation: The article presents the periodization of the basic areas of research in the field of artificial intelligence. The first examples of systems created to perform intellectual tasks are considered in detail. The significance of experimental work for the subsequent creation of intelligent machines is described.

Keywords: intelligent machine, artificial intelligence, labyrinth search, machine translation, visual pattern recognition.

Introduction

With the advent of the first generation of computers, the hardware of which was built on the basis of vacuum tubes, research in the field of artificial intelligence (AI) is actively developing. Initially, when creating the first computers, scientists did not think about the implementation of intellectual functions. The earliest designs were designed to perform complex computational tasks. However, later, with an increase in productivity, it became clear that a huge potential is hidden in computers, with the help of which it is possible not only to simplify labor costs and increase the efficiency of human activity, but also to build a system similar to the human mind, and, consequently, to understand how mental thinking is carried out activity.

For the first time, the theory that the capabilities of electronic computers at some point will equal the capabilities of the human brain was proposed by the English mathematician, logician, and cryptographer Alan Turing. In his 1947 report "Intelligent Machines," Turing speculated whether a mechanism could detect intelligent behavior. In 1950, the work "Computing Machines and the Mind" was published, in which he presented a method for determining the "intelligent behavior" of a machine, later called the "imitation game" or "Turing test". The standard interpretation of this test is: "A person interacts with one computer and one person. Based on the answers to the questions within five minutes, he must determine with whom he is talking: with a person or a computer program. The task of a computer program is to mislead a person into making the wrong choice." Turing claimed that by the year 2000 computer systems would be free to pass his test, but this did not happen [6].

American scientist Marvin Lee Minsky, along with Alan Turing, is considered one of the founders of AI. At the heart of his theory is the idea that "the brain is nothing but a complex machine whose properties can be copied by computers". In 1951, M. Minsky and D. Edmonds created the first network computer based on a neural network - a device built on the principle of organization and functioning of the nerve cells of a living organism. The sample was named "Snarc" (Stochastic Neural Analog Reinforcement Calculator). It was the first self-learning computer system simulating a network of 40 neurons [7].

Since 1952, Arthur Samuel, a pioneer in the field of computer games and machine learning, has been creating a number of programs for playing checkers. The most important result of his work is the "Checkers-playing" program - one of the first in which self-learning functions are implemented and the basic principles of AI are clearly demonstrated. In the course of his research, Samuel disproved the claim that computers could only do what they were taught: one of his programs "learned" how to play checkers better than its creator. The developments of A. Samuel are considered to be fundamental in this direction [5].

At the same time, the American researcher Allen Newell began to develop a program for playing chess. The working team included analysts from the RAND Corporation (a company that develops new methods for solving strategic problems), as well as a group of Dutch psychologists led by De Groot, who studied the playing styles of outstanding chess players. The result of two years of work was the

programming language "IPL" - the first symbolic language for processing lists. After some time, the intellectual program "Logic-Theorist" was written in this language, designed to automatically prove theorems in propositional calculus. With its help, 38 out of 52 theorems of one of the sections of mathematical logic, the propositional calculus, were re-proved. Subsequently, all 52 theorems were deduced on a high-speed computer" [2].

1952 was also marked by the development of the American mathematician, cybernetics and cryptologist Claude Chenon. He created an "electronic mouse" - a learning machine for finding a way out of a labyrinth, controlled by a complex relay circuit. The device independently explored the labyrinth and found a way out of it. At its core, it was a software implementation of the labyrinth search model [4].

In 1954, a demonstration was made of the operation of a device representing a separate area in AI research, namely, machine translation from one natural language to another with the preservation of semantic relations using a special computer program. The idea was proposed back in 1947 by cryptographer Warren Weaver, and on January 7, 1954, IBM, together with Georgetown University, demonstrated the IBM Mark II, which performed a fully automatic translation of more than 60 sentences from Russian into English. The event has been dubbed the "Georgetown Experiment". It gave a powerful start to the development of this area, causing a wide resonance in the scientific community and positively influencing the development of such systems in the future [1].

In 1956, research in the field of AI was formalized as an independent scientific direction. In the American city of Hanover, on the basis of Dartmouth College, a conference on AI was held, which was attended by all prominent American researchers involved in developments in this area. It was at this conference that computer scientist John McCarthy coined the term "Artificial Intelligence" ("artificial intelligence"). According to McCarthy, intelligence is understood as "the computational component of the ability to achieve a goal, and researchers are free to use methods that are not observed in humans, if necessary, to solve specific problems, both in the design of a machine and in the operation of algorithms" [8].

In 1958, John McCarthy also made a significant contribution to the development of a new high-level programming language, Lisp. This language is still one of the main tools for writing the software part of intelligent systems. McCarthy's next discovery, due to the lack of funds to increase the power of computer resources, was the "time-sharing mode" (simultaneous access of several users to one computer). This mode made it possible to unleash the potential of computers and significantly increase the productivity of work.

In the same year, McCarthy described the hypothetical Advice Taker program, the main purpose of which was the use of knowledge, including general ideas about the world, in solving problems. Basing its actions on a set of axioms, the program, depending on the conditions, is able to expand the set of fundamental settings, thereby embodying the principles of knowledge representation and reasoning [5].

In 1959, M. Minsky founded the Artificial Intelligence Laboratory at the Massachusetts Institute of Technology and designed a robot capable of perceiving and manipulating surrounding objects. The device was equipped with optical scanners and tactile sensors, controlled by a computer [3].

Since 1960, AI as an independent direction has spread throughout the world. The USSR, Japan, European countries joined the work. Period from 1945 to 1960 was the first step in the development of a new science. At this time, the main directions of AI research emerged, the results of which gave rise to a huge number of diverse ideas, generating both interdisciplinary connections and fundamentally new ideas. Experimental intelligent systems have become the starting point in the development of such areas of research as neural networks, game programs, labyrinth search, machine translation, automatic theorem proving, recognition of visual patterns and external influences. It should be said that robotics is not considered in this article, since by 1945 there were already a large number of automatic machines, and the development of computer technology and the emergence of AI theory marked a new stage of research in this direction.

Subsequently, subject to the trends of reducing the cost of hardware components of computers and increasing their capacities, the presented areas of AI research are transformed and intertwined with research in the field of philosophy, psychology, and cultural studies. There are theories of "weak" and "strong" AI. Writers and cinematographers in their fantastic works try to show possible interactions between man and

machine, touching upon the problems of ethics, morality, and religion. AI research, as well as the very understanding and use of the theory of intelligent machines, are being commercialized. AI enters the world market not only as a high-performance computer information system, but also as a global general cultural idea that has given rise to both new hopes and new phobias in the minds of people.

At the moment, every specialist, one way or another connected with computer technology, has heard about AI. The world in the last 70 years has been trying to use computer technology to solve problems that have been relevant throughout the history of mankind - understanding and recreating life, reason, the ability to perceive, understand and explain the world around.

Perhaps this problem will be solved in the process of creating AI, perhaps AI will solve this problem after its appearance. However, it can be confidently asserted that AI, like any other scientific direction, will receive productive development only as a result of the joint active efforts of the world scientific community.

The ideas of AI highlighted in this paper are important because they are fundamental. These are the first attempts to embody the possibilities of the mind, recreated by separate technical systems, in order to subsequently unite into a full-fledged intellectual environment. On the other hand, it was these areas of research that were chosen for consideration, first of all, for the reason that they represent the most general ways of knowing and understanding the world around us - starting from the perception of reality (pattern recognition) to attempts to describe and adapt to the environment of existence. (translation, labyrinth search, game).

Thus, the concepts of learning, playing, searching for something new and adapting it to improve human existence, defined in the course of the cultural and historical development of society, are reflected in the theory and practice of AI. The components of a complex idea (artificial intelligence) implemented with the help of computer tools, described in this article, marked the beginning of a new era of computer culture, which completely covered most of our planet, outlining the features of today's historical era.

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Technology for the production of the substance of the drug donaxin hydrochloride

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Abstract: A technology has been created for the production of the substance donaxin hydrochloride from the aerial part of the donax plant. On the basis of the created technology, apparatuses were selected and a production line was installed. This line produced the first industrial samples of donaxin hydrochloride substances from the aerial part of donax.

Key words: Donax, extraction, extract, chloroform, sulfuric acid, alkaloid, donaxin hydrochloride, substance, technology.

Introduction. When employees of the Institute of Chemistry of Plant Substances carried out pharmacotoxicological studies of donaxin hydrochloride, isolated from the aerial part of the A.donax plant, it was revealed that this substance has a high aphrodisiac activity. To study the chemical composition of the aerial part of the donax plant, the alkaloid donaxin was previously isolated in several ways, as given below. The crushed leaves of the A.donax plant are soaked in a 10% ammonia solution and loaded into a percolator, extracted with dichloroethane. From the dichloroethane extract, the amount of alkaloids is extracted with a solution of hydrochloric acid. Then the hydrochloric acid extract is alkalized with sodium hydroxide, extracted with diethyl ether. The latter is dehydrated with potassium carbonate. Then, the dehydrated extract is evaporated to dryness to obtain the amount of alkaloids. From the sum of alkaloids, donaxin is precipitated with acetone. The crushed leaves of the A.donax plant are soaked in 25% ammonia solution and loaded into the extractor. Then extracted with chloroform. The resulting chloroform extract is filtered, evaporated to an aqueous residue. From the latter, alkaloids are extracted with a solution of sulfuric acid. The acid extract is alkalized with 25% ammonia solution, extracted with chloroform. The obtained chloroform extracts are combined and the amount of alkaloids is obtained by evaporation. The total amount of alkaloids is dissolved in acetone and treated with hydrochloric acid solution to pH 1. Precipitated donaxin hydrochloride is isolated by filtration. The above methods for obtaining donaxin hydrochloride from the raw materials of the A.donax plant are laboratory methods and have been used for the qualitative and quantitative study of the alkaloid composition of this plant species. In the above laboratory methods, expensive organic solvents harmful to health are used in large volumes, thus the use of these methods for industry is impractical. Earlier, we reported on the study of the process of extraction of the alkaloid donaxin hydrochloride by the method of water-alcohol extraction of the aerial part of the A.donax plant, the factors affecting the process were studied. This article presents the scientific results obtained in the development of technology for obtaining the substance of the drug donaxin hydrochloride from the isolated extract obtained from plant materials. As a result of the research, a flowchart was developed for the production of the substance of the drug donaxin hydrochloride from donax plant raw materials. Based on the research, a technology was developed for the production of the substance donaxin hydrochloride from the aerial part of A.donax, on the basis of which a pilot plant was created on the basis of the Pilot Production of the Institute of Chemistry of Plant Substances. Technological scheme for the production of the substance donaxin hydrochloride. According to the technology developed by us, raw materials (donaxin content 0.14% by weight of raw materials) are crushed in a mill (M-1) to 2-5 mm, weighed on a scale (B-2) 50 kg, loaded into an extractor (E-3) and from the measuring tank (Sb-4) pour 180 liters of 80% ethyl alcohol. After 6 hours, the first drain is drained in the amount of 100 liters, and 100 liters of 80% ethyl alcohol are poured into the extractor. Thus, the second drain is produced after 5 hours, the third - 4 hours, the fourth and fifth plums - after 3 hours. The combined extract in the amount of 520 l is concentrated in a vacuum circulation apparatus (VCA-5) to the volume of the aqueous residue of 52 l and left in the refrigerator for 12 hours. The precipitate formed is filtered off through a suction filter (NF-6), 51 l of the aqueous part is alkalized with

NaOH solution to pH 10-12 in a separating column (DK-6). From an alkaline solution, the amount of alkaloids is extracted with chloroform from a measuring tank (Sb-7) 6 times in 10 liters. The resulting 60 l chloroform extract is concentrated in a vacuum circulation apparatus (VCA-5) to a volume of 6 l and poured into a separating column (DK-8). From chloroform, alkaloids are extracted with a 10% solution of sulfuric acid from a measuring tank (Sb-9) 4 times in 1 liter. The resulting sulfuric acid extract in the amount of 4 l is alkalized with a solution of NaOH to pH 10-12 in a separating column (DK-10) and extracted with chloroform 6 times in 1 l. 6 l of chloroform extract is concentrated on a rotary evaporator (RI-11) until chloroform is completely removed. 235.5 g of the dry amount of alkaloids are placed in a flask, dissolved in 500 ml of ethyl alcohol, boiled in a water bath (Wb-12) and cooled. The precipitate formed is filtered and dried with 50 g of technical Donaxina is placed in a crystallizer (K-3), an alcoholic solution of hydrochloric acid is added to a pH value of 5-6 and left for 12 hours. The formed precipitate is filtered through a suction filter (NF-14) and dried. 56.5 g of technical donaxin hydrochloride is dissolved in a flask with ethyl alcohol in a water bath (Wb-15), 1.01.5% activated carbon is added, boiled and filtered.

A package of draft regulatory and technical documentation for the substance and for the finished dosage form - tablets of 1 mg, as well as samples of substances and tablets of donaxin hydrochloride, were submitted to the Pharmacopoeia Committee of the Ministry of Health of the Republic of Uzbekistan to obtain permission to conduct extensive clinical trials of the drug.

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«Prospects for the development of entrepreneurship in the conditions of the digital economy»

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Annotation: In this article, opinions were expressed about the prospects for the development of entrepreneurship in the conditions of the digital economy.

Keywords: digital economy, entrepreneurship, small business, government technology, intensive.

The concept of digital economy has been clarified by the American scientist Nicholas Negroponte from the University of Massachusetts in 1995-th year, at a time not far from relatively. The scientist mentioned what changes can take place in the transition from the old economy to the new economy, following the intensive development of information and communication technologies. The digital economy is the conduct of economic activity, the main factor in the production and provision of services is the data in the form of figures, and with the help of processing a large amount of information and analysis of the result of this processing, the introduction of more effective solutions from the previous system in the delivery of various types of production. By the way, in other words, the digital economy is an activity that is associated with the development of digital computer technologies in the areas of provision of online services, implementation of electronic amulets, internet trade, kraudfanding and other types. Basically, e-commerce, internet banking, electronic tulips, internet advertising and, at the same time, internet games are seen as the main element of the development of the digital economy. The development and implementation of Information Technology evaziga in our daily lives is becoming very convenient. Let's say we want to eat, but we do not want to cook it, we can order the food we want online through the internet, home food delivery service, not manners. Or we need to transfer money to a friend, there is no need to go to the atelab to the bank or financial institutions, we can transfer money through a mobile bank. We can implement many similar types of services online, through a smartphone or computer. Of course, the development of information and communication technologies, the introduction of modern technologies into our lives can give everyone a lot of positive opportunities in their lives. Following the development of digital technologies, a person can quickly use the necessary service for him, save a lot of money by buying himself the necessary products cheaper through the internet. For example, the purchase of any book in electronic form can cost you much cheaper to buy, the appearance of which the same book is published. Or, if not, an ordinary consumer can become an entrepreneur himself, without leaving his home, engaged in online trading.

Other advantages of the development of the digital economy can be as follows:

- Increase in the productivity of labor in production;
- Growing competitiveness of companies;
- Reduction of costs in production;
- Creation of new jobs;
- The emergence of new modern professions;
- Overcoming poverty and catching up with social inequality.

These are the few advantages of a digital economy or holos. The development of the digital economy has a positive impact on our daily lives, gives the ordinary user a lot of additional opportunities and, if left out, can provide the growth and development of the market. The risks that the digital economy can come up with

The risk of cyber attacks, circulations related to the protection of personal data;»digital slavery» (the use of data from millions of people to manage their later self-retention); many industries and professions can

disappear after the increase in unemployment, the development of information technologies and its introduction. Countries of the developed world in the digital economy

«Digital» countries today are considered Norway, Sweden and Swedensariya. The number of developed countries in the digital economy includes the United States, Great Britain, Denmark, Finland, Singapore, South Korea and Hong Kong.

The fact that the competitiveness of the national economy is also due to the high share of small scale business in the indicators that reflect the processes of economic activity and its results is beyond doubt. The fact that the opportunity to create new jobs on account of low cost, the ability to occupy market segments where a large business can not enter, especially in the service sector and the adoption of non-large local resource bases, is a very favorable organizational form, shows that the importance of developing a small business can not be overestimated. For this reason, the issue of rapid development of small business is closely connected with the issues of localization of product production, development of the service sector and also with the development of the country's export potential. As a result of studying the world experience, it became clear that in developed countries of the digital economy, the state(government) in the digital economy defines the rules of the market «game» for all participants in the game, and the bunda as the most important task of the state is to create the same, equal and possible conditions for participants in the game.

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Prevalence of Oral Diseases in Patients with Chronic Pancreatitis

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Annotation. The article deals with the variety of clinical signs of chronic pancreatitis, manifested in the mouth. Noted their pathogenic mechanisms, directly dependent on whether the patient has a history of chronic pancreatitis. Identify common patterns of abnormalities in the oral cavity in chronic pancreatitis by comparing the two control groups of patients.

The keywords: chronic pancreatitis, oral cavity, oral mucosa.

Introduction. The most common lesions of the human body are dental diseases. A special place among them is occupied by diseases of the oral mucosa. Diseases of the oral mucosa remain one of the urgent problems of therapeutic dentistry [1, 2, 3].

Recently, there has been an increase in the number of inflammatory diseases of the oral mucosa [1]. This is due to both an increase in the number of adverse factors affecting the body (deterioration of the environmental situation, chronic stress) and a decrease in the standard of living [8].

Actually, diseases of the oral mucosa are caused by various etiological factors, and the peculiarities of the structure and functioning of the oral cavity create conditions for the impact on the mucous membrane of traumatic factors, pathogens or viruses [6, 8].

At the same time, the severity and prevalence of the disease is determined by the nature of the etiological factor and the intensity of aggression. In the case when the aggressiveness of the factor is insignificant, the body reacts by mobilizing a complex of nonspecific defense reactions and the disease does not occur [3, 8]. Despite the variety of etiological factors of influence, there are common patterns in the development of the pathological process [8].

The variety of clinical signs in the oral cavity is associated with various general somatic diseases. One of the most common pathologies is chronic pancreatitis. Chronic pancreatitis is a progressive disease leading to the development of connective tissue in the pancreas due to a chronic inflammatory process [6]. Characteristic manifestations on the oral mucosa will be atrophic changes in the dorsal surface of the tongue in the form of glossitis, dryness and hyperemia of the oral mucosa, thinning of the red border of the lips and angular cheilitis, as well as a decrease in the level of caries resistance of hard dental tissues [7].

The purpose of the study was to assess the prevalence of diseases and lesions of the oral cavity associated with chronic pancreatitis and to identify the features of clinical manifestations.

Materials and methods of research

In the therapeutic department of the city hospital No. 20 (TsGB No. 20), an external examination and examination of the oral cavity of 15 patients with chronic pancreatitis (group No. 1) and 15 patients without pancreatic pathology (group No. 2) were performed using disposable dental kits, individual for each patient, consisting of a dental mirror, dental probe, curved tweezers, bib cloth, examination gloves and a tray. The average age of patients was 49.5 ± 2.7 years, of which 17 (57%) were men and 13 (43%) were women. All respondents completed voluntary informed consent. In patients with chronic pancreatitis, during the examination, special attention was paid to the condition of the oral mucosa (moisture, presence / absence of edema, changes in the color of the mucous membrane, dryness in the oral cavity, the presence / absence of pathological changes and ischemic foci), the alveolar process, tongue and red border of the lips. In addition, the KPU index and the presence of halitosis were determined.

Research results and discussion

When calculating the KPU index, it was found that the intensity index, on average, is very high - 15.6 ± 1.04 (very low level of caries resistance of hard dental tissues). This value indicates the presence of a serious concomitant disease that affects the general and immunological reactivity of the organism, which occurs in hypovitaminosis against the background of chronic pancreatitis [4].

In 10 patients (66.6%) with chronic pancreatitis, serious changes in periodontal tissues were revealed. Thus, 5 people (33.3%) were diagnosed with catarrhal gingivitis, which was predominantly generalized; 3 (20%) - ulcerative gingivitis. Two patients (13.3%) were provisionally diagnosed with chronic periodontitis. Such a spread of periodontal tissue diseases may indicate a connection between diseases of the internal organs and their symptomatic manifestations in the oral cavity. In the group of patients without the presence of pancreatic pathology, no corresponding changes were detected.

Based on the visual examination data, the presence of dryness in the oral cavity (xerostomia) was found in 9 patients (60%) from group No. 1 and in 5 (33.3%) patients from group No. 2. Speaking about the patients of group #1, dry mouth is directly related to stopping or reducing salivation. This symptom belongs to the group of signs, according to which a preliminary diagnosis of chronic pancreatitis is made [2]. Also, with inflammation of the pancreas, digestion is disturbed due to a malfunction in the exocrine function of the organ and a lack of food enzymes, therefore, patients suffer from diarrhea, which leads to dehydration and a feeling of dry mouth [1]. As for patients of group 2, the presence of xerostomia is associated with menopause in women and long-term bad habits such as smoking in men [3].

An important indicator is the presence of bad breath (halitosis) in patients of comparative groups. Studies have shown that in 12 patients (80%) with chronic pancreatitis (group No. 1), inflammatory processes in the pancreatic parenchyma, in which the enzymes intended for digesting food, are activated ahead of time and begin to digest the tissues of their own gland, this process is accompanied by persistent sour bad breath [5]. Among patients of group No. 2, halitosis occurs in 5 (33.3%) cases, which is associated with poor oral hygiene and smoking.

Group 1 patients have atrophic changes in the tongue, namely, atrophy of the filiform papillae in 66.7% of patients, the presence of persistent plaque in 86.7%, and the organ undergoes hypertrophy in 46.70% of patients, which indicates inflammation in the pancreas. chronic gland.

Assessment of the state of the lips showed the presence of angular cheilitis, herpetic eruptions and thinning of the red border of the lips in 46.7%, 6.7%, 53.3% of patients in group 1, respectively. These manifestations are associated with a violation of the endocrine function of the pancreas.

Conclusions:

1. A high need (100%) of patients with chronic pancreatitis in dental care was noted.
2. A high intensity of the carious process was diagnosed: the KPU of the teeth averages 15.6 ± 1.04 (the index "Y" predominates - extracted teeth).
3. In patients with chronic pancreatitis, the oral mucosa has significant deviations from physiological norms in the form of hyperemia (40% of patients), ischemia (6.7% of patients), swelling (20% of patients), the presence of aphthae (6.7% of patients), insufficient moisture (80% of patients).
4. 66.6% of patients with chronic pancreatitis have serious violations of periodontal tissues.
5. When assessing the state of the tongue in patients with chronic pancreatitis, an increase in the tongue is observed (46.7% of patients), atrophy of the papillae and non-cleaning plaque in 66.7% and 86.7% of patients, respectively.
6. There are bright lesions of the lips in patients with chronic pancreatitis in the form of: angular cheilitis (46.7%), herpetic eruptions (6.7%), thinning of the red border of the lips (53.3% of patients).

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Hormonal status in progressive myopic Chorioretinitis

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Annotation. The article explains the scientific significance of retinal dystrophy. An actual problem in ophthalmology at the present time is retinal dystrophy of varying degrees. This is due to the progressive increase in the incidence of this pathology. Until now, a unified theory about the pathogenesis of retinal dystrophy has not been formed. Visually, this is usually not noticeable if we are talking about small degrees of retinal pathology. But what leads to the growth of the eye is a very stormy topic for discussion today, which generates a lot of myths.

Key words: dystrophy, oct, fundus chamber.

Relevance. Myopic chorioretinitis (MX) is a complication of progressive myopia of a high degree, accompanied by damage to the peripheral and central parts of the retina. Myopic chorioretinitis, occurs in young people, proceeds very slowly, but with a progressive degree of chorioretinitis proceeds quickly, without obvious signs, often leads to disability or irreversible loss of vision.

Goal. To determine the role of altered hormonal status in patients with advanced myopia of a high degree in the formation and progression of MX. To study the relationship of hormonal status indicators in adolescents with high myopia.

Materials and methods. Adolescents of two age ranges were examined: group 1 - initial pubertal changes, age 10-14 years; group 2 - 14-20 years of the period of the middle and end of puberty. The exclusion criteria were severe concomitant chronic diseases. The case histories of patients from the Andijan Regional Ophthalmological Hospital and the eye department of the And GosMI Clinic in 2020 – 2021 were analyzed. The obtained distribution of patients by gender type suggested that one of the reasons for the formation of MX may be a change in hormonal status. Then 80 patients (160 eyes) were prospectively examined. The first clinical group included 40 patients with myopic chorioretinitis, who in ten cases had a bilateral process (20 eyes). The second clinical group consisted of conditionally healthy paired eyes (15 eyes). The third group is represented by patients with myopia without signs of MX. The high degree of myopia in the first and third groups was comparable and averaged -10.5 ± 2.1 dpt, PZO – 30.5 ± 2.8 mm. The control group, the fourth, included patients with emmetropic refraction, PZO – 23.27 ± 0.44 mm. The age in all groups ranged from 14 to 20 years (33.6 ± 6.1 , $p > 0.05$). The main criterion for inclusion in the control group was the presence of a regular menstrual cycle, the absence of gynecological and hormonal diseases. All patients underwent a comprehensive ophthalmological examination, including a fundus camera, refractometry, A-scan and optical coherence tomography, according to which the localization, size, shape of dystrophic foci, the severity of pathological changes of the retina above the focus were evaluated. The Fundus chamber and OCT data were used as the main criterion for the diagnosis of MX, determining the degree of its activity and indications for treatment with angiogenesis inhibitors. The hormonal status was studied with the determination of sex hormones (testosterone, progesterone, estradiol). The study was conducted by solid-phase ELISA. Blood sampling for the study was carried out from the ulnar vein, in women with a preserved menstrual cycle from the 5th to the 7th day of the cycle.

Results. The patients of the first group in the central part of the fundus were diagnosed with classical MX, located above the retinal pigment epithelium. The concentration of total testosterone in the blood in the group of adolescents with NWP increased significantly after reaching a BMI of $>75\%$ of the centile values. When compared with BMI <25 , 25-50 and 50-75%: the testosterone level of 0.63 ± 0.7 ng/ml at $<25\%$ centiles and 0.66 ± 0.5 ng/ml at 25-50% centiles is significantly lower than at $>75\%$ centiles (2.0 ± 0.5 ng/ml;

$p=0.035$). Moreover, as in group 1, testosterone levels were moderately positively correlated with the level of LH in the blood ($R=0.517$; $p=0.031$). Neovascularization in complicated myopia was characterized by moderate activity, small membrane sizes (horizontal – 568 ± 111.5 , vertical – 205 ± 28.6 , sagittal – 316 ± 31.3 microns), the absence of intraretinal cysts. Neuroepithelial detachment was weakly expressed or absent. Druses, elevation of the pigment epithelium, as a rule, were not visualized.

A comparative analysis of the indicators characterizing the state of retinal and choroidal blood flow in patients in four compared groups found that at the level of the superficial vascular plexus, significant differences in capillary density were detected between patients with myopic refraction and emmetropia. There were no differences in the groups with the presence and absence of HCV. At the level of the deep vascular plexus, other relationships were revealed. The relative density of the capillaries of the deep vascular plexus in the control group patients with myopia and emmetropia was comparable. Whereas in the group with myopic chorioretinal neovascularization, a decrease in this indicator was noted compared to the control. In the presence of HCV, the relative density was reduced by about 30%, on a pair of conditionally healthy eyes – 14%. This trend continued at the level of choriocapillaries, the degree of their relative density in patients of the first and second clinical groups would be. A comparative analysis of hormonal status indicators revealed a significant imbalance in patients with myopic CHF: the levels of FSH and prolactin were increased 2 and 1.8 times, respectively, compared with the control groups, and the concentration of progesterone was reduced 2.1 times. The data of the examination of the ophthalmological status using OCT, including in the angio and PHAG mode, showed that myopic CNV has structural differences from other forms of CNV: small size, fusiform shape, moderate activity, type II neovascularization. The OCT data in the angio mode convincingly demonstrate that patients with myopic CNV have significant violations of retinal and choroidal blood flow, which is confirmed by a decrease in the relative density of capillaries in the deep retinal vascular plexus and at the level of choriocapillaries, as well as a pronounced thinning of the thickness of the choroid. It is important to emphasize that these changes were detected not only in the eyes with chorioretinal neovascularization. Assessment of hormonal status indicates an imbalance of sex hormones and the presence of estrogen deficiency. According to numerous data presented in domestic and foreign sources, it is known that a decrease in estrogen levels leads to an increased risk of vascular complications. Estrogen normally stimulates vascular relaxation by stimulating the release of nitric oxide or by acting directly on the vascular wall smooth muscle (VSN). Recent studies indicate that calcium and potassium channels in VSN cells play an important role in the estrogen-induced relaxation of many vascular structures. That is, hypoestrogenemia is the cause, on the one hand, of the formation of endothelial dysfunction, and, on the other, of prolonged vasospasm.

Conclusions. Thus, myopic CNV can be considered as a comorbid condition, which includes a combination of menstrual-ovarian cycle disorders, in which choriocapillaries as locus minoris resistentia act as a kind of target in the implementation of a systemic pathological process. The revealed results open up new ways of prevention and early diagnosis of chorioretinal neovascularization in patients with myopia.

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Psychological Characteristics of Primary School Students of General Secondary School

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Annotation: The article discusses the psychological changes of primary school students during the period of schooling, the role and responsibility of teachers, parents and relevant state bodies in their systemic formation, as well as psychological changes in children. the ability to respond to changes in the environment and society.

Key words: motivation, attention, speech, intuition, perception, imagination, memory, thinking, emotion.

With the advent of the school, the lifestyle of children, their duties and responsibilities change. Their psychology is also changing. There is a transition from game activities to learning, visual-majestic thinking to oral-logical. The system of personal relationships is changing: if children have just played in the past, now they need attention, parents and teachers want them to learn and apply, to evaluate them. Children learn to control their attention, will, behavior.

This is a very difficult period in a child's life, waiting for some miracle from coming to school is almost lost in the first days, as children face challenges instead of wonders, they have to work: listen and remember, read, write, do the assignments, and even build a new relationship - with teachers and classmates. Especially difficult for "home" children, those who did not go to the garden.

Crisis 7 years

At the age of 7, the child has an internal fracture that tries to understand who he is and what he wants from him. Before you do something, the child will already think about what this will bring to him. Many children start "pretending to be like something," which means they are looking for a role.

Xarakter

At 6-8 years old, children still act under the influence of very impulsive, momental emotions that still lack sufficient will, and if they fail, they can surrender and stop moving towards the goal. It is also possible to note stubbornness and agility. Read more about the crisis in elementary school age.

From about age 9, children begin to control their feelings and behavior. A child learns to express his feelings, anger orally (he does it with a cry or a fist), can be mockery, discuss something or someone.

Ethical qualities are formed:

- vijdon;
- feelings of responsibility for himself, his friends, class;
- birovning baxtsizligiga hamdardlik;
- protest against injustice.

Elementary school age is essential for fostering the basic qualities of character, human psychology, it is at this age that children begin to distinguish between good and bad, good and bad, evaluate the actions of themselves and others, learn the rules, and communicate standards. A child begins to develop an internal position (his or her own opinion, self-esteem, attitude toward people and events).

Individual formation

Children of primary school age begin to realize themselves as individuals, where self-esteem develops, and it is important to help them form it. A child who has always been reprimanded and failed becomes unreliable, lowly self-esteem. Anyone who has been supported, encouraged and helped will feel worthy respect, he will believe in himself. If you admire a child without reason, without any explanation and without permission for everything, it is full of less than self-esteem and the birth of egocentricity.

This period is important for hard work and independence. A child at this age wants to be like an adult, to be independent. He strives to do everything himself, learns to make decisions and responsibility for them. The child needs to be entrusted with chores, given the right to give and choose possible assignments at school. If everything is decided for her and protected from any difficulties, she will grow up as an infant. But it is also

impossible to put in place a large number of tasks and demand that they be carried out incompleteness, which can lead to rejection and resistance.

Children of this age, especially in grades 1-2, have unlimited trust and obedience to adults (teacher or parent). For a child, the words of adults, its value, are very important. Even children themselves are assessed by the words of adults, so it is important not to criticize or taunt, but to manage, support, a child's self-confidence in a soft way.

After the third grade, the teacher's reputation decreases, and peer approval becomes more important. It is important to be accepted by the group. During this period, the guys create unofficial groups with their own rules and norms of behavior, but they are still unstable. Nevertheless, the leaders are already emerging. The child is an important public consent and social reputation. She searches for her place in the group and, in addition to a relationship with her parents and teacher, her psycho-emotional state is affected by relationships with her peers and friends.

Motivatsiya

Motivation can be of two types: achieving a goal or avoiding failure. If a child is praised and supported, and they are targeted to be encouraged, he will be motivated to achieve the goal. If he is frequently scolded for not doing something good enough or winnings are ignored, the boy has a motive "if they haven't been tainted" to avoid failures. It undermines a child's spirituality and self-esteem. In the future, the child will live with such motivation all his life and, perhaps, will not be able to achieve excelling. Therefore, at this age it is very important to properly stimulate and stimulate the baby.

In Amonashvili's pedagogical writings, the Sh.A. recommends not using grades, especially low grades, in elementary school to prevent children from developing a motive for not failing.

Research

Initially, all children strive to read well to win adult consent and are saddened by failures and especially criticism. In such a situation, they can develop behavioral deviations, for example, indifference, ridicule, constant arousal, irritability, fear of punishment. It is very important to behave properly by the teacher and the parent and direct a child to acquire knowledge without personal assessments and characteristics of mental abilities, and to be interested in learning it without regard to good or bad characters.

By the age of 11, children begin to realize that what they lack in abilities can be replaced by a lot of effort. If a child wants to learn, he or she can control his will and sit on a textbook until he understands the material.

At this age, the differences in children's abilities are already clear: someone has a mathematical opinion, someone has a humane, creative mind.

A distinctive feature of elementary school age is that it is the basis of the entire future life of a young child. What is laid at the age of 6-11 years becomes his character. Therefore, both the teacher and the parent need patience, help you to direct and advise without any problems, teach them how to distinguish between good and bad and teach them responsibility for their actions, instill the ability to think and assess actions and events appropriately, and, most importantly, to believe in yourself.

In physical education, a physical education teacher changes children's lifestyle, their duties, and functions as a result of the appearance of children's age characteristics and psychological processes, distinction between personal characteristics, psychological processes (attention, speech, sensitivity, perception, imagination, memory, thinking, emotions, and so on), psychological situations (emotions, admiration, reliability, creativity. Their psychology is also changing. There is a transition from game activities to learning, visual-majestic thinking to oral-logical. The system of personal relationships is changing: if children have just played in the past, now they need attention, parents and teachers want them to learn and apply, to evaluate them. Children learn to control their attention, will, and actions. y spirituality, beliefs, apathy, curiosity, perseverance, refreshment) and personality characteristics (temperament, ability, talent, responsibility character) should be linked to physical education and sports. The training process, its impact, should know the importance of forming situations during the competition, the last, period, and relationships between the team.

Regardless of the type of activity a physical education teacher has, the component of the activity is usually associated with perspective (e.g. student tracking), data recall, and restoration, which is associated with the same perceptions and perceptions.

To assist individuals desiring to benefit the worldwide work of Jehovah's Witnesses through some form of charitable giving, a brochure entitled Charitable Planning to Benefit Kingdom Service Worldwide has been prepared. Activities are carried out in several stages, the preparation phase, the plan execution (main phase) phase, and the completion phase (final phase).

In the first phase, the physical education teacher performs a very large-scale job. According to the plan, he draws up a concept, prepares them, prepares places (lounge, reservoir, sports area, stadium). It prepares all sports equipment and weapons related to the lesson. This phase includes creating student-friendly conditions for more successful activities and the psychological preparation of a physical education teacher.

The second phase includes supervising students (engaged), educating them (in terms of moral, mental, aesthetic, employment tasks), maintaining order, protecting them from injury, and so on. The practical implementation of certain activities, the control of students' actions, discipline, elimination of difficulties at the beginning of the lesson, correcting the lesson plan according to the change in circumstances. At this stage, the constant distribution and transportation of attention among the excluded students is characterized by the psychological tension of the teacher, which is conditioned by the teacher's serenity, depending on the prevention of situations that lead to physical injury, in other words, the physical education teacher receives a physical burden not only psychologically but also physically.

The third phase (final phase) will assess the achievements and shortcomings of the lesson. The resulting embroiled in this brochure may not support more than the address noted scriptures. The full analysis of the lesson, which involves the inclusion of adjustments to the plan in the re-execution of the activity, requires searching for answers to questions arising in scientific and methodological literature.

The main goal of a physical education teacher is to help them develop harmoniously and become loyal, patriotic to society. Educational, scientific, organizational, leadership, design, administrative and economic functions will also have to be performed.

The objective of physical education for students is to help the Independent Father to form a person who is perfectly developed and loyal, which is achieved in the educational process of students. It will be revealed and clarified in common tasks.

Foydalanilga adabiyotlar ro'yxati

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Covid-19's Impact on Organizational Behavior and Norms

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Abstract: It's known that value and norms in organizations are unwritten rules within the company, to regularize and control employees and their behavior.

The objective of this study is learning about how the covid-19's has impacted on the organization's social, appearance, work and resource norms within the company.

While writing this report, what are the organizational behavior and what might be the example of norms of any company, and how they affect you individual's life and they are behavior have been learnt.

And how pandemic has influenced these factors. It can be seen, learning the impact of covid-19 to the daily life as well as the impact to norms of organization will be helpful to analyze advantages and the disadvantages of coronavirus outbreak in the future.

In this focuses on the changes which are happening in social norms regarding to keeping social distance or greetings, changing clothing style and the impact of covid-19 to work norms and unemployment.

Keywords: covid-19, organizational behaviors and norms, unemployment rate, fashion, organizational structure, values, employees, flexible working environment, task-oriented activities, individual's performance,

Introduction

Nowadays covid-19 is the main topic of the world, Coronavirus outbreak has advanced rapidly, after being emerging in China and the pandemic has effected to ever field of our lives as well as the organizations. This project will be learning the effect of covid-19 to organizational behavior and norms. While writing the project some research have been done on the internet to learn impact of covid-19 and read books related to organizational norms. However, there have been some problems to clarify ideas on the project, because the pandemic was new and still staying covered for science which has not been fully discovered yet. As a result it has been found out that covid-19's impact can be seen in each norm of an organization, especially in social norms, because it can be obviously seen not only in organization, even outside of the organizations.

Materials and Methods

When it comes to theories and principles, the project is written according to the books that that have learnt before related to organizational behavior field. For example, below there have been given definition of Stephen Robbins as an example, and also to improve theoretical knowledge of readers the book organizational behavior by Jeff Harris, Sandra, and Hartman can be helpful. What are the organizational behavior and norms? If we look from the academic angle, organizational behavior is a field of study that investigates the impact that individual group and structures have on behavior within the organization for the purpose of applying such knowledge toward improving and organizational effectiveness. This definition was given by Stephen Robbins. In the daily life we can see that OB is how we behave ourselves in a group as an individual in our workplace and what is our attitudes toward different things, and how would work in our team or in our organization.

Now let's look at the organization norms, also can be called normative dimensions. This organizational Norms are needed to regularize organizational structure, interactions and the functions within the company. The strategy that have been used to write the project, all the information have been collected from different books and websites. To find out some information and clear database, the book *Organizational behavior* written by K. Aswathappa have been learnt to find out what are the norms in the organization and their importance within the company. In addition to this, to get latest information an exact numbers to do main research on organizational behaviour and norms Futurelearn educational website, and Management Study HQ website which is all about the managing the company were helpful. While learning about Coronavirus

World Health Organization's (WHO) website were main provider for all necessary information. These book and the websites were really important for finishing project.

Discussion (result and outcomes) **Organizational Behavior and Norms**

We need organizational norms to know about our rights as well as the responsibilities, what are do's and don'ts for us, what we can do directly or indirectly, what activities are prohibited for us. Norms in organizations is this set of rules for human behavior, which help to work by sharing information correctly as usual and being socially expected in our workplace. Norm in an organization should be accepted by every group member, because it's sterile of conduct we should be established by employees, they are standard for everyone. They are the rules must be done and the standard of behavior. This teaches individuals how to behave in a particle group.

Every organization has different values, perceptions and expectations which are the base of organization norms and behaviors. From this we can see that the Norms which are being established within the company are all related to values of a company. If we look at a norms in an organization, it can be seen that there are four main types of norms in any organization, which are performance Norms appearance Norms social arrangement norms and the last one is resource allocation norms. All these norms Are rules and guidelines, which are given to us to define our day-to-day behavior at workplace. All the behavioral norms influence employees' habits, and make the workers more punctual to finish the given assignments within a given period of time, improve efficiency without losing our temper, and so on.

To start with *performance norms*, the norm can also be called work Norms, because this Norms are tasks related or task-oriented activities which help to regularize individuals performance and productivity on the way achieving to group task and goals. To these Norms we can add developing strategy for any assignment and accomplishing it to the project, dividing work and responsibilities, evaluating employees capabilities to different tasks and assigning job according to what tasks is fit for them, monitoring the process and while waiting the task and clarifying the goal.

The second norm is name an *appearance norm*, from the name of the norm it can be known that, it is all about your clothing style. What kind of dress you wear to work, which kind of closes are fit you while you are on workplace, what you should wear during the sport activities, or for dinner. This norm informs us how we should look at our workplace or where and when, how should be individual's physical appearance, what kind of fashion, clothing style, hair style is fit to your job.

The next is *social arrangement norms*, this norm is came to us because of some reasons and all about how we act in social settings. First and foremost reason is compliance. Why? It might be described in a simply way that people sometimes are afraid of to be punished, that's why they follow social norms. On the other hand, the rest of the people, who tried to follow this norm, are willing to being motivated by following and supporting some social group norms. Another reason is identification, this kind of support happens when some people find that supporter of any norm are attractive rather than them, these individuals are also try to support this norms and to be attractive as them. For example, if some lower-level manager has been recently promoted, that manager tries to be as his or her boss, in other words, that person admires to higher level manager. They try to wear clothes as them, want to speak in a way his boss speaks, even behave as their boss. The last reason is sometimes people support social norms, not because of admiring someone or being afraid to be punished it, just their beliefs, values and attitudes are fit to these social norms.

The last important norm which we may face in the organization is *resource allocation norms*, sometimes this Norms significance is higher than others, because it's all about have to allocate resources within the company. We have to focus on how to distribute the things that are belong to us. It might be raw materials or the tasks, which should be given, sometimes it might be distributing time for activities within the company or outside of it. By establishing this Norms in organizations we learn how to do fair distribution and achieve our objectives in a positive way.

Covid-19 And Its Impact To Organizational Norms

COVID-19 has changed our world to the different site, has Influenced to every field of our life, in other word, it has made significant changes in people's life. If we speak as a business person, it has impacted to

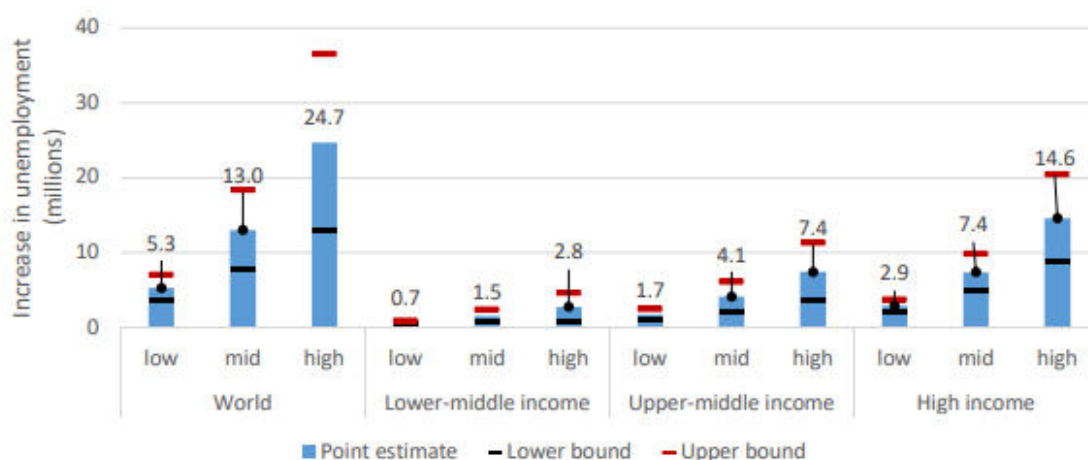
the organizations also, they might be educational, production producing or service, all are affected by COVID-19. Covid-19 has started in 2019 in Wuhan, China since that it turned it to be global disease and emergency around the world.

The impact of COVID-19 can be seen in organizational behavior and the norms as well. Following the project tells impacts of COVID-19 in each norms of an organization. As we know these norms are informal rule of behavior in any organization, and because of disease our social position has changed.

To start with social arrangement, why starting with this norm, because the impact of the disease can be seen obviously in this sphere. The first impact of COVID-19 can be seen by social distancing. We know in some societies they have social distancing, but not all the countries had this kind of norm or value in their culture, if we give an example in US people try to keep distance at least one meter. And now because of the pandemic every individual should keep distance to keep themselves healthy, because as we know the disease might be spread around 2 meters from sick person to healthy one. In addition to this, type of greeting can be good example for social norms. shaking hands, which was the normal type of greeting. Instead of it people are trying to use elbow bump, the Namaste hand prayer as a greeting.

As it's known performance in the organization is all about allocating the task in a fair way. Because of the pandemic, nearly all the organizations had to be closed for a period of time, of course it was up to the country and how situation was good or bad in country. The bad effect of pandemic the regarding to work is the increasing of unemployment around the world, because about 30 million people lost their job in the first 6 weeks of pandemic. But it is not the end, unemployment rate increased as well as the pandemic become more serious.

Figure 1: Impact of declining global growth on unemployment based on three scenarios, world and income groups (millions)



Note: The figure shows the estimated unemployment impact based on three GDP growth scenarios simulated by McKibbin and Fernando (2020). The error bounds present the range of uncertainty stemming from the unemployment projection model but taking the GDP growth scenario as given.

Some traditions have lost their value, or its importance. Let's take a business traveling, when one company wants to make a contract with another one they always had business travels, and when one company with to another day try to be polite and nice to their visitors. Maybe we will not see this idea in the future because all the business meetings are being conducted by online programs, Zoom and Google meeting or a Google class are might be examples for these kind of programmers. Employees workplace from the office turn into their houses. People start working in their dining room and sometimes on their beds

Another effect of covid-19 to performance Norms is about standard office hours which is from 9 to 5. Workers have started working flexible hours, even though some companies had already given chance to the employees to work with flexible hours, after the covid-19 outbreak every organization had to establish it as a new norm for employees in their organization employees.

When it comes to the appearance Norms, we must mention that the masks have become the most important thing, which should be in everyone's wardrobe during the pandemic and maybe after pandemic also. People are required to wear face masks and gloves when they go outside, or when people are in a crowd. These rules, wearing masks and gloves might be compulsory in offices also, and they maybe produced in an innovative way which will be more productive, comfortable and stylish. You can see that sensation companies have already started changing the style of their product, and adding face masks which are fit to their products. Even in some cases you can see bride's wedding dress with wear masks.



<https://www.google.com/url?sa=i&url=https%3A%2F%2Fwww.bbc.com%2Fnews%2Fin>



<https://www.forbes.com/sites/stephanr-abimov/2020/04/27/20-fashion->

We told that resource allocation should be fair all the time. While distributing the task and the resources we take employees' ability into the consideration. During the coronavirus outbreak it changes somehow, it had good and bad effect on the organization at the same time. Let me start with the good site, in the past there were many workers who willing to work pads because of the time limitation they could not work as they wanted, now when did employees start working from their house it gave them chance working as much as they want. Especially women had this kind of problem. On the other side some people have lost their job because of the pandemic, there were middle-level managers, who were important in the organization as a distributor of tasks to lower-level employees. Now all the sites have improved and the companies have started working online with each of their workers. These factors changed the type of allocation of resources within the organization.

Conclusion

In conclusion, it can be obviously seen that coronavirus outbreak has affected to individual's both personal and interpersonal behavior, values and norms related to our performance, social interactions which are related to the organization, and outside of organizations. From the researchers we can elevate the advantages and the disadvantages of the pandemic to organizations and their norms. People have started acting accurately with keeping distance, and each individual has got the chance working from house without going to office those factors, which have changed the resource allocation norms. On the other hand the covid-19 has made rapidly change in term of producing and fashion industry. It has increased the rate of unemployment all over the world.

In the future scope of the project, it is not clear what will happen in the future. Maybe it will change to positive side, on the other hand it might get worse. World Health Organization is still trying to analyze and control the outbreak, maybe incoming future we all go back to our workplaces as it was in the past, continue our job or vice versa, because of you pandemic we may established some new rules and norms in organizations to keep employees healthy.

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Honeypot-based intrusion detection system: A performance analysis

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Abstract: Attacks on the internet keep on increasing and it causes harm to our security system. In order to minimize this threat, it is necessary to have a security system that has the ability to detect zero-day attacks and block them. "Honeypot is the proactive defense technology, in which resources placed in a network with the aim to observe and capture new attacks". This paper proposes a honeypot-based model for intrusion detection system (IDS) to obtain the best useful data about the attacker. The ability and the limitations of Honeypots were tested and aspects of it that need to be improved were identified. In the future, we aim to use this trend for early prevention so that pre-emptive action is taken before any unexpected harm to our security system

Keywords: Honeypot, Handheld computers, Decision support systemshacking, security, forensic analysis of honeypots, network.

Introduction: First of all, honeypot forensics is used to study and understand a hacker strategy and his tools but not to prosecute him. This science is very time consuming and according to honeynet project members, one hour of hacker activity can lead to more than 40h of forensic work. The suggested approach is to work on a copy of the original victim, that way the analysis process can be repeated from the beginning without losing any important data. Forensic in computer science require a perfect knowledge of hacker techniques as well as how different software works in general. Forensic science is to find evidences to make researches on it and trying to find some details and answers from it. The forensic science branch that we are interested in our thesis is computer forensics which is the same definition of forensic science but this time electronic devices are involved with our researches. The necessary data is obtained from the devices, and forensic investigators make deeper examination on them. There are several roles and responsibilities for forensic investigation. Forensic investigation is done with first responders, investigators, technicians, evidence custodians, forensic examiners and forensic analysts. (Kipper G., (2007)). The different honeypots we studied offered us several log files that a forensic party can analyze. The most common file to study when we talk about network security is the .pcap file that most honeypots are generating. This file contains all the packets exchanged between the attacker and its target. It can be opened with Wireshark and allow the forensic to see what communication happened. This file can be huge in size but contains very important information. The difficulty here is to sort the relevant information. In the case of a honeypot, we assume that all traffic is suspicious thus any IP address not within our network must be analyzed. This make the sorting easier than on a production network where the attack is harder to detect. Another part of the forensic work is called reverse engineering. When a hacker successfully compromises a system, he will most likely upload one or more malware. Reverse engineering take a closer look at these malware by decompiling it and trying to understand what are their purposes and how they work. Again this technique is very time consuming but can allow the forensics team to identify new threats. Honeypot system In the computer network is very important for network security, especially related to applications involving various interests, there will be many things that can disrupt the stability of the computer network connection, whether related to hardware (physical security, power resources) and related to software (System, configuration, access system, etc.). Disruption of the system can occur due to accidental factors performed by the manager (human error), but not least also caused by a third party. Disturbances can include destruction, infiltration, theft of access rights, misuse of data or systems, to criminal acts through computer network applications. Security of the system

should be done before the system is enabled. The use of the system should be done before the actual system is enabled. Overall.

Materials: Honeypots are mostly used by military, research and government organizations. They are capturing a huge amount of information. Their aim is to discover new threats and learn more about the Blackhat motives and techniques. The objective is to learn how to protect a system better, they do not bring any direct value to the security of an organization.

Methods: Honeypots can capture attacks and give information about the attack type and if needed, thanks to the logs, it is possible to see additional information about the attack. New attacks can be seen and new security solutions can be created by looking at them. More examinations can be obtained by looking at the type of the malicious behaviors. It helps to understand more attacks that may happen. Honeypots are not bulky in terms of capturing data. They are only dealing with the incoming malicious traffic. Therefore, the information that has been caught is not as much as the whole traffic. Focusing only on the malicious traffic makes the investigation far easier. Therefore, this makes honeypots very useful. For the only malicious traffic, there is no need for huge data storage. There is no need for new technology to maintain. Any computer can be used as a honeypot system. Thus, it does not cost additional budget to create such a system.

Results: We studied all level of interaction honeypots and configured them. As first level of interaction honeypot, we deployed Honeyd. We explained the logic behind it and installed it correctly. Our findings about Honeyd are; Honeyd is the most popular low interaction honeypot but its problem is its age. The project is opensource but part of it is outdated and nobody seems to upgrade it. On the other hand hacker tools are evolving, so identifying this honeypot is not hard. Honeyd is using an old version on Nmap fingerprint to create fake virtual operating systems so by using a newer version of Nmap, the fake operating systems will not be recognized and Nmap will detect that there is a problem. Another limitation of Honeyd is the scripts bound to the different ports. With a basic scan it is possible to find which ports are open but as soon as the attacker tries to actually connect on a port, he will realize the service is fake. For example the script used for a Web server, by connecting it using telnet, the server should send back replies but nothing is happening. Another problem is one cannot understand if there is an incoming attack to the system or not. Because there is no such alarm system that can make you understand that there is an attack. Information gathering is not very smart either. As a result the hacker can understand quickly that there is something wrong with the target and will abort his attack. Even unprofessional intruders can compromise the honeypot without spending too much time on it. Because it is very popular and easy to use well known techniques such as Nmap. There is no additional approach needed for it. Our second step was to configure medium level interaction honeypot Nepenthes. We explained how it works and how we studied on it in implementation part. However, we found some problems with Nepenthes too. First of all, Nepenthes is for capturing malware over internet. It is mostly used for this aim. Thus, it must be implemented very rapidly since threats for users over internet are increasing dramatically day by day. Nepenthes could not keep up with new threats. As new threats are arriving and Nepenthes is not up to date, it will not be able to capture malware. Another problem comes from the shellcode. Shellcode manager should consider about shellcode and understand it. As new threats cannot be captured, new exploits cannot be captured either. Furthermore, as we are investigating the problems and security flaws in our experiment, there is an important security flaw in Nepenthes structure. Nepenthes do not have transport layer security. Transport layer security is a protocol that gives security for communications throughout the internet. We think it is a real problem for honeypot deployment.

Conclusion: We explained honeypot systems in detail, and implemented low interaction, middle interaction and high interaction honeypots at laboratory. Our goal was to understand their strategy and how they are working in order to lure intruders towards the system. We discovered their security flaws in order to help researchers and organizations. Several companies are using honeypot systems to protect the whole organization's network security, and researchers are making academic experiments on them at schools. As we all know network security is very significant for all computer systems because any unprotected machine in a network can be compromised in any minute. One may lose all the secret and important data of a

company, which can be a great loss, and it is also very dangerous that someone else knows your important personal information. Thus, we tried to find answers for honeypots' security using all interaction honeypots possible. Our main goal for our thesis was to see if honeypots are easy to hack and check if they are really isolated from other networks like a organization's network. When a honeypot is compromised, is it possible to reach other systems and compromise them too ? After the system is compromised, is it possible to track the hacker by using necessary forensic science tools ? How efficient are they ? As we stated in results and analysis part, we easily hacked all the honeypots that we used for our thesis. Especially, low interaction honeypot Honeyd can be hacked easily without too much effort. As we stated before, any amateur hacker can seize the system and also can see that it is a trap system. Therefore, Honeyd is not a good honeypot as its features are not efficient to fool the hacker. As Honeyd is a daemon, it is just simulating a operating system's services. So, it is not possible to a hacker to seize other systems using Honeyd. For the intruder, it will not take time to see that the system is not real, so he will not continue compromising it. He will leave the system. For forensic part, Honeyd's log was sufficient to see the actions of the hacker. Next part was to try Nepenthes as medium interaction honeypots. The result was quite similar. Thus, we came up with this conclusion: Low interaction honeypots and medium interaction honeypots are just simulating the services of a real system, because of that it is not possible to capture significant data from intruders. They are slightly different from each other but the main idea is the same. As they are not real operating systems, it is not risky to build them. There is no need to mention about further attacks. So, we moved on to the last level. After working low interaction and medium interaction honeypots, we decided to deploy high interaction honeypots. We studied on Honeywall. Even though it is time consuming and difficult, we managed to create a structure and worked on it. Our result were more interesting than before. High interaction honeypots are not virtualizing the system. They are real systems. So, it is very risky but the captured information is important. After deploying the implementation correctly, we successfully hacked the honeynet, but not Honeywall itself. It was the result we were looking for. As we stated in this paper, honeypot systems are still very new but are a great tool to identify cyber threats. The problem nowadays is that a very good hacker will most likely be able to understand when he is attacking a honeypot. Low interaction honeypots will be able to identify mostly automated attack and will hardly be able to understand new hacker method. On the other hand, high interaction systems are here to entrap the hacker and make him give away his techniques and tools to the forensic team. The network administrator implementing this kind of honeypot should make sure that the system is completely isolated from the production network. This is the best defense if the hacker compromises the honeypot. Network security is not a path many students are taking but we see it as one of the most important topics when we speak about computing. We were curious about this subject and decided to write a thesis on that field. This work taught us a lot about the black hat and white hat community. It also gave us an idea how huge and complex the forensic work is. New threats are discovered everyday and the best way to stay protected is to always stay up to date. By doing this simple task, most attacks will not have any effect on the system. The problem nowadays is that people using pirated version of an operating system are contributing to botnets. Their system does not support critical updates and they are more sensitive to automated attacks. Nowadays, the implementation and development of honeypots are under control by network security expert. The weakness of this system is that it is not backed up by a clear legislation. Most of the work in the future should be about improving the laws about honeypots. The current laws about honeypots in most of the countries are not clear. There is a gap between the lawyers and the IT professionals. They should learn to cooperate with each other in order to clarify the legislation and give a clear answer about the legality of this technology. A lot of work should be done in the future to improve this situation. On a technical aspect, the main difficulty is to keep up with the new attacks. These days, it is not hard to detect a honeypot system, most of the work should focus on making this technology stealthier.

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The impact of artificial intelligence systems on business performance

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Abstract: This article examines the impact of artificial intelligence on enterprises and the expected efficiency from it, and analyzes the impact of artificial intelligence on the economy using a neo-Schumpeterian economic approach. Artificial intelligence systems

Keywords: artificial intelligence, Schumpeter's economics, digitization, SI applications.

Introduction

Decree of the President of the Republic of Uzbekistan dated February 17, 2021 “On measures to create conditions for the accelerated introduction of artificial intelligence technologies” in accordance with the Strategy “Digital Uzbekistan - 2030” In order to accelerate the introduction of intelligent technologies and their widespread use in our country, provide access to digital data and their high quality, create favorable conditions for the training of qualified personnel in this area in the economic and social spheres, public administration, develop a regulatory framework that defines uniform requirements, responsibility, security and transparency in the development and use of artificial intelligence technologies; widespread use of artificial intelligence technologies to improve the quality of public services in the interests of the population, as well as to increase the efficiency of government data processing bodies; conducting fundamental and applied scientific research to develop useful technological solutions and create a local ecosystem of innovative developments in the field of artificial intelligence, which will contribute to their further commercialization. The resolution calls for more effective control over the activities of commercial banks in 2021-2022 on the introduction of artificial intelligence technologies, as well as remote biometric identification of users (Face-ID) and assessment of credit risks, budgetary, pension, social and water expenses, average payments, as well as analysis and improvement of the effectiveness of pension payments, monitoring of traffic and traffic congestion, detection of pneumonia by computed tomography, analysis of human lungs in the norm, and early detection of breast cancer based on mammographic analysis of diagnostics projects were approved [1-2].

The use of artificial intelligence will help service companies increase efficiency and improve customer service. SI technology is becoming an increasingly important part of industry service management and can benefit companies by: simplifying tasks; increase efficiency; improved mobility; revolutionary changes in customer service.

Analysis of literature on the topic

The use of digital technologies in the economy is widely covered in the works of Academicians S. Gulyamov, R. Ayupov, Ergashev, V. Markova, G. Golovenchik. In their work, they covered a wide range of issues related to the use and application of artificial intelligence in the service sector.

Neo-Schumpeterian economics is used as a baseline model to analyze the impact of artificial intelligence on the economy. The three forces driving the neo-Schumpeterian economy are innovation, knowledge and entrepreneurship. He uses these forces to study the success of artificial intelligence algorithms, study their location for commercial purposes, and to study investors, entrepreneurship, and therefore the global market [4].

Technological innovation brings great benefits to innovative businesses, consumers and society as a whole. Neo-Schumpeter's comprehensive economic theory, focused on quality development based on innovation, provides a theoretical framework for analyzing various issues in the dynamics of industry, financial markets and the public sector. A comprehensive neo-Schumpeterian approach should take into account the transformational processes taking place not only at the sectoral level of the economy, but also in the public and financial spheres [5]. Neo-Schumpeter's theory is that the development of potential and the

nature of changes in sectoral structure and macroeconomic effects at different phases of their established sequence are considered through a widespread new potential technology that can cope with new challenges by merging all sectors of the economy, i.e. industry, public and financial sectors. In economic theory, innovation in the service sector is currently becoming an area of research [6].

Over the past decade, the evolution of organizational processes and efficiency has largely been achieved using advanced technologies such as data analytics, artificial intelligence (AI), and business intelligence applications. The increased use of advanced technologies has increased efficiency, effectiveness and efficiency as existing and new knowledge in the organization continues to improve AI capabilities [7].

Methods

Artificial intelligence (AI) is changing the way business is managed by simplifying tasks in real time and helping to organize people and resources. In enterprise service management, AI improves the communication process in communications, routing planning and optimization, and many other functions. A few years ago, artificial intelligence was associated with games, movies, science fiction, advanced science, entertainment, and books. However, it has now entered the service sector to streamline day-to-day operations.

Advantages of artificial intelligence in the economy: fast discovery of large data samples, fast visualization and analysis, improved product design, detailed analysis. These advantages will lead to the creation of new types of services in the economic sphere, the expansion of business, an increase in profits, an increase in the efficiency of production and social life, and a reduction in costs [9].

One of the most common types of artificial intelligence is machine learning and deep learning, which are widely used in business operations and customer service. Machine learning is an artificial intelligence method for monitoring a computer, controlling a robot, recognizing speech and face, and more. Many AI developers find it easier to train a system with examples than to do it by hand. Deep learning algorithms are part of machine learning algorithms. The use of artificial intelligence systems has become a key innovation in all existing service industries. Computer vision, transfer learning, natural language processing, etc. The approaches of this deep learning method are widely used in solving high-level problems, detecting complex big data structures, image and speech recognition. Deep learning can be successfully applied to image analysis and goal setting.

Results

If machine learning determines what is relevant to a problem, these knowledge algorithms can be used to analyze specific problems. Algorithms require reliable data to the extent that they can identify useful patterns. The data can be digital, in the form of images, in the form of visual data, text, or unstructured data. Machine learning systems have the ability to learn and adapt when making decisions. Enterprise AI systems, on the other hand, can make decisions in managing and running a business.

With the use of artificial intelligence in the service industry, more strategic decisions can be made. Using chatbots also brings some convenience and can help customers faster and more accurately. These bots, which also contain information about the customer and their activities, can be aware of the problem and offer a quick solution.

SI allows employees to focus on predictive analysis while quickly completing administrative iterations. It manages the final work and data flow through automation. Continuous evaluation and processing of data gives the analyst a clear picture. Thus, the service company is able to save a lot due to artificial intelligence.

Discussion

In high-tech enterprises, SI also distinguishes between sensory intelligence systems. With the help of such systems it is possible to achieve decision-making, personality, individual characteristics, perception and successful operation of the firm. Sensory intelligence is a set of traits and abilities that includes a wide range of tendencies and personal skills, such as soft skills or intra, which the ANFIS system senses from a set of measured physiological changes in the human body, "identifies them" [10]. The results show that in the age of modern technology, manufacturers with improved general emotional intelligence will become successful people in the workplace and in the social environment. Thus, artificial intelligence can identify excess costs in business processes and suggest the optimal use of resources to improve productivity. AI includes intelligent

agents and intelligent systems that enable organizations to perform intelligent and cognitive activities that combine business processes with tasks, enabling businesses to be innovative. Smart agents are taken as the basis for creating strong artificial intelligence, so the intelligent system is based on the features of human cognition and learning. Smart objects capture the state of the data and manage the content in the state because they can control the access or retrieval of data using methods permitted by the data object.

Conclusion

Thus, enterprises use SI systems when looking for new solutions to recurring problems in their business processes, competition, and technological development.

Thus, artificial intelligence (AI) is a system that mimics human intelligence to improve jobs, increase productivity, and drive economic growth. Intellectuals, born from the activity of artificial intelligence, have a lot of know-how necessary to increase efficiency and create new knowledge for business processes. Artificial intelligence is a smart system that allows employees to access valuable information through technology platforms.

Conclusion

Artificial intelligence is a smart system that allows employees to access valuable information through technology platforms.

Thus, enterprises use SI systems when looking for new solutions to recurring problems in their business processes, competition, and technological development. Artificial intelligence plays an increasingly important role in our lives and economies and affects our world in different ways. AI is viewed by many as a vehicle for productivity and economic growth - to improve operational efficiency and improve decision-making by analyzing large amounts of data, as well as to stimulate the creation of new products and services in the market. While artificial intelligence is believed to increase demand and create new sources of income, it can have devastating consequences for the economy and society. Thus, artificial intelligence (AI) is a system that mimics human intelligence to improve jobs, increase productivity, and drive economic growth. Intellectuals, born from the activity of artificial intelligence, have a lot of know-how necessary to increase efficiency and create new knowledge for business processes.

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Region Requirements for Life Insurance in Uzbekistan and Regression Analysis of Factors Affecting It

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Abstract: The article notes that insurance is an integral part of the financial infrastructure a market economy and an important factor in ensuring the sustainable development of the economy as a whole and the role of the insurance in ensuring the continuity of production and protection of the population from accidents in a market economy. In particular, the current state of life insurance in Uzbekistan was analyzed and suggestions and conclusions were made on the direction of development.

Key words: life insurance demand, factors effecting insurance demand, life insurance, insurance premium; unemployment; inflation; GDP; income.

Introduction

In the current period of rapid development, the share of life insurance in the global insurance market is growing. Life insurance is a social and financial protection that covers several events: for example, disability due to illness, death or survival up to a certain age. At present, serious attention is being paid in our country to the development of the insurance market, in particular, to increasing the share of life insurance.

The degree to which the study has been studied

Quantitative assessment of the factors influencing the development of the insurance market and the development of the insurance market is reflected in the scientific work of a number of researchers. Among the factors influencing the demand for financial services, of course, are the factors that have a positive impact on economic growth and financial development. For example, in a recent empirical study of the insurance market by Browne (2000), Ward and Zurbruegg (2002), Beck and Webb (2003), and Esho (2004), several factors affect the level of demand for insurance in the economy, including economic, political, legal, and social. factors have been found to be affected.

Research methodology

The study used scientific abstraction, grouping, comparison, retrospective and prospective, empirical analysis, and other methods. The article substantiates the importance and necessity of the factors influencing life insurance insurance revenues in the development of life insurance companies using the method of scientific abstraction, and predicts the scientific and practical importance of ensuring the financial sustainability of insurance operations. Also, the method of comparative comparison of the activities of insurance companies in the world insurance practice and life insurance premiums in developed countries with the existing insurance companies in our country has been formed.

Conclusions and discussions

In the world economy, insurance activity is a system that integrates the steps of creating a cash fund, increasing the competitiveness of production, protecting the export and import of products, activities related to the integration of production, as well as expanding the scope of activities of each entity, investment serves to increase placement and credit opportunities.

Life insurance compensates for the life and health problems of the insured during the insurance period by protecting them from various risks. In this way, insurance companies compensate for the losses in the economy and contribute to its development.

In European countries (France, Spain, Germany, Italy, etc.), the share of insurance companies in GDP is 8.4%. In Russia, the figure is 1.5 percent, in Kazakhstan 0.9 percent, in Armenia 0.6 percent, and in Uzbekistan 0.4 percent. [Nasretdinov S.S. "Activities of insurance companies during the coronavirus pandemic"] The share of life insurance in GDP in 2020 was 0.12%. [Figure 1]

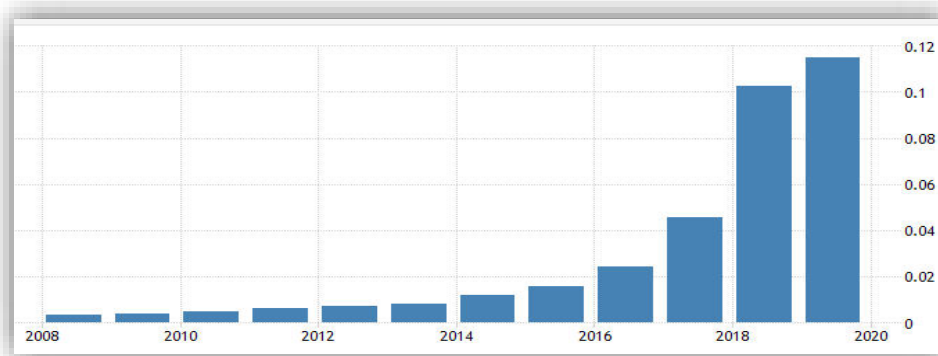


Figure 1. Life insurance in 2008-2020
 Share of Uzbekistan in GDP (%)

[Source: <https://tradeconomics.com/uzbekistan/life-insurance-premium-volume-to-gdp>]

Today, there are 40 insurers in the insurance market of the Republic of Uzbekistan, including 32 in the general insurance network and 8 in life insurance, as well as 5 insurance brokers, 5 actuarial organizations and 22 assistants, associates, surveys, 8870 insurance agents.

Table 1. Life insurance companies in Uzbekistan
 [Source: Based on information from www.mf.uz.]

Суғурта компаниялари номи	Суғурта мукофотлари		Хаёт суғуртаси бўйича бозордаги улуши, %да
	01.10.2020	01.10.2021	
Жами	244 022,0	483 263,4	
АЖ "New Life Insurance"	66 502,4	183 693,6	38,01
АЖ СК "Agros Hayot"	42 111,9	102 545,4	21,2
АЖ "O'zbekinvest Hayot"	58 944,8	56 647,0	11,7
АЖ "Apex Life"	11 016,7	39 728,5	8,22
АЖ "Kafolat Hayot"	17 624,3	38 499,8	7,97
АЖ "Alfa Life"	14 658,0	26 316,0	5,45
АЖ "Euroasia Life"	27 133,1	25 613,8	5,5
АЖ "Alskom Vita"	6 030,8	10 219,3	2,11

According to Table 1, New Life Insurance LLC is currently the leader in the field of life insurance in Uzbekistan, which accounts for 38% of total insurance premiums. The volume of insurance premiums has declined relatively quickly until 2019. By 2020, the growth in the total insurance network slowed down to 9%, while in the life insurance network there was a decrease in the volume of insurance premiums, which is 57% compared to last year.

Table 2. Volume of insurance premiums by life insurance classes
[Source: Based on information from www.mf.uz.]

Суғурта турлари	Суғурта мукофотлари	
	01.10.2020	01.10.2021
Ихиёрий суғурта бўйича ҳаёт суғуртаси класслари жами	218 884,7	473 416,1
I класс. Ҳаёт ва аннуитетлар	119 727,5	199 585,2
II класс. Никоҳ ва туғилиш	8,4	16,0
III класс. Ҳаётни узок муддатли суғурталаш	97 587,2	252 287,4
IV класс. Соғлиқни суғурталаш	-	639,5
икки ва ундай ортиқ класслар бўйича суғурта	1 561,7	20 888,1

The decline in the life insurance network observed in 2020 is primarily due to the fact that on December 31, 2019, the Republic of Uzbekistan

In the tax code, we can say that the reason is the limited use of existing benefits from the income tax of individuals and legal entities, introduced for the purpose of life insurance



Figure 2. The amount of insurance premiums and growth rate dynamics

In 2021, insurers collected insurance premiums in the amount of 3,732.8 billion soums, which is 68.6% more than in 2020. Between 2010 and 2021, the national insurance market changed for the better, growing almost 21.3 times, from 175.5 to 3,732.8 billion soums (Figure 2)

¹ Суғуртани кўллаб қувватлаш агентлиги маълумотлари асосида муаллиф томонидан тузилган

Table 3. Correlation matrix between economic indicators of Uzbekistan and insurance premiums

№	Кўрсаткичлар номи	Кўрсаткичлар						
		Ҳаёт суғуртаси мукофотлари	Асосий капиталга киритилган инвестициялар	ЯИМ	Аҳоли сони	Инфляция	Аҳоли жон бошига даромад	Ишсизлик
1.	Ҳаёт суғуртаси мукофотлари	1						
2.	Асосий капиталга киритилган инвестициялар	0,92	1					
3.	ЯИМ	0,90	0,99	1				
4.	Аҳоли сони	0,87	0,94	0,98	1			
5.	Инфляция	0,86	0,71	0,69	0,67	1		
6.	Аҳоли жон бошига даромад	0,88	0,94	0,96	0,98	0,71	1	
7.	Ишсизлик	0,85	0,88	0,89	0,87	0,81	0,90	1

It is advisable to use a correlation coefficient to determine and assess the relationship between life insurance revenues and the country's key socio-economic indicators. Because the correlation coefficient evaluates how linearly correlated the two indicators are.

In general, the Republic of Uzbekistan has a moderately strong correlation between key socio-economic indicators and life insurance premiums, ranging from 0.67 to 0.99 (Table 3). This indicates that their level of sensitivity to each other is strong, but in this case it will be necessary to determine which indicator is primary and secondary.

The results of Table 3 show that it is possible to construct a regression model between life insurance premiums and key macroeconomic indicators. However, in this case it is possible to create only a one-factor model. Because there is a strong correlation between all the indicators in the construction of a multivariate model, multicollinearity is observed in the model. In the modeling process, regression equations are constructed that represent the relationship between the insurance premium and key macroeconomic indicators. The reason we do not model the effect of insurance premiums on macroeconomic indicators is that insurance premiums have a very small effect on key macroeconomic indicators.

Table 4. Model of correlation of insurance premiums collected in the Republic of Uzbekistan with the main economic indicators

№	Модел	t-статистика	F _{stat}	Детерминация коэффициенти
1.	$LifePrem = Invest * 0,0024 - 43,2$	(7,69) (-1,15)	59,1	R ² = 0,85
2.	$LifePrem = GDP * 0,0009 - 111,2$	(6,63) (-2,16)	43,97	R ² = 0,81
3.	$LifePrem = Pop * 0,0998 - 2964,1$	(5,57) (-5,25)	31,02	R ² = 0,75
4.	$LifePrem = Infl * 48,8 - 281,3$	(5,44) (3,13)	29,62	R ² = 0,74
5.	$LifePrem = IncperC * 0,065 - 218,7$	(5,86) (-2,96)	34,3	R ² = 0,77
6.	$LifePrem = Unempl * 80,7 - 385,48$	(5,10) (-3,35)	26,01	R ² = 0,72

Here: LifePrem (life insurance premiums), GDP (GDP), Invest (Fixed capital investment), Pop (Total population), Unempl (Unemployment rate), Infl (Inflation), IncperC (per capita income)

The independent variable parameter (regression coefficient) represents how many units the independent variable changes to the independent variable. The impact of key macroeconomic indicators on insurance premiums can be divided into 3 groups based on Table 4.

The first group of indicators includes fixed capital investment and GDP, their impact on insurance premiums is 0.0024 and 0.0009, respectively.

The second group of indicators is the total population and per capita income, a change in these indicators per unit leads to a change in insurance premiums of 0.0998 and 0.065 units, respectively.

The third group is inflation and unemployment, which increase or decrease by one unit, leading to an increase or decrease in insurance premiums by 48.8 and 80.7 units, respectively.

According to insurance companies, in the III quarter of 2021, 483.3 billion soums were spent on life insurance. soums of insurance premiums were collected. Despite the fact that insurance premiums are declining from year to year, today the volume of insurance premiums is 0.4% of the republic's GDP. Worldwide, the figure averages 6.1 percent. The share of life insurers in the insurance market of our country is relatively low. The share of the life insurer in the total amount of insurance premiums was 25% in 2019, and in 2020 this figure will fall to 15%. In this case, the share of the life insurance network in the total volume of insurance premiums in developed countries is relatively large.

In order to increase the demand for life insurance in Uzbekistan and increase the amount of insurance premiums, it is necessary to study the factors influencing the demand for insurance. The demand for life insurance is affected by a number of factors. We can divide these factors into demographic and economic factors. These are: education rate, inflation, income, unemployment, interest rates, etc. [A Time-Series Analysis of Demand for Life Insurance Companies in Australia: An Unobserved Components Apporoach.// Liam J. A. Lenten, David N. Rulli] These factors are at risk affects differently in different countries. It is through the analysis of this that life insurance companies can identify the factors that have the greatest impact on the size of the premium, which in turn allows them to increase their income in the future.

Conclusion

As Uzbekistan aims to develop the insurance industry, it should study and apply the experience of developed countries. This has been demonstrated by the pandemic that has been going on around the world since the beginning of 2020. In 2020, the Uzbek insurance market grew by only 5% instead of the projected 10%, while insurance premiums in the life insurance sector fell to 57%. Given that insurance premiums are one of the sources of capital for insurance companies, this has a negative impact on the solvency of companies.

The Uzbek life insurance company has a very small share in the country's gross domestic product. At the same time, life insurance cohaci have a very large untapped potential. To take advantage of this potential, it is necessary to analyze the market, study the influencing factors and, most importantly, gain customer confidence.

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Learning any Language with Linguoculturology Enriches our Knowledge and Broadens our Horizon

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Annotation. This article deals with the data related to one of the most crucial branches of the modern linguistics, linguoculturology.

Key words: linguistics, culture, linguoculturology, communication

Introduction.

Language is the primary means of communication and the most significant tool to express people's thoughts. At the same time language helps to deliver, store, use and transmit culture from one generation to the next generation. Consequently, the research of relationships between language and culture has great importance in modern linguistics. The focus of linguoculturology is a person considered as a carrier of language and culture, his background knowledge, national-specific, behavioral norms, making him a representative of the culture. Problems related to the functioning and study of the language in a multilingual society are considered against the background of the overall picture of the language situation.

In world linguistics the researches on the problem of language and culture are also developing. As B. Sainte-Marie said that "Language and culture cannot be separated. Language is vital to understand our unique cultural perspectives. Language is a tool that is used to explore and experience our cultures and the perspectives that are embedded in our cultures." In addition, culture is created by be humankind who use language.

Material And Methods

Linguoculturology is a new branch of linguistics which focuses on the study of relationships between language and society, language and mind, language and culture. V.N Telia defines Linguoculturology as "a study aimed at investigating and describing the correlation between language and culture in scope of modern culture national self-consciousness and its sign representation. (Telia 1996, p .16) p 16). V.V. Krasnykh considers Linguoculturology to be "a discipline studying and manifestation, reflection and fixation of culture in the language and discourse" (V.V. Krasnykh 2003 p27).

Results.

The linguocultural characteristics of words help students broaden their cultural awareness of the learning language. As it proved each nation has colourful and reach traditions and customs. Through learning the language with its linguocultural features learners not only study the language but also the culture of that nation. Therefore, linguoculturology plays a significant role in the modern research. It appeared in the 90th of the 20th century. The term linguoculturology came into use in the scientific works by V.V Vorobyev, N.D. Arutyunova, Y.S Stepanov, V. T. Kolokov, V.A. Maslova, V. I. Karasik, V.N. Teliya, V. Avramova and others. Being a master of the native language and culture allows the student to communicate and interact within the same ethno-social and cultural community; the assimilation of two languages and culture of the people. A person who can speak multi languages will be able to understand many nations and customs as well. In our country, this is at least a trilingual personality: owning a native language, Russian, and one of the European languages as a means of international communication (English, French, German). Mastering a second language involves learning a new linguistic picture of the world to be more precise, people who know foreign languages will discover new way of living, dressing, eating habits and many others.

Discussion.

As the object of the linguoculturology is to learn language and culture, one can learn how to use any word in any language having studied this branch of linguistics.

While learning English we should learn every word's style and usage in order to use it properly in any situation. My research work's aim is to investigate the linguocultural features of the word "marriage" in English and Uzbek languages.

In the English language the word "turmush" may be given with these words:

1. "Marriage"
For instance, "My parents are celebrating 40 years of marriage."
2. "Match" (old fashioned)
"He was determined that his daughter should make a good match."
3. "Wedlock"
He was born out of wedlock.
4. "Domesticity"
I am not cut out for domesticity.

In the Uzbek language "turmush, nikoh" and "oilaviy hayot" can mean the same meaning with the word "marriage" in English.

It is vitally important to be aware of the words' cultural features in order to use them appropriately. To exemplify in the Uzbek nation it is advised to avoid to call one's wife with their given names or words like "sweetheart, darling, my dear, my lovely" and others due to the fact that this situation seems immoral among parents, relatives, neighbors, children, colleagues, briefly in society. According to the Uzbek mentality it is preferable to address and refer to an Uzbek wife with her elder child's name in order to avoid improper and rude situation. At the same time in the English nation men may call their wives with endearment exclamatory words such as "my darling, dear, sweetheart, honey, love, sweetie" as this situation is a normal custom in this mentality as well as this describes that there is a true love and respect in that family.

Moreover, in English the word "brother" is used for both meaning "aka" (elder brother) and "uka" (little brother) whilst in Uzbek there are used two separate words to express "elder brother" (aka), and "little brother" (uka). There would be found some similarities and dissimilarities among their languages and cultures.

Conclusion.

As discussed above that any language is picturesque and makes the atmosphere lively if only it is learned with cultural background among the native speakers and the language learners. Culture makes each language more individual, colorful and rich. Language and culture reflect the past history of the nation, its tradition, customs and heritage of the countries like folk-songs, national dances, and fairy-tales. Due to the fact that Linguoculturology is defined as "a complex scientific discipline of a synthesizing type that studies the relationship and interaction of culture and language in its functioning and reflects this process as an integral structure of units in the unity of their linguistic and extra-lingual (cultural) content". Learning the culture of another country helps to overcome communicative barriers, be tolerant towards the attitudes and customs of other peoples, and understand clearly the socio-cultural norms and foundations of intercultural communication. Linguocultural approach involves the formation of linguocultural competence that is a system of both knowledge and skills about the culture and the ability to use them in a particular communicative situation.

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Issues for Enforcement of Decisions of the International Investment Arbitration on Temporary Protection Measures

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Abstract. In recent years, many of the leading arbitral institutions have amended their rules in order to make arbitration more responsive to users' needs. A key development has been the introduction of emergency arbitrator procedures, which enable parties to obtain urgent relief before the substantive tribunal is formed. For good reason, these new mechanisms are receiving significant attention from parties and arbitrators. However, have enforcement mechanisms kept pace with these developments? Therefore, this article addresses the implementation of interim measures of relief issued by international arbitral tribunals through exploring current legal frameworks for such enforcement, foreign case law practices, examples of such measures that have been enforced and suggestions for drafting interim measures as well as alternatives for harmonizing into international framework to maximize their potential enforceability.

Keywords: interim measures, provisional measures, arbitral order, arbitral award, binding award, prima facie jurisdiction, status quo

Introduction.

Enforcement of arbitration awards is the most important issue in resolving international investment disputes. Otherwise, the efforts and costs incurred in the dispute resolution process will have no effect. However, arbitral awards are not limited to arbitral awards.

In particular, among arbitral awards, decisions on temporary safeguards are of particular importance. Temporary protection measures are temporary protection means provided in special cases. The purpose of the interim protection measures is to protect the material and procedural rights of the parties until the case is considered on its merits.

The party requesting the interim measures must demonstrate the rights to be protected by the interim measures in dispute. Such rights must be related to a particular dispute in arbitration, be available at the time the request is made, and not be speculative. Interim measures may be granted at the request of the parties or on the arbitrator's own initiative. Interim measures may be granted at the request of the parties or on the arbitrator's own initiative.

Methodology.

The research methodology is based on both the general scientific methodology of cognition of reality and private-scientific methods: historical, system-structural analysis, comparative legal analysis, analysis of judicial practice data. The study of international and foreign legislation on the recognition and enforcement of interim measures as well as several case law practices was carried out using the methods of specific research, logical and statistical analysis. In work, the author relied on the results of research by European and American legal theorists in the considered and related fields of knowledge, and international frameworks as well as the foreign legislations and practices of European, North American, Latin American, African countries and Australia as well.

Results and Discussion.

Of particular importance here is the timing, conditions and types of temporary safeguards, as well as the powers of arbitration tribunals. This is because these issues are features that are particularly valued in the enforcement of the arbitral tribunal's interim protection measures.

So what is the deadline for taking temporary safeguards?

Temporary safeguards may be granted at any time before the final decision of the arbitral tribunal. The legal basis for this is stated in Article 39 of the ICSID Arbitration Rules: "At any time during the proceedings, a party may request interim measures recommended by the court to preserve their rights."¹

International tribunals typically have a clear mandate to take interim measures, as contained in the UNCITRAL Model Law and their constituent instruments:

- ❖ UNCITRAL Model Law (Article 17);
- ❖ ICSID Convention 1965 (Article 47);
- ❖ ICSID Arbitration Rules 2006 (Article 39);
- ❖ ICSID Additional Facility Rules 2006 (Article 46);
- ❖ ICC Arbitration Rules 2021 (Article 28);
- ❖ SCC Arbitration Rules 2017 (Article 37).

In addition, the power of tribunals to grant such interim measures may be enshrined in international investment agreements. The following bilateral investment agreements are examples of this:

- ✓ Guatemala - Trinidad and Tobago BIT (2013);
- ✓ Canada - Romania BIT (2009);
- ✓ Mexico - United Kingdom BIT (2006);
- ✓ Canada - EU CETA (2016).

Unlike UNCITRAL and other arbitration rules, the ICSID Arbitration Rules do not set specific requirements for taking temporary measures. However, these requirements are formulated by the tribunals as follows:

- 1) prima facie jurisdiction of the tribunal;
- 2) prima facie existence of a right susceptible of protection (establishment of the case);
- 3) necessity of the measure requested;
- 4) urgency of the measure requested; and
- 5) proportionality of the measure requested².

Prima facie jurisdiction of the tribunal

To establish prima facie jurisdiction, many international tribunals consider whether the legal claims brought before them are "capable of falling within" the legal instrument and applicable rules in question. Tribunals further tend to assess whether the claims fall prima facie within the consent of the parties (Talinn v. Estonia Decision on Respondent's Application for Provisional Measures).

Where arbitral tribunals have had to assess their prima facie jurisdiction, they have often reached decisions to:

- a) decline prima facie jurisdiction and thus interim relief
- b) confirm prima facie jurisdiction without granting provisional measures (where one or more of the other requirements have not been met)
- c) find the test satisfied and order provisional measures in full or in part (where the other requirements have been met).

Prima facie existence of a right susceptible of protection

In making this prima facie determination, the tribunal must first assume and accept the facts as alleged by the requesting party pro tempore, that is for the time being. Then, the tribunal must consider whether the facts alleged are susceptible of constituting breaches of the applicable treaty. In order to perform such task, the tribunal must apply a prima facie standard of review, both in respect of the capacity of the facts to fall within the ambit of the treaty protections and of the understanding of these protections.

Necessity of the measure requested

The criterion of necessity "implies an assessment of the risk of damage" which interim measures are intended to prevent. The standard of significant and substantial harm - if a party would suffer substantial prejudice absent interim measures, then the interim measures are "necessary" and the substantial harm requirement is satisfied (Gabrial Resources v. Romania Decision on Claimant's Second Request for Provisional Measures; Talinn v. Estonia Decision on Respondent's Application for Provisional Measures).

Urgency of the measure requested

Most investment tribunals consider the urgency of a vital criterion for granting provisional measures in investment disputes. Some tribunals consider a provisional measure to be urgent where an action prejudicial

to the rights of either party is likely to be taken before a final decision is rendered (Rizzani de Eccher v. Kuwait ICSID Decision on Provisional Measures; Pugachev v. Russia Ad hoc Arbitration Interim award).

When assessing the required level of urgency, tribunals often consider two factors:

- A. The nature / type of the requested provisional measure, in particular the rights whose protection is targeted by such measure.
- B. The seriousness, imminence, and irreparability of the prejudice / harm that might ensue if the requested measure is not granted.

Obligation to prove and evidence

Burden of proof - usually the obligation to prove the above requirements is the obligation of the person requesting the interim measure. In rare cases, the tribunal may find that the obligation to present evidence rests with the party in the best position (Garcia Armas and Others v. Venezuela PCA Procedural Order No. 9).

Types of temporary protection measures

The following temporary safeguards were imposed by the tribunals:

1. Obtaining and defending evidence.
2. Ensuring the implementation of the decision (security for costs).
3. Suspend or terminate other litigation.
4. Prevent the disclosure of confidential information.
5. Ensuring a specific contractual obligation.
6. Measures to be taken to protect the life and safety of the parties.

Obligation of temporary protection measures and its implementation.

Not all of the documents authorizing the tribunals to take interim measures state that they are binding. For example, according to Article 47 of the ICSID: "Except as the parties otherwise agree, the Tribunal may, if it considers that the circumstances so require, recommend any provisional measures which should be taken to preserve the respective rights of either party"³.

Nevertheless, the question may arise in the context of ICSID as Article 47 of the Washington Convention states that arbitral tribunals may 'recommend' interim measures which suggest that they have no binding character. However, several arguments can be made against this. First of all, as stated by the ICJ, the subject-matter and purpose of interim measures is to preserve the rights of the parties: for these measures to be effective they should be mandatory. Secondly, as pointed out by an arbitral tribunal, the linguistic versions of the Washington Convention differ slightly. For example, in the Spanish version, the binding character of interim measures is quite clear⁴.

According to the definition given by the UNCITRAL Model Law, an interim measure is a temporary measure aimed at protecting the outcome of the arbitration proceedings. An Arbitral Tribunal, therefore, may order to: "(a) maintain or restore the status quo pending determination of the dispute; (b) take action that would prevent, or refrain from taking action that is likely to cause, current or imminent harm or prejudice to the arbitral process itself; (c) provide a means of preserving assets out of which a subsequent award may be satisfied; or (d) preserve evidence that may be relevant and material to the resolution of the dispute"⁵. Arbitrators' power to order interim measures is widely recognized by several jurisdictions and arbitral institutions and their relevant regulations (such as, by way of example, the UNCITRAL Rules, the ICC Rules).

However, there are still a few Countries where arbitrators are not allowed to issue interim measures, such as Italy, Greece and Austria. Italy, in particular, has a conflicting position. In fact, article 818 of the Italian Code of Civil Procedure prevents arbitrators from ordering interim measures. As an exception to this general rule, article 35 of the Legislative Decree no. 5 of 2003 introduced the possibility for arbitrators to order the suspension of the shareholders' resolutions, thus, confining the possibility of interim measures only within arbitration proceedings concerning corporate matters.

Some commentators did not construe this innovative provision as a real exception to the general rule that prevents arbitrators from issuing interim measures. Indeed, the order to suspend a shareholders' resolution is a self-executing interim measure that does not need enforcement.

The United States, Federal Arbitration Act does not specifically contemplate the arbitrators' power to issue interim measures but it does not even exclude this power. Parties may agree to entrust either arbitrators or

ordinary courts with such power. However, if an arbitration clause exists, courts appear to be less incline to issue interim measures and may interpret such request as a waiver to arbitration (see *McCreary Tire Rubber Company v. Ceat*, 501 F. 2d 1032, 3d Cir. 1974).

The United Kingdom adopted the so-called “subsidiary approach” according to which parties bound by an arbitration clause should request an interim measure within the arbitration proceedings, in the first place and, eventually, resort to courts only for those interim measure, such as *ex parte* *mareva* injunction, that can only be granted by courts. In other jurisdictions, such as in Germany and in Hong Kong, the so-called “free choice model” was adopted. This allows the parties of an arbitration to choose between requesting the interim measures to arbitrators or to courts.

Despite this big step forward, the problem remains the interim orders' enforceability, which requires the parties to revert to ordinary courts.

Applicable enforcement mechanisms

In international commercial arbitration, the key enforcement mechanisms are the United Nations Convention on the Recognition and Enforcement of Foreign Arbitral Awards 1958 (the New York Convention) and the applicable domestic arbitration laws, many of which are based on the UNCITRAL Model Law on International Commercial Arbitration (the Model Law).

The New York Convention is silent on the question of arbitrator interim awards and orders. On the face of it, the convention applies only to “awards”, thereby seemingly excluding arbitrator orders, interim or otherwise. Moreover, there is no definition of “award”, but finality is considered an essential characteristic of an award in many jurisdictions - not least because the convention provides that a party may resist enforcement of an award on grounds that it is not yet “binding”. As such, this raises questions over the enforceability of orders and awards that are only interimbinding.

At the UN's 40th anniversary celebration of the New York Convention in 1998, several speakers identified the need to strengthen interim measures as a crucial next step in enhancing the Convention's support for international arbitration. In particular, VV Veeder warned that 'for too long, there have been difficulties enforcing an arbitrator's order for interim measures', given that 'the better view of [the New York Convention's] application excludes any provisional order for interim measures from enforcement abroad as a Convention award'⁶. Mr. Veeder opined that an arbitral interim measure 'could be at least as [important as], if not more important than, an arbitral award' because, without such measures, 'it is sometimes possible for a recalcitrant party to thwart the arbitration procedure - completely and finally '(for example, by dissipating assets out of which an award would be paid). He thus concluded that the lack of enforceability of interim measures' strikes at the heart of an effective system of justice in transnational trade 'and went so far as to recommend' a supplementary convention to the New York Convention on the enforcement by State courts of an arbitral tribunal's interim measures'.

When UNCITRAL subsequently identified issues raised at that 1998 conference that might merit its own further work on possible solutions, it identified the problem of arbitral interim measures' enforceability and - appearing to echo Mr. Veeder - explained: 'The prevailing view, confirmed also by case law in some States, is that the Convention does not apply to interim awards.' Not all scholars agreed about the New York Convention's limits. For example, Albert Jan van den Berg, a leading scholar of the Convention, specifically criticized UNCITRAL's report because it 'does not give a source for this statement' and noted that 'there does not appear to be a "prevailing view" on this question 'since - at least as at 2000, when Mr. van den Berg voiced his critique - 'the reference to case law “in some States” is, to my knowledge,⁷. Mr. van den Berg found greater wisdom in the 'pragmatic view' exemplified by US case law, which he said recognized that 'no major obstacles to the enforcement of a “temporary” award seem to exist'.

An award will be enforced in accordance with its terms. If one of the terms is that the order contained in the award is for a limited period of time, the enforcement will cover accordingly that period of time. If the interim award is subsequently rescinded, suspended or varied by an arbitral tribunal, that will as a rule be laid down in a subsequent interim award, which can also be enforced.

Unlike the New York Convention, the original Model Law does expressly address interim relief, in that it empowers a tribunal to order interim measures. However, it does not address the implementation of such measures, instead leaving it open to national courts whether or not to provide assistance in that regard. The Model Law was updated in 2006 to address, among other things, the enforceability of arbitrator interim

measures. The amended Model Law empowers tribunals to grant interim relief in both the form of an award as well as in “another form”, and provides that such measures will be binding and enforceable as any other award. Save that, if made in the form of a preliminary order, although binding on the parties such an order will not be subject to enforcement by a court (and does not constitute an award).

The amended Model Law offers some helpful clarity. But it does not perfectly resolve all issues. Firstly, it fails to define “arbitral tribunal”, which leaves open the question of whether an emergency arbitrator falls outside the definition. More importantly, the 2006 amendments have not been widely adopted. Over one hundred jurisdictions implemented domestic arbitration laws based on a version of the Model Law, but less than half of those have adopted the 2006 revisions. Among those that have are Australia, Belgium, the Canadian province of Ontario, the state of Florida, New Zealand, and several Latin American countries. Add to that, a number of domestic arbitration laws, including those in some of the leading seats of arbitration (England, France, the United States), are not based on the Model Law at all. In actuality,

In the absence of express provisions (such as those adopted in Hong Kong and Singapore), it is up to the domestic courts to determine whether an emergency arbitrator decision, be it in the form of an order or an award or an order, is enforceable.

The revised Model Law that UNCITRAL ultimately promulgated in 2006 includes a sprawling new Article 17 on interim measures, of which subsections 17H and 17I establish an explicit right and mechanism to enforce arbitral interim measures in the national courts of any relevant jurisdiction. Article 17H requires that an arbitral interim measure, no matter how styled (as an award, an order or a decision) 'shall be recognized as binding and. . . enforced upon application to the competent court, irrespective of the country in which it was issued, subject to certain limited grounds for non-enforcement set forth in Article 17I. These include the grounds already established for non-compliance of awards on the merits under Model Law Article 36 (which derives, in turn, from Article V of the New York Convention).

Thus, a final reason why UNCITRAL developed a detailed regulation regarding arbitral interim measures was to give tribunals greater confidence in exercising their interim authority. Indeed, UNCITRAL delegates subsequently imported nearly all the provisions on tribunal interim measures from Article 17 of the Model Law into Article 26 of the updated Arbitration Rules (2010).

According to UNCITRAL, of the nearly 120 jurisdictions that have adopted legislation based on the Model Law, more than 35 have done so in the past dozen or so years and thus have included the 2006 revisions (sometimes with modifications)⁸. For parties and their counsel now seeking to enforce an arbitral interim measure in a jurisdiction that has not adopted the 2006 Model Law, it will be necessary to examine national legislation to see if there are other enactments (along the lines of the various approaches previously described) that may authorise such enforcement and, if not, to consult national jurisprudence to determine whether legislation that does not expressly so provide has nonetheless been judicially so construed (such as by broadly interpreting the term 'award').

Although there are still significant differences across jurisdictions, recent court decisions may signal a trend towards broader recognition and enforcement of arbitral interim measures, even in the absence of an express statutory provision to that effect.

The United States continues to be at the forefront of the enforcement movement. For example, in *CE International Resources Holdings LLC v. SA Minerals Ltd et al.* (2012) (*CE International Resources*), a federal district court in New York City confirmed its long-standing jurisprudence that 'an award of temporary equitable relief. . . was separable from the merits of the arbitration 'and was therefore capable of immediate recognition and enforcement'⁹. Although the district court did not expressly refer to the New York Convention (or its statutory implementation, under the Federal Arbitration Act)¹⁰ as the basis for its power to enforce the interim award, the case involved foreign parties and probably constituted a 'non-domestic award' falling within the US courts' expansive application of the New York Convention. Several similar decisions have been issued in other US cases in recent years.

Other common law jurisdictions have recognized the enforceability of arbitral interim measures in recent years. For example, in 2015, the Singapore Court of Appeal confirmed that awards ordering interim relief are 'final' as to the issue they adjudicate (ie, the question of whether the requested relief is warranted) and can therefore be enforced under the Singapore Arbitration Act¹¹. In this case, the 'interim relief' at stake was somewhat unusual: an arbitral order compelling one party to comply with a prior decision by a dispute

adjudication board, constituted under the 1999 FIDIC Red Book, which ordered the party to pay an amount of money to the other party¹².

Courts in certain civil law jurisdictions also appear to have followed this trend. For example, in 2014, the commercial court in Kinshasa is reported to have accepted the enforcement of an International Chamber of Commerce emergency arbitrator decision that had granted an anti-suit injunction against one of the parties, forbidding it from commencing certain court actions in the Democratic Republic of Congo (DRC). Although the court apparently noted that the New York Convention had not yet entered into force in the DRC, it is reported to have nevertheless relied on local law to accept the enforcement of the emergency arbitrator decision¹³.

Likewise, in 2016, the Supreme Court of Ukraine appeared willing to consider the implementation of the provisional relief granted by a Stockholm Chamber of Commerce arbitral tribunal in the context of an investor-state arbitration¹⁴. In this case, the relief had been rendered in the form of an award enjoining the state from collecting royalties on gas production from the investor at a higher rate than was previously in place. The investor sought to enforce the emergency award in Ukraine and succeeded at first instance before the Perchersk District Court, reportedly because the relief was rendered in the form of an 'award' and, thus, was enforceable pursuant to the New York Convention. Although this decision was later overturned by the Kyiv Court of Appeal, in February 2016, the Supreme Court of Ukraine quashed the Court of Appeal's decision, remanding it for reconsideration while holding that a Ukrainian court could only refuse to recognize or enforce an arbitral award on the grounds enumerated in Article V of the Convention and that the Kyiv Court of Appeal had not. Similarly, in May 2018, the Cairo Court of Appeal was the first Egyptian court to recognize and enforce an arbitral order for interim measures issued by a foreign tribunal, which was seated in Paris¹⁵. The tribunal had issued an interim order enjoining one of the parties to cease and desist from the Egyptian court proceedings that sought the liquidation of a performance bond. The Court held that arbitral interim measures finally resolve the parties' dispute with respect to the provisional measures sought in the arbitration and were therefore capable of enforcement. Notably, the Court stated that enforcement of interim measure orders issued by arbitral tribunals was consistent with the objectives of the New York Convention, namely to favor the enforcement of arbitration agreements and arbitral awards, to ensure predictability in international commercial dealings and consistency among jurisdictions.

Of particular interest was the Cairo Court of Appeal's express reference to the 2006 revision of the Model Law, clearly providing for the enforcement of arbitral interim measures and which the Court said 'derives from the New York Convention and implements its guarantees and standards'. As the Court recalled, Egypt's arbitration law is inspired by the Model Law but was enacted well before the 2006 revision. The Court further noted the potential inconsistency in allowing arbitral tribunals to issue interim measures but then refusing to recognize or enforce them.

Despite what may be a nascent trend in some national courts towards the enforcement of arbitral interim measures, even in the absence of a statutory provision to that effect, other jurisdictions remain reluctant to embrace this path. For instance, although the Korean Arbitration Act was revised in 2016 and largely incorporated provisions on interim measures from the 2006 Model Law, it nevertheless limits enforcement of interim measures to those issued by tribunals seated in South Korea¹⁶. In 2010, the Chilean Supreme Court rejected the exequatur of arbitral interim measures granted abroad regarding assets located in Chile¹⁷. Similarly, in Russia, the Presidium of the Highest Arbitration Court reaffirmed in 2010 its position that only awards finally deciding (part of) the merits of a dispute can be enforced in the Russian Federation¹⁸.

Conclusion.

Given the current state of enforcement of interim safeguards in international investment arbitration, some states recognize the authority of arbitral tribunals to apply interim safeguards. But there are also states that oppose it. Also, the provisions of the UNCITRAL Model Law on the obligation to enforce arbitral awards on the application of provisional safeguards are not available in all countries that have implemented them. Nevertheless, current trends and the growing number of appeals to arbitration tribunals for the application of interim safeguards require that the issue be addressed in international instruments.

Therefore, the obligation to recognize and enforce arbitral awards on temporary safeguards should be established by an international instrument. There are the following alternative solutions to define the 2006 amendments to the UNCITRAL Model Law in an international imperative document:

The first is the inclusion of provisions in the 1958 New York Convention on the enforcement of temporary safeguards. Obviously, most governments will not accept this. Therefore, this proposal cannot be considered as the most optimal solution.

The second is to include provisions in the ICSID Convention on the mandatory implementation of temporary safeguards. Obviously, this is likely not to be accepted by most governments either.

The third is to determine the conditions for the enforcement of decisions on temporary safeguards issued by arbitral tribunals in national courts through bilateral investment agreements (BITs) and multilateral investment agreements (MITs) between states.

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Reliability of Collector (Bottle) Set in ACS

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Annotation. DC motors are widely used in industry due to their deep, smooth and economical speed control. However, the reliability of DC machines is lower than that of asynchronous machines due to the presence of a sliding contact collector-brush combination. Statistical analysis shows that in terms of reliability in AC machines, it is necessary to distinguish four "weak sets": collector-brush set, bearing ring, armature ring, drive throwing pot we pay attention to the collector-brush set, taking into account the above.

Objective: To ensure the reliability of AC collectors.

Methods: Ensuring the reliability of the collectors of AC machines Ensuring the reliability of the design of the collector parts in detail. **Keywords:** Reliability, Collector-brush, the possibility of continuous operation, in AC machines, rectangular deviation, constant current (OT)

Introduction:

The efficiency and durability of a collector unit is determined by the influence of three main factors related to electromagnetic processes, mechanical effects, and the physicochemical nature of the sliding contact.

Electromagnetic influencing factors are determined by electromagnetic loads, voltage between adjacent plates, reactive EYUK, current overload, and so on.

Mechanical impact factors are determined by the technological and design characteristics of the machine: weakening of compression, eccentricity and ellipticity of the collector, vibration level of the whole machine or unit and rotor speed.

Factors of the physicochemical nature of the sliding contact are determined between the current collection conditions and the surrounding condition: brush and collector coupling, brushing, collector material, ambient temperature, humidity, acidity, and dust.

It should be noted that a contact film (polish) is formed on the surface of the collector. the presence of a film reduces the wear of the collector, slows down the speed, and facilitates a more comfortable distribution of flow under the brushes. Humidity, the presence of active gases in the environment, and especially dust have a detrimental effect on the collector material.

In addition, a large amount of damage to the collectors is caused by the friction of the brushes against the collector and the high flow density under the brushes when the brushes are not firmly attached to the collector, which is accompanied by a significant increase in temperature, ie. thermal ionization of the brush contacts occurs as a result of local heating of individual areas.

Opening and closing the contact points with the formation of a small electric arc on the collector surface leads to the destruction of the collector surface.

The most effective means of reducing collector wear are:

Improving the switching conditions of the machine by properly adjusting the additional poles, selecting the brand and size, the brushes for the power and voltage of the machine, reduce the rotation speed of the collector and select the appropriate pressure brush to the collector.

Careful balancing of the armature is also important to reduce vibrations in the collector. Practical and experimental data show that the leakage of the collectors during continuous operation of the machine is 0.03-2 mm per year in copper containing 99.9% of the base metal (taking into account the presence of silver). The amount of other compounds in the chemical composition does not exceed one hundred percent.



Figure 1.8. M1 copper used for collector fabrication

Total other elements should not exceed 0.1%.

- iron - 0.005%;
- nickel - 0.002%;
- sulfur - 0.004%;
- arsenic - 0.002%;
- lead - 0.005%;
- ruthenium - 0.004%;
- oxygen - 0.05%;
- deuterium - 0.002%;
- bismuth - 0.001%;
- tin - 0.002%.

Copper alloy M1 has excellent physical properties: high electrical conductivity and low ($0.018 \mu\Omega\text{m}$) electrical resistance, which is further reduced by 2.8% after heat treatment. The plastic properties of the alloy allow it to be used for the production of parts used in solid joints with an operating temperature of up to 250°C .

Due to its very low content, the price of M1 copper is 20% higher than that of other popular brand M2. Various copper rolled products made of M1 alloy are widely used in cryogenic industry. Due to its thermal stability, its hardness, strength and plastic properties do not change under extremely dangerous temperature conditions.

Copper with a chemical composition similar to the local M1 class is produced in many countries with developed metallurgical industries:

- Japan (JIS standard), USA - S1100, S1220.
- European Union (EN standard) - Cu-ETP.
- UK (BS standard) - S106.
- France (AFNOR standard) - Cu-B.
- Italy (UNI standard) - Cu-DHP.

As a national product, analogues of the M1 brand are undoubtedly the leading metallurgical industry in Germany in the production of various alloys of oxygen-free copper. Non-ferrous metallurgical plants produce three types of alloys in accordance with DIN and WNR standards - Ecu57, ECu58, SF-Cu.

The coefficient of friction of lubricated metal is 0.011, without lubrication - 0.043. There are two categories of alloys according to GOST 1173-2006 on Brinell hardness: during the test it should be remembered that the linear shrinkage of M1 is 2.1%. Copper melts at a temperature of 1083°C , casting is carried out in the temperature range of $1150\text{--}1250^\circ\text{C}$.

For example, for collectors made of copper M1, it is 0.36 and 0.22 mm per 10,000 hours when using 611M and EG-74K, respectively.

In most cases, the leakage of the collector depends on the normal state, or a shortened normal distribution. Figure 1.9 shows the curvature of the integral function (curve 2) of the GP-311B generators (curve 1) and the flow rate distribution of the GP-311 collectors.

Due to its deep, smooth and economical speed control, DC motors are widely used in industry. However, the reliability of DC motors is lower than that of asynchronous motors due to the presence of a sliding contact collector-brush connection. Statistical analysis shows that in terms of reliability in AC machines, it is necessary to distinguish four "weak sets": collector-brush set, bearing ring, anchor ring, drive throwing pot. Faults in the commutator-brush assembly are governed by normal law, bearing faults by Weibull's law, armature faults by logarithmic-normal law or superposition of laws, and drive windings by exponential law. The above regarding the distribution laws of node faults is of a generalized nature, but does not exclude other distribution laws. The number of DC machines produced is less than the number of asynchronous machines, so the data are less statistically significant. However, the amount of available statistics on the reliability of AC machines and their individual units allows us to get a complete picture.

The largest proportion of faults occur in the collector-brush and the bearing ring. According to operational statistics, on average, about 25% of machine failures are caused by collector failures. In some cases, for example in transport, this figure reaches 44-66%. One of the main causes of failure in traction engines of electric locomotives is the occurrence of all-round fires. The share of collector failures due to all-round fires is on average 70%.

A study of DC motors found that faults in the collector assembly were 56%, due to mechanical damage - 34%, and faults in the armature and poles - 10%. Analysis of statistical data on failures of DC-717A heavy-duty DC motors revealed that the armature and collector-brush assembly are the least reliable units. The failure of electric machines due to the failure of the collector-brush set varies from 21.6% (ferrous metallurgy enterprises) to 37.8% (enterprises producing mineral fertilizers) and an average of 26.5% for all industries; for anchors - from 19.6% (non-ferrous metallurgy) to 42% (coal industry) and on average - 27.7%.

The fault distribution law of DK-717A traction engines is presented as a superposition of two Vaibul laws with corresponding weights. Figure 1.5 shows that the failure rate of electric motors depends on the walking distance of the vehicle.

If you imagine the level of failure of electric machines in the form of a function $\lambda_{ДВ} = k_p * f(x)$ (where k_p is the coefficient taken into account working conditions for groups of enterprises in different industries, x_t is another factor), then the coefficient according to statistics k_r as follows:

For engines of the mining industry and ferrous metallurgy - 0.837, for non-ferrous metallurgy - 0.919, for the coal industry - 1.166, for the chemical industry - 1.137.

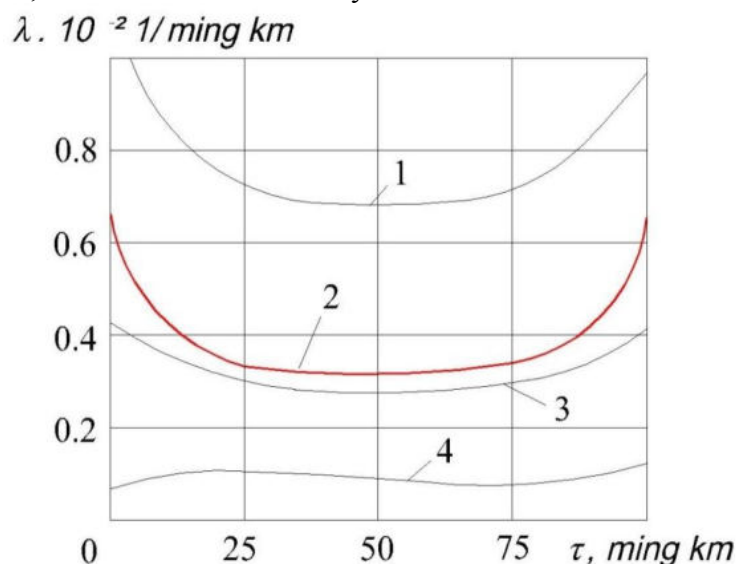


Figure 1.5. Rapid breakdown of electric machines (1). chulg'am (2). Collector-brush (3) mechanical. The graph above shows the indicators for the transport sector.

Let's take a look at the damage to the main parts of AC machines. Typically, collector damage includes surface abrasions, scratches on the surfaces due to its shape, burning and melting of surfaces, uncomfortable switching and all-round fire. If one of the listed damages occurs, the machine must be stopped to make appropriate repairs. The collector must be sanded to eliminate the fault. Some types of AC

machines use plastic collectors. In most cases, the failure of such collectors is due to the breakdown of the insulating part of the work or the covering of the arc.

Damage to the anchor bolts occurs due to the following reasons: damage to the body insulation between the bolts, set of steel coils, alternating connections (with polygonal sections in coils) with anchors, collector plates with connecting petushk cleaning cleaning (on high-powered machines), tire removal, anchor coils amine retention (on high-speed machines) and so on.

Injuries to the exciter, the auxiliary pole, and the compensating coil are rare. They usually cause a breakdown of the body insulation between the coils and the car's magnetic system.

The most common mechanical parts of DC machines are sliding or oscillating bearings and the shoulder of the shaft. Typical signs of damage to these units are oil leakage, malfunction of the lubrication rings, breakage of the ball or rollers, breakage of the separator, sticking of the balls, wear of the shoulder part of the shaft, and so on.

Damage to the traverse of the brush can be manifested in the form of a fracture of the traverse ring, which can be caused by it in the bearing or other device, adjusting the position of the brush holders on the fingers or bracket traverse, traverse holding the bracket holders and so on.

The occurrence of any of these damages will result in the machine malfunctioning, which must be stopped to make appropriate repairs.

For example, we consider the reliability of traction machines. The most time-consuming and frequent failures of electric vehicles include recirculation and combustion of the collector, and the brush holder, armature belt, spool insulation failure, co. breakage of the cable outlet of the shaft, rotation of the drive mechanism. These faults are the result of electrical and mechanical factors.

Mechanical factors can lead to bearing failure, breakage and loosening of connections, rings and bolts, destruction of the electrical collector surface layer, and damage to the insulation. Due to the low reliability of the switching, the collector plates are burned chaotically or in a certain order. During the operation of the machine, if the necessary precautions are not taken, a fire will develop on all collector surfaces. The formation of burns is caused by poor switching and overheating of the collector-brush connection elements, due to the intensive accumulation of the collector-brush brushes, which contributes to the overheating of the arc and the appearance of circular flashes [8].

The most severe type of malfunction is the formation of a circulating fire in the collector, which accounts for 24% of all faults, as well as a violation of the insulation of the armature between the windings and the body.

Typically, insulation failure leads to the opening of the belts, especially if the protection of the electrical circuits does not work in a timely manner. When analyzing the failures of 1,800 ED-170A electric machines, the ED-118A, GP-311B reported 58% of the failures of the electric equipment of electric locomotives, according to five-year operational monitoring data with an average operating time of 32,400 hours. forms.

It is interesting to analyze the statistics of the technological process (technological reliability) of the production of DC machines.

Below are the results of the GP-311B direct current generator control and fault detection at the manufacturer's test station [7].

1. Rotation of the collector due to heat - 24.1%.
2. Deformation of the collector in the cold state - 3.5%.
3. Darkening of collector plates - 2.5%.
4. Other defects of the collector (contact surface retention, melting of pads, insulation damage) - 1.47%.
5. Damage to the anchor insulation in the case - 3.66%.
6. Sequential closure of anchor insulation - 3.77%.
7. Removal of varnish from the anchor - 32.75%.
8. Bearing failure - 8.05%.
9. Other defects (belt loosening, rotor overheating, switching failure) - 20.2%.

For example, we calculate the probability of continuous operation $P(\tau)$ and the failure rate $a(\tau)$ of high-load machines. Figure 1.5 Fault Level Curve. The formulas $\lambda(t) = \frac{a(t)}{P(t)}$ and $P(t) = \exp[-\int_0^t \lambda(t) dt]$ are used for the calculation..

The following values are determined according to Figure 1.5:

$\lambda(0) = 0.66 \cdot 10^{-2}$ 1/ thousand. km, $P(0)=1$, $a(0)=1 \cdot 0.66 \cdot 10^{-2}=0.66 \cdot 10^{-2}$ 1/ thousand. km.

for $\tau=25,000$ km $\lambda(25,000) = 0.36 \cdot 10^{-2}$ 1/ thousand. km. Integral value 2, i.e. the area under the curve. $\int_0^{25000} \lambda(\tau) d\tau = 0.1105$ Therefore, according to the above, error-free operation $P(25000) = 0.4005$ Furthermore, proceed to the formula, $\lambda(t) = \frac{a(t)}{P(t)}$ as a result of failure $a(25000) = 0.4005 \cdot 0.36 \cdot 10^{-2} = 0.1442 \cdot 10^{-2}$ 1/ thousand. km. At a distance of 25,000 to 50,000 km, $\lambda = \text{const} = 0.36 \cdot 10^{-2}$ 1/thousand km.

Then the value of $\int_0^{50000} \lambda(\tau) d\tau = 0.1105 + 0.36 \cdot 10^{-2} \cdot 25 = 0.2005$ is the probability of continuous operation

$P = (50,000) = 0.3348$. Error rate $a(50,000) = 0.3348 \cdot 0.36 \cdot 10^{-2} = 0.1205 \cdot 10^{-2}$ 1/thousand. km.

For the same $\tau=75,000$ km $\lambda(75,000) = 0.36 \cdot 10^{-2}$ 1/ thousand. km. Value $\int_0^{75000} \lambda(\tau) d\tau = 0.2005 + 0.36 \cdot 10^{-2} \cdot 25 = 0.2905$ Hence, the probability of error-free operation is $P(75,000) = 0.2796$. Error rate $a(75,000) = 0.1007 \cdot 10^{-2}$ 1/ thousand. km. for $\tau=100,000$ km $\lambda(100,000) = 0.5 \cdot 10^{-2}$ 1 / ming. km. Value $\int_0^{100000} \lambda(\tau) d\tau = 0.4155$

Probability of trouble-free operation $P(100,000) = 0.2244$. The failure rate is $a(100,000) = 0.1481 \cdot 10^{-2}$ 1 / thousand. km.

Conclusion

In conclusion, it should be noted that reliability is a complex feature that includes failure, permanence, serviceability, stability, safety, manageability, viability and safety. The normal operation often depends on the condition of the collectors and coils, and it is recommended to consider the reliability of each part in their design. It requires reliable maintenance.

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Integration of Mathematics with other Sciences

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Abstract: This article is written about the integral relationship of mathematics with other disciplines and the importance of an integrative approach in the effective organization of lessons in this discipline. The interrelationships of mathematics and physics, the educational and methodological significance of integrative approaches were also discussed.

Keywords: integration, problem, classification, hyperbolic type, differential.

Everything in nature is interconnected and interconnected. This theory is also reflected in the interdisciplinary relationship. The application of mathematics to physics is divided into three main types, which differ sharply in terms of the properties of the second-order linear special product differential equations, which play an important role: hyperbolic type, parabolic type, elliptical type. Euler studied these three types of equations from the time of D'Alembert to the middle of the twentieth century. After the creation of jet planes, the problem of studying the rapid motion of gases from sound leads to mixed-type differential equations. Our scientists have studied such equations in detail, revealed their classification and canonical forms, and solved a number of problems for equations of mixed composition. They pay special attention to the application of mathematics to practical problems, the creation of mathematical models of objects related to production and environmental processes. It is also useful to provide information about mathematics scientists who have lived in our country and contributed to the field of mathematics. For example, Sirojiddinov's major research work, which spread the fame of the Tashkent School of Mathematics around the world, focused on the limit theorems of probability theory, in particular, the limit theorems for Markov chains. Sirojiddinov was the first in the history of mathematics to introduce exact estimates and asymptotic distributions in limit theorems for the sum of random quantities connected by the Markov scheme, and invented a method for obtaining such results. The method was later extended to other schools of probability theory. Sirojiddinov's work on statistical methods of product acceptance control and recommendations developed on this basis have been implemented in many enterprises. In addition to the

direct practical application of mathematics, it should be noted that it has a special role in educating the younger generation as fully developed adults. Analytical reasoning, logical observation, spatial imagination, and abstract thinking are necessary skills for all areas of human activity, which are formed and deepened in the process of studying mathematics. We have a lot of students who are interested in mathematics and want to master it. Our country has all the conditions for them to become advanced scientists, but among our young people there is an opinion that only a student who wants to become a mathematician should master it. It is the result of not being able to get out of the daily routine of today's life, of not being able to see the future. Of course, we think that the quality of education will increase if the teachers who have contributed to the development of science, along with the organization of integration lessons in mathematics in school, provide information about great people. Young learners are introduced to mathematics from the earliest days of school, and at the same time it opens the way to all disciplines. We cover mathematics in all the subjects we study. For young learners, mathematics opens the doors of knowledge to the world and can give new tasks to their learners almost every day. It is important for the teacher to take this into account in order to make interdisciplinary connections correctly. It is very easy to make interdisciplinary connections in elementary school. Because all subjects are taught by one teacher, and therefore interdisciplinary connections are opened for him. Primary school science is based on the events and happenings around it get a clear idea of the properties of r . The proud feature of mathematics is that it is abstracted at the same time as the study of an objective being in relation to everything that does not belong to the most general aspects of the material world under study, to its quantitative aspects, and to spatial forms and relations. recognizes the abstraction and generality of concepts. Expresses connections between them, teaches such connections, assumes general activities about numbers, notions and elementary concepts about arithmetic operations, various skills and abilities, types of activities, forms and methods of teaching. Socio-economic relations in our country, changes in the public education system, as reflected in the laws on education and the "National Training Program", each primary school 'puts an important task in front of the waiter. This task allows to distinguish the specific links for primary education, which are the introduction of education in different curricula, textbooks in textbooks and the formation of a network in the methodological system. can do. State educational standards provide ample opportunities for the development of curricula in the subject. It also serves to ensure the interdependence of disciplines and interdisciplinary connections based on the principles of interdisciplinary communication and knowledge coordination. When we talk about the methodological and mathematical training of teachers in the primary grades, we need to understand that they are prepared in an integral connection with scientific, pedagogical and mathematical training.

The methodology of teaching mathematics in the organization of interdisciplinary communication has several tasks:

1. Implementation of educational and practical tasks;
2. To cover the process of studying the system of theoretical knowledge;
3. Teach students how to shape their worldview;
4. Humanization of education;
5. In the process of teaching mathematics, a person should be taught to love work, to cultivate such values as self-esteem and mutual respect;
6. Teaching methodology consists of teaching in connection with the content of mathematics in grades 5-6, which is a continuation of mathematics in grades 1-4.

Mathematics has a special place in primary education, because it not only develops children's calculation skills, but also develops their worldview, introduces them to the various concepts and quantities of life. In solving any of the examples and problems given in the textbooks, we identify the connections that science makes and connect them with life. In recent years, the whole system of teaching mathematics in primary schools of the country has undergone significant changes in terms of scale and importance. The introduction of new tasks in the school has radically changed the content of teaching mathematics. One of the most interesting lessons in elementary school is math. In order for students to think and keep up with the times, they need to be introduced to mathematics, the father of science, from an early age. Mathematics, in turn, is inextricably linked with all the subjects studied. In turn, didactic games are used in the teaching of mathematics. This means that sometimes we have to cover several subjects in one lesson. The level of organization of the lessons also depends on the creativity of the teacher. Math games and picture puzzles add

to the fun of everyday lessons. In order for primary school students to master the basic mathematical concepts, the teacher must choose a convenient method and forms (types) of lessons. Didactic games play an important role in this. Indeed, play is one of the traditional and tried-and-tested ways of educating kindergarten and school-age children and adolescents. Students should not only master the program materials in mathematics, but also try to observe, compare, think about the environment, events and processes, substantiate their conclusions, and speak mathematical language. Didactic games provide an opportunity to individualize the work in the classroom, to assign tasks to the strength of each student, to maximize his abilities. Through play, students reinforce the knowledge they have learned from the lesson, preparing them to apply it to life. It is advisable to use puzzle games in the process of teaching first graders numbers from 11 to 20.

In conclusion, the teacher's focus on improving the education system is the focus on our great nation, our future, and our future. As a result of such reforms, our future heirs We will create opportunities for the young generation to acquire solid knowledge, apply their knowledge in everyday life, to grow into perfect people, that is, as our esteemed President Shavkat Mirziyoyev said, "Our young people have independent thinking, high intellectual and spiritual potential. We will mobilize all the forces and capabilities of our state and society to grow and be happy as people who do not come to their peers in any field in the world. " Indeed, the focus on the education system is a guarantee of confidence in our great future.

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Water resources of Bukhara region and their geographical study

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Annotation: the article provides an overview of the Natural Resources of Bukhara region, especially the sources of Water Resources, their study, published scientific sources.

Key words: P.Baratov, A.R.Muhammadzhanov, I.SH.Allayarov B.Rakhmatov, M.Tagiev, G.A.Talipov, X.R.Toshov, O.H.Rahimov, G.I.Hikmatova, Hayitov Yo.Q., Water Resources, sea water, Modern (saltwater) lake, Karakir, Ayakitma, Khadich Lake, Devxona Lake, zikri Lake, Amu-Buxoro machine channel, ground water, trench water, atmospheric precipitation.

The study of the nature of Bukhara region, the emergence and settlement of Natural Resources, the comprehensive assessment of the resource opportunities of different regions, zoning and mapping are directly part of the actual tasks of geography science. In particular, the issue of the study of Water Resources is more important[1].

The oases, economic and social systems and water supply of the population built in Bukhara region are mainly met from the account of water sources coming from other regions. Therefore, the problem of drinking and irrigation water in our republic today is one of the tasks at the level of state policy. In particular, this problem is a very important issue for the Bukhara region, which is located in the central desert zone of our country and occupies an area of nine percent of its territory. The supply of drinking and irrigation water in the region is fully provided with Amudarya water through the AMU-Bukhoro machine channel. This water is supplied to the above land by means of sequentially located pumping stations and is economically expensive [2]. Under these conditions, the demand for water also increases from year to year. And the options for obtaining water from the amuderia are becoming more and more complicated.

One of the strategic ways to solve these problems is the effective use of these natural resources. So the first task is to analyze the water resources of Bukhara region and their geographical study.

Since ancient times, the Zarafshan River served as the main source of water for the region. Since the middle of the XIX century, it was difficult for the river water to flow into the Bukhara and Karakol oases. By the 60-ies of the XX century, due to an increase in the scale of production in the regions of the upper and middle reaches of the Zarafshan River, an increase in the population, the river water did not reach the lower reaches in the spring and summer months. As a result, the yield of crops decreased, adversely affected the economic activity of the population. Of course, our ancestors recovered from the sardines, pools and Wells, softening the problem of drinking water for themselves a little. But the water supply of fertile lands remained complicated. Those who have always dreamed that there will be a source of water that will provide their crops with important water. In our people who have suffered from water shortages for such centuries, the qualities of preserving, honoring, not wasting water have been polished. Already his perfume is enjoyable for humans. Consequently all of them will learn, will receive praise. Of course, today this inspirational "fountain" encourages our compatriots to give thanks to all the blessings, or rather to avoid extravagance.

Bukhara Region Water Resources can be conditionally divided into 4 parts.

1. Amu-Buxoro machine Channel 2. Groundwater 3. Factory waters 4. Atmospheric precipitation.

The main water source of the region is primarily the AMU-Buxoro machine channel (1965), I-respectively 60,3 m³/s, II - respectively 95,8 m³/s, and Amu-Karakul canal 48 m³/s. Water transfer capacity of all three channels is 204,1 m³ / h.

On the floor of the Bukhara region there is a large reserve of groundwater. They are sizot and layered water reserves.

Seven Lakes were formed in the territory of Bukhara region as a result of the meeting of zakh waters formed as a result of salt washing through the system of trenches. These are: Sea-Water Area 35 thousand/ha, water volume 1,8-2,0 billion / m³, Lake modern or Tuzkan - area 8,2 thousand/ha, total amount of water 250-300 million / m³. Karakir-27 thousand / ha, water volume 150-200 million / m³, foot Lake -14 thousand/ha, water volume 0.8-1.0 million/m³, Lake Khadija - 6-8 thousand/ha, water volume 100-140 million/m³, Lake Devxona - 1.3 thousand/ha, water volume 80-100 million/m³, Lake Zikri - 2.0 thousand/ha, water volume 35-40 million / m³. The total area of these lakes is approximately 101 thousand/ha, and the volume of water is Z - 4 billion/m³.

Due to atmospheric precipitation in the steppe zone, a large amount of water is formed in winter and spring. Our ancestors used such waters effectively. The volume of water generated by atmospheric precipitation in the Bukhara region exceeds the capacity of the duckling (1 billion m³) by five times (X.Toshov, 2008). Many scientists have studied the water resources of Bukhara region and their geographic aspects and have published literature (Table 1).

Sources of water resources of Bukhara region

№	Author (co-author)	Source name	Publishing and year	Type of source
1	Baratov.P	Natural resources of the Zarafshan Valley and their use	T., Fan Publishing House, 1977. p. 116.	Monograph
2	Muhammadjonov A.R	Irrigation history of lower Zarafshan Valley	T., 1972.	Monograph
3	Nazarov I.Q., Allayorov I.Sh	Geography of Bukhara. Part one	Bukhara, 1994.- 67 б.	Instruction
4	Nazarov I.Q	Abiogenic flows in arid geosystems: optimization природопользования.	T., "Fan", 1992.	Monograph
5	Rahmatov Yu.B	Natural conditions and landscape zoning of the Karakul delta of the Zarafshan River and its agricultural development.	Tashkent, «Fan». 1984.-102 p.	Monograph
6	Tagiyev M	The waters of Amudarya are in the fields of Bukhara.	T.: Fan, 1988. – 56 p.	Instruction
7	Talipov G. A	Land resources of Uzbekistan and problems of their rational use.	T. Uzinform. 1992. – 236 p.	Monograph
8	Toshov X.R	Effective use of desert landscapes and their agroimones (on the example of Bukhara region).	Tashkent. 2008 year. 153 p.	Prepared dissertation for obtaining the scientific degree of the candidate of Geographical

				Sciences.
6	Toshov X.R., Rahimov O.H., Hikmatova G.I	Water value	Bukhara, "Durdana" 2018. 70 p.	Instruction
7	Hayitov Yo. Q	Zarafshan Oasis is the formation of recycled wastewater, their purification and secondary use	Tashkent, 2017	Prepared dissertation for obtaining the scientific degree of the candidate of Geographical Sciences

Of course, the "root" of most global problems is the result of the attitude of people to anthropogen factors, that is, natural resources. It is no secret that their solution is also human dependence on themselves[3]. In place of the conclusion, it should be noted that the study of sources of Water Resources will once again witness the centuries-long toil of the people of Bukhara, located in the lower Zarafshan region for centuries. It further increases them the nature of the ylka and the feelings of appreciating this rare blessing of him, it is no doubt that in pirorvardi obi will enter life as a blessing.

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Publicistic Opportunities

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Annotation. In this article we will talk about the publicistic activity of the creator Sirojiddin Sayyid. Some of his articles give examples of the poet's publicistic views.

Keywords: publitsistics, essay, social reality, artistic image, portrait article, imaginative language, historical fact, literary process

It is well known from history that no matter what form of publicism was, it served to bring to the public the most important, topical issues of the period, to absorb into the minds of people the events that were happening around them, to form their social views. Publicistics differs from each other in its oral and written form. Each form includes several genres. Each genre itself, for example, differs from each other in terms of expression or essence, such as pamphlet, felyeton, esse, etc., in the style and methodological means of reporting programs issued on gazeta, radio, television, or genres of artistic publitsistics, although a common aspect in all of them is apparent. It is also the fact that speech is aimed at society. In the lexical sense of publicistics, "Society, Public", "Social", in the stylistic sense, firstly, the type of literature devoted to the actual socio-political issues of the period (modern), as well as to the everyday life of society, and secondly, works or works (articles, essays, pamphlets, felyeton, etc.k.) complex ¹ the meaning of which also implies the interpretation of social life in the essence of publicistics. But even if we take into account the fact that in the second sense of the dictionary artistic publitsistics is meant, then even if the publitsistics in the first meaning of the dictionary is expressed in the general sense in relation to the publitsistics in the next meaning, artistic publitsistics creates a much more significant coverage than in the same private sense. Negaki, artistic publicism helps not only to bring information to the masses, but also to bring out the spiritual perfection of a person to high heights, to form a harmonious personality, to educate a thoughtful generation, without limiting themselves to the formation of their social views. As a proof of our opinion, we can see that the above general characteristics are widely explained in the example of the study of each genre, selected as an obyek in the artistic publicistic of the poet of the Word creator, sensitive poet, master publicist Sirojiddin Sayyid. Sirojiddin Sayyid, whose theme area is endlessly wide in the field of poetry, is also a blessed creation in the field of art publicistics. If we say that artistic publicism has become one of the lifeblood of the poet's creativity, it can not be overestimated. The creator has made a fruitful work in the field of publicistic, and so far he has "I would go say-the end of the word", "the son of Jevachi", "goodbye now, spring", "Long Live the rains!", "The trace left behind", "Poet and poetess", "the question of the skull" in poetry, "My leaves are also spilling", "attractive jungles" and many more articles, memorabilia and essays, portraits-articles and portraits-drawings are included in the collections, and even in publicistic tones prove that the poet's fine outlook is high, his artistic skills of creating a wide artistic image. After all, "another important feature of the author's publicistic work is manifested in the work of the author through images. It is also possible that the writer does not exactly mention this phenomenon when reacting to a particular event of his time. That is, a publicistic problem, surrounded by pictorial language and symbols, performs a greater task than a pure publicistic work, through its influence on the psyche and feelings, and not on the mind of the reader, such as propaganda, propaganda, publicistic thought"². In this sense, Sirojiddin Sayyid, even in the process of addressing the most political, social and topical issues, illuminates the word in a very beautiful "dress", covered with artistic imagery. This process is especially evident in his essays and articles about the homeland. In some of his articles, the publicist tries to capture historical events and explain that during the Soviet era there was a lot of

¹O'zbek tilining izohli lug'ati/Tahrir hay'ati:E.Begmatov,A.Madvaliyev,N.Mahkamov,T.Mirzayev va b. – T.:O'zbekiston milliy ensiklopediyasi,2007.III tom. – B.319.

²Kurbanova S.Yozuvchi publitsistikasining taraqqiyot tamoyillari. – T.:Muharrir,2012. – B.12.

pressure on the material and spiritual condition of the Uzbek nation, and the nation became a slave. However, it expresses historical facts so highly in figurative language that, as a result, even if the reader has read these events in historical works, the power of the word, the aesthetic and as a result of psychological distress he feels a sense of spiritual purification not only in his mind but also in his psyche. It is in these respects that a work of fiction is distinguished by its richness of artistic elements, its leadership in psychological interpretation, and its philosophical observation, whether it is a report prepared by an ordinary journalist or a socio-political film or a work based on factual information written by a historian. Sirojiddin Sayyid's journalism is diverse not only in terms of genres, but also in terms of topics. In particular, among his publicist works, he emphasizes not only the poets and writers who are considered to be members of fiction, but also the masters of music, ie artists, who are the property of the soul. we can also observe that he was able to give the most objective assessment.

In addition, we can see that some of the publicist's essays and articles are syncretically reflected in the artistic and journalistic observation. In particular, his short article, "The Problem of the Head in Poetry," reveals the reality of the movement and the author's personality, as well as the author's aesthetic ideals. This article proves that journalism is always on the move. Sirojiddin Sayyid raises a very topical issue (perhaps a problem) in today's literary process. The article begins with a memoir by a teacher of journalism. In it, a man who thinks that a young man who is training for a publishing house is an employee of the department holds in his hand the poems written on a spider. The rhymes are so abundant that you have to squeeze in until you read this "selection."³ It is disturbing that the poet's claim to poetry was connected with "washing his head thoroughly with hot soapy water." When our well-known writer O'tkir Hoshimov compared the creative process to a full-blown pain, or when the incomparable artist Usmon Nasir wrote a poem describing the flood of inspiration, did he not simply understand the need to "wash his head with hot soapy water"? What if they didn't ?! After all, inspiration is so easy, creativity is so fast!

Although 40 years have passed since this incident, taken from the memoirs of Sirojiddin Sayyid's teacher, he writes that the essence of the issue mentioned in it has not lost its significance today, but has increased: "How great , great poets have passed away, the word is still alive. The market economy has been very helpful to him, hiring sponsors, making money, agile, resourceful. You don't, "but because of their tastelessness, their ignorance of Navoi, their“ artists ”who don't read books, they also use public scenes, radio and television channels, and weddings. 'Ol is going’⁴. In fact, the creator exposes a very urgent issue in this article: the emoticons who take the word as a weapon of trade, who have never seen a book in their lifetime, who are poetry workshops, who perform on stage regardless of what they write, amateurs who do not even know what they condemn... well, in a publicist article, covering the ever-growing there is no immunity, but, but the so-called literary process, the beorom, the behalovat, has entered the depths of an ocean-without acknowledging that such circumstances are also escalating around it, that national delicacy, the inheritance from the grandfathers is absolutely contrary to the high taste, affects spirituality, the morality, the upbringing of young people, do not have a choice’⁵.

In the article "Mutolaa tulpori", the author emphasizes the verse of Hazrat Navoi, saying that the person who perfects the word will also develop as a person. insists that it must be done. It means that it is foolish to dream of flying in the sky without riding on a tulpar. writing a poem without realizing it is a reminder of the situation of a shepherd who enters a large library and searches for his goat. Then involuntarily comes to mind the famous epigraph of Qahhor teacher - "O you who do not know yourself, Asrorqul"⁶.

All of Sirojiddin Sayyid's journalistic works have one thing in common: the author's personality, honesty, conscientious approach to everything, justice, perseverance and steadfastness. The author not only approaches social reality as an informant, but also expresses his humanistic views with a deep understanding of the essence of each event. He considers it his duty to contribute to the forefront and, most importantly, to the creation of a perfect and harmoniously developed generation. After all, the ultimate goal of the creator is reflected in each of his works.

³Sirojiddin Sayyid. Asarlar.II jild.T.:Sharq,2018.B.541.

⁴Sirojiddin Sayyid. Asarlar.II jild.T.:Sharq,2018.B.542.

⁵Sirojiddin Sayyid. Asarlar.II jild.T.:Sharq,2018.B.545.

⁶Sirojiddin Sayyid. Asarlar.II jild.T.:Sharq,2018.B.550.

It should be noted that the higher Sirojoddin Sayyid's skill in poetry, the more meaningful and exemplary his publicist views are. In these views, the poet is a well-known representative of the journalistic work, which deals with social life, society and nature, as well as the relationship of man. Indeed, the fact that journalism is a product of a synthesis of philosophical-intellectual and artistic-aesthetic thinking is vividly reflected in his work.

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Evaluation of Human Basic Movement Systems Based on Artificial Intelligence

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Annotation: One of the fastest growing areas today is artificial intelligence. This article gives a brief overview of the assessment of human locomotor systems based on artificial intelligence. Today, information technology is developing rapidly in our lives.

Keywords: Artificial Intelligence, Deep Blue, IBM Computer.

The term “artificial intelligence” refers to the simulation of human mental processes through machines, especially computer systems. It also includes Expert Systems, Voice Recognition, Machine Visualization, and Natural Language Processing. how many tasks it can perform. The 1990s marked a new chapter in the development of artificial intelligence. In 1997, IBM's Deep Blue became the first computer in history to beat world chess champion Harry Kasparov. Artificial intelligence is the science and technology of creating smart machines, especially smart computer programs. Artificial intelligence is related to a task similar to the use of computers to understand human intelligence, but is not limited to biologically reliable methods.

Artificial intelligence is important because it can give businesses insights into their operations that they may not have known before, and in some cases, artificial intelligence can perform tasks better than humans. Especially when it comes to repetitive, detail-oriented tasks, such as analyzing a large number of legal documents to make sure that the relevant fields are filled in correctly, artificial intelligence tools often do things quickly and with relatively little error. ends with. This has helped increase efficiency and opened the door to completely new business opportunities for some large businesses. Before the current wave of artificial intelligence, it was hard to imagine using a computer program to connect drivers to taxis, but today Uber has become one of the largest companies in the world by doing just that. It uses sophisticated car learning algorithms to predict the likelihood that people will need to travel in certain areas, which helps to get drivers actively on the road as long as they need to. As another example, Google has become one of the largest players in a number of online services, using machine learning to understand how people use their services and then improve them. In 2017, Sundar Pichai, CEO of the company, announced that Google would operate as an “artificial intelligence company” in the first place. Today's largest and most successful companies use artificial intelligence to improve their operations and gain an advantage over competitors.

Whether artificial intelligence is useful or harmful, we will now briefly write about it. The various debates about artificial intelligence have been going on for almost 50 years. Experts are still divided on the issue. Some experts are concerned that mass unemployment could rise as a result of their popularity. Some experts say artificial intelligence should be treated positively.

According to Ilon Mask, the founder of SpaceX, “Artificial intelligence is a major threat to human civilization. Artificial intelligence causes mass labor problems. Because robots can do everything better than we can. As a result of the pursuit of advanced technology, companies may lose sight of the dangers posed by artificial intelligence.”

Microsoft CEO Bill Gates also spoke out against him. "After a few decades, when robots start doing most of the work, SI becomes so powerful that eventually it starts to worry us. I agree with Snake Mask. But I don't understand why this question doesn't concern others," said Gates.

Based on the above, the role of artificial intelligence in our lives today is a bit misleading from year to year, it is deepening at a very high rate day by day. The debate over whether they are human successes or failures is long overdue. Most importantly, in the words of science fiction writer Ishak Azimov,

the motto of creating robots should not be to harm people. Artificial intelligence affects the future of almost every industry and every human being. Artificial intelligence has worked as a key driver of emerging technologies such as big data, robotics and IoT, and it will continue to act as a technology innovator in the near future

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Catalytic nitriding of steel components operating in difficult conditions of hydro-abrasive wear

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Abstract. In the paper, the catalytic effect of previously deposited copper oxide film on nitriding process is described. Mechanisms of iron nitriding intensification are discussed: ammonia dissociation, nitrogen ions adsorption at metal surface, and nitrides formation acceleration. Microstructure of nitrided layers in Armco-iron and in high-chromium steel is examined. It was shown the increase of abrasive wear resistance of nitrided 20Cr13 steel.

Keywords: Nitriding, chromium steel, catalytic effect, nitrided layer, wear resistance.

Introduction

Many parts of equipment for gas and oil production (drilling rigs, pumps, sprayers, etc.) operate in a hydraulic flow containing solid abrasive particles [1]. Exposure of components in corrosive liquids under high pressure aggravates extremely hard conditions of waterjet wear.

Thus, elements of a submersible module for logging oil and gas wells work under hydrostatic pressure from 0.1 to 150 MPa at temperatures from -45 to + 450°C [2]. During operation, the module parts contact directly with the borehole wall and drilling fluid containing water, oil, solutions of salts, acids and alkalis, and gases (methane, hydrogen sulfide). Taking into account these conditions, some components of submersible modules (axles, screws, nuts, pins, forks, sleeves, clamps) are made of high-chromium steels (13-18%Cr) [3].

Wear of a metal surface by abrasive particles is one of the main reasons for reducing the service life of such machines. Abrasive wear of the surface is the result of micro scratching of the metal with hard particles, so the wear degree depends on the ratio of the hardness of the metal and the abrasive particles. Waterjet wear can be considered as a special case of abrasive wear. However, when the abrasive particles move in a stream of liquid, some additional factors contribute to the destruction of a steel surface. At high flow rates, fluid local impacts may behave like solid particles that cause cavitation destruction of the metal [4]. A hydroflow, combined with the action of abrasive particles, removes protective oxide films from the steel surface, which accelerates electrochemical corrosion.

Since the main extreme influences are perceived by the surface of the parts, then methods of chemical thermal treatment (CTT) are effective to improve their reliability. Comparing to the coatings deposition methods, CTT processes have significant preferences due to the diffusion penetration of saturating atoms into the metal's crystal lattice: high adhesion of the layer with the steel substrate, and fluently decreased depth concentration profile of an element that provides gradual properties changes.

Nitriding is one of the most effective methods of thermo-chemical treatment for steel parts and tools as it ensures significant increase of their wear resistance, corrosion resistance, and fatigue strength at relatively low process temperatures. Nitriding process is successfully used for increase of wear resistance of ferritic steels [5]. Formation of nitrides at the nitrided surface of chromium-containing steels contributes to the resistance against a hydraulic flow with abrasive particles. The volume changes in the surface layer lead to the appearance of favorable residual compressive stresses in the hardened zone, which reduces the sensitivity of steel to stress concentrators arising in the process of micro-shocks action.

There are several obstacles for effective application of nitriding for surface strengthening of chromium steels. Firstly, the procedure of previous de-passivation is necessary for removing of oxide films from the surface. Besides, the problem of corrosion resistance loss appears because of possible chromium nitrides

formation [6, 7]. Some of these problems may be overcome during nitriding techniques with preliminary oxidation [8].

The important limitation in nitriding of high-alloyed steels consists in the low rate of a diffusion layer growth that is the result of very slow diffusion of nitrogen. For example, for forming of a nitrided layer in 13%Cr steel of 0.2...0.3 mm thickness, the duration of the classic gas nitriding should be not less than 30 hours [9]. Thus, the problem of nitriding intensification is the most important for processes further development.

The process temperature is considered the main physical factor for nitriding intensification because the diffusion coefficient of nitrogen is the exponential function of the temperature. Thus, high temperature nitriding seems to be the only way for forming of extended diffusion layers in ferritic and austenitic steels, as well as in nickel-based alloys [5, 10]. For many steels, the nitriding temperature is limited by some factors critical for keeping their properties.

Temperature increase is not only mode of process acceleration. Activation of steel saturation with nitrogen may be achieved by application of high-energy sources: electric discharge, laser, plasma, ultrasonic effects. For nitriding intensification of alloyed steels, controlled atmospheres are used as well as gas-cyclic and staged processes [11].

It was shown that catalytic properties of metal oxides may be used for nitriding intensification. For example, copper oxide film at the steel surface accelerates the nitriding layer growth in carbon steels [12]. The purpose of the study consists in the investigation of catalytic effect of copper oxide films on nitriding of chromium steels and in the examination of hydro-abrasive wear resistance of nitride steels for oil and gas production components.

Methods of study

Experimental study of catalytic nitriding was carried out on specimens made of Armco-iron (model material) and of chromium steel 20Cr13 (AISI 420). CTT of the model material included stages of oxidation and nitriding. Before nitriding specimens were covered by thin copper film deposited from 1% solution of blue vitriol. Exposure in the air atmosphere at 585°C during 1-3 minutes results in the formation of the copper oxide coating. Nitriding of samples with CuO coating was carried out in ammonia at the same temperature (585°C) during 3 hours.

Specimens of chromium steel covered with copper film were subjected to gas-cyclic processes at 585°C with alternating stages of oxidation and nitriding. At each oxidation stage in the air atmosphere, formation of CuO layer occurs; at the next stages in ammonia, nitriding of steel under the CuO film proceeds together with the reduction of copper oxide by hydrogen. Oxidation stages duration was determined depending on necessary thickness of the oxide layer; and nitriding stages duration was selected upon the time of its total dissolution. Stages are repeated for forming of necessary thickness of nitrided layer. Then cooling was carried out in the ammonia atmosphere.

Microstructure of the samples was examined in optical microscope AXIOVERT 25CA and in scanning electron microscope JEOL JSM-6480LV. Elements' concentrations in different points of the layers were determined by EDS spectrometer. Phase composition of the nitrided surface was examined by X-ray diffraction. Phases distribution through the depth of the layers was estimated by correlation of local nitriding concentrations according to the Fe-N phase diagram.

For microhardness measurement, PMT-3 device was used. Abrasive wear tests were conducted in a loose mass of corundum sand abrasive particles moving between the test specimen and the rubber roller. Wear resistance was measured by weight loss of tested specimens.

Results and discussion

Mechanisms of nitriding intensification of iron with surface oxide film. Nitriding intensification boils down to the search of factors that can accelerate the dynamics of the main elementary physics-chemical processes: 1) ionization of a saturating gas environment; 2) activation of a treated metal surface for better adsorption; 3) stimulation of diffusion processes in a metal substrate. One of the solutions for increase of adsorption of saturating element's atoms/ions at the metal surface consists in the usage of specific properties of active oxide films formed at a steel substrate: presence of oxides increases the number of active centers for adsorption.

Oxides of metals act as the sources of high energy electrons that can easily emit from the surface film; this contributes to the active ionization of ammonia atmosphere during nitriding and to the acceleration of nitrogen ions movement to the metal surface. If an oxide film is thin enough than it may be penetrable for ions with sufficient kinetic energy. In this case, forming of a nitrided layer under the film is possible. This creates preconditions for regulation of phase composition and thickness of the nitrided layer. In particular, a diffusion layer based on solid solution may be formed.

Active oxide films may be formed both as the consequence of spontaneous oxidation of the substrate metal or some of the alloying elements and as the result of a special preliminary surface treatment. One of the approaches consists in the deposition of a metal precursor at the steel substrate with the following oxidation.

As it was already mentioned, copper is one of the effective precursors for forming of catalytic oxide film for nitriding intensification. Copper film is formed at the surface of iron specimen according to the reduction reaction from copper sulfate solution:



During the contact of iron specimen with $CuSO_4$, Cu^{2+} ions move into the solution (Fig. 1 a); thus the surface becomes charged negatively. At the same time Cu^{2+} ions deposit from the solution at the iron surface. In the conditions of dynamic equilibrium, the quantity of Fe^{2+} ions in the solution is equal to the quantity of Cu^{2+} ions deposited at the substrate. This state corresponds to the maximum thickness of the copper precursor.

Heating of covered samples in the air atmosphere provides the oxidation of copper precursor. The process of oxygen dissociation occurs; oxygen ions are adsorbed by the surface, and then diffuse into the copper film (Fig.1 b). At the initial stage of oxidation, Cu_2O oxide is formed, which transfers then to CuO oxide. The completeness of the oxidation depends on the thickness of the copper precursor. CuO interacts with ammonia according to the reaction of copper reduction:



Intensification of ammonia dissociation is accompanied by active nitrogen ions formation. Well-developed surface of the oxide film creates a number of adsorption centers that contributes to the increase of nitrogen ions number at the surface (Fig. 1c).

Nitrogen ions penetrate through the thin oxide film in the iron substrate. Diffusion of nitrogen ions into the depth leads to the nitrided layer formation under the copper oxide film with the structure corresponding to the phase transformations in the Fe-N system.

Influence of copper oxide film on the kinetics of nitrided layer growth. Experiments confirmed the suggested schemes and discussed mechanisms of elementary processes during nitriding under copper oxide film. Metallographic examinations and evaluation of nitrogen concentration at different depth from the surface discovered the penetration of nitrogen under the copper oxide film and formation of nitrided layer in iron specimens (Fig. 2).

Elements' spectrum from the surface shows that during the nitriding process, copper oxide is resolved, and copper is reduced from the oxide (Fig. 3). Copper atoms diffusion into the iron substrate occurs to the depth of 90 μm (Fig. 2).

X-ray diffraction examination identifies ϵ -phase $Fe_{2-3}N$ directly at the surface with nitrogen concentration about 11 wt.%. Examination of nitrogen concentration profiles and micrographs of the layer gives the reason to evaluate the thickness of ϵ -phase zone as about 70 μm (Fig. 2). According to the nitrogen concentration decrease with the depth, we can suppose forming of $\epsilon+\gamma'$ compound layer under the ϵ -phase zone. At the depth more than 100 μm , an internal nitriding zone $Fe_\alpha(N)+\gamma'$ is formed; the total thickness of the nitrided layer is up to 200 μm .

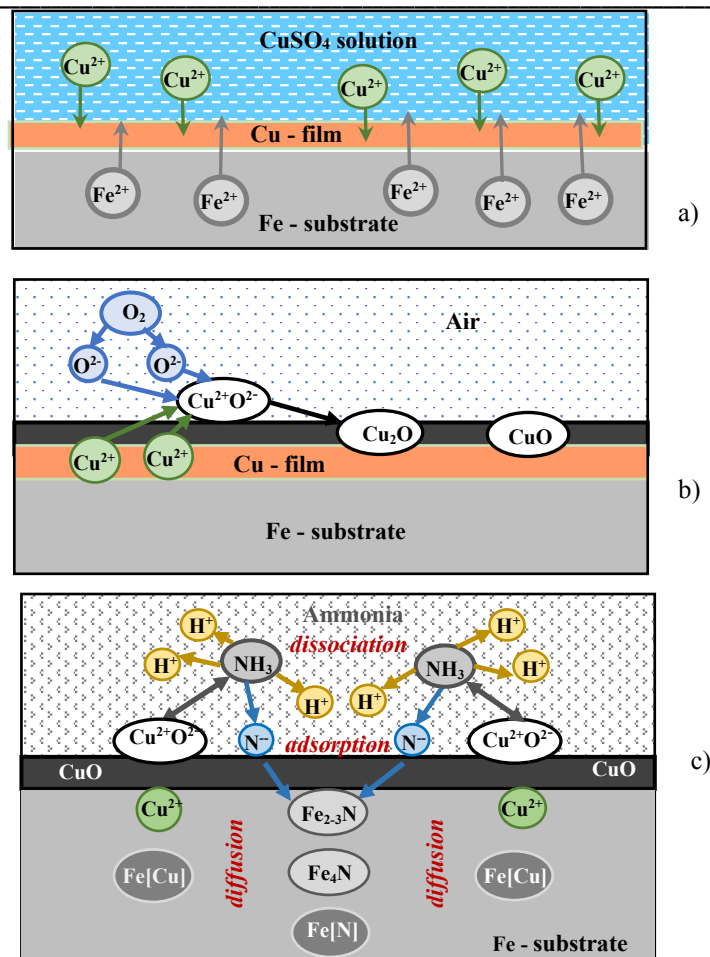


Fig. 1. Schemes of elementary processes during catalytic nitriding: a) Cu-film formation at Fe-substrate; b) Cu-film oxidation; c) nitrided layer formation under CuO film

Catalytic nitriding of chromium steel with previously formed copper oxide film. Analysis of kinetics of nitrided layer growth in chromium steel has shown the catalytic effect of copper oxide film. For example, the process duration of 1.5 hour is enough for forming of 150- μm nitrided layer in 20Cr13 steel during gas-cyclic process with previous deposition of copper oxide. Whereas the time of 15-20 hours is required for such layer thickness achievement during classical gas nitriding in ammonia. Catalytic nitriding duration is 5 times less comparing to the time of traditional oxi-nitriding necessary for the same layer formation.

Some differences in the diffusion layer structure were discovered in chromium steel comparing to the structure of Armco-iron model material. ϵ -phase formation is not observed, whereas powder-like sintered composite layer of γ' - Fe_4N nanoparticles is formed at the surface (Fig. 4 a). This may be the result of counter iron diffusion from the substrate through the copper oxide nano-film. Alternation of ammonia-air saturation atmospheres activates the interaction between iron ions and adsorbed nitrogen ions at the surface. In the internal nitriding zone, nano-particles of chromium nitrides CrN are observed in ferrite matrix (Fig. 4 b) that is the precondition of precipitation hardening.

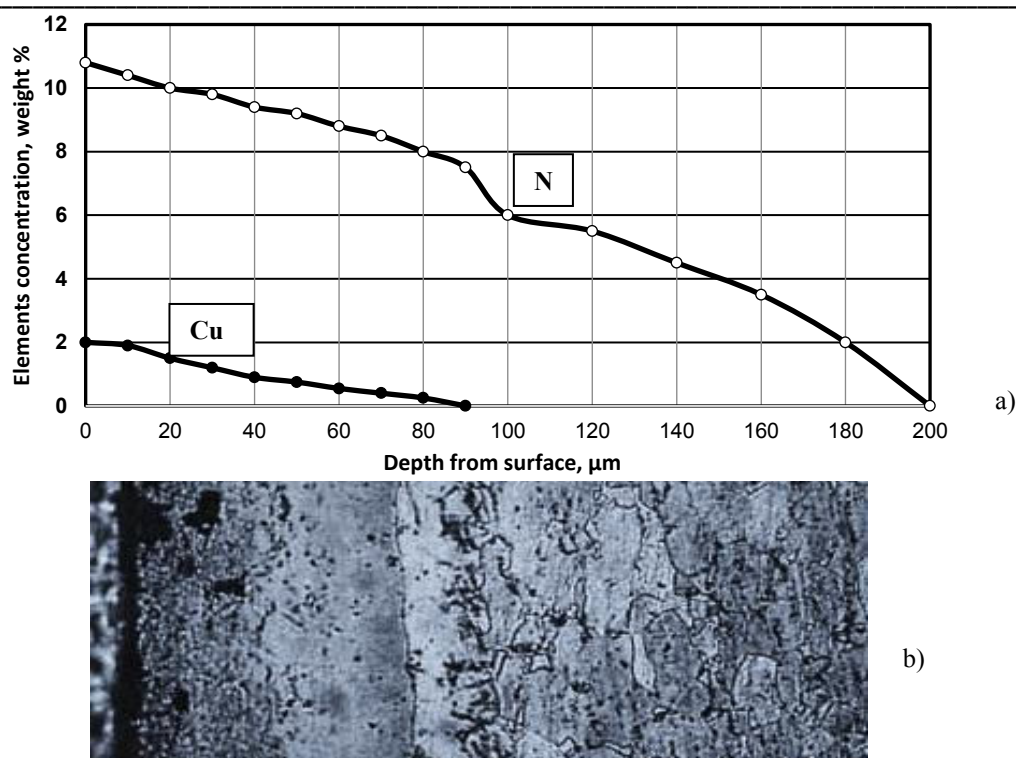


Fig. 2. Nitrogen and copper concentration profiles in Armco-iron (a) and microstructure of nitrided layer formed under CuO film (b)

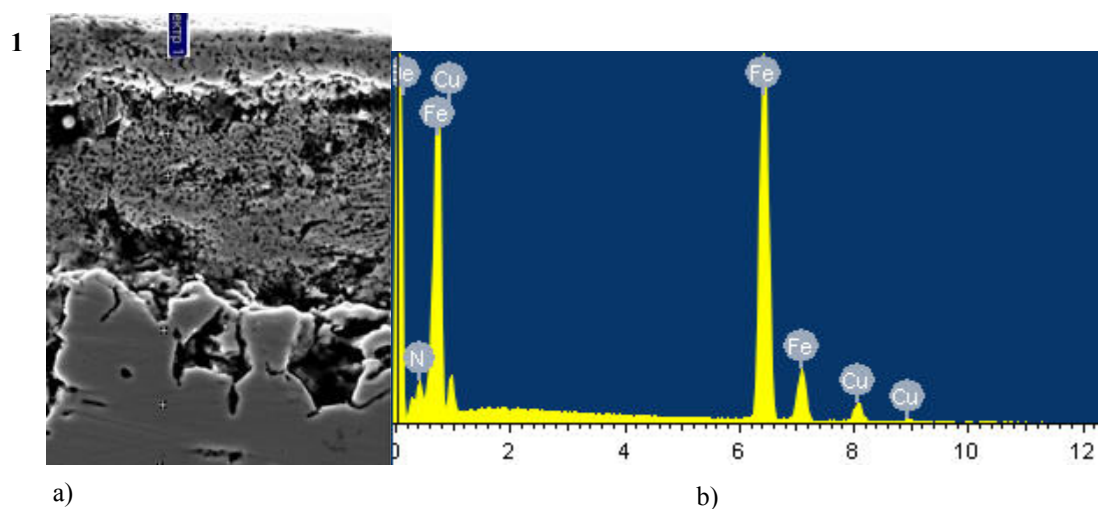


Fig. 3. SEM image of surface compound layer in nitrided Armco-iron (a) and elements' spectrum in the point "1" (b)

It was shown that catalytic nitriding with CuO film significantly increase abrasive wear resistance of 20Cr13 steel (Fig. 5). Weight loss parameter halved as at the workability stage and at the stage of steady wear.

Both parts of the nitrided layer in chromium steel play their role during machine components operation in hydro-abrasive wear conditions. Relatively soft surface coating of powder-like ferrous nitrides provides workability of the surface at the initial period of friction. The extended internal nitriding zone strengthened by dispersed CrN particles contributes to the wear resistance due to the so-called Charpy structure. Untreated core of the specimen keeps the monophasic structure of alloyed ferrite which is resistible to impact loads.

On-location tests of logging equipment with components treated according to the described nitriding method have shown that their service life under the impact and friction loads increased from 3 to 7.5 times.

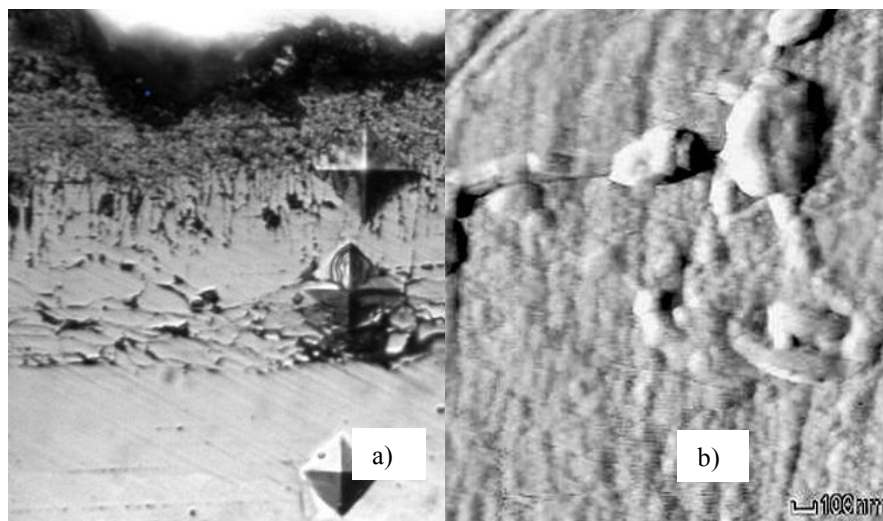


Fig. 4. Microstructure of 20Cr13 nitrided steel: a) – surface composite layer; b) – chromium nitrides in the internal nitriding zone (SEM)

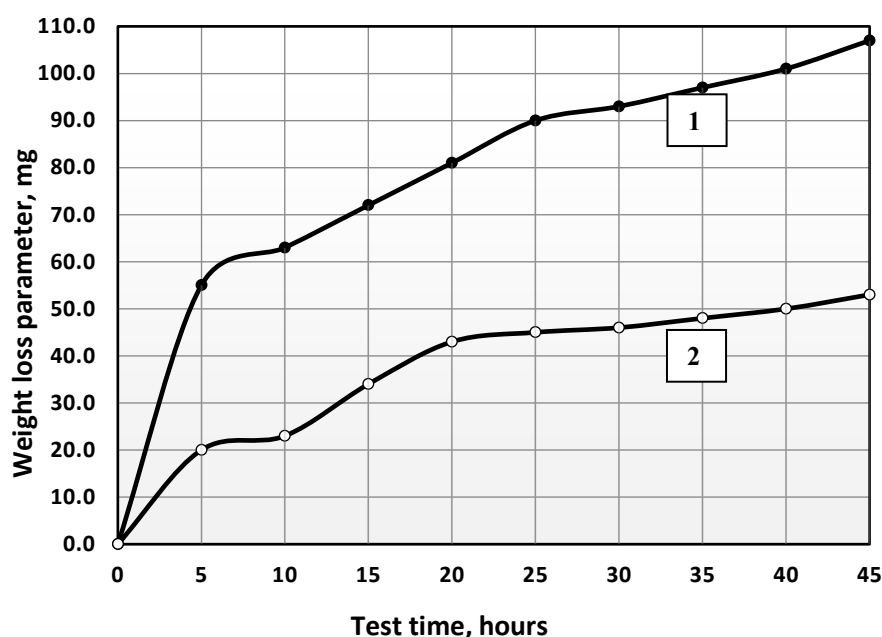


Fig. 5. Abrasive wear resistance of 20Cr13 steel without surface treatment (1) and after catalytic nitriding with copper oxide film (2)

Conclusion

Catalytic effect of copper oxide film on nitriding process is confirmed for both Armco-iron and high-chromium steel due to the mechanisms of acceleration of ammonia dissociation, activation of nitrogen ions adsorption at metal substrate, and intensification of nitrides formation at the surface. The structure of nitrided layer in 20Cr13 steel after catalytic gas-cyclic nitriding provides high wear resistance and contributes to the multiple increase of the service life of machine parts operating in hydro-abrasive wear conditions.

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Blockchain technology and the role of blockchain in uzbekistan

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Annotation: This article gives you a brief overview on blockchain technology and its benefits. There is talk about the development of blockchain in Uzbekistan and in what areas the blockchain can be widely used.

Keywords: Digital economy, blockchain, bitcoin, transaction.

Blockchain is a database that is distributed between the noins of a computer network. As a database, blockchain stores data in digital format in electronic form. Blockchains are known for their decisive role in cryptocurrency systems such as Bitcoin to store secure and non-centered recording of transactions. The innovation in Blockchain is that it guarantees the reliability and security of the data record.

One of the main differences between a simple database and blockchain is the structure of the data. Blockchain collects information in groups known as blocks that store the data set . The blocks have certain storage capabilities and close when filled, connect with a previously filled block and form a data chain known as a "blockchain." All new data after the newly added block will be collected into the newly formed block and added to the chain after replenishing.

Blokcheynning printsipli va ishlashi

Blockchain is a chain of blocks where the history of transactions can be maintained, as well as a tool by which transactions go from one person to another. This is a distributed book, which everyone can access, and also offers an irreversible feature for cryptocurrency. Now let's find out how it works. Each block contains data and hash of the previous block. A data set stores user data, and information similar to quantity. The hash then becomes more like a unique identification number, such as a fingerprint. Once the block is created, it is a hash, and if something changes on the block, the hash code will also change. It defines the block and all its composition. The hash of the front block is stored on the next block forming a chain, making its blocking safe. The current block refers to the previous block's hash, so if the hash of one block changes, it will affect the next block.

Blockchain uses work proof technology, slows down the creation of new blocks in the case of bitcoin, it can take 10 minutes to calculate proof of the case and creation of new blocks. This mechanism makes hardening very difficult, since if one block is more temperature-free, we must confirm the work of all the blocks. Blockchain is also very safe due to the peer-to-peer feature, if someone joins the network, it will receive a full knowledge of the blockchain and can check if everything is in order. Let's take a look at what happens when someone creates a new block. When someone creates a new block, it will be sent to everyone in the block chain. They check to see if they have been approved and broken and then add that block to the chain. Nodes on the network create consensus and they agree on which blocks are not valid, and unbreakable blocks are rejected and only real blocks are added to the blockchain. To access blockchain, each block must be broken properly, and 50% of peers must agree to add the block to their blockchain.

Features of blockchain

1. **Reliable** – Blockchain is reliable because it uses a peer-to-peer network, as everyone can access the transaction history and get acquainted with the transaction details and with whom the transaction is

being done. It also includes hash functionality that is very safe, and no one can modify it using any algorithm.

2. Distributed - Blockchain is a distributed system, there is no supervising body where every node can get information about the transaction being processed. Only centers within a centralized system will have access to the transaction, and if any node is not working on the distributed system, it will not affect other nodes and other nodes will be connected.
3. Hash Technology - Hash Feature is the most important technology of blockchain, a feature that makes blockchain technology very safe because if each block has a hash of the previous block, and something changes on the block, it does not correspond to the hash of the next block. . So, here it is possible to reduce the risk of demolition.
4. Secure- Blockchain is very safe and cannot be easily broken. Since change blocks are added, when someone tries to break down a block, he has to block every block next to the block, and the added blocks can't stand the speed.
5. Transaction fee - in a centralized system, a certain amount of transaction fee is charged by banks when performing this transaction, but in blocking technology this is canceled.

Blockchain is the basis for cryptography. In the case of Bitcoin, blockchain is used decentralized, so no individual or group will have control, but rather all users will collectively retain control. Decentralized blockchains are unchanged, i.e. the entered data cannot be returned. For Bitcoin, this means transactions are recorded on a regular basis and made visible to everyone. Bitcoin technology was introduced by Satoshi Nakamoto, which has a decentralized, peer-to-peer and electronic cash system based on the RPOW principle, but bitcoin used a peer-to-peer platform to derail centralization, instead of using a reliable computer system. Ethereum is also based on blockchain technology, an alternative cryptocurrency.

The capabilities of the digital economy and blockchain technologies in Uzbekistan are extremely promising. [The Resolution](#) of the Head of State of the Republic of Uzbekistan dated September 2, 2018, launched the free work of companies in the field of crypto-assets and blockchain technologies.

The Digital Trust Foundation has been established to implement the most promising and strategically important projects for the development of the digital economy, as well as other measures to prepare personnel in the field of the development and implementation of blockchain technologies.

On November 12, for the first time in Uzbekistan, a pilot project of blockchain technology was introduced in the system of automated reestablishments of the State Center for The Expertise and Standardization of Medicines, Medical Equipment and Medical Equipment. So the data of this object is from any manipulation. Many focus on blockchain technology as the basis for the transaction of cryptocurrencies. However, its capacity is higher than financial transactions. Here are some interesting yet not widely circulated [information about](#) this revolutionary technology.

1. Blockchain can be used to track the results of scientific research

According to Scientific American magazine, 2.5 million scientific papers are published annually. Often, checking the results to the authors can be a challenge. Blockchain may come to the aid in this situation. Scientific American writes:

"Blockchain significantly simplifies and speeds up the publication and validation of data – it will not be possible to alter or falsify the results of the experiments."

2. Blockchain technology market to reach \$60 billion by 2024

In 2017, the market for blockchain-based technologies would total \$ 708 million. According to forecasts, by 2024, their total amount will be \$60.7 billion. The bulk of such growth is directed to the financial services market.

3. Some technop companies are already earning from the sale of blockchain

Graphic cards offered by American companies NVIDIA and AMD (Advanced Micro Devices) allow you to develop cryptocurrencies and work with blockchain.

NVIDIA chief Juan Jensen recently told CNBC that technology is moving into a radically new form and it will remain with us for a long time

4. Blockchain media increases transparency in the market

Salon Media Group is using a blockchain technology-based registry to record contracts and related payments for advertising. Unilever Corporation, in turn, uses IBM's blockchain technology to purchase advertising spaces in the United States and track its transactions.

5. Power supply network can be controlled with technology

Blockchain allows you to modernize the correlation between electricity consumers and its suppliers. Data is automatically stored in a single register.

6. Blockchain can radically change the transport industry

Control over thousands of cargo ships around the world is a serious problem for companies. Blockchain can simplify this process by converting the circulation of documents into electronic form. Bloomberg's recent article says that the standardization of container sizes in the 1960s made a revolution in the industry. If blockchain makes logistics simpler than it really is, goods around the world will get cheaper.

7. Technology can be used to manage radio frequents

Currently, there is a limited frequency range for commercial radio stations in the United States. Some of its networks are used for generic cellular communications, others are designed for government organizations to use, and third for technologies like WiFi. Blockchain allows you to control radio frequents and distribute diaphragms depending on the size of the requirements.

8. Works on Digital Passports Blockchain

Billions of people around the world struggle to confirm their identity (with documentation). Microsoft wants to change that. The company is currently developing a decentralized digital identification system. The system gives everyone a unique number. It can be used when using banking services, in healthcare and even traveling the world.

The abstract. We need to implement a number of measures for the development of blockchain in our country. For example, in the field of medicine, we can get rid of a lot of costs by tying disease sheets to the blockchain. It also provides accurate information that can be exchanged if we use it in the field of taxation, cadastre services, and education.

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